

Essential Components Selection Guide



Get the right components, at the right price, right when you need them.



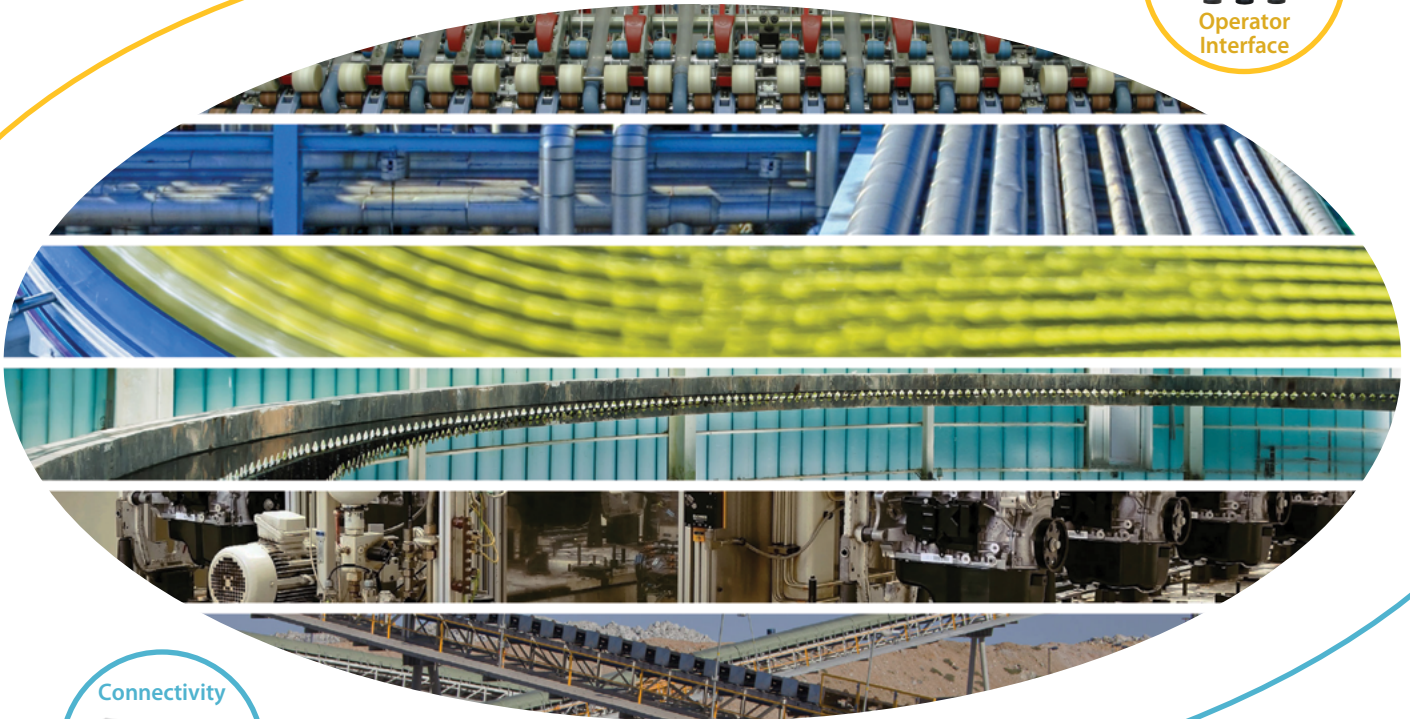
Power



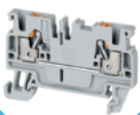
Logic



Operator Interface



Connectivity



Safety



Sensors



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THINK.
SOLVE.™

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- Controller, Motion
- Controller, Programmable Automation Controller
- Controller, Programmable Logic Controller
- Controller, Embedded Computer System
- Operator Interface
- Power Supply
- Relay
- Stack Light Tower
- Industrial Electric Motor Drive
- Motor, Servo
- Motor Starter
- Input/Output Systems
- Input/Output, Machine-Mount
- Machine Safety Components
- Programmable Safety Controller
- Safety Network Components
- Safety Relay
- Sensing, Encoder/Resolver Measurement
- Software, Integrated Platform
- Software, Motion Control
- Software, PLC Programming



Innovation Awards

"Our PEOPLE are the foundation of all we do, and creating an environment where everyone can do their best work is fundamental to our success."

- Blake Moret,
President and Chief Executive Officer



World's Most Ethical Companies List

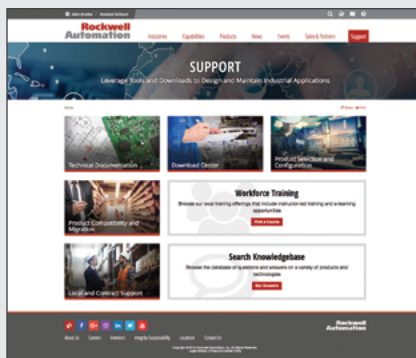
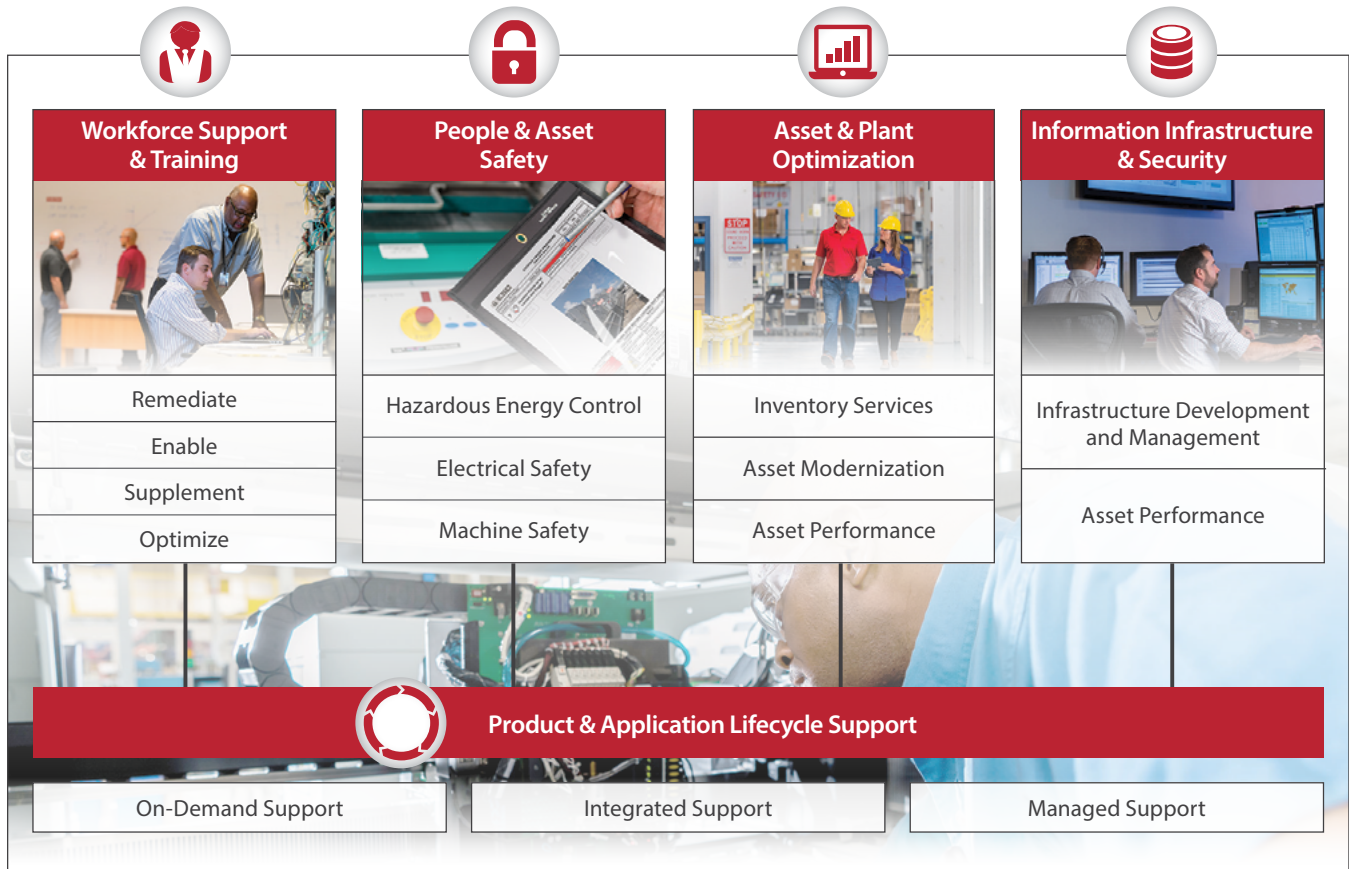
For the seventh time, the Ethisphere Institute has named Rockwell Automation as one of the "World's Most Ethical (WME) Companies," a recognition that honors organizations that continue to raise the bar on ethical leadership and corporate behavior.

The Ethisphere Institute is an independent center of research promoting best practices in corporate ethics and governance. World's Most Ethical Company honorees understand the correlation between ethics, reputation and daily interactions.



Rockwell Automation Services

Minimizing Risk. Maximizing Productivity.



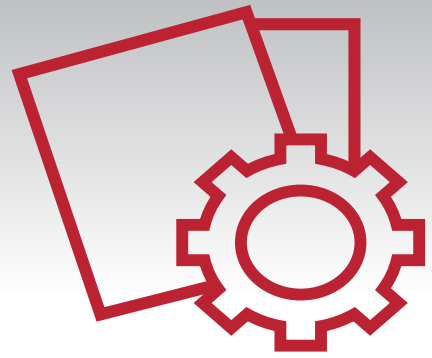
Support

Visit the Rockwell Automation support website for more information on all our offerings.
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Online Resources

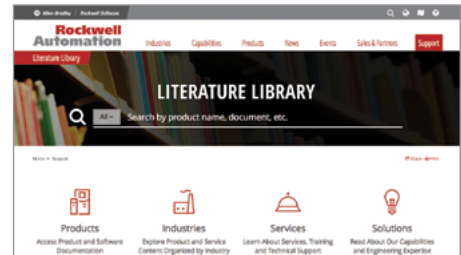
Rockwell Automation offers a wide range of online tools to assist you in selecting and configuring your application.



Literature Library

Browse Literature Library for technical and commercial publications in multiple languages.

- Application Guides
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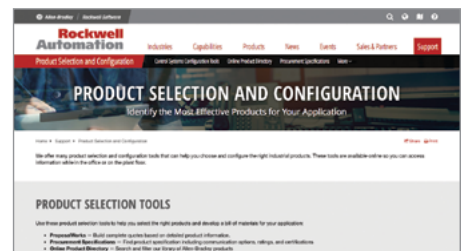


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Browse our diverse collection of tools designed to help you choose the right products, and plan and configure a system to support your business needs.

- Accelerator Toolkits
- Product Drawings
- Product Selection
- System Configuration
- Product Certifications

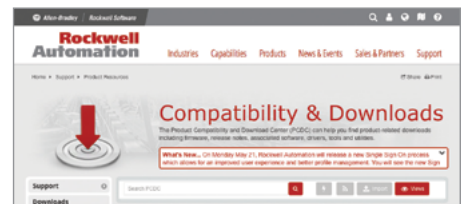


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For more details and to download the free app, visit the iTunes app store.



Looking for More?

This catalog highlights only our most essential components. For a complete product selection, visit our online product directory at <http://ab.rockwellautomation.com/allenbradley/productdirectory.page>

Smart Devices

Make data-driven productivity improvements using Smart Devices

At its most basic level, The Connected Enterprise is about enabling the equipment, machinery, and devices in a manufacturing plant to provide real time information that can help optimize plant operations.

Smart devices help you:

- Increase productivity
- Produce higher-quality products at lower costs
- Support regulatory compliance
- Identify and address worker-safety issues
- Optimize supply chains

Our smart devices are the foundation of integrated control and information, providing seamless connectivity and the raw data for your Connected Enterprise.

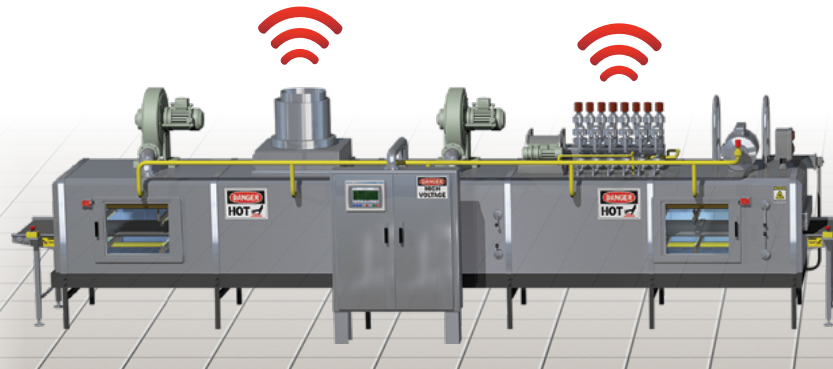
Real-time Data

*Current, Voltage, kWh,
Running Time,
Temperature, Safety*



Information

*CONTEXTUALIZATION
Production output,
Warnings/Alarms, Energy
usage, Downtime causals*



Our Smart Devices Include:

Variable Frequency Drives



Servo Drives

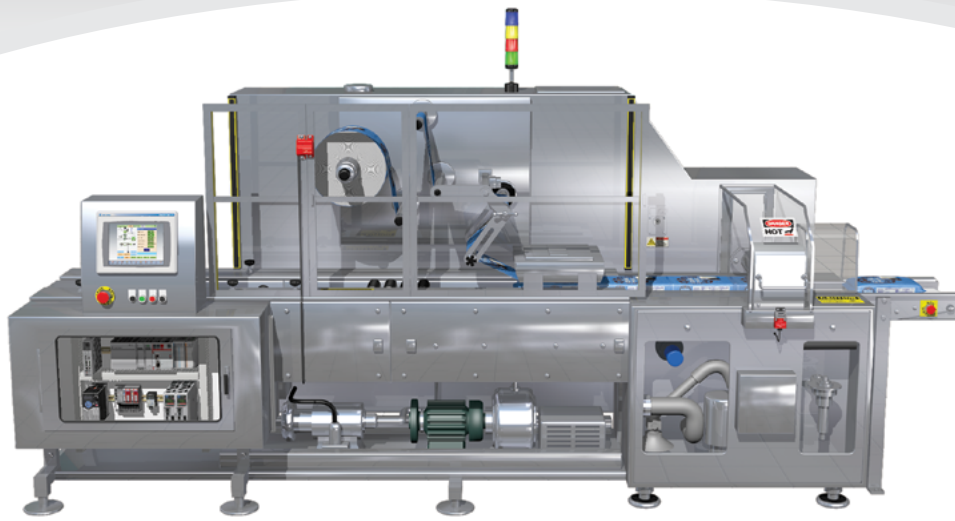


Motor Starters



Condition Monitoring





Knowledge

ANALYTICS
Mean Time to Repair, Predictive maintenance, OEE

Optimize

ACTION
More efficient process workflows, Continuous improvement



Power Monitoring



Motor Protection



Sensors



Safety

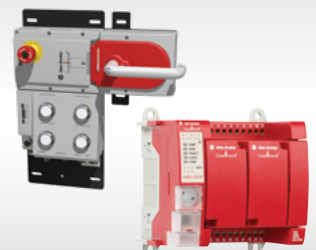


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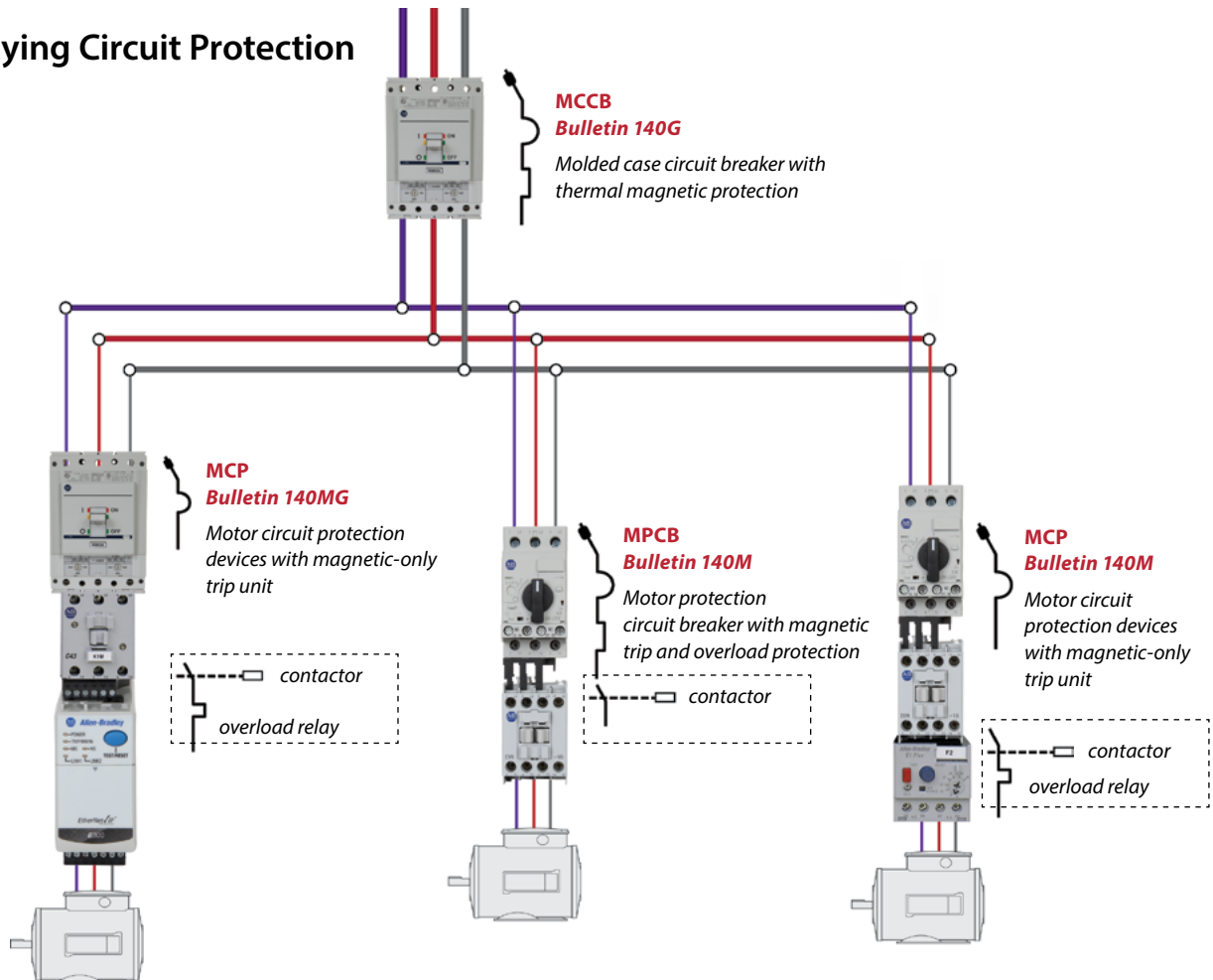
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Circuit Breakers

Applying Circuit Protection



Molded Case Circuit Breakers (MCCB) are designed to protect an electrical circuit from damage caused by overload or short circuit. Their basic function is to detect a fault condition and interrupt current flow. An MCCB can be reset (either manually or automatically) to resume normal operation.

Motor Circuit Protectors (MCP) are designed to provide short circuit (magnetic) protection and disconnect for a motor circuit. They are designed to be used with a contactor (to start/stop the motor) and an overload relay (to protect against overcurrent).

Motor Protection Circuit Breakers (MPCB) are designed to provide short circuit (magnetic) protection, a disconnect for motor circuit, and overload protection for the motor, all in one device.

Circuit Breakers



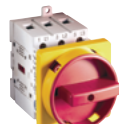
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Starters



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Motor Protection



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Smart Motor Control



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Motor Circuit Protector (MCP) Motor Protection Circuit Breakers (MPCB) 140M

- Available with and without motor overload protection
- UL Listed for motor loads
- 0.1...45 A (motor overload protection included)
- 0.16...45 A (motor overload protection provided separately)
- Overload protection in multiple motor applications available

* Product Selection starts on page 1-4.



Motor Circuit Protector (MCP) Motor Protection Circuit Breakers (MPCB) 140MG

- Available with and without motor overload protection
- UL Listed for motor loads
- High current limiting and high switching capacity
- 10...150 A (motor overload protection included)
- 3...1200 A (motor overload protection provided separately)

* Product Selection starts on page 1-7.



Molded Case Circuit Breakers (MCCB) 140G

- Thermal magnetic or electronic protection 10...3000 A
- Eight frame sizes with a range of 125...3000 A
- Interrupting capacities from 25...150 kA support many applications
- Electronic Maintenance mode trip units 400...3000A
- Offers current-limiting options (H, J, and K frames)
- 3- and 4-pole configurations

* Product Selection starts on page 1-9.



Drives



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For more information on our complete family of circuit protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Circuit Breakers



Product Selection

140M Motor Circuit Protectors

Rated Operational Current (I_r) [A]	Magnetic Trip Current [A]	Ultimate Interrupting Current [kA]		Max. 3-phase Hp Ratings ¹				Max. kW, 3-Phase – AC-3 ¹				Cat. No.
		400V (I_{cu})	480V (group motor)	200V	230V	460V	575V	230V	400/415V	500V	690V	
C-Frame												
0.16	2.1	100	65	–	–	–	–	–	0.02	0.06	0.06	140M-C2N-A16
0.25	3.3	100	65	–	–	–	–	–	0.04	0.09	0.09	140M-C2N-A25
0.4	5.2	100	65	–	–	–	0.25	0.06	0.09	0.12	0.18	140M-C2N-A40
0.63	8.2	100	65	–	–	0.25	0.33	0.09	0.18	0.18	0.25	140M-C2N-A63
1	13	100	65	–	–	0.5	0.75	0.18	0.25	0.37	0.55	140M-C2N-B10
1.6	21	100	65	0.25	0.33	1	1	0.25	0.55	0.75	1.1	140M-C2N-B16
2.5	33	100	65	0.5	0.75	1.5	2	0.37	0.75	1.1	1.8	140M-C2N-B25
D-Frame												
2.5	33	100	65	0.5	0.75	1.5	2	0.37	0.75	1.1	1.8	140M-D8N-B25
4	52	100	65	1	1	3	3	0.75	1.5	2.2	3	140M-D8N-B40
6.3	82	100	65	1.5	2	5	5	1.5	2.2	3	4	140M-D8N-B63
10	130	100	65	3	3	7.5	10	2.2	4	6.3	7.5	140M-D8N-C10
16	208	100	65	5	5	10	15	4	7.5	10	13	140M-D8N-C16
25	325	65	30	7.5	7.5	20	20	5.5	11	15	22	140M-D8N-C25
32	448	50	30	7.5	10	25	30	7.5	15	20	25	140M-D8N-C32
F-Frame												
25	325	100	65	7.5	10	20	25	6.3	11	15	22	140M-F8N-C25
32	416	65	65	7.5	10	25	30	7.5	15	20	30	140M-F8N-C32
45	585	65	65	10	15	30	40	13	22	30	40	140M-F8N-C45

¹ Horsepower/kW ratings shown in the tables above are for reference. The final selection of the manual starter depends on the actual motor full load current.



Global Short Circuit Current Ratings Selection Tool

Try out the Global SCCR Selection Tool, providing coordinated high fault branch circuit solutions for motor starters, soft starters and component drives.

www.rockwellautomation.com/support/global-sccr.page

Circuit Breakers



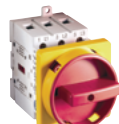
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Control & Load Switches



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Smart Motor Control



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Product Selection

140M Motor Protection Circuit Breakers

Rated Operational Current (I_n) [A]	Motor Current Adjustment Range [A]	Max. Short Circuit Current [kA]		Max. 3-phase Hp Ratings ¹		Max. kW, 3-Phase – AC-3 ¹		Standard Magnetic Trip Cat. No.	High Magnetic Trip Cat. No.
		400V (I_{cs})	480V (group motor)	230V	460V	230V	400/415V		
C-Frame									
0.16	0.10...0.16	100	65	–	–	–	0.02	140M-C2E-A16	140M-C2T-A16
0.25	0.16...0.25	100	65	–	–	–	0.04	140M-C2E-A25	140M-C2T-A25
0.4	0.25...0.40	100	65	–	–	0.06	0.09	140M-C2E-A40	140M-C2T-A40
0.63	0.40...0.63	100	65	–	0.25	0.09	0.18	140M-C2E-A63	140M-C2T-A63
1	0.63...1.0	100	65	–	0.5	0.18	0.25	140M-C2E-B10	140M-C2T-B10
1.6	1.0...1.6	100	65	0.33	1	0.25	0.55	140M-C2E-B16	140M-C2T-B16
2.5	1.6...2.5	100	65	0.75	1.5	0.37	0.75	140M-C2E-B25	140M-C2T-B25
4	2.5...4.0	100	65	1	3	0.75	1.5	140M-C2E-B40	140M-C2T-B40
6.3	4.0...6.3	100	65	2	5	1.5	2.2	140M-C2E-B63	140M-C2T-B63
10	6.3...10	100	65	3	7.5	2.2	4	140M-C2E-C10	140M-C2T-C10
16	10...16	65	30	5	10	4	7.5	140M-C2E-C16	140M-C2T-C16
20	14.5...20	50	30	7.5	15	5.5	10	140M-C2E-C20	–
25	18...25	15	25	7.5	20	5.5	11	140M-C2E-C25	–
29	24...29	15	25	10	20	7.5	13	140M-C2E-C29	–
32	27...32	15	25	10	25	7.5	15	140M-C2E-C32	–
D-Frame									
2.5	1.6...2.5	100	65	0.75	1.5	0.37	0.75	140M-D8E-B25	–
4	2.5...4.0	100	65	1	3	0.75	1.5	140M-D8E-B40	–
6.3	4.0...6.3	100	65	2	5	1.5	2.2	140M-D8E-B63	–
10	6.3...10	100	65	3	7.5	2.2	4	140M-D8E-C10	–
16	10...16	100	65	5	10	4	7.5	140M-D8E-C16	140M-D8T-C16
20	14.5...20	100	65	7.5	15	5.5	10	140M-D8E-C20	140M-D8T-C20
25	18...25	65	30	7.5	20	5.5	11	140M-D8E-C25	–
29	24...29	50	30	10	20	7.5	13	140M-D8E-C29	–
32	27...32	50	30	10	25	7.5	15	140M-D8E-C32	–
F-Frame									
10	6.3...10	100	65	3	7.5	2.2	4	140M-F8E-C10	–
16	10...16	100	65	5	10	4	7.5	140M-F8E-C16	–
20	14.5...20	100	65	7.5	15	5.5	10	140M-F8E-C20	–
25	18...25	100	65	10	20	6.3	11	140M-F8E-C25	140M-F8T-C25
32	23...32	65	65	10	25	7.5	15	140M-F8E-C32	140M-F8T-C32
45	32...45	65	65	15	30	13	22	140M-F8E-C45	–

¹ Horsepower/kW ratings shown in the tables above are for reference. The final selection of the manual starter depends on the actual motor full load current.

Drives



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For more information on our complete family of circuit protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Circuit Breakers

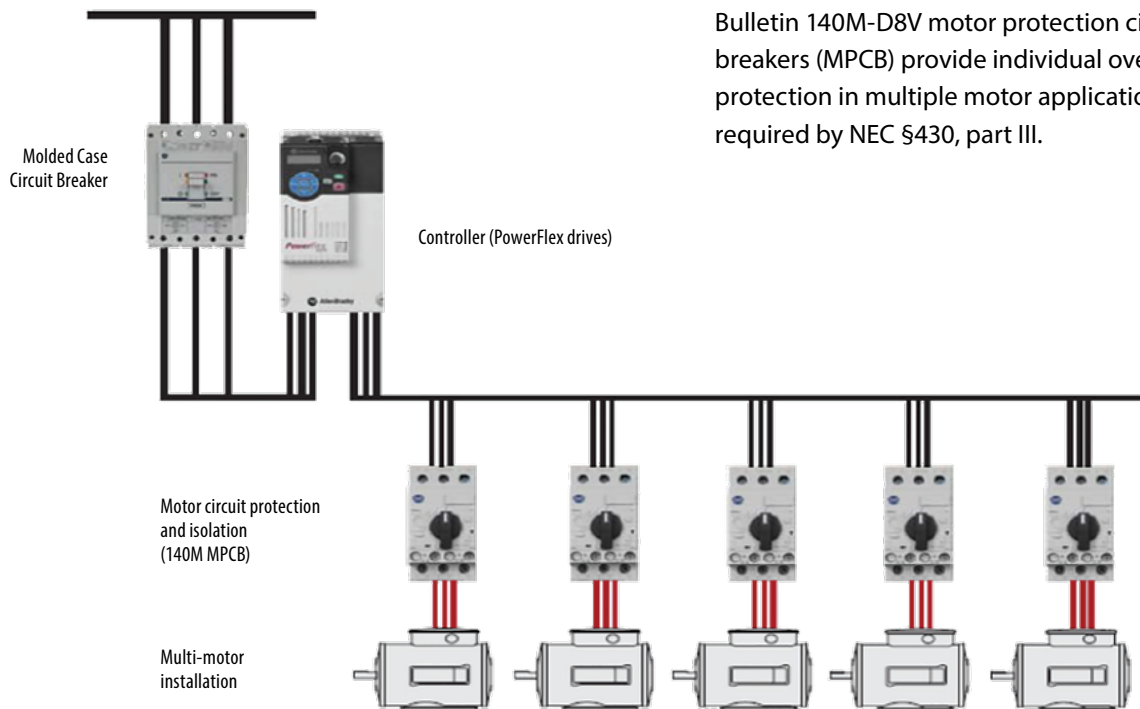


Product Selection

140M Motor Protection Circuit Breaker for Multiple Motor Installation with Drives

Rated Operational Current (I_r) [A]	Motor Current Adjustment Range [A]	Nominal Magnetic Trip Current [A]	Max. Short Circuit Current [kA]		Max 3-phase Hp Ratings ¹			Max. kW, 3-phase – AC-3 ¹			Cat. No.
			400V (I_{sc})	480V (group motor)	200V	230V	460V	230V	400/415V	500V	
D-Frame											
1.6	1.0...1.6	82	65	65	0.25	0.33	1	0.25	0.55	0.75	140M-D8V-B16
2.5	1.6...2.5	82	65	65	0.5	0.75	1.5	0.37	0.75	1.1	140M-D8V-B25
4	2.5...4.0	82	65	65	1	1	3	0.75	1.5	2.2	140M-D8V-B40
6.3	4.0...6.3	82	65	65	1.5	2	5	1.5	2.2	3	140M-D8V-B63
10	6.3...10	130	65	65	3	3	7.5	2.2	4	6.3	140M-D8V-C10
16	10...16	208	65	65	5	5	10	4	7.5	10	140M-D8V-C16
20	14.5...20	260	65	65	5	7.5	15	5.5	10	11	140M-D8V-C20
25	18...25	325	65	30	7.5	7.5	20	5.5	11	15	140M-D8V-C25
29	24...29	406	50	30	7.5	10	20	7.5	13	18.5	140M-D8V-C29
32	27...32	448	50	30	7.5	10	25	7.5	15	20	140M-D8V-C32

¹ Horsepower/kW ratings shown are for reference. The final selection of the MPCB is determined by actual motor full load current.



Bulletin 140M-D8V motor protection circuit breakers (MPCB) provide individual overload protection in multiple motor applications as required by NEC §430, part III.

Circuit Breakers



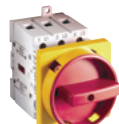
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Control & Load Switches



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Smart Motor Control



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Product Selection

140MG Motor Circuit Protectors



Rated Operational Current (I_r) [A]	Magnetic Trip Current [A]	Ultimate Interrupting Current [kA]	Max. 3-phase Hp Ratings ¹		Max. kW, 3-Phase – AC-3 ¹		Cat. No.
	CAM Setting Range		415V I_{ca}	230V	460V	230V	
G-Frame							
3	12...33	5	0.5	1.5	0.6	0.75	140MG-G8P-B30
7	28...77	5	2	3	1.1	2.2	140MG-G8P-B70
H-Frame							
30	90...330	70	10	20	5.5	11	140MG-H8P-C30
50	150...550	70	15	30	11	22	140MG-H8P-C50
J-Frame							
100	600...1200	50	30	75	22	37	140MG-J8P-D10
110	660...1320	50	40	75	22	45	140MG-J8P-D11
175	875...1750	70	60	125	37	55	140MG-J8P-D17
200	1000...2000	70	75	150	45	75	140MG-J8P-D20

¹ Horsepower/kW ratings shown in the tables above are for reference. The final selection of the MCP depends on the actual motor full load current.



140MG Motor Protection Circuit Breakers

3-phase kW Ratings (50 Hz)	3-phase Hp Ratings (60Hz)			Max. Short-Circuit Current [kA]		L		U	I	Cat. No.
	400/415V	460V	575V	480V	600V	Motor Current Adjustment Range I_1 [A]	Trip Class	50% of I_1	I_n = Instantaneous	
H-Frame										
11	15	20	65	25	10...25	3E, 5E, 10E, 20E (approx. 2...20 s)	ON or OFF	Adjustable from 6...13 x I_n		140MG-H8E-C25
32	40	50	65	25	24...60					140MG-H8E-C60
55	75	100	65	25	40...100					140MG-H8E-D10
J-Frame										
22	30	40	65	25	16...40	3E, 5E, 10E, 20E (approx. 2...20 s)	ON or OFF	Adjustable from 6...13 x I_n		140MG-J8E-C40
32	40	50	65	25	24...60					140MG-J8E-C60
55	75	100	65	25	40...100					140MG-J8E-D10
80	100	150	65	25	60...150					140MG-J8E-D15

Drives



1-70...1-75

For more information on our complete family of circuit protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Circuit Breakers

Accessories for 140M Motor Circuit Protectors and 140M Motor Protection Circuit Breakers

Auxiliary Contacts

Description	Auxiliary Contacts		For Use With	Cat. No.
	N.O.	N.C.		
Front-mounted	1	0	140M-C, D, F	140M-C-AFA10
	0	1		140M-C-AFA01
	1	1		140M-C-AFA11
	2	0		140M-C-AFA20
	0	2		140M-C-AFA02
Right Side-mounted	2	0	140M-C, D, F	140M-C-ASA20
	0	2		140M-C-ASA02
	1	1		140M-C-ASA11

Voltage Trip Units

Description	Trip Rating	For Use With	Cat. No.
Shunt trip	110V, 50 Hz / 120V, 60 Hz	140M-C, D, F	140M-C-SND
	230V, 50 Hz		140M-C-SNF
	240...260V, 60 Hz		140M-C-SNA
	24V DC		140M-C-SNZJ
Undervoltage trip	110V, 50 Hz / 120V, 60 Hz	140M-C, D, F	140M-C-UXD
	230V, 50 Hz		140M-C-UXF
	240...260V, 60 Hz		140M-C-UXA
	480V, 60 Hz / 415V, 50 Hz		140M-C-UXB

Handles

Description		For Use With	Cat. No.
Lockable Knob	Black	140M-C, D, F	140M-C-KN1
Lockable Knob	Red/Yellow		140M-C-KRY1

Feeder Terminals and Compact Busbars

Description	For Use With	Cat. No.	
Feeder Terminal for Compact Busbar • Meets IEC spacing requirements	140M-C, -D	140M-C-WTN	
Feeder Terminal for Compact Busbar • Meets UL Type E spacing requirements	140M-C, -D 140M-F	140M-C-WTEN 140M-F-WTE	
Three-Phase Compact Busbar for 32 A Motor Protection Circuit Breakers – 64 A Max. Continuous Current • 45 mm spacing • Front-mounted auxiliary contact	2 connections	140M-C, -D	140M-C-W452N
	3 connections		140M-C-W453N
	4 connections		140M-C-W454N
	5 connections		140M-C-W455N
Three-Phase Compact Busbar for 32 A Motor Protection Circuit Breakers – 64 A Max. Continuous Current • 54 mm spacing • Side-mounted auxiliary contact	2 connections	140M-C, -D	140M-C-W542N
	3 connections		140M-C-W543N
	4 connections		140M-C-W544N
	5 connections		140M-C-W545N
Three-Phase Compact Busbar for 45 A Motor Protection Circuit Breakers – 115 A Max. Continuous Current • 54 mm spacing • Front-mounted auxiliary contact	2 connections	140M-F	140M-F-W542
	3 connections		140M-F-W543
	4 connections		140M-F-W544
Three-Phase Compact Busbar for 45 A Motor Protection Circuit Breakers – 115 A Max. Continuous Current • 63 mm spacing • Side-mounted auxiliary contact	2 connections	140M-F	140M-F-W632
	3 connections		140M-F-W633
	4 connections		140M-F-W634

Accessories for 140MG Motor Circuit Protectors and 140MG Motor Protection Circuit Breakers

Operating Mechanisms

Description	For Use With	Shaft Length	Cat. No.
Rotary, variable depth operator kits	140MG-G, I Frames	12 in (30.48 mm)	140G-G-RVM12B
		21 in (53.34 mm)	140G-G-RVM21B
	140MG-H, J Frames	12 in (30.48 mm)	140G-H-RVM12B
		21 in (53.34 mm)	140G-H-RVM21B

Description	For Use With	Cable Length	Cat. No.
Flex cable operator kits	140MG-G Frame	3 ft (9.1 m)	140G-G-FCX03
		4 ft (1.3 m)	140G-G-FCX04
		6 ft (1.9 m)	140G-G-FCX06
	140MG-H, Frame	3 ft (9.1 m)	140G-H-FCX03
		4 ft (1.3 m)	140G-H-FCX04
		6 ft (1.9 m)	140G-H-FCX06

Voltage Trip Units

Description	Trip Rating	For Use With	Cat. No.
Shunt trip	110...127V AC/ 110...125V DC 220...240V AC/ 220...250V DC 24...30V AC/DC	140MG-H, J	140G-G-SND
			140G-G-SNA
			140G-G-SNJ
			140G-G-SNJ
Undervoltage trip	110...127V AC/ 110...125V DC 220...240V AC/ 220...250V DC 24...30V AC/DC	140MG-H, J	140G-G-UVD
			140G-G-UVA
			140G-G-UVA
			140G-G-UVJ

Circuit Breakers



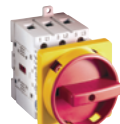
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Disconnect Switches



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Control & Load Switches



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Contactors



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Starters



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Motor Protection



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Smart Motor Control



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Product Selection

140G Assembled Molded Case Circuit Breakers

G Frame, Thermal-Magnetic, Fixed



Rated Current I_n [A]	Thermal Trip [A] $I_t = I_n$	Magnetic Trip [A] I_m	Interrupting Code G2 ²		Interrupting Code G3 ²		Interrupting Code G6 ²	
			Cat. No.		Cat. No.		Cat. No.	
			3 Poles	4 Poles	3 Poles	4 Poles	3 Poles	4 Poles
15	15	500	140G-G2C3-C15	140G-G2C4-C15	140G-G3C3-C15	140G-G3C4-C15	140G-G6C3-C15	140G-G6C4-C15
16	16	500	140G-G2C3-C16	140G-G2C4-C16	140G-G3C3-C16	140G-G3C4-C16	140G-G6C3-C16	140G-G6C4-C16
20	20	500	140G-G2C3-C20	140G-G2C4-C20	140G-G3C3-C20	140G-G3C4-C20	140G-G6C3-C20	140G-G6C4-C20
25	25	500	140G-G2C3-C25	140G-G2C4-C25	140G-G3C3-C25	140G-G3C4-C25	140G-G6C3-C25	140G-G6C4-C25
30	30	500	140G-G2C3-C30	140G-G2C4-C30	140G-G3C3-C30	140G-G3C4-C30	140G-G6C3-C30	140G-G6C4-C30
32	32	500	140G-G2C3-C32	140G-G2C4-C32	140G-G3C3-C32	140G-G3C4-C32	140G-G6C3-C32	140G-G6C4-C32
35	35	500	140G-G2C3-C35	140G-G2C4-C35	140G-G3C3-C35	140G-G3C4-C35	140G-G6C3-C35	140G-G6C4-C35
40	40	500	140G-G2C3-C40	140G-G2C4-C40	140G-G3C3-C40	140G-G3C4-C40	140G-G6C3-C40	140G-G6C4-C40
45	45	500	140G-G2C3-C45	140G-G2C4-C45	140G-G3C3-C45	140G-G3C4-C45	140G-G6C3-C45	140G-G6C4-C45
50	50	500	140G-G2C3-C50	140G-G2C4-C50	140G-G3C3-C50	140G-G3C4-C50	140G-G6C3-C50	140G-G6C4-C50
60	60	600	140G-G2C3-C60	140G-G2C4-C60	140G-G3C3-C60	140G-G3C4-C60	140G-G6C3-C60	140G-G6C4-C60
63	63	600	140G-G2C3-C63	140G-G2C4-C63	140G-G3C3-C63	140G-G3C4-C63	140G-G6C3-C63	140G-G6C4-C63
70	70	700	140G-G2C3-C70	140G-G2C4-C70	140G-G3C3-C70	140G-G3C4-C70	140G-G6C3-C70	140G-G6C4-C70
80	80	800	140G-G2C3-C80	140G-G2C4-C80	140G-G3C3-C80	140G-G3C4-C80	140G-G6C3-C80	140G-G6C4-C80
90	90	900	140G-G2C3-C90	140G-G2C4-C90	140G-G3C3-C90	140G-G3C4-C90	140G-G6C3-C90	140G-G6C4-C90
100	100	1000	140G-G2C3-D10	140G-G2C4-D10	140G-G3C3-D10	140G-G3C4-D10	140G-G6C3-D10	140G-G6C4-D10
110	110	1100	140G-G2C3-D11	140G-G2C4-D11	140G-G3C3-D11	140G-G3C4-D11	140G-G6C3-D11	140G-G6C4-D11
125	125	1250	140G-G2C3-D12	140G-G2C4-D12	140G-G3C3-D12	140G-G3C4-D12	140G-G6C3-D12	140G-G6C4-D12
160 ³	112...160	1600	140G-G2E3-D16	140G-G2E4-D16	140G-G3E3-D16	140G-G3E4-D16	140G-G6E3-D16	140G-G6E4-D16

H Frame, Thermal-Magnetic, Fixed and Adjustable

Rated Current I_n [A]	Thermal Trip [A] $I_t = I_n$	Magnetic Trip [A] I_m	Interrupting Code H2 ²		Interrupting Code H3 ²		Interrupting Code H6 ²	
			Cat. No.		Cat. No.		Cat. No.	
			3 Poles	4 Poles	3 Poles	4 Poles	3 Poles	4 Poles
15	15	400	140G-H2C3-C15	140G-H2C4-C15	140G-H3C3-C15	140G-H3C4-C15	140G-H6C3-C15	140G-H6C4-C15
16	16	400	140G-H2C3-C16	140G-H2C4-C16	140G-H3C3-C16	140G-H3C4-C16	140G-H6C3-C16	140G-H6C4-C16
20	20	400	140G-H2C3-C20	140G-H2C4-C20	140G-H3C3-C20	140G-H3C4-C20	140G-H6C3-C20	140G-H6C4-C20
25	25	400	140G-H2C3-C25	140G-H2C4-C25	140G-H3C3-C25	140G-H3C4-C25	140G-H6C3-C25	140G-H6C4-C25
30	30	400	140G-H2C3-C30	140G-H2C4-C30	140G-H3C3-C30	140G-H3C4-C30	140G-H6C3-C30	140G-H6C4-C30
32	32	400	140G-H2C3-C32	140G-H2C4-C32	140G-H3C3-C32	140G-H3C4-C32	140G-H6C3-C32	140G-H6C4-C32
35	35	400	140G-H2C3-C35	140G-H2C4-C35	140G-H3C3-C35	140G-H3C4-C35	140G-H6C3-C35	140G-H6C4-C35
40	40	400	140G-H2C3-C40	140G-H2C4-C40	140G-H3C3-C40	140G-H3C4-C40	140G-H6C3-C40	140G-H6C4-C40
45	45	500	140G-H2C3-C45	140G-H2C4-C45	140G-H3C3-C45	140G-H3C4-C45	140G-H6C3-C45	140G-H6C4-C45
50	50	500	140G-H2C3-C50	140G-H2C4-C50	140G-H3C3-C50	140G-H3C4-C50	140G-H6C3-C50	140G-H6C4-C50
60	60	600	140G-H2C3-C60	140G-H2C4-C60	140G-H3C3-C60	140G-H3C4-C60	140G-H6C3-C60	140G-H6C4-C60
63	63	600	140G-H2C3-C63	140G-H2C4-C63	140G-H3C3-C63	140G-H3C4-C63	140G-H6C3-C63	140G-H6C4-C63
70	70	700	140G-H2C3-C70	140G-H2C4-C70	140G-H3C3-C70	140G-H3C4-C70	140G-H6C3-C70	140G-H6C4-C70
80	56...80	400...800	140G-H2F3-C80	140G-H2F4-C80	140G-H3F3-C80	140G-H3F4-C80	140G-H6F3-C80	140G-H6F4-C80
90	63...90	450...900	140G-H2F3-C90	140G-H2F4-C90	140G-H3F3-C90	140G-H3F4-C90	140G-H6F3-C90	140G-H6F4-C90
100	70...100	500...1000	140G-H2F3-D10	140G-H2F4-D10	140G-H3F3-D10	140G-H3F4-D10	140G-H6F3-D10	140G-H6F4-D10
110	77...110	550...1100	140G-H2F3-D11	140G-H2F4-D11	140G-H3F3-D11	140G-H3F4-D11	140G-H6F3-D11	140G-H6F4-D11
125	87...125	625...1250	140G-H2F3-D12	140G-H2F4-D12	140G-H3F3-D12	140G-H3F4-D12	140G-H6F3-D12	140G-H6F4-D12
160 ³	112...160	800...1600	140G-H2F3-D16	140G-H2F4-D16	140G-H3F3-D16	140G-H3F4-D16	140G-H6F3-D16	140G-H6F4-D16

² See page 1-12 for the interrupting rating/breaking capacity specifications.

³ IEC only.

Note: End Cap terminals provided as standard.

Drives



1-70...1-75

For more information on our complete family of circuit protection products, please visit:
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Circuit Breakers

Product Selection

140G Assembled Molded Case Circuit Breakers

I Frame, Thermal-Magnetic, Fixed

Rated Current I_n [A]	Thermal Trip [A] $I_r = I_n$	Magnetic Trip [A] I_m	Interrupting Code I2 ²		Interrupting Code I3 ²	
			Cat. No.		Cat. No.	
			3 Poles	4 Poles	3 Poles	4 Poles
90	90	900	140G-I2C3-C90	140G-I2C4-C90	140G-I3C3-C90	140G-I3C4-C90
100	100	1000	140G-I2C3-D10	140G-I2C4-D10	140G-I3C3-D10	140G-I3C4-D10
125	125	1250	140G-I2C3-D12	140G-I2C4-D12	140G-I3C3-D12	140G-I3C4-D12
150	150	1500	140G-I2C3-D15	140G-I2C4-D15	140G-I3C3-D15	140G-I3C4-D15
175	175	1750	140G-I2C3-D17	140G-I2C4-D17	140G-I3C3-D17	140G-I3C4-D17
200	200	2000	140G-I2C3-D20	140G-I2C4-D20	140G-I3C3-D20	140G-I3C4-D20
225	225	2250	140G-I2C3-D22	140G-I2C4-D22	140G-I3C3-D22	140G-I3C4-D22

J Frame, Thermal-Magnetic, Adjustable

Rated Current I_n [A]	Thermal Trip [A] $I_r = I_n$	Magnetic Trip [A] I_m	Interrupting Code J2 ²		Interrupting Code J3 ²		Interrupting Code J6 ²	
			Cat. No.		Cat. No.		Cat. No.	
			3 Poles	4 Poles	3 Poles	4 Poles	3 Poles	4 Poles
80	56...80	400...800	140G-J2F3-C80	140G-J2F4-C80	140G-J3F3-C80	140G-J3F4-C80	140G-J6F3-C80	140G-J6F4-C80
90	63...90	450...900	140G-J2F3-C90	140G-J2F4-C90	140G-J3F3-C90	140G-J3F4-C90	140G-J6F3-C90	140G-J6F4-C90
100	70...100	500...1000	140G-J2F3-D10	140G-J2F4-D10	140G-J3F3-D10	140G-J3F4-D10	140G-J6F3-D10	140G-J6F4-D10
110	77...110	550...1100	140G-J2F3-D11	140G-J2F4-D11	140G-J3F3-D11	140G-J3F4-D11	140G-J6F3-D11	140G-J6F4-D11
125	87...125	625...1250	140G-J2F3-D12	140G-J2F4-D12	140G-J3F3-D12	140G-J3F4-D12	140G-J6F3-D12	140G-J6F4-D12
150	105...150	750...1500	140G-J2F3-D15	140G-J2F4-D15	140G-J3F3-D15	140G-J3F4-D15	140G-J6F3-D15	140G-J6F4-D15
160	112...160	800...1600	140G-J2F3-D16	140G-J2F4-D16	140G-J3F3-D16	140G-J3F4-D16	140G-J6F3-D16	140G-J6F4-D16
175	122.5...175	875...1750	140G-J2F3-D17	140G-J2F4-D17	140G-J3F3-D17	140G-J3F4-D17	140G-J6F3-D17	140G-J6F4-D17
200	140...200	1000...2000	140G-J2F3-D20	140G-J2F4-D20	140G-J3F3-D20	140G-J3F4-D20	140G-J6F3-D20	140G-J6F4-D20
225	157.5...225	1125...2250	140G-J2F3-D22	140G-J2F4-D22	140G-J3F3-D22	140G-J3F4-D22	140G-J6F3-D22	140G-J6F4-D22
250	175...250	1250...2500	140G-J2F3-D25	140G-J2F4-D25	140G-J3F3-D25	140G-J3F4-D25	140G-J6F3-D25	140G-J6F4-D25

K Frame, Thermal-Magnetic, Adjustable

Rated Current I_n [A]	Thermal Trip [A] $I_r = I_n$	Magnetic Trip [A] I_m	Interrupting Code K3 ²		Interrupting Code K6 ²		Interrupting Code K0 ²	
			Cat. No.		Cat. No.		Cat. No.	
			3 Poles	4 Poles	3 Poles	4 Poles	3 Poles	4 Poles
300	210...300	1500...3000	140G-K3F3-D30	140G-K3F4-D30	140G-K6F3-D30	140G-K6F4-D30	140G-K0F3-D30	140G-K0F4-D30
400	280...400	2000...4000	140G-K3F3-D40	140G-K3F4-D40	140G-K6F3-D40	140G-K6F4-D40	140G-K0F3-D40	140G-K0F4-D40

M Frame, Thermal-Magnetic, Adjustable

Rated Current I_n [A]	Thermal Trip [A] $I_r = I_n$	Magnetic Trip [A] I_m	Interrupting Code M5 ²		Interrupting Code M6 ²		Interrupting Code M0 ²	
			Cat. No.		Cat. No.		Cat. No.	
			3 Poles	4 Poles	3 Poles	4 Poles	3 Poles	4 Poles
600	420...600	3000...6000	140G-M5F3-D60	140G-M5F4-D60	140G-M6F3-D60	140G-M6F4-D60	140G-M0F3-D60	140G-M0F4-D60
630 ³	441...630	3150...6300	140G-M5F3-D63	140G-M5F4-D63	140G-M6F3-D63	140G-M6F4-D63	140G-M0F3-D63	140G-M0F4-D63
800	560...800	4000...8000	140G-M5F3-D80	140G-M5F4-D80	140G-M6F3-D80	140G-M6F4-D80	140G-M0F3-D80	140G-M0F4-D80

² See page 1-12 for the interrupting rating/breaking capacity specifications.

³ IEC only.

Note: End Cap terminals provided as standard.

Circuit Breakers



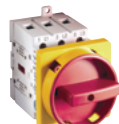
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Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39

Starters



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Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69



Product Selection

140G Assembled Current-limiting Molded Case Circuit Breakers



H Frame, Thermal-Magnetic, Fixed and Adjustable

Rated Current I_n [A]	Thermal Trip [A] I_T	Magnetic Trip [A] I_m	Interrupting Code HC6	Interrupting Code HC0
			Cat. No.	Cat. No.
15	15	400	140G-HC6C3-C15	140G-HC0C3-C15
20	20	400	140G-HC6C3-C20	140G-HC0C3-C20
30	30	400	140G-HC6C3-C30	140G-HC0C3-C30
40	40	400	140G-HC6C3-C40	140G-HC0C3-C40
50	50	500	140G-HC6C3-C50	140G-HC0C3-C50
60	60	600	140G-HC6C3-C60	140G-HC0C3-C60
70	70	700	140G-HC6C3-C70	140G-HC0C3-C70
80	56...80	400...800	140G-HC6F3-C80	140G-HC0F3-C80
90	63...90	450...900	140G-HC6F3-C90	140G-HC0F3-C90
100	70...100	500...1000	140G-HC6F3-D10	140G-HC0F3-D10
125	87...125	625...1250	140G-HC6F3-D12	140G-HC0F3-D12
160 ³	112...160	800...1600	140G-HC6F3-D16	140G-HC0F3-D16

³ IEC only.

J Frame, Thermal-Magnetic, Fixed and Adjustable

Rated Current I_n [A]	Thermal Trip [A] I_T	Magnetic Trip [A] I_m	Interrupting Code JC6	Interrupting Code JC0
			Cat. No.	Cat. No.
25	25	400	140G-JC6C3-C25	140G-JC0C3-C25
30	30	400	140G-JC6C3-C30	140G-JC0C3-C30
40	40	400	140G-JC6C3-C40	140G-JC0C3-C40
50	50	500	140G-JC6C3-C50	140G-JC0C3-C50
60	60	600	140G-JC6C3-C60	140G-JC0C3-C60
70	70	700	140G-JC6C3-C70	140G-JC0C3-C70
80	56...80	400...800	140G-JC6F3-C80	140G-JC0F3-C80
90	63...90	450...900	140G-JC6F3-C90	140G-JC0F3-C90
100	70...100	500...1000	140G-JC6F3-D10	140G-JC0F3-D10
125	87.5...125	625...1250	140G-JC6F3-D12	140G-JC0F3-D12
150	105...150	750...1500	140G-JC6F3-D15	140G-JC0F3-D15
160	112...160	800...1600	140G-JC6F3-D16	140G-JC0F3-D16
175	122.5...175	875...1750	140G-JC6F3-D17	140G-JC0F3-D17
200	140...200	1000...2000	140G-JC6F3-D20	140G-JC0F3-D20
225	157.5...225	1125...2250	140G-JC6F3-D22	140G-JC0F3-D22
250	175...250	1250...2500	140G-JC6F3-D25	140G-JC0F3-D25

K Frame, Thermal-Magnetic, Fixed and Adjustable

Rated Current I_n [A]	Thermal Trip [A] I_T	Magnetic Trip [A] I_m	Interrupting Code HC6	Interrupting Code HC0
			Cat. No.	Cat. No.
15	15	400	140G-HC6C3-C15	140G-HC0C3-C15
20	20	400	140G-HC6C3-C20	140G-HC0C3-C20

Current-limiting molded case circuit breakers (MCCBs) are rated to open in less than half of a cycle under fault conditions which limits the let-through energy, providing enhanced protection for downstream components.

Drives



1-70...1-75

For more information on our complete family of circuit protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Circuit Breakers

Product Selection

Interrupting Rating/Breaking Capacity – Thermal-Magnetic Circuit Breakers

Interrupting Rating (50/60 Hz), UL 489/CSA C22.2-5, No. 5-02 [kA]			Breaking Capacity (50/60 Hz), IEC 60947-2 I_{cu} [kA] / I_{cs} %								Interrupting Code
240V	480V	600V/ 347V	220V		415V		440V		690V		
			I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	
50	25	10	65	75	36	100	36	50	6	75	G2
65	35	14	85	75	50	100	50	50	8	50	G3
100	65	25	100	75	70	50	65	50	10	50	G6

240V	480V	600V	220V		415V		440V		690V		Interrupting Code
			I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	
65	25	14	65	100	36	100	36	100	10	100	
100	35	18	85	100	50	100	50	100	12	100	H3
150	65	25	100	100	70	100	65	100	15	100	H6, HC6
200	100	35	150	100	120	100	100	100	18	100	H0, HCO
200	150	42	200	100	150	100	150	100	20	75	H15

240V	480V	600V/ 347V	220V		415V		440V		690V		Interrupting Code
			I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	
50	25	10	50	75	36	75	25	75	5	50	
65	35	10	85	50	50	50	40	50	6	50	I3

240V	480V	600V	220V		415V		440V		690V		Interrupting Code
			I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	
100	35	18	85	100	50	100	50	100	12	100	
150	65	25	100	100	70	100	65	100	15	100	J6
200	100	35	150	100	120	100	100	100	20	100	J0

240V	480V	600V	220V		415V		440V		690V		Interrupting Code
			I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	
100	35	25	85	100	50	100	40	100	25	100	
150	65	35	100	100	70	100	65	100	40	100	K6
200	100	65	200	100	120	100	100	100	70	100	K0

240V	480V	600V	220V		415V		690V		Interrupting Code
			I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	
100	50	25	85	100	50	100	22	75	
200	65	35	100	100	70	100	25	75	M6
200	100	42	200	100	100	100	30	75	M0

Circuit Breakers



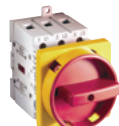
1-2...1-15

Disconnect
Switches



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Control &
Load Switches



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Contactors



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Starters



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Motor
Protection



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Smart
Motor Control



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Accessories for 140G Assembled Molded Case Circuit Breakers

Terminal Lugs

Description	Frame Size	Cat. No. (Pkg. Qty. 3)	Cat. No. (Pkg. Qty. 4)
Cu wire, MCCB only (1) 14...1/0 AWG or 2.5...70 mm ²	G	140G-G-TLC13	140G-G-TLC14
Cu wire, MCP only (1) 14...1/0 AWG or 1.5...70 mm ²		140G-G-TLC13A	-
Multiple cable – Cu wire (6) 14...2 AWG or 2.5...35 mm ²		140G-G-MTL63	140G-G-MTL64
Cu wire only (1) 14...1/0 AWG or 2.5...95 mm ²	H	140G-G-TLC13	140G-G-TLC14
Multiple cable – Cu wire (6) 14...2 AWG or 2.5...35 mm ²		140G-G-MTL63	140G-G-MTL64
Al or Cu wire (1) 14...1/0 AWG or 2.5...50 mm ²	I	140G-I-TLA13	140G-I-TLA14
Al or Cu wire (1) 4...300 MCM or 25...150 mm ²		140G-I-TLA1A3	140G-I-TLA1A4
Cu wire only (1) 10...250 MCM or 6...185 mm ²		140G-I-TLC13	140G-I-TLC14
Multiple cable – Cu wire (6) 12...2 AWG or 2.5...35 mm ²		140G-I-MTL63	140G-I-MTL64
Al or Cu wire (1) 14...1/0 AWG or 2.5...50 mm ²	J	140G-J-TLA13	140G-J-TLA14
Al or Cu wire (1) 4...300 MCM or 25...150 mm ²		140G-J-TLA1A3	140G-J-TLA1A4
Cu wire only (1) 10...250 MCM or 6...185 mm ²		140G-J-TLC13	140G-J-TLC14
Multiple cable – Cu wire (6) 12...2 AWG or 2.5...35 mm ²		140G-J-MTL63	140G-J-MTL64
Cu wire only (1) 250...350 MCM or 120...185 mm ²		140G-J-TLC1A3	140G-J-TLC1A4
Al or Cu wire (1) 250...500 MCM or 120...240 mm ²	K	140G-K-TLA13	140G-K-TLA14
Al or Cu wire (2) 2/0...250 MCM or 95...120 mm ²		140G-K-TLA23	140G-K-TLA24
Multiple cable – Cu wire (6) 6...1/0 AWG or 16...50 mm ²		140G-K-MTL63	140G-K-MTL64
Al or Cu wire (2) 250...500 MCM or 120...240 mm ²	M	140G-M-TLA23	140G-M-TLA24
Al or Cu wire (3) 2/0...400 MCM or 7...185 mm ²		140G-M-TLA13	140G-M-TLA14

Terminal Covers

Frame Size	Height	3-Pole Cat. No. (Pkg. Qty. 2)	4-Pole Cat. No. (Pkg. Qty. 2)
G	2 in. (50 mm)	140G-G-TC3H	140G-G-TC4H
H	2 in. (50 mm)	140G-H-TC3H	140G-H-TC4H
I	2.36 in. (60 mm)	140G-I-TC3H	140G-I-TC4H
J	2.36 in. (60 mm)	140G-J-TC3H	140G-J-TC4H
K	2.36 in. (60 mm)	140G-K-TC3H	140G-K-TC4H
M	2.36 in. (60 mm)	140G-M-TC3H	140G-M-TC4H



Global Short Circuit Current Ratings Selection Tool

Try out the Global SCCR Selection Tool, providing coordinated high fault branch circuit solutions for motor starters, soft starters and component drives.

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Drives



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Circuit Breakers

Accessories for 140G Assembled Molded Case Circuit Breakers Operating Mechanisms

Description	Frame Size	Handle Color	Shaft Length	Cat. No.
Rotary, variable depth operator kits	G, I	Black	12 in (305 mm)	140G-G-RVM12B
		Red/Yellow		140G-G-RVM12R
		Black	21 in (533 mm)	140G-G-RVM21B
		Red/Yellow		140G-G-RVM21R
	H, J	Black	12 in (305 mm)	140G-H-RVM12B
		Red/Yellow		140G-H-RVM12R
		Black	21 in (533 mm)	140G-H-RVM21B
		Red/Yellow		140G-H-RVM21R
	K	Black	12 in (305 mm)	140G-K-RVM12B
		Red/Yellow		140G-K-RVM12R
		Black	22 in (559 mm)	140G-K-RVM21B
		Red/Yellow		140G-K-RVM21R
	M	Black	12 in (305 mm)	140G-M-RVM12B
		Red/Yellow		140G-M-RVM12R
		Black	22 in (559 mm)	140G-M-RVM21B
		Red/Yellow		140G-M-RVM21R

Description	Frame Size	Handle Type	Cable Length	Cat. No.		
Flex cable operator kits	G	Non-metallic Handle, Type 1/3/12/4/4X	3 ft (.91 m)	140G-G-FCX03		
			4 ft (1.3 m)	140G-G-FCX04		
			6 ft (1.9 m)	140G-G-FCX06		
			10 ft (3.0 m)	140G-G-FCX10		
		Stainless Steel Handle, Type 4/4X	3 ft (.91 m)	140G-G-FCS03		
			4 ft (1.3 m)	140G-G-FCS04		
			6 ft (1.9 m)	140G-G-FCS06		
			10 ft (3.0 m)	140G-G-FCS10		
			H	Non-metallic Handle, Type 1/3/12/4/4X	3 ft (.91 m)	140G-H-FCX03
					4 ft (1.3 m)	140G-H-FCX04
	6 ft (1.9 m)	140G-H-FCX06				
	10 ft (3.0 m)	140G-H-FCX10				
	Stainless Steel Handle, Type 4/4X	3 ft (.91 m)		140G-H-FCS03		
		4 ft (1.3 m)		140G-H-FCS04		
		6 ft (1.9 m)		140G-H-FCS06		
		10 ft (3.0 m)		140G-H-FCS10		
	I	Non-metallic Handle, Type 1/3/12/4/4X	3 ft (.91 m)	140G-I-FMX03		
			6 ft (1.9 m)	140G-I-FMX06		

Circuit Breakers



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Disconnect Switches



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Control & Load Switches



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Contactors



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Starters



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Motor Protection



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Smart Motor Control



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Accessories for 140G Assembled Molded Case Circuit Breakers Operating Mechanisms

Description	Frame Size	Handle Type	Cable Length	Cat. No.
Flex cable operator kits	J	Non-metallic Handle, Type 1/3/12/4/4X	3 ft (.91 m)	140G-J-FCX03
			4 ft (1.3 m)	140G-J-FCX04
			6 ft (1.9 m)	140G-J-FCX06
			10 ft (3.0 m)	140G-J-FCX10
		Stainless Steel Handle, Type 4/4X	3 ft (.91 m)	140G-J-FCS03
			4 ft (1.3 m)	140G-J-FCS04
			6 ft (1.9 m)	140G-J-FCS06
			10 ft (3.0 m)	140G-J-FCS10
	K	Non-metallic Handle, Type 1/3/12/4/4X	3 ft (.91 m)	140G-K-FCX03
			4 ft (1.3 m)	140G-K-FCX04
			6 ft (1.9 m)	140G-K-FCX06
			10 ft (3.0 m)	140G-K-FCX10
		Stainless Steel Handle, Type 4/4X	3 ft (.91 m)	140G-K-FCS03
			4 ft (1.3 m)	140G-K-FCS04
			6 ft (1.9 m)	140G-K-FCS06
			10 ft (3.0 m)	140G-K-FCS10

Auxiliary Contacts


Description	Designation	For Use With	Cat. No.
(1) Auxiliary contact, 250V	AX2	140G-G, H, I, J	140G-G-EA1A
(1) Auxiliary, (1) alarm contact, 250V	AX2/AL1		140G-G-EA1R1A
(1) Auxiliary contact, 24V	1		140G-G-EA1J
(1) Auxiliary, (1) alarm contact, 24V	2		140G-G-EA1R1J
(1) Auxiliary, (1) alarm contact, 250V	AX2/AL1	K, M	140G-K-EA1R1A
(1) Auxiliary, (1) alarm contact, 24V			140G-K-EA1R1J

Undervoltage Release

Description	Frame Size	Cat. No.
24...30V AC/DC	G, H, I, J	140G-G-UVJ
48V AC/DC		140G-G-UVKY
60V AC/DC		140G-G-UVY
110...127V AC/110...125V DC		140G-G-UVD
220...240V AC/220...250V DC		140G-G-UVA
380...440V AC		UVB
480...525V AC		140G-G-UVC
24...30V AC/DC	K, M	140G-K-UVJ
48V AC/DC		140G-K-UKY
60V AC/DC		140G-K-UVY
110...127V AC/110...125V DC		140G-K-UVD
220...240V AC/220...250V DC		140G-K-UVA
380...440V AC		140G-K-UVB

Shunt Trips

Description	Frame Size	Cat. No.
24...30V AC/DC	G, H, I, J	140G-G-SNJ
48...60V AC/DC		140G-G-SNKY
110...127V AC/110...125V DC		140G-G-SND
220...240V AC/220...250V DC		140G-G-SNA
24...30V AC/DC	K, M	140G-G-SNJ
48...60V AC/DC		140G-G-SNKY
110...127V AC/110...125V DC		140G-G-SND
220...240V AC/220...250V DC		140G-G-SNA

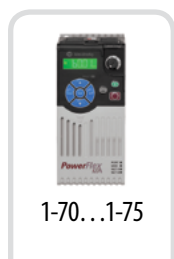


Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

Drives



For more information on our complete family of circuit protection products, please visit:
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Disconnect Switches



Rotary Disconnect Switch, Fused 194R

- Up to 1250 A for IEC, and 800 A for UL
- Touch-safe, compact design
- Padlocking available
- Double-break switching for full fuse line and load side isolation when switch is OFF
- Side operation

Rotary Disconnect Switch, Non-fused 194R

- Up to 1250 A for IEC, and 1200 A for UL
- Compact footprint for both UL and IEC switch bodies
- Suitable for severe utilization categories (AC-22 & AC-23)



Rotary Disconnect Switch, Enclosed 194R

- Lock-out tag-out functionality
- Use as at-motor isolation
- Enclosure options:
 - Stainless Steel, NEMA 4/4X (194R-C)
 - Painted Metal, NEMA 3/4/12 (194R-F)
 - Thermoplastic, NEMA 4/4X (194R-K)

* For enclosed disconnect switches, please visit our online product directory.

Disconnect Switches

Circuit Breakers



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Control & Load Switches



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Contactors



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Starters



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Motor Protection



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Smart Motor Control



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Product Selection

194R Rotary Disconnect Switches, UL/CSA

Rated Current [A]	Maximum Hp Ratings, 3-Phase (60 Hz)				Fused		Non-Fused
	240V	480V	600V		Fuse Type	Cat. No. ¹	Cat. No. ³
			Fused	Non-Fused			
30	7.5	15	20	20	30 A Class J, HRCI-J	194R-J30-1753 ²	194R-N30-1753
60	15	30	50	40	60 A Class J, HRCI-J	194R-J60-1753 ²	194R-N60-1753
100	30	60	75	100	100 A Class J, HRCI-J	194R-J100-1753	194R-NU100-1753
200	60	125	150	200	200 A Class J, HRCI-J	194R-J200-1753	194R-NU200-1753
400	125	250	350	350	400 A Class J, HRCI-J	194R-J400-1753	194R-NU400-1753
600	200	500	500	350	600 A Class J, HRCI-J	194R-J600-1753	194R-NU600-1753
800	200	500	500	500	800 A Class L, HRCI-L	194R-L800-1753	194R-NU800-1753
1200	200	500	–	500	–	–	194R-NU1200-1753

- ¹ Time delay fuses may be required to utilize the disconnect switch at its maximum horsepower rating.
- ² Blown fuse indicator available by adding **S** to the end of the catalog number.
- ³ Non-fused disconnect switches must use separately installed fuses for upstream short circuit protection.

194R Rotary Disconnect Switches, IEC

Load Rating [A]	Maximum kW Ratings				Fused		Non-Fused
	200/220/230V	380/400/415V	660/690V		Fuse Type	Cat. No.	Cat. No. ³
			Fused	Non-Fused			
32	9	18.5	30	–	NH000	194R-D32-1753	–
63	18.5	30	55	–	NH000	194R-D63-1753	–
125	–	63	90	55	NH00	194R-D125-1753	194R-NE125-1753
160	–	80	110	55	NH00	194R-D160-1753	194R-NE160-1753
250	–	132	220	90	NH1	194R-D250-1753	194R-NE250-1753
400	–	220	220	150	NH2	194R-D400-1753	194R-NE400-1753
630	–	355	295	150	NH3	194R-D630-1753	194R-NE630-1753
800	–	450	400	185	NH3	194R-D800-1753	194R-NE800-1753
1250	–	560	400	415	NH4a	194R-D1250-1753	194R-NE1250-1753

- ³ Non-fused disconnect switches must use separately installed fuses for upstream short circuit protection.



Padlockable handle, test mode (30...60 A)



Padlockable handle (100...400 A)



Padlockable handle, standard (30...60 A)

Operating Handles

Range	Handle Operating Shaft ⁴		Padlockable Handle	
	Cat. No. 12 in (304.8 mm)	Cat. No. 21 in (533.4 mm)	Cat. No. Black	Cat. No. Red/Yellow
up to 60 A	194R-S1	194R-S2	194R-PB	194R-PY
up to 60 A	194R-S1	194R-S2	194R-PBT	194R-PYT
100...400 A	194R-R7	194R-R8	194R-HM4	194R-HM4E
600...1250A	194R-R9	194R-R10	194R-HM4-L	194R-HM4E-L

- ⁴ For additional lengths, please visit our online product directory.

Drives



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For more information on our complete family of circuit protection products, please visit: <http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Disconnect Switches

Power



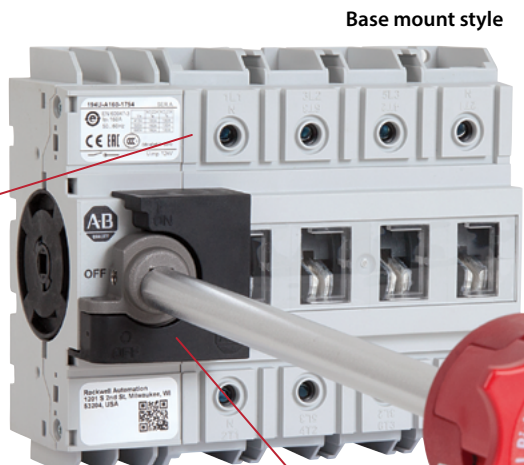
Rotary Disconnect Switch, Non-fused 194U

- Touch-safe, compact design
- UL 30...125 A – IEC 40...160 A
- Can be used as main panel disconnect switch (UL98), or as at-motor disconnect switch (UR)
- NFPA79 compliant handle for robust lock-out/tag-out
- Multiple configuration options


Configuration and Accessories

Body Styles

3- and 4-pole versions are available in both front and base mount.




Base mount style




Base mount style

Handle Options


Multiple handle options are available including the NFPA79-compliant handle for robust lock-out/tag-out.



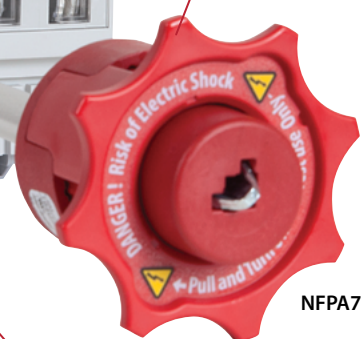
194E handles



194R handles




194L handles




NFPA79-compliant handle

Accessories


Additional accessories are available to meet your application needs.



Ground and 4th pole terminals



Terminal shrouds



Auxiliary contacts

Disconnect Switches

Circuit Breakers



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Control & Load Switches



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Motor Protection



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Smart Motor Control



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Product Selection

194U Rotary Disconnect Switches

Base Mount	3 pole	194U-A30-1753	194U-A60-1753	194U-A100-1753	194U-A160-1753	
	4 pole	194U-A30-1753 + 194U-A100-FP	194U-A60-1753 + 194U-A100-FP	194U-A100-1753 + 194U-A100-FP	194U-A160-1754	
Front Mount	3 pole	194U-E30-1753	194U-E60-1753	194U-E100-1753	194U-E160-1753	
	4 pole	194U-E30-1753 + 194U-E100-FP	194U-E60-1753 + 194U-E100-FP	194U-E100-1753 + 194U-E100-FP	194U-E160-1754	
Standard Compliance		cULus, EAC, IEC	cULus, EAC, IEC	cULus, EAC, IEC, CCC	cULus, EAC, IEC, CCC	
UL compliance		UL98	UL98	UL98	UL98	UR
Ampere Rating	[A]	30	60	100	100	125
Max Hp/FLA, 3-phase AC						
240V	[Hp/A]	10/28	20/54	30/80	40/104	40/104
480V	[Hp/A]	20/27	40/52	50/65	75/96	75/96
600V	[Hp/A]	30/32	30/32	30/32	100/99	100/99
Short Circuit Rating						
J Fuse	[kA]	200	200	200	100	100
T Fuse	[kA]	200	200	200	100	100
Fuse Size	[A]	100/60	100/60	100/100	200	200
Rated Oper. Current AC-23A 400...415V	[A]	40	63	90	160	
Rated Oper. Power AC-23A 400...415V	[kW]	15	18.5	45	75	

Handles and Accessories

Description	For Use with	Color / Type	Catalog Number
Padlockable Handle 3R,3 12, 4, 4X Protection	Bul. 194U disconnect switches up to 60A	Black	194R-PB
		Red/Yellow	194R-PY
	Bul 194U base mounted switches, 30... 125A	Black	194E-SB
		Red/Yellow	194E-SY
Type N handle, 0-I, OFF-ON 67x67mm	Front and base mount switches 30... 100A	Red/Yellow	194L-HE6N-175
Switch handle	Front mounted switches up to 160A	Black	194U-FB
		Red/Yellow	194U-FY
NFPA 79 internal operating handle with 12in. (30,5cm) shaft	Bul 194U base mounted switches, 30... 125A	-	194U-N1
Extension kit for N handle	Base mounted 30... 100A	9.25in. (23,5cm)	194U-G3393
Shaft for S-Type handle	Base mounted 30... 125A	12in. (30,5cm)	194U-S1
Front mount handle adapter	Front mounted switches	-	194U-DMA
Auxiliary Contact	All 194U switches	NC	194U-NC
		Auxiliary Contact	194U-NO
		NO/NC	194U-NONC
Terminal shroud	30... 100A switches	1 pole (Qty 1)	194U-C1
		3 pole (Qty 1)	194U-C3
	125 (160)A switches	1 pole (Qty 1)	194U-160-C1
		3 pole (Qty 1)	194U-160-C3

Drives



1-70...1-75

For more information on our complete family of circuit protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Disconnect Switches



Visible Blade Disconnect Switch 1494U Universal Mechanism

- 30...100A, 3-pole, 600 V AC/DC ratings
- Universal mechanism allows for rod or cable operation
- Fusible or non-fusible versions
- Lockable handle
- Visible blade construction for safety

Visible Blade Construction

- Reliable visible blade indication
- Blades visible – switch is de-energized
- Blades hidden – switch is energized

Fuse Blocks

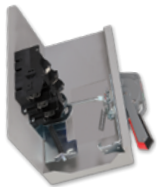
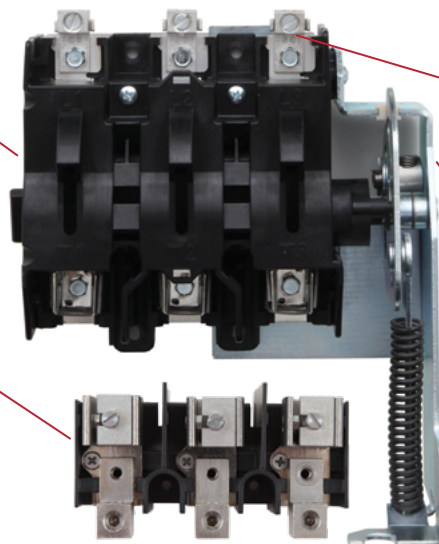
- Common base across 30/60/100 A
- Integrated Phase Barriers
- J and R fuse clips are available for the fusible styles

Lug Connectors

- Included aluminum lugs will accept copper or aluminum wire

Universal Mechanism

- Provides flexibility of installation for either rod or cable operated applications



1494U Rod Operated System



1494U Cable Operated System

Lug Connectors

Disconnect Switch Size [A]	Description	Wire Size	Cat. No.
30...60	Aluminum, 1 port	(1) #14...2 AWG, copper-aluminum (2) #14...10 AWG, copper (2) #12...10 AWG, aluminum	1494U-LA36
100	Aluminum, 1 port	(2) #12...4 AWG, copper-aluminum (1) #14...1/0 AWG, copper (1) #12...1/0 AWG, aluminum	1494U-LA100
30...100	Aluminum, 6 port	(1) #14...4 AWG, copper (1) #12...4 AWG, aluminum (2) #10 AWG, copper-aluminum	1494U-LM31

Disconnect Switches

Circuit Breakers



1-2...1-15



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39

Starters



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69



Product Selection

1494U Disconnect Switches¹

Continuous Current Rating [A] 600V AC, 600V DC	Maximum Hp – UL and CSA Applications					1-Phase, AC			Maximum kW – IEC Applications (Category AC 23)			Switch with Right-Hand Mechanism Cat. No.
	3-Phase, 60 Hz					3-Phase, 50 Hz		DC ²	3-Phase, 50 Hz			
	115V	200...208V	230V	460V	575V	115V	230V		600V	220...240V	380...440V	
30	3	7.5	7.5	15	20	2	3	15	5.5	11	15	1494U-D30
60	7.5	15	15	30	50	3	10	30	11	22	37	1494U-D60
100	–	25	30	60	75	–	–	50	22	45	55	1494U-D100

¹ Aluminum lug/line kits are provided with each disconnect switch.

² Ratings based on using two poles in series to break one line of the DC supply voltage and the remaining pole breaking the second DC supply line.

Connecting Rods

Disconnect Switch Size [A]	Enclosure Working Depth [in. (mm)] ³		Cat. No.
	Minimum	Maximum	
30, 60, 100, 200	6-3/4 (172)	19 (483)	1494U-R1

³ Enclosure working depth is measured from the top of the flange to the disconnect switch mounting surface. Dimensions are approximate.

NOTE: For enclosure depths greater than 19 in. but less than 23 in., select catalog number 1494V-RA4.

Operating Handles

Handle Type	Description	Mounting	Disconnect Switch Size [A]	Cat. No.
Type 1, 3R, 4, 4X, 12	Nonmetallic	Right or Left Flange	30, 60, 100	1494U-HP1
Type 1, 3R, 4, 12	Painted Metal			1494U-HM1
Type 4, 4X	Stainless Steel			1494U-HS1

Cable Mechanism

Disconnect Switch Size [A]	Cable Length [ft (m)]	Right-Hand Cable Mechanism Cat. No.
30, 60, 100	3 (0.91)	1494U-C313
	4 (1.22)	1494U-C314
	5 (1.52)	1494U-C315
	6 (1.83)	1494U-C316

Fuse Clip Kits

Fuse Class	Fuse Clip Rating [A]		Cat. No.
	250V	600V	
H/J	30	–	1494U-FC302J
	60	30	1494U-FC30J
	–	60	1494U-FC60J
	100	100	1494U-FC100J
R	30	–	1494U-FC302R
	60	30	1494U-FC30R
	–	60	1494U-FC60R
	100	100	1494U-FC100R

Trailer Fuse Block Kits

Disconnect Switch Size [A]	Cat. No.
30	1494U-F30
60	1494U-F60
100	1494U-F100



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

Drives



1-70...1-75

For more information on our complete family of circuit protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Disconnect Switches



Visible Blade Disconnect Switches 1494V Variable Depth

- 200...600 A, 3-pole, 600V AC ratings
- Rod-operated, flange-mounted handle
- Fusible or non-fusible versions
- Lockable handle
- Visible blade construction for safety

Visible Blade Disconnect Switches 1494C Cable Operated

- 200...600 A, 3-pole, 600V AC ratings
- Cable operation allows flexible mounting within the panel
- Fusible or non-fusible versions
- Lockable handle
- Visible blade construction for safety



Application Spotlight

Bulletin 1494 disconnect switches are time proven, robust design with visible blade construction that is the product of choice in automotive manufacturing applications.

Disconnect Switches

Circuit Breakers



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1-16...1-23

Control & Load Switches



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Contactors



1-28...1-39

Starters



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Motor Protection



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Smart Motor Control



1-60...1-69



Product Selection

1494V Visible Blade Disconnect Switch Components

Continuous Current Rating [A] 600V AC, 250V DC	NEMA, UL, CSA Maximum Rating Hp		IEC Utilization Category AC-23 Maximum Rating kW		Rod Operated	
	3-Phase, 60 Hz		3-Phase, 50 Hz		Switch with Right-Hand Mechanism	Switch with Left-Hand Mechanism
	200...208V	460V	220...240V	380...440V	Cat. No.	Cat. No.
200	50...60	125	48	90	1494V-DS200	1494V-DSX200
400	75	250	90	185	1494V-DS400	1494V-DSX400
600	150	400	150	295	1494V-DS600 ¹	

1494C Visible Blade Disconnect Switch Components

Continuous Current Rating [A] 600V AC, 250V DC	NEMA, UL, CSA Maximum Rating Hp		IEC Utilization Category AC-23 Maximum Rating kW		Cable Operated	
	3-Phase, 60 Hz		3-Phase, 50 Hz		Switch with Right-Hand Mechanism	Switch with Left-Hand Mechanism
	200...208V	460V	220...240V	380...440V	Cat. No.	Cat. No.
200	50...60	125	48	90	1494F-D200	1494F-DX200
400	75	250	90	185	1494F-D400	1494F-DX400
600	150	400	150	295	1494V-DS600 ¹	

¹ Switch can be converted in the field for left-hand operation.

Cable Mechanisms for 1494C Disconnect Switch

Disconnect Switch Size [A]	Cable Length [ft]	Right-Hand Cable Mechanisms	Left-Hand Cable Mechanisms
		Cat. No.	Cat. No.
200	4	1494C-CM5	1494C-CMX5
	5	1494C-CM6	1494C-CMX6
	6	1494C-CM7	1494C-CMX7
	10	1494C-CM8	1494C-CMX8
400	4	1494C-CM9	1494C-CMX9
	5	1494C-CM10	1494C-CMX10
	6	1494C-CM11	1494C-CMX11
	10	1494C-CM12	1494C-CMX12
600	4	1494C-CM13	1494C-CMX13
	5	1494C-CM14	1494C-CMX14
	6	1494C-CM15	1494C-CMX15
	10	1494C-CM16	1494C-CMX16

Trailer Fuse Block Kits for 1494V & 1494C

Disconnect Switch Size [A]	Cat. No.
200	1494V-FS200
400	1494V-FS400
600	1494V-FS600

Fuse Clip Kits for 1494V & 1494C

Fuse Class	Fuse Clip Rating [A]		Cat. No. ⁴
	250V	600V	
J	200	200	1401-N45
	400	400	1401-N46
	600	600	⁵

⁴ Includes six clips and mounting hardware.

⁵ Fuse clips not required: fuse bolts directly to terminal.

Connecting Rods for 1494V Disconnect Switches

Disconnect Switch Size [A]	Enclosure Depth [in. (mm)] ²		Cat. No.
	Minimum	Maximum	
200	6-3/4 (172)	9-1/8 (232)	1494V-RA3
	6-3/4 (172)	21-5/8 (549)	1494V-RA4
400, 600	9-1/2 (241)	10 (254)	1494V-RB3 ³
	9-1/2 (241)	23 (584)	1494V-RB4 ³

² Enclosure depth is measured from the top of the flange to the disconnect switch mounting surface.

³ Kit includes two connecting rods.

Operating Handles for 1494V & 1494C

Handle Type ⁶	Description	Disconnect Switch Size [A]	Cat. No.
Type 1, 3R, 4, 4X, 12	Nonmetallic	200	1494F-P1
		400, 600	1494F-M2
Type 1, 3R, 4, 12	Painted Metal	200	1494F-M1
		400, 600	1494F-M2
Type 4, 4X	Stainless Steel	200	1494F-S1
		400, 600	1494F-S2

⁶ Right or left flange mounting available.

Drives



1-70...1-75

For more information on our complete family of circuit protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Control & Load Switches

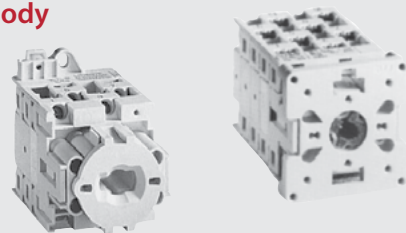
Power



Control & Load Switches 194L

- Available in ON-OFF, changeover, star-delta (wye-delta), reversing, ammeter, voltmeter and step switch configurations
- Front door, Base/DIN Rail mounting configurations
- 1-6-pole versions
- Enclosed products available up to 25A
- Padlockable handles available (up to 3 padlocks)

Switch Body



Shaft



Handle



N Style



G Style

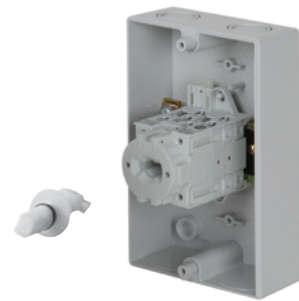


I Style



A Style

Bulletin 194L Control & Load Switches are designed for use as manual motor controllers and at motor disconnects.



IP66 enclosure, shaft and handle are orderable as components.

Handles (Includes OFF-ON legend plate and control knob)

Type (for front or base mounting)	With Legend Plate 0-1, 48 x 48 mm	With Legend Plate 0-1, 67 x 67 mm
	Cat. No.	Cat. No.
A – Standard switch	194L-HE4A-175	194L-HE6A-175
G – Disconnect switch	194E-HE4G-175	194L-HE6G-175
I – Emergency stop	194L-HE4I-175	194L-HE6I-175
N – Disconnect switch/ Emergency stop	194E-HE4N-175	194L-HE6N-175

Control & Load Switches

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23



1-24...1-27

Contactors



1-28...1-39

Starters



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Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69



Product Selection

194L Switch Bodies, ON-OFF

Function	I AC-21A [A]	Poles	Front/Door Mounting	Base/DIN Rail Mounting
			Cat. No. ¹	Cat. No. ¹
	12	1	194L-E12-1751	194L-A12-1751
		2	194L-E12-1752	194L-A12-1752
		3	194L-E12-1753	194L-A12-1753
	16	1	194L-E16-1751	194L-A16-1751
		2	194L-E16-1752	194L-A16-1752
		3	194L-E16-1753	194L-A16-1753
	20	1	194L-E20-1751	194L-A20-1751
		2	194L-E20-1752	194L-A20-1752
		3	194L-E20-1753	194L-A20-1753
	25	1	194L-E25-1751	194L-A25-1751
		2	194L-E25-1752	194L-A25-1752
		3	194L-E25-1753	194L-A25-1753

¹ To change number of poles, change final number to 1, 2, 3 or 4.

194L Switch Bodies, Changeover Switches

Function	I AC-21A [A]	Poles	Front/Door Mounting
			Cat. No.
	12	3	194L-E12-3503
		4	194L-E12-3504
	16	3	194L-E16-3503
		4	194L-E16-3504
	20	3	194L-E20-3503
		4	194L-E20-3504
	25	3	194L-E25-3503
		4	194L-E25-3504

194L Switch Bodies, Changeover Switches ²

Function	I AC-21A [A]	Poles	Front/Door Mounting
			Cat. No.
	12	3	194L-E12-2503
	16		194L-E16-2503
	20		194L-E20-2504
	25		194L-E25-2503

² With both 0-1 and OFF/ON inscriptions.

Enclosed Control & Load Switches

For Use With	Number of Contacts	IP66 Enclosure, ABS Material	Required Shaft for ABS	IP66 Enclosure, Noryl Material	Required Shaft for Noryl
		Cat. No.	Cat. No.	Cat. No.	Cat. No.
194L-A12/16	1...2	194L-G3572	194L-G3195	194L-G3576	194L-G3195
	3...4	194L-G3572	194L-G2830	194L-G3576	194L-G2830
	5...6	194L-G3573	194L-G3195	194L-G3577	194L-G3195
194L-A20/25	1...2	194L-G3572	194L-G3194	194L-G3576	194L-G3194
	3...4	194L-G3572	194L-G2830	194L-G3576	194L-G2830
	5...6	194L-G3573	194L-G3194	194L-G3577	194L-G3194

Drives



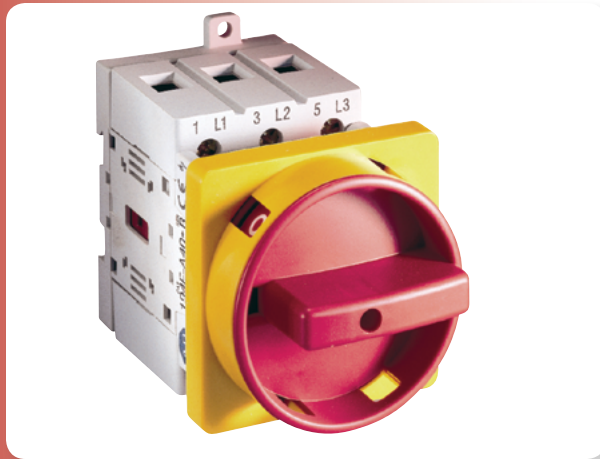
1-70...1-75

For more information on our complete family of control and load switch products, please visit: <http://ab.rockwellautomation.com/Motor-Control/Control-and-Load-Switches>



Control & Load Switches

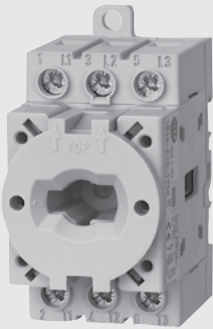
Power



Load Switches 194E

- Base/DIN Rail, or front-door mounting configurations
- Available in OFF-ON and changeover configurations
- 3- and 6-pole switches
- Enclosed products available up to 100A
- Padlockable handles available (up to 3 padlocks)

Bulletin 194E load switches are suitable as motor disconnect or other load switch applications.




Handle Options


Available as front mounting/DIN mounting




N Style



G Style



I Style



A Style

194E
16...100 A

Enclosed Load Switches

Base/DIN Rail Mounting Only





Stainless steel



Thermoplastic

Non-metallic

Control & Load Switches

Circuit Breakers



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Disconnect Switches



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Contactors



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Starters



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Motor Protection



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Smart Motor Control



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Product Selection

OFF-ON 3-Pole Switch (includes operating shaft)

Function	IAC-21A [A]	Front/Door Mounting	Base/DIN Rail Mounting
		Cat. No.	Cat. No.
	16	194E-E16-1753	194E-A16-1753
	25	194E-E25-1753	194E-A25-1753
	32	194E-E32-1753	194E-A32-1753
	40	194E-E40-1753	194E-A40-1753
	63	194E-E63-1753	194E-A63-1753
	80	194E-E80-1753	194E-A80-1753
	100	194E-E100-1753	194E-A100-1753

OFF-ON 6-Pole Switch (includes operating shaft)

Function	IAC-21A [A]	Front/Door Mounting	Base/DIN Rail Mounting
		Cat. No.	Cat. No.
	16	194E-E16-1756	194E-A16-1756
	25	194E-E25-1756	194E-A25-1756
	32	194E-E32-1756	194E-A32-1756
	40	194E-E40-1756	194E-A40-1756
	63	194E-E63-1756	194E-A63-1756
	80	194E-E80-1756	194E-A80-1756
	100	194E-E100-1756	194E-A100-1756

Enclosed Load Switches, 3-Pole

Description	Rated Operational Current [A]	Cat. No.
Enclosed Switches	16	194E-◆A16 ¹
	25	194E-◆A20 ¹
	32	194E-◆A32 ¹
	40	194E-◆A40 ¹
	63	194E-◆A63 ¹
	80	194E-◆A80 ¹
Thermoplastic enclosure, IP66	100	194E-◆A00 ¹
	16	194E-Y16-1753-4N ²
	25	194E-Y25-1753-6N ²
	32	194E-Y32-1753-6N ²
	40	194E-Y40-1753-6N ²

¹ Catalog number shown is for black handle. To order a red/yellow handle, add an **E** to the end of the catalog number.

² Catalog number shown is for red/yellow handle.

◆ The catalog number as listed is incomplete. Select an enclosure types code from the table below.

◆ Enclosure Type

Code	Description
C, D	Stainless steel enclosure, IP66, UL Type 4/4X, Hinged
K	Non-metallic enclosure, IP66, UL Type 4/4X
A	Painted steel, IP54, Type 1, Hinged
F, G	Painted steel, IP66, Type 3/4/12, Hinged

Handles (Includes OFF-ON legend plate and control knob)

Type (for front or base mounting)	Up to 16 A	25...100A
	Cat. No.	Cat. No.
A Standard switch	194L-HE4A-175	194E-HE6A-175
G Disconnect switch	194E-HE4G-175	194E-HE6G-175
I Emergency Stop	194L-HE4I-175	194E-HE6I-175
N Disconnect switch/Emergency stop	194E-HE4N-175	194E-HE6N-175

Accessories

Auxiliary Contacts	Cat. No.	For Use With
1 N.O. + 1 N.C.	194E-A-P11	194E-A16...100
	194E-E-P11	194E-E16...100
1 N.O. + 1 N.C.L.B.	194E-A-PL11	194E-A16...100
	194E-E-PL11	194E-E16...100
2 N.O. + 2 N.C.	194E-A-P22	194E-A16...100
	194E-E-P22	194E-E16...100
1 N.O.E.B.	194E-A16-PD10	194E-A16
	194E-A-PD10	194E-A25...100
	194E-E16-PD10	194E-E16
	194E-E-PD10	194E-E25...100

Additional Pole, 1 N.O.	Neutral Terminal	For Use With
194E-A16-NP	194E-A16-TN	194E-A16
194E-A25-NP	194E-A32-TN	194E-A25
194E-A32-NP	194E-A32-TN	194E-A32
194E-A40-NP	194E-A63-TN	194E-A40
194E-A63-NP	194E-A63-TN	194E-A63
194E-A80-NP	194E-A100-TN	194E-A80
194E-A100-NP	194E-A100-TN	194E-A100
194E-E16-NP	194E-E16-TN	194E-E16
194E-E25-NP	194E-E32-TN	194E-E25
194E-E32-NP	194E-E32-TN	194E-E32
194E-E40-NP	194E-E63-TN	194E-E40
194E-E63-NP	194E-E63-TN	194E-E63
194E-E80-NP	194E-E100-TN	194E-E80
194E-E100-NP	194E-E100-TN	194E-E100

Drives



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For more information on our complete family of control and load switch products, please visit: <http://ab.rockwellautomation.com/Motor-Control/Control-and-Load-Switches>



Contactors

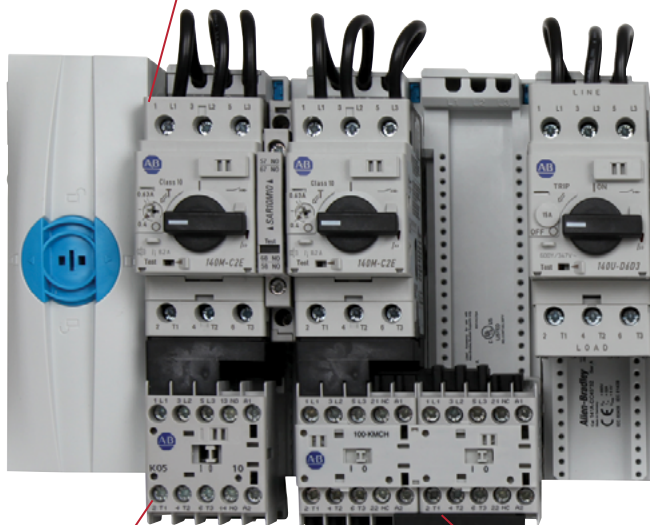


Miniature IEC Contactors 100-K/104-K

- Designed for commercial and light industrial applications
- 5...12 A
- Compact size with fewer panel depth and height requirements
- Full-voltage non-reversing and reversing contactors
- Same dimensions for AC and DC

Miniature IEC contactors can be used on the compact bus bar mounting system as shown below.¹

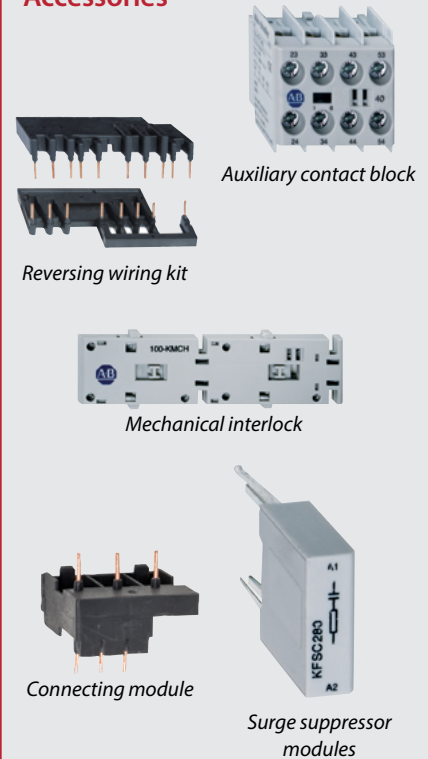
140M Motor Protection
Circuit Breaker



100-K Miniature Contactor

104-K Reversing
Miniature Contactor

Accessories²



Auxiliary contact block

Reversing wiring kit

Mechanical interlock

Connecting module

Surge suppressor
modules

¹ Additional details on the 141A Busbar Mounting System can be found on page 1-77.

² Additional details on accessories can be found on page 1-32.

Contactors

Circuit
Breakers



1-2...1-15

Disconnect
Switches



1-16...1-23

Control &
Load Switches



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1-28...1-39

Starters



1-40...1-53

Motor
Protection



1-54...1-59

Smart
Motor Control



1-60...1-69

Product Selection

AC- and DC-Control Miniature Contactors¹

Rated Operational Current [A]		Ratings for Switching AC Motors			Power Poles		Aux. Contacts		Direct-on-Line	
		3-Phase kW	3-Phase Hp						Screw Terminal	Spring Clamp
AC-3	AC-1	400/415V	200/230V	460/575V	N.O.	N.C.	N.O.	N.C.	Cat. No.	Cat. No.
3-pole										
5	20	2.2	1-1/2	3	3	0	1	0	100-K05⊗10	100-KR05⊗10
							0	1	100-K05⊗01	100-KR05⊗01
9	20	4	2	5			1	0	100-K09⊗10	100-KR09⊗10
							0	1	100-K09⊗01	100-KR09⊗01
12	20	5.5	3	7-1/2			1	0	100-K12⊗10	–
							0	1	100-K12⊗01	–
4-pole										
5	20	2.2	1-1/2	3	4	0	0	0	100-K05⊗400	–
					2	2	0	0	100-K05⊗200	–
9	20	4	2	5	4	0	0	0	100-K09⊗400	–
					2	2	0	0	100-K09⊗200	–
12	20	5.5	3	7-1/2	4	0	0	0	100-K12⊗400	–
					2	2	0	0	100-K12⊗200	–

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table below.

¹ Additional details on accessories can be found on page 1-32.

⊗ Coil Voltage Codes for AC and DC Control

AC Control	
Code	Description
KJ	24V, 50/60 Hz
D	110V, 50 Hz/120V, 60 Hz
KF	230V, 50/60 Hz
KA	240V, 50/60 Hz

DC Control	
Code	Description
DJ	24V, Integrated diode
ZJ	24V, Standard

For more coil voltage codes, please visit our online product directory.



Product Certifications

Global certifications available online:

www.rockwellautomation.com/global/certification/overview.page

Drives



1-70...1-75

For more information on our complete family of IEC contactor products, please visit:
<http://ab.rockwellautomation.com/Motor-Control/Contactors/IEC>



Contactors

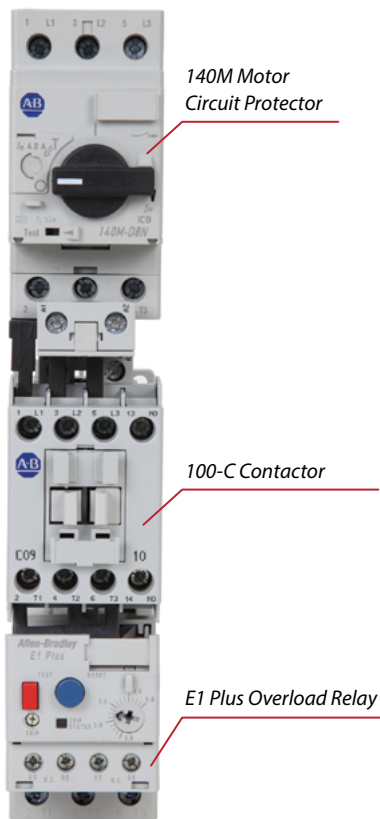


IEC Contactors 100-C/104-C

- 9...97 A
- Environmentally friendly materials
- Low-consumption AC or DC coils
- Common accessories for all contactor sizes

Flexible Starter Configurations

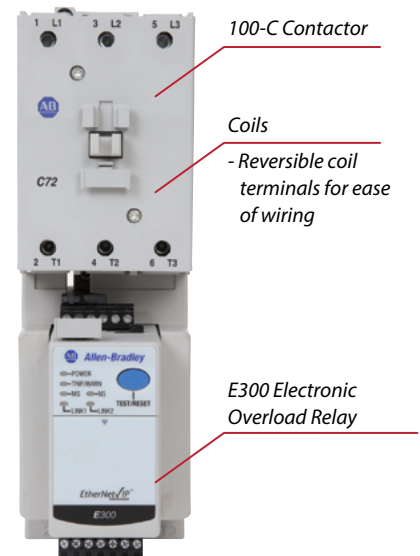
Three Component Starter



Two Component Starter



Short Circuit Protection Provided Separately



Multiple mounting methods available:

- Panel mount
- DIN Rail
- Bus bar

Contactors

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27



1-28...1-39

Starters



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69

Product Selection

AC- and DC-Operated Contactors³

Rated Operational Current [A]		Ratings for Switching AC Motors – AC-2, AC-3			Direct-on-Line			Reversing		
		3-Phase kW	3-Phase Hp		Auxiliary Contacts ^{1,2}		Cat. No.	Auxiliary Contacts installed per contactor		Cat. No.
AC-3	AC-1	400/415V	200/230V	460/575V	N.O.	N.C.		N.O.	N.C.	
3-pole, Screw Terminals										
9	32	4	5	7-1/2	1	0	100-C09⊗10	1	1	104-C09⊗22
12	32	5.5	7-1/2	10	1	0	100-C12⊗10	1	1	104-C12⊗22
16	32	7.5	10	15	1	0	100-C16⊗10	1	1	104-C16⊗22
23	32	11	15	15	1	0	100-C23⊗10	1	1	104-C23⊗22
30	65	15	20	25	0	0	100-C30⊗00	1	1	104-C30⊗22
37	65	18.5/20	25	30	0	0	100-C37⊗00	1	1	104-C37⊗22
43	85	22	30	30	0	0	100-C43⊗00	1	1	104-C43⊗22
55	85	30	40	40	0	0	100-C55⊗00	1	1	104-C55⊗22
60	100	32	40	50	0	0	100-C60⊗00	1	1	104-C60⊗22
72	100	40	50	60	0	0	100-C72⊗00	1	1	104-C72⊗22
85	100	45	60	60	0	0	100-C85⊗00	1	1	104-C85⊗22
97	130	55	75	75	0	0	100-C97⊗00	1	1	104-C97⊗22
3-pole, Spring Clamp										
9	25	4	5	7-1/2	1	0	100-CR09⊗10		–	
12	25	5.5	7-1/2	10	1	0	100-CR12⊗10		–	
16	25	7.5	10	15	1	0	100-CR16⊗10		–	

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table below.

¹ To add an N.O. auxiliary contact, the catalog number can be changed from 100C-C30⊗00 to 100C-C30⊗10.

² To add an N.C. auxiliary contact, the catalog number can be changed from 100C-C30⊗00 to 100C-C30⊗01.

³ Additional details on accessories can be found on page 1-32.

⊗ Coil Voltage Codes for AC and DC Control

AC Control		DC Control with Integrated Surge Suppression	
Code	Description	Code	Description
KJ	24V, 50/60 Hz	DJ	24V (60...97 A only)
D	110V, 50 Hz/120V, 60 Hz	EJ	24V, Electronic (9...55 A only)
KF	230V, 50/60 Hz	ED	110V, Electronic (9...55 A only)
KA	240V, 50/60 Hz		

For more coil voltage codes, please visit our online product directory.



Global Short Circuit Current Ratings Selection Tool

Try out the Global SCCR Selection Tool, providing coordinated high fault branch circuit solutions for motor starters, soft starters and component drives.

www.rockwellautomation.com/support/global-sccr.page

Drives



1-70...1-75

For more information on our complete family of IEC contactor products, please visit: <http://ab.rockwellautomation.com/Motor-Control/Contactors/IEC>



Contactors

Accessories

100-K Miniature Contactors

Description	Auxiliary Contacts		Spring Clamp Cat. No.	Screw Terminals Cat. No.
	N.O.	N.C.		
Front-mounted auxiliary contacts	0	2	100-KRFC02	100-KFC02
	1	1	100-KRFC11	100-KFC11
	2	0	100-KRFC20	100-KFC20
	2	2	100-KRFC22	100-KFC22
	3	1	100-KRFC31	100-KFC31
	4	0	100-KRFC40	100-KFC40

Description	Cat. No.	
RC suppressor	24...48V AC	100-KFSC50
	110...280V AC	100-KFSC280
	380...480V AC	100-KFSC480
MOV surge suppressor	12...55V AC, 12...77V DC	100-KFSV55
	56...136V AC, 78...180V DC	100-KFSV136
	137...277V AC, 181...250V DC	100-KFSV277
Diode surge suppressor	12...250V DC	100-KFSD250
Mechanical interlock	100-KMCH	
Power wiring kit- for reversing and start/delta combinations	100-KPR	
ECO connecting module for electrical and mechanical connection to a 140M-C motor protection circuit breaker - 12 A	140M-C-PEK12	



Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

www.rockwellautomation.com/sales-partners/overview.page

Contactors

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27



1-28...1-39

Starters



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69



Accessories

100-C Contactors with Screw Terminals

Description	Auxiliary Contacts		Screw Terminals Cat. No.	Spring Clamp Cat. No.
	N.O.	N.C.		
Front-mounted auxiliary contacts	0	2	100-FA02	100-CRFA02
	1	1	100-FA11	100-CRFA11
	2	0	100-FA20	100-CRFA20
	2	2	100-FA22	100-CRFA22
	3	1	100-FA31	100-CRFA31
	4	0	100-FA40	100-CRFA40
Side-mounted auxiliary contacts	0	1	100-SB01	–
	1	0	100-SB10	–
	0	1	100-SB11	–
	2	0	100-SB20	–

Surge Suppressors		Cat. No.
RC Module	24...48V AC, 50/60 Hz	100-FSC48
	110...280V AC, 50/60 Hz	100-FSC280
	380...480V AC, 50/60 Hz	100-FSC480
MOV Surge Suppressor	12...55V AC, 12...77V DC	100-FSV55
	56...136V AC, 78...180V DC	100-FSV136
	137...277V AC, 181...250V DC	100-FSV277

Mechanical Interlock	For Use With	Cat. No.
Mechanical only, without aux contacts	100-C (except 100C-40...C90)	100-MCA00
Mechanical/electrical, with 2 N.C. aux contacts		100-MCA02

Reversing Power Wiring Kit	For Use With	Cat. No.
For reversing connection with a solid-state or thermal overload relay	100-C09...C23	105-PW23
	100-C30...C37	105-PW37
	100-C43...C55	105-PW55
	100-C60...C97	105-PW85

Timing Modules		For Use With	Cat. No.
Pneumatic Timing Modules: Contacts switch after the delay time, main control relay contacts continue to operate without delay	On-Delay 0.3...30 s Range	100-C w/ AC Coils or DC Electronic Coils	100-FPTA30
	On-Delay 2...180 s Range		100-FPTA180
Electronic Timing Modules: Delay of the contactor or control relay solenoid, contactor or control relay is energized at the end of the delay time	On-Delay 0.1...3 s Range	100-C w/ 110...240V, 50/60 Hz or 110...250V conventional DC coils	100-ETA3
	On-Delay 1...30 s Range		100-ETA30
	On-Delay 10...180 s Range		100-ETA180
	On-Delay 0.1...3 s Range		100-ETAZJ3
	On-Delay 1...30 s Range	100-C w/ 24...48V conventional DC coils	100-ETAZJ30

Drives



1-70...1-75

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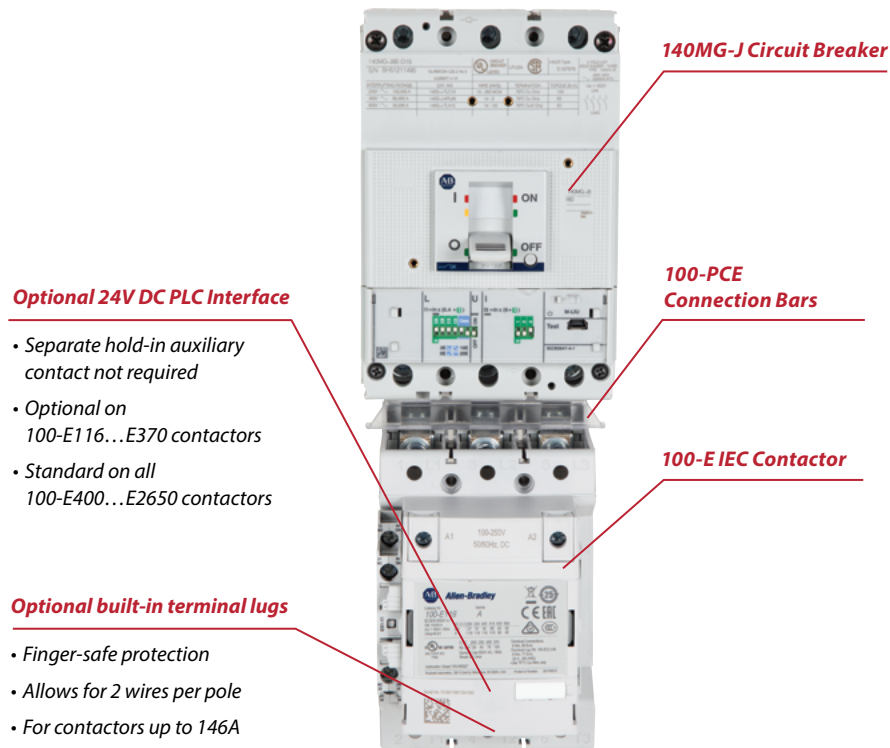
Contactors



IEC Contactors 100-E/104-E

- 116...2650 A
- Compact size for smaller panel space requirements
- Wide range electronic coils for reduced energy consumption
- Environmentally friendly

The Bulletin 100-E/104-E contactor family offers wide range AC/DC electronic coils for reduced energy consumption and a compact design.



⊗ Coil Voltage Codes for AC and DC Control

AC/DC Control	
Electronic Standard Coils, 100-E116...E370	
Code	Description
KJ	24...60V 50-60 Hz, DC
KD	100...250V 50-60 Hz, DC
KN	250...500V 50-60 Hz, DC
Electronic Coils with PLC Interface, 100-E116...E370	
Code	Description
ED	100...250V 50-60 Hz, DC
EN	250...500V 50-60 Hz, DC
Electronic Coils with PLC Interface, 100-E400...E750, E1260	
Code	Description
EJ	24...60V DC
ED	100...250V 50-60 Hz, DC
EN	250...500V 50-60 Hz, DC
Electronic Coils with PLC Interface, 100-E860, E1060, E2050, E2650	
Code	Description
ED	100...250V 50-60 Hz, DC

Contactors

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27



1-28...1-39

Starters



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69

Product Selection

AC/DC Operated Contactors

Rated Operational Current [A]		Ratings for Switching AC Motors – AC-2, AC-3			Direct-on-Line Contactors			Reversing Contactors		
AC-3	AC-1	3-Phase kW (50 Hz)	3-Phase Hp (60 Hz)		Auxiliary Contacts ¹		Cat. No.	Auxiliary Contacts ¹ installed per contactor		Cat. No.
400V	690V	400V	460V	575V	N.O.	N.C.		N.O.	N.C.	
116	160	55	75	100	1	1	100-E116⊗11 ¹	2	2	104-E116⊗22 ¹
146	225	75	100	125	1	1	100-E146⊗11 ¹	1	1	104-E146⊗22 ¹
190	275	90	125	150	1	1	100-E190⊗11	1	1	104-E190⊗22
205	350	110	150	200	1	1	100-E205⊗11	1	1	104-E205⊗22
265	400	132	200	250	1	1	100-E265⊗11	1	1	104-E265⊗22
305	500	160	250	300	1	1	100-E305⊗11	1	1	104-E305⊗22
370	600	200	300	350	1	1	100-E370⊗11	1	1	104-E370⊗22
400	600	200	350	400	1	1	100-E400⊗11	1	1	104-E400⊗22
460	700	250	400	500	1	1	100-E460⊗11	1	1	104-E460⊗22
580	800	315	500	600	1	1	100-E580⊗11	1	1	104-E580⊗22
750	1050	400	600	700	1	1	100-E750⊗11	1	1	104-E750⊗22
860	1350	475	800	1000	1	1	100-E860⊗11	–	–	–
1060	1650	560	900	1150	1	1	100-E1060⊗11	–	–	–
–	1260	–	–	–	1	1	100-E1260⊗11	–	–	–
–	2050	–	–	–	1	1	100-E2050⊗11	–	–	–
–	2650	–	–	–	1	1	100-E2650⊗11	–	–	–

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table to the left.

¹ To order with built-in terminal lugs, add the letter “L” to the end of the catalog number (e.g. 100-E116⊗11L).

Side Mounted Auxiliary Contacts

Description	For Use With	Mtg. Position	N.O.	N.C.	Cat. No.
Standard contacts • Left or right side mtg. • Min. switching 24V 50 mA	100-E116...E370	Inside	1	1	100-ES1-11
		Outside	1	1	100-ES2-11
	100-E400...E2650	Inside	1	1	100-ES3-11
		Outside	1	1	100-ES4-11
Standard contacts • Left or right side mtg. • Min. switching 3V 1 mA	100-E116...E370	Inside	1	–	100-ES1-B10
		Inside	–	1	100-ES1-B01
	100-E400...E2650	Inside	1	–	100-ES3-B10
		Inside	–	1	100-ES3-B01

Terminal Lugs

Description	For Use With	Cat. No.
Terminal Lug Kit (set of two)	100-E116...E146	100-ECL146
Terminal Lugs (set of three)	100-E190...E205	100-ETL205
	100-E265...E370	100-ETL370
		100-ETL370B ²
	100-E400...E460	100-ETL580
	100-E580...E1250	100-ETL750
	100-E860	100-ETL860
	100-E1060	100-ETL1060
100-ETL1060B ³		

² Accepts 2 conductors.

³ Accepts 6 conductors.

Mechanical Interlock

Description	For Use With	Cat. No.
For interlocking two contactors	100-E116...E370	100-EM1-00
	100-E400...E2650	100-EM2-00

Drives



1-70...1-75

For more information on our complete family of IEC contactor products, please visit:
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Contactors

Power



Safety Contactors 100S-C/104S-C, 100S-E

- 9...750 A
- SUVA third party certification
- AC and DC operating coils
- Mechanically linked or mirror contact performance

Safety contactors provide mechanically linked, or mirror, contact performance, which is required in feedback circuits monitoring energy isolating switchgear used in hazardous motion loads.

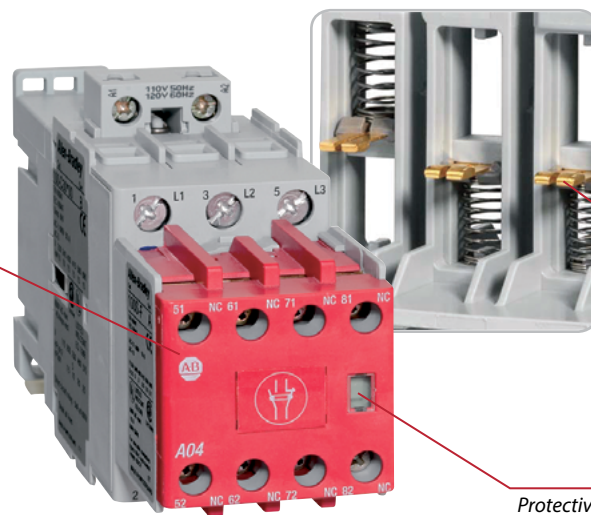
Red contact housing for easy identification

Certifications (100S-C)

- CE Marked
- cULus Listed (File No. E3125; Guide NLDX, NLDX7)
- CCC

Certifications (100S-E)

- CE Marked
- cULus Listed (File No. E41850; Guide NLDX, NLDX7)
- SUVA Certified
- CCC



100S-C Safety Contactor

Gold plated, bifurcated contacts for improved signal reliability

Protective cover prevents manual operation

Contactors

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27



1-28...1-39

Starters



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69

Product Selection

100S-C Safety Contactors

Rated Operational Current [A]		Ratings for switching AC motors			Auxiliary Contacts		No. of Poles	AC Coil Control Cat. No. ¹
		3-Phase kW (50 Hz)	3-Phase Hp (60 Hz)					
AC-3	AC-1	400/415V	460V	575V	N.O.	N.C.		
9	32	4	5	7 1/2	1	4	3	100S-C09⊗14BC
12	32	5.5	7-1/2	10	1	4	3	100S-C12⊗14BC
16	32	7.5	10	15	1	4	3	100S-C16⊗14BC
23	32	11	15	15	1	4	3	100S-C23⊗14BC
30	65	15	20	25	1	4	3	100S-C30⊗14BC
37	65	18.5/20	25	30	1	4	3	100S-C37⊗14BC
43	85	22	30	30	1	4	3	100S-C43⊗14BC
55	85	30	40	40	1	4	3	100S-C55⊗14BC
60	100	32	40	50	1	4	3	100S-C60⊗14BC
72	100	40	50	60	1	4	3	100S-C72⊗14BC
85	100	45	60	60	1	4	3	100S-C85⊗14BC
97	130	55	75	75	1	4	3	100S-C97⊗14BC

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table below.

¹ For additional contact configurations, please visit our online product directory. BC = bifurcated and C = standard.

100S-E Safety Contactors

Rated Operational Current [A]		Ratings for switching AC motors			Auxiliary Contacts			No. of Poles	Cat. No. ²
AC-3	AC-1	3-Phase kW (50 Hz)	3-Phase Hp (60 Hz)		N.O.	N.C.	N.C. ³		
400V	690V	400V	460V	575V					
116	160	55	75	100	1	1	1	3	100S-E116⊗12C ²
146	225	75	100	125	1	1	1	3	100S-E146⊗12C ²
190	275	90	125	150	1	1	1	3	100S-E190⊗12C
205	350	110	150	200	1	1	1	3	100S-E205⊗12C
265	400	132	200	250	1	1	1	3	100S-E265⊗12C
305	500	160	250	300	1	1	1	3	100S-E305⊗12C
370	600	200	300	350	1	1	1	3	100S-E370⊗12C
400	600	200	350	400	1	1	1	3	100S-E400⊗12C
460	700	250	400	500	1	1	1	3	100S-E460⊗12C
580	800	315	500	600	1	1	1	3	100S-E580⊗12C
750	1050	400	600	700	1	1	1	3	100S-E750⊗12C

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table below.

² To order with built-in terminal lugs, add the letter "L" to the end of the catalog number (e.g. 100-E116⊗11L).

³ The N.C. contact meets IEC 60947-4-1 Annex F requirements for mirror contact performance.

⊗ Coil Voltage Codes for AC and DC Control

AC Control, 100S-C	
Code	Description
KJ	24V, 50/60 Hz
D	110V, 50 Hz/ 120V, 60 Hz
KF	230V, 50/60 Hz
KA	240V, 50/60 Hz

DC Control, 100S-C	
Code	Description
EJ	24V, Electronic coils (9...55 A only)
DJ	24V, Integrated diode (60...97 A only)

AC/DC Control	
Code	Description
Electronic Standard Coils, 100S-E116...E370	
KJ	24...60V 50-60 Hz, DC
KD	100...250V 50-60 Hz, DC
KN	250...500V 50-60 Hz, DC
Electronic Coils with PLC Interface, 100S-E116...E370	
ED	100...250V 50-60 Hz, DC
EN	250...500V 50-60 Hz, DC

AC/DC Control, 100S-C	
Code	Description
Electronic Coils with PLC Interface, 100S-E400...E750, E1260	
EJ	24...60V DC
ED	100...250V 50-60 Hz, DC
EN	250...500V 50-60 Hz, DC
Electronic Coils with PLC Interface, 100S-E860, E1060, E2050, E2650	
ED	100...250V 50-60 Hz, DC

Drives



1-70...1-75

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Contactors

Power



Definite-Purpose Contactors 400

- 1...4 pole options, 25...120 A resistive loads
- Feed-through wiring
- Double-break contacts
- Snap-on auxiliary contacts
- Rated for inductive lighting and resistive loads



Stationary Terminal

One piece terminal design with integral dual 0.250 quick connects. Meets NEMA Standard for spacing without insulated terminals.

Base Assembly

High arc-resistant polyester hold stationary terminals, positions actuator, and magnet/coil assembly.

Exclusive Terminal Screw

Hex, Slotted, Phillips, screw, #10-32 SEM's. Box lugs standard on 40 FLA models and larger.

Applications

- Air conditioners
- Compressors
- Welding equipment
- Business machines
- Power supplies
- Refrigeration equipment
- Resistive heating
- Food service equipment



Contactors

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27



1-28...1-39

Starters



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69



Product Selection

400 Definite-Purpose Contactors

Full Load Amps [A]	No. of Poles	Max. Continuous Ampere Rating [A]		Line Voltage [V]	Locked Rotor Current [A]	Resistive Current Rating [A]	Control Voltage [V]	Max. [Hp]		Cat. No.
		Tungsten Lamp Loads ¹	Ballast Lighting Load					1-Phase	3-Phase	
20/25	2	25	240/277	150	35	120	2	–	400-DP25N⊗2	
			480	125	35	240	3	–		
			600	100	35	240	3	–		
	3	25	240/277	150	35	110/120	2	5	400-DP25N⊗3⊕	
			480	125	35	240/277	5	10		
			600	100	35	480	–	15		
30	2	30	240/277	150	40	120	2	–	400-DP30N⊗2	
			480	125	40	240	3	–		
			600	100	40	240	3	–		
	3	30	240/277	180	40	110/120	2	5	400-DP30N⊗3⊕	
			480	150	40	240/277	5	10		
			600	150	40	480	–	15		
40	2	40	240/277	240	50	120	–	–	400-DP40N⊗2	
			480	200	50	240	–	–		
			600	120	50	240	–	–		
40	3	–	240/277	240	50	110/120	–	–	400-DP40N⊗3	
			480	200	50	200/208	–	–		
			600	120	50	240/277	–	–		
			600	120	50	480	–	–		
600	120	50	600	–	–	–	–			

¹ Max. 480V line, 277V load.

⊕ The catalog number as listed is incomplete. Select coil voltage code from the table.

★ Factory-installed Modifications

Description	Suffix Code
Auxiliary contact – 1 N.O./1 N.C. with QC for 3-pole – 20/25 and 30 A only	-AB5
Auxiliary contact – SPDT with QC for 3-pole – 20/25 and 30 A only	-A5
Auxiliary contact – 2 SPDT with QC for 3-pole – 20/25 and 30 A only	-AA5

⊗ AC Coil Voltage Codes

Code	Description
J	24V
D	120V
A	208/240V
F	277V
B	480V

Accessories

Description	Cat. No.
Arc covers for 20/25 and 30 A – 2-pole	400-C2
Mechanical interlock kit	20/25...40 A, 3-pole 400-MK1
DIN Rail adapter	20/25...40 A, 1-...4-pole 400-DRA
Auxiliary contact	1 N.O./1 N.C. w/QCs 400-AB1
	SPDT w/QCs 400-A1
	2-SPDT w/QCs 400-B2

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Drives



1-70...1-75

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Starters



Manual Motor Low Voltage Starters 600, 609, 609U, 609TU

- Undervoltage protection
- Manual operation with overload protection
- Ideal for low HP applications, up to 10 HP three phase

Manual motor starters are specifically designed for full voltage motor starting applications where remote push button control is not necessary. They are ideally suited for starting and protecting smaller motors frequently used for fans and blowers.

600 Manual Starting Switches

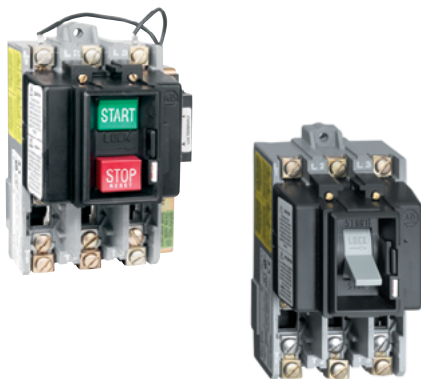


- Single phase
- Starting and overload protection of small AC/DC motors up to 1 Hp

609 Manual Starting Switches



- Single and three phase
- Contact position indicator
- Locking feature
- Reversing and 2-speed
- Wide range of enclosures, including hazardous location



609U & 609TU Manual Starting Switches

- Undervoltage protection
- Single and three phase
- Contact position indicator
- Locking feature
- Wide range of enclosures
- Push button or toggle switch

Starters

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69



Product Selection

600 Manual Motor Starters

Type	No. of Poles	Open Type Without Enclosure Includes Legend Plate	Type 1 General Purpose Enclosure Surface Mount	Type 1 General Purpose Enclosure Flush Mount Includes Flush Plate Only
Switch Only				
Toggle	1	600-TOX4	600-TAX4	600-TQX4
	2	600-TOX5	600-TAX5	600-TQX5
Key	2	600-TOX49	600-TAX49	600-TQX49
Lever	1	600-TOX149	600-TAX149	–
Switch with Neon Pilot Light (115 or 230V)				
Toggle	1	600-TOX216	600-TAX216	600-TQX216
	2	600-TOX109	600-TAX109	600-TQX109
Key	2	600-TOX110	600-TAX110	600-TQX110
Switch and Hand-Off-Auto Selector Switch (for use on AC only)				
Toggle	2	–	600-TAX9	600-TQX9
Switch with Neon Pilot Light and Hand-Off-Auto Selector Switch (115 or 230V, AC only)				
Toggle	2	–	600-TAX142	600-TQX142
Key	2	–	600-TAX145	–

609 Manual Motor Starters

Type	Phase	Size	Max. Hp Rating				Open Type without Enclosure	Type 1 General Purpose Enclosure Surface Mount
			Motor Voltage, 60 Hz					
			115V	200V	230V	460...575V	Cat. No.	Cat. No.
Push Button	1	0	1	–	2	–	609-AOX	609-AAX
		1	2	–	3	–	609-BOX	609-BAX
		1P	3	–	5	–	609-XOX	609-XAX
	3	0	–	3	3	5	609-AOW	609-AAW
		1	–	7-1/2	7-1/2	10	609-BOW	609-BAW
Toggle Lever	1	0	1	–	2	–	609T-AOX	609T-AAX
		1	2	–	3	–	609T-BOX	609T-BAX
		1P	3	–	5	–	609T-XOX	609T-XAX
	3	0	–	3	3	5	609T-AOW	609T-AAW
		1	–	7-1/2	7-1/2	10	609T-BOW	609T-BAW

Heater Elements – All single-phase starters require one heater element and three-phase starters require three heater elements.

Product selection for 609U & 609TU is available at
<http://ab.rockwellautomation.com/Motor-Control/LV-Starters/Manual-Motor>

Drives



1-70...1-75

For more information on our complete family of IEC starter products, please visit:
<http://ab.rockwellautomation.com/Motor-Control/Low-Voltage-Starters>



Starters



IEC Eco Starters 190E/191E

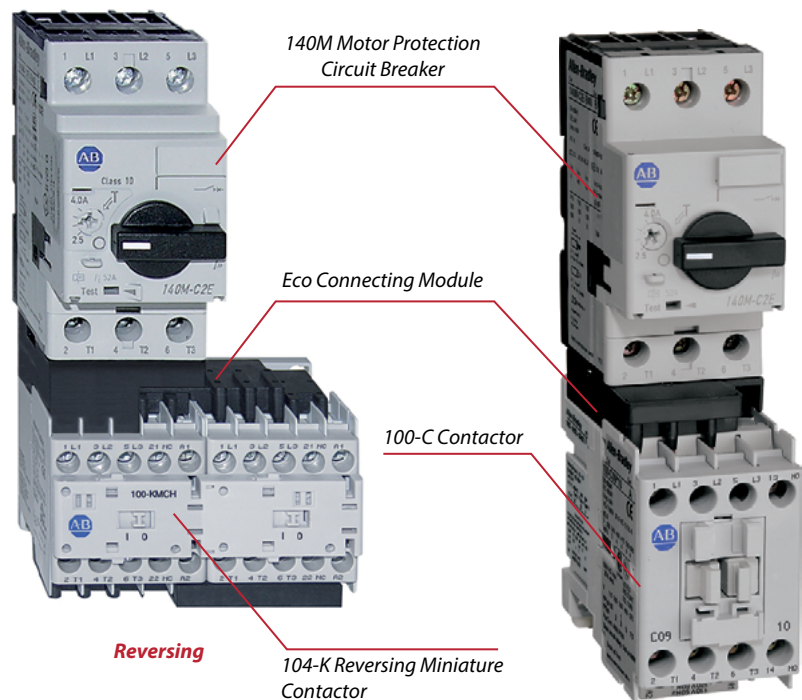
- 5...23 A
- Type 1 and 2 coordination
- AC or DC coils available
- Shares common accessories with 100-C/100-K contactors and 140M motor protection circuit breakers

The 190E/191E motor controllers can be used in a variety of applications. These starters can be used in a group motor application or as a stand-alone product without any additional short-circuit protection in the motor branch circuits. Rated Type F combination motor controllers (UL/CSA).

Options for Field Assembly

190/191-E starters can be field assembled. Simply select the following:

- 100-K/104-K miniature contactor (page 1-28) or 100-C/104-C contactor (page 1-30)
- 140M motor protection circuit breaker (page 1-3)
- Eco connecting module



Direct-on-Line

Starters

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69

Product Selection

IEC Eco Starters with AC and DC-Operated Contactors

Motor Current Adjustment Range [A]	3-Phase kW (50 Hz)	3-Phase Hp (60 Hz)	Max. Short-Circuit Current Type 1 Coordination [kA]	With 100-K IEC Miniature Contactors		With 100-C IEC Contactors	
				Direct-on-Line Cat. No.	Reversing Cat. No.	Direct-on-Line Cat. No.	Reversing Cat. No.
				400/415V	460V	480Y/277V	
0.10...0.16	0.02	–	65	190E-KMN⊗2-CA16X	191E-KMN⊗1-CA16X	190E-AN⊗2-CA16X	191E-AN⊗3-CA16X
0.16...0.25	0.06	–	65	190E-KMN⊗2-CA25X	191E-KMN⊗1-CA25X	190E-AN⊗2-CA25X	191E-AN⊗3-CA25X
0.25...0.40	0.09	–	65	190E-KMN⊗2-CA40X	191E-KMN⊗1-CA40X	190E-AN⊗2-CA40X	191E-AN⊗3-CA40X
0.40...0.63	0.12...0.18	–	65	190E-KMN⊗2-CA63X	191E-KMN⊗1-CA63X	190E-AN⊗2-CA63X	191E-AN⊗3-CA63X
0.63...1.00	0.25	0.5	65	190E-KMN⊗2-CB10X	191E-KMN⊗1-CB10X	190E-AN⊗2-CB10X	191E-AN⊗3-CB10X
1.00...1.60	0.37...0.55	0.5...1	65	190E-KMN⊗2-CB16X	191E-KMN⊗1-CB16X	190E-AN⊗2-CB16X	191E-AN⊗3-CB16X
1.60...2.50	0.75	0.75...1.5	65	190E-KMN⊗2-CB25X	191E-KMN⊗1-CB25X	190E-AN⊗2-CB25X	191E-AN⊗3-CB25X
2.50...4.00	1.1...1.5	1.5...3	65	190E-KMN⊗2-CB40X	191E-KMN⊗1-CB40X	190E-AN⊗2-CB40X	191E-AN⊗3-CB40X
4.00...6.30	2.2	3...5	65	190E-KNN⊗2-CB63X	191E-KNN⊗1-CB63X	190E-AN⊗2-CB63X	191E-AN⊗3-CB63X
6.30...10.0	3.0...4.0	5...7.5	65	190E-KPN⊗2-CC10X	191E-KPN⊗1-CC10X	190E-BN⊗2-CC10X	191E-BN⊗3-CC10X
10.0...11.0	5.5	7.5	30	190E-KPN⊗2-CC16X	191E-KPN⊗1-CC16X	–	–
10.0...12.0	4.0...5.5	7.5	30	–	–	190E-BN⊗2-CC16X	191E-BN⊗3-CC16X
10.0...16.0	5.5...6.3	7.5...10.0	30	–	–	190E-CN⊗2-CC16X	191E-CN⊗3-CC16X

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table below.

Accessories

Description	For Use With	Cat. No.
ECO Connecting Modules – 25 A	140M-C to 100-M	140M-C-PEM12
	140M-C to 100-C09...C23	140M-C-PEC23

⊗ Coil Voltage Codes for AC and DC Control

AC Control		24V DC Control	
Code	Description	Code	Description
KJ	24V, 50/60 Hz	ZJ	Standard (190E/191E-K)
D	110V, 50 Hz/120V, 60 Hz	DJ	Integrated diode (190E/191E-K)
KF	230V, 50/60 Hz	EJ	Electronic with integrated diode (190/191E-A...D)
KA	240V, 50/60 Hz		



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

Drives



1-70...1-75

For more information on our complete family of IEC starter products, please visit:
<http://ab.rockwellautomation.com/Motor-Control/Low-Voltage-Starters>



Starters

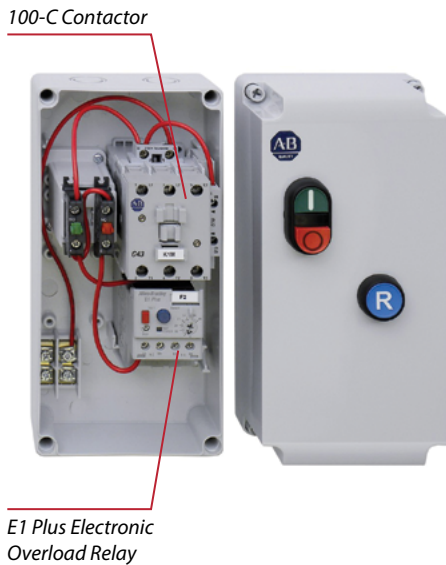


Enclosed Starters, IEC 109-C/105-C

- Reversing and non-reversing
- Electronic motor protection
- Non-combination, disconnecting means to be provided separately
- Factory modifications available

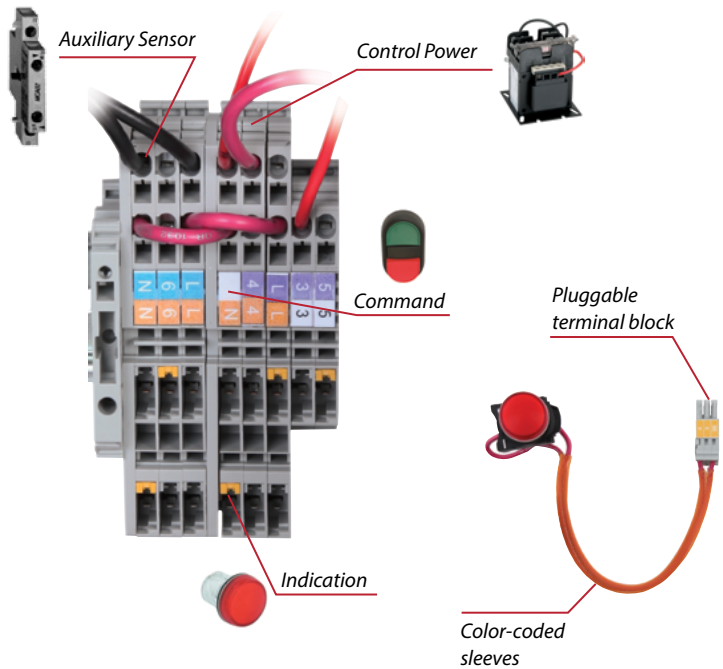
Compact Installation

Plastic enclosures provide a compact, cost effective solution to help reduce machine space and expand product flexibility.



Wiring Made Easy

Metal enclosures now feature component wiring color-coded by function. The wiring sleeve-cover corresponds to a colored label on the terminal block, reducing wiring errors and allowing for quicker installation times.



Starters

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69

Product Selection

IEC Enclosed Starters, Plastic

Type		Direct-on-Line Starter ² 109-C	Reversing 105-C
Ratings AC-3	E1 Plus ¹ Overload Relay	IP66, Type 4/4X/12, Molded Plastic	IP66, Type 4/4X/12, Molded Plastic
Amps	Motor Current Setting Range		With FORWARD/OFF/REVERSE Multifunction Push Button (3 Functions) and Reset
[A]	[A]	Cat. No.	Cat. No.
9	1.0...5.0	109-C09K⊗E1C-⊕	105-C09L⊗E1C-1M-7
9	3.2...16.0	109-C09K⊗E1D-⊕	105-C09L⊗E1D-1M-7
12	3.2...16.0	109-C12K⊗E1D-⊕	105-C12L⊗E1D-1M-7
16	3.2...16.0	109-C16K⊗E1D-⊕	105-C16L⊗E1D-1M-7
23	5.4...27.0	109-C23K⊗E1E-⊕	105-C23L⊗E1E-1M-7
30	9.0...45.0	109-C30L⊗E1F-1M-7 ³	—
37	9.0...45.0	109-C37L⊗E1F-1M-7 ³	—
43	9.0...45.0	109-C43L⊗E1F-1M-7 ³	—

¹ For Eutectic Alloy Overload Relay, please visit our online product directory.

² For other enclosure types, please visit our online product directory.

³ With START/STOP Multifunction Push Button (2 Functions) and Reset.

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table to the right.

⊕ The catalog number as listed is incomplete. Replace with start and stop (1) or reset (7).

⊗ Coil Voltage Codes for AC and DC Control

AC Control	
Code	Description
KJ	24V, 50/60 Hz
D	110V, 50 Hz/120V, 60 Hz
KF	230V, 50/60 Hz
KA	240V, 50/60 Hz

DC Control with Integrated Surge Suppression	
Code	Description
DJ	24V (60...97 A only)
EJ	24V, Electronic (9...55 A only)
ED	110V, Electronic (9...55 A only)

IEC Enclosed Starters, Metal⁴

Amps	Max. Hp Rating				Catalog Number	
	3-Phase				Type 1 (IP42)	
	200V AC	230V AC	460V AC	575V AC	Non-reversing	Reversing
9	2	2	5	7 1/2	109-C09AD-OLR	105-C09AD-OLR
12	3	3	7 1/2	10	109-C12AD-OLR	105-C12AD-OLR
16	5	5	10	15	109-C16AD-OLR	105-C16AD-OLR
23	5	7 1/2	15	15	109-C23AD-OLR	105-C23AD-OLR
30	7 1/2	10	20	25	109-C30AD-OLR	105-C30AD-OLR
37	10	10	25	30	109-C37AD-OLR	105-C37AD-OLR

⁴ All starters come standard with a 120V AC coil.

E1 Plus™ Overload Relays

IEC Contactor	Overload Relay FLA Range [A]	Three-phase Cat. No.
109-C09...109-C23	0.1...0.5	193-EEAB
	0.2...1.0	193-EEBB
	1.0...5.0	193-EECB
	5.4...27	193-EEEB
109-C30...109-C55	5.4...27	193-EEED
	9...45	193-EEFD
	11...55	193-EEQD
External reset adapter is required		193-ERA

Snap-together Accessory Kits

Kit Description	Catalog Number
Push Button, Start-Stop	198-SSPB ⁵
Selector Switch, Plastic, HOA/FOR	198-3SS
Push Button, For-Rev-Stop	198-FRSPB ⁶
Pilot Light, 24...120V AC/DC, Red LED	198-RUPL
Pilot Light, 24...120V AC/DC, Green LED	198-GUPL
Pilot Light, 24...120V AC/DC, White LED	198-WUPL
N.O./N.C. Auxiliary contact kit	198-SA11 ⁵
208/120V AC transformer kit	1497-HD50 ⁷
240/120V AC transformer kit	1497-AD50 ⁷
480/120V AC transformer kit	1497-BD50 ⁷
600/120V AC transformer kit	1497-CD50 ⁷

⁵ Can only be used with non-reversing starters and contactors.

⁶ Can only be used with reversing starters.

⁷ Transformer kits are pre-engineered with fuses and fuse covers.

Drives



1-70...1-75

For more information on our complete family of IEC starter products, please visit:
<http://ab.rockwellautomation.com/Motor-Control/Low-Voltage-Starters>



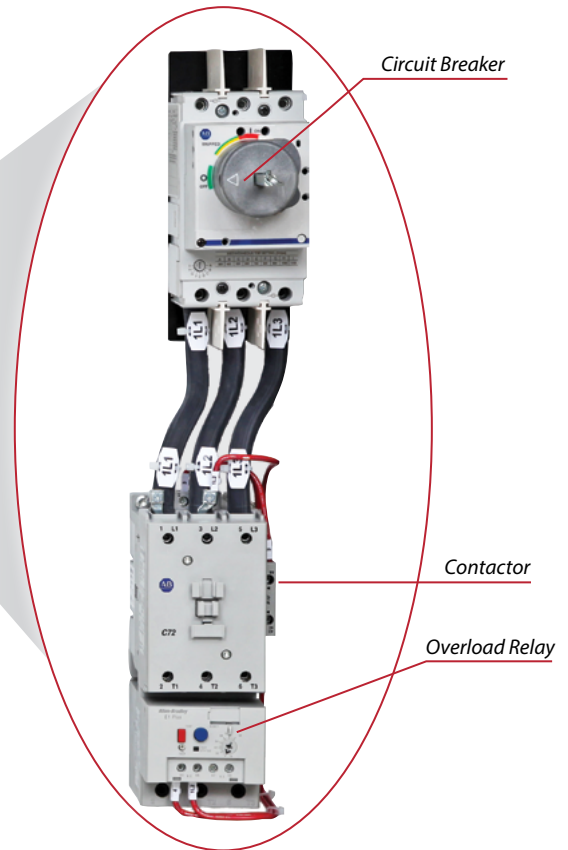
Starters



Combination Starters, IEC 112/113

- 112 with fusible and non-fusible disconnect switches
- 113 with circuit breakers
- Non-reversing and reversing
- IP42 (Type 1) and IP66 (Type 3/4/12) enclosures
- Padlockable handle for up to three padlocks

These full-voltage combination starters are designed to provide the disconnecting means, short-circuit protection (with suitable fuses), control and overload protection for three-phase squirrel-cage motors. All starters include a normally open auxiliary contact as standard.



Circuit Breaker

Contactor

Overload Relay

Enclosures

- IP42 (Type 1) general purpose sheet metal (hinged cover)
- IP66 (Type 3/4/12) watertight, dusttight sheet metal (hinged cover)

Starters

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69

Product Selection

IEC Combination Starters, Non-Reversing

Ratings (AC3, AC4)			IP42 (Type 1) General Purpose Sheet Metal Enclosure (Hinged Cover)			IP66 (Type 3/4/12) Watertight, Dusttight Sheet Metal Enclosure (Hinged Cover)		
Max. I_e	Hp		Fusible Disconnect Type ¹		Circuit Breaker Type	Fusible Disconnect Type ¹		Circuit Breaker Type
	3-Phase							
[A]	230V	460V	Fuse Clip Rating/ UL Class	Cat. No.	Cat. No.	Fuse Clip Rating/ UL Class	Cat. No.	Cat. No.
9	2	5	30 A/Class J	112-C09A⊗⊕	–	30 A/Class J	112-C09F⊗⊕	–
12	3	7.5	30 A/Class J	112-C12A⊗⊕	–	30 A/Class J	112-C12F⊗⊕	–
23	7.5	15	30 A/Class J	112-C23A⊗⊕	–	30 A/Class J	112-C23F⊗⊕	–
30	10	20	60 A/Class J	112-C30A⊗⊕	113-C30A⊗⊕-□	60 A/Class J	112-C30F⊗⊕	113-C30F⊗⊕-□
43	15	30	60 A/Class J	112-C43A⊗⊕	113-C43A⊗⊕-□	60 A/Class J	112-C43F⊗⊕	113-C43F⊗⊕-□
60	20	40	100 A/Class J	112-C60A⊗⊕	113-C60A⊗⊕-□	100 A/Class J	112-C60F⊗⊕	113-C60F⊗⊕-□
72	25	50	100 A/Class J	112-C72A⊗⊕	113-C72A⊗⊕-□	100 A/Class J	112-C72F⊗⊕	113-C72F⊗⊕-□

⊗ The catalog number as listed is incomplete. Select a coil voltage code, circuit breaker code, and overload relay code from the tables below.

¹ Non-fusible versions also available.

□ Circuit Breaker Code

Code	Max. Hp	Code	Max. Hp	Code	Max. Hp	Code	Max. Hp
33	0.5	39	5	43	20	50	100
35	1	40	7.5	44	25	51	125
36	1.5	41	10	45	30	52	150
38	3	42	15	48	60	54	200

⊕ Overload Relay Code

Full Load Current Range [A]	3-Phase Overload Relay Code
0.1...0.5	E1A
0.2...1.0	E1B
1.0...5.0	E1C
3.2...16	E1D
5.4...27	E1E
9.0...45	E1F
18...90	E1G

⊗ Coil Voltage Codes for AC and DC Control

AC Control		DC Control with Integrated Surge Suppression	
Code	Description	Code	Description
KJ	24V, 50/60 Hz	DJ	24V (60...97 A only)
D	110V, 50 Hz/120V, 60 Hz	EJ	24V, Electronic (9...55 A only)
KF	230V, 50/60 Hz	ED	110V, Electronic (9...55 A only)
KA	240V, 50/60 Hz		

Modifications

Description	Suffix Code
START-STOP push button	1
Hand-Off-Auto selector switch	3
Red pilot light	4R

Drives



1-70...1-75

For more information on our complete family of IEC starter products, please visit:
<http://ab.rockwellautomation.com/Motor-Control/Low-Voltage-Starters>



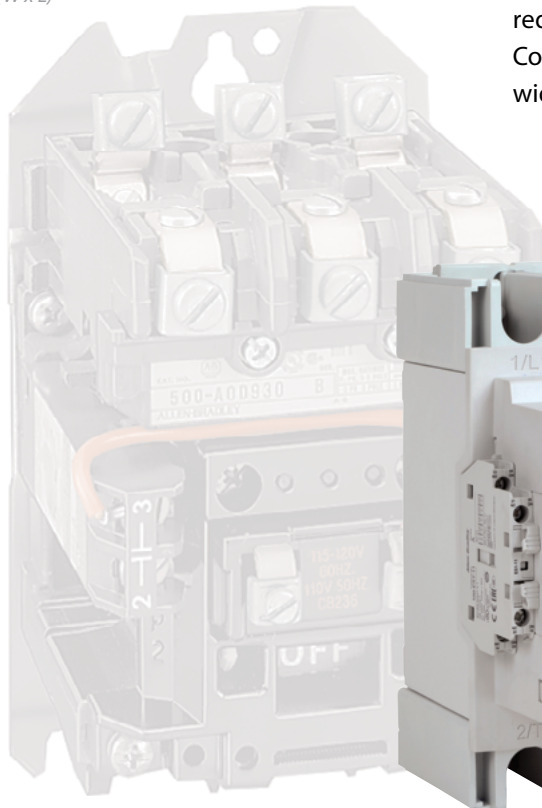
Starters



Space-Saving NEMA Full Voltage Starters 300

- NEMA sizes 0...8
- Energy-saving, universal coil design covers wide-range of AC and DC control voltages (sizes 4...8)
- Solid-state overload relay (direct mount through size 4)
- Panel or DIN rail mounts available
- Safety versions available (sizes 4...8)

Approximate size of traditional NEMA contactor 7 x 13.39 in., 178 x 340 mm (W x L)



The Allen-Bradley® Bulletin 300 NEMA Contactors and motor starters provide a space-saving and cost-effective alternative for applications requiring NEMA-rated motor control. Based on our Bulletin 100 IEC Contactor design these NEMA-rated products are compatible with a wide range of accessories as well as solid-state overload relays.

Compatible with full range of Bulletin 100C/E accessories for wide selection

Compact design saves panel space

Bulletin 300 Size 5
5.51 x 8.86 in., 140 x 225 mm (W x L)
actual size 30% smaller

Energy-saving, wide range AC/DC current coils (sizes 4...8)

Starters

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69

Product Selection

3-Pole AC/DC Operated Contactors and Starters

NEMA Size	Continuous Current Rating (A)	Switching of 3-phase Motors — AC-2, AC-3				Auxiliary Contacts Each Contactor		Bulletin 300 Direct On-line Contactor	Bulletin 305 Reversing Starter	Bulletin 309 Starter	Safety Contactor
		Hp (60 Hz)				N.O.	N.C.				
		200 V	230 V	460 V	575 V			Cat No.	Cat No.	Cat No.	
0	18	3	3	5	5	1	—	300-A0⊗930	305-A0⊗-⊕	309-A0⊗-⊕	•
1	27	7.5	7.5	10	10	1	—	300-B0⊗930	305-B0⊗-⊕	309-B0⊗-⊕	•
2	45	10	15	25	25	1	—	300-C0⊗930	305-C0⊗-⊕	309-C0⊗-⊕	•
3	90	25	30	50	50	1	1	300-D0⊗930	305-D0⊗-⊕	309-D0⊗-⊕	•
4	135	40	50	100	125	1	1	300-E0⊗9311 ¹	305-E0⊗-⊕	309-E0⊗-⊕	300S-E0⊗9312C ¹
5	270	75	100	200	250	1	1	300-F0⊗9311	—	—	300S-F0⊗9312C
6	540	150	200	400	500	1	1	300-G0⊗9311	—	—	300S-G0⊗9312C
7	810	250	300	600	700	1	1	300-H0⊗9311	—	—	300S-H0⊗9312C
8	1215	—	450	900	900	1	1	300-J0⊗9311	—	—	300S-J0⊗9312C

⊗ The catalog number as listed is incomplete. Select a control voltage code from the tables below.

⊕ The catalog number as listed is incomplete. Select an overload relay code from the table below.

Example: **Cat. No. 305-A0D-⊕** becomes **Cat. No. 305-A0D-EEC**.

¹ To order with built-in terminal lugs, add the letter "L" to the end of the catalog number (for example, **300-E0⊗9311-L**).

⊗ Coil Voltage Codes and Terminal Position (NEMA Sizes 0...3)

	[V]	24	110	120	220	240	277	440	480	550	600
NEMA Size 0...3	AC, 50 Hz	K ²	D	P ²	A	T ²	—	B	—	C	—
	AC, 60 Hz	J ²	—	D	—	A	T ²	—	B	—	C
	AC, 50/60 Hz	KJ	—	—	—	KA ²	—	—	—	—	—
NEMA Size 0...2	DC	EJ	—	—	—	—	—	—	—	—	—
NEMA Size 3	DC	DJ ²	—	—	—	—	—	—	—	—	—

⊗ Coil Voltage Codes and (NEMA sizes 4...8)

Electronic Coils with PLC Interface	[V]	24...60	48...130	100...250	250...500
NEMA Size 4...5	AC/DC	J	Y	D	B
NEMA Size 4...5	AC/DC with PLC Input	—	—	ED	EN
NEMA Size 6...7		EJ ³	EY	ED	EN
NEMA Size 8		—	—	ED	—

² Bulletin 300 contactors only

³ 24...60V DC only.

⊕ E1 Plus Overload Relay (Bulletin 305, 309, NEMA Sizes 0...4)

NEMA Size	Adjustment Range [A]	Overload Relay Code
0	1.0...5	EEC
0...1	5.4...27	EEE
2	9...45	EEF
3	18...90	EEG
4	30...150	A2M

Drives



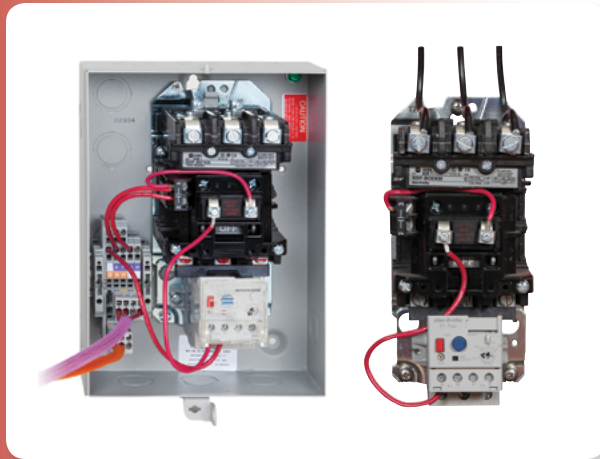
1-70...1-75

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<http://ab.rockwellautomation.com/Motor-Control/Low-Voltage-Starters>



Starters

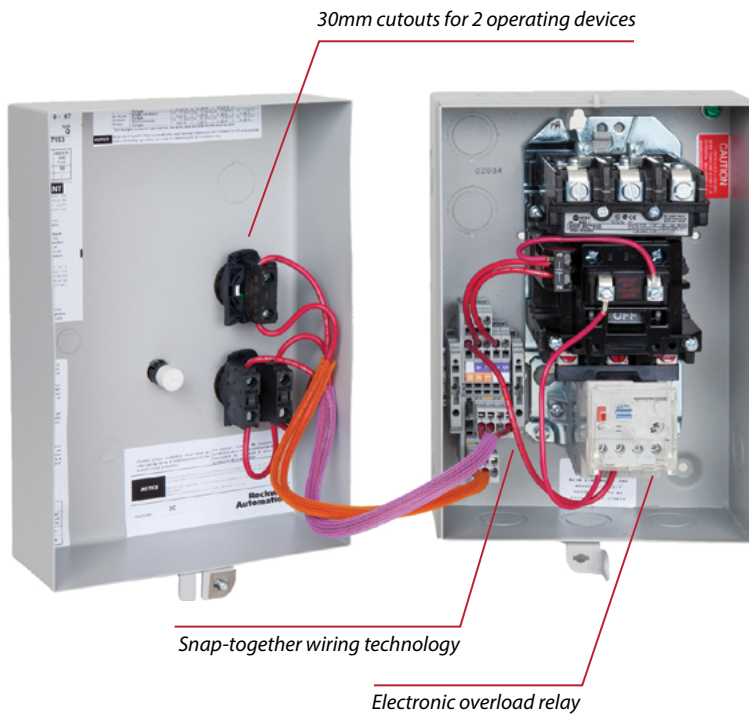
Power



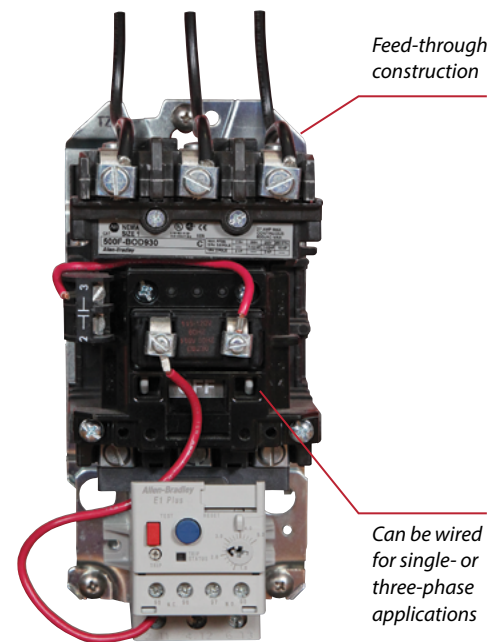
NEMA Full-Voltage Starters 509 Heavy Duty Industrial

- NEMA sizes 00...5
- Available as a modular kit for faster delivery
- Includes a 120V AC coil and (1) N.O. auxiliary contact as standard
- Solid-state overload relays: Class 10, 15, 20, and 30
- Snap-together wiring available on lift-off enclosures
- Enclosure rating: Type 1, 3R/12, 4/4X stainless steel, and 7 & 9

The 509 NEMA Starters are designed for full-voltage starting of polyphase squirrel-cage motors. These starters are available for constant horsepower, constant torque or variable torque, three-phase motors.



509 Enclosed Starter



509 Open Starter

Starters

1-50

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69

Product Selection

NEMA Reversing and Non-reversing Starters and Contactors¹

NEMA Size	Max. Hp Rating				Catalog Number				
	3-Phase				Type 1				
	200V	230V	460V	575V	Non-reversing	Reversing	Non-reversing space saving	Reversing space saving	Contactors ¹
00	1 1/2	1 1/2	2	2	509-TAD-XXX	505-TAD-XXX	–	–	500-TAD930
0	3	3	5	5	509-AAD-XXX	–	309-AAD-XXX	305-AAD-XXX	500-AAD930
1	7 1/2	7 1/2	10	10	509-BAD-XXX	–	309-BAD-XXX	305-BAD-XXX	500-BAD930
2	10	15	25	25	509-CAD-XXX	–	309-CAD-XXX	–	500-CAD930

¹ All starters and contactors come standard with a 120V AC coil.

NEMA Sizes 0...3 by Components

Base Contactor with 120V Coil

Open Type Without Enclosure		
NEMA Size	Continuous Ampere Rating [A]	Cat. No.
0	18	500F-AOD930
1	27	500F-BOD930
2	45	500F-COD930
3	90	500F-DOD930
4	132	500F-EOD930

Command and Indication Devices

Kit Description	Catalog Number
Push Button, Start-Stop	198-SSPB ²
Selector Switch, Plastic, HOA/FOR	198-3SS
Pilot Light, 24...120V AC/DC, Red LED	198-RUPL
Pilot Light, 24...120V AC/DC, Green LED	198-GUPL
208/120V AC transformer kit	1497-HD50 ³
240/120V AC transformer kit	1497-AD50 ³
480/120V AC transformer kit	1497-BD50 ³
600/120V AC transformer kit	1497-CD50 ³

² Can only be used with non-reversing starters and contactors.

³ Transformer kits are pre-engineered with fuses and fuse covers.

Coils

Description	NEMA Size			
	0...1	2	3	4
	Cat. No.	Cat. No.	Cat. No.	Cat. No.
24V DC	599-B24DC	599-C24DC	599-D24DC	–
110V 50 Hz, 120V 60 Hz	599-CB236	599-CC236	599-CD236	599-CE236
220V 50 Hz, 240V 60 Hz	599-CB254	599-CC254	599-CD254	599-CE254
440V 50 Hz, 480V 60 Hz	599-CB273	599-CC273	599-CD273	599-CE273

E1 Plus Solid-State Overload Relays, 3-Phase⁴

NEMA Size	Current Range [A]	Cat. No.
0, 1	1.0...5.0	592-EECC
0...2	5.4...27	592-EEEC
3	9...45	592-EEFD
3	18...90	592-EEGD
4	30...150	592-EEHE

⁴ For Eutectic Alloy Overload Relays, please visit our online product directory.

Drives



1-70...1-75

For more information on our complete family of IEC starter products, please visit:
<http://ab.rockwellautomation.com/Motor-Control/Low-Voltage-Starters>



Starters

Power

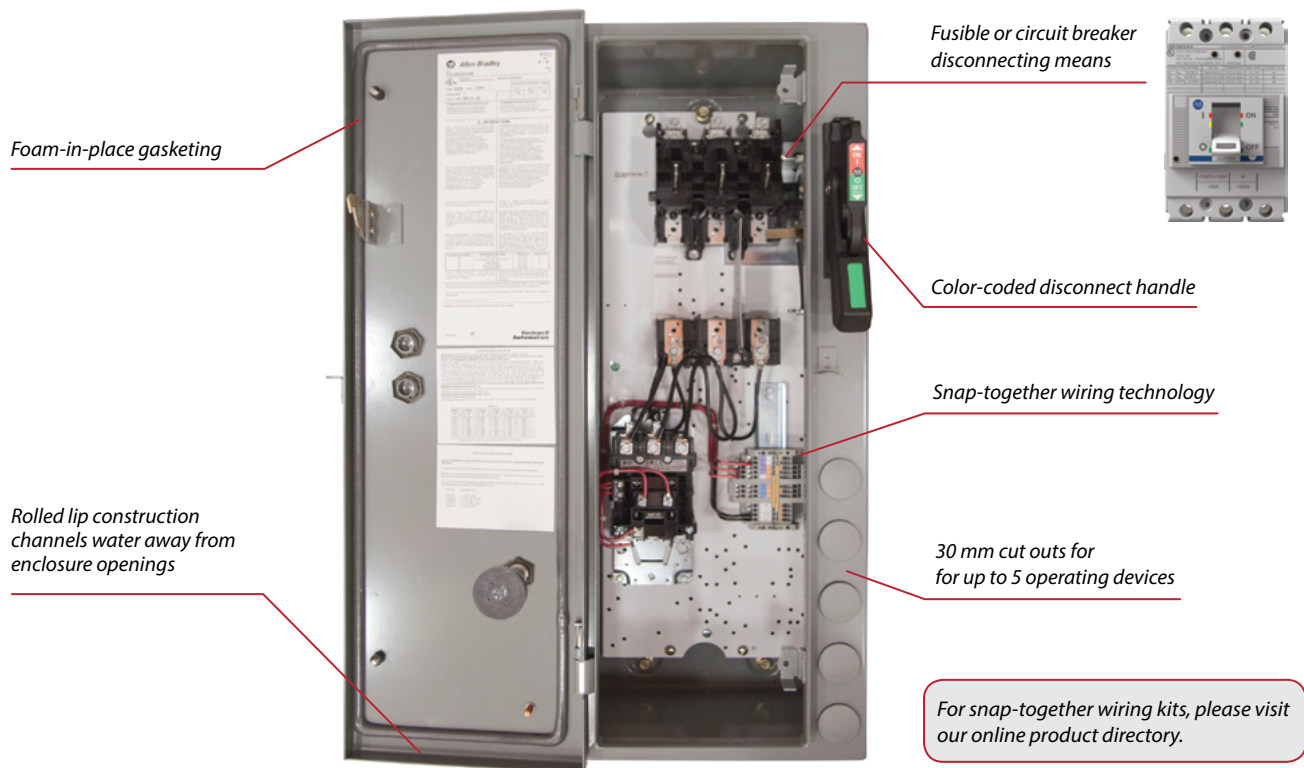


Combination Starters, NEMA 512/513

512 with fusible and non-fusible disconnect switches
513 with circuit breakers

- Starter sizes 0...7
- Patented snap-together wiring ¹
- Overload relays: eutectic supplied as standard, solid-state available as an option
- Reversing and non-reversing available
- NEMA Type 1, 4/12/3R, 4/4X, 3R/7-9
- UL listed and CSA certified

The robust NEMA combination starters, now with patented snap-together wiring, are versatile in designs and flexible in configurations, allowing various command and indication options, enclosure sizes and environmental type ratings.



¹ Snap-together wiring is not available for NEMA size 6 reversing starters and higher, or for NEMA Type 7/9.

Starters

1-52

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39



1-40...1-53

Motor Protection



1-54...1-59

Smart Motor Control



1-60...1-69

Product Selection

512 NEMA Non-Reversing Combination Starters

Size	Cont. Ampere Rating [A]	Max. Hp Rating ² Motor Voltage, 60 Hz		Fuse Clip Rating [A] ¹	Type 1 General Purpose	Type 3R/4/12 Rainproof, Waterproof, Dustproof
		230V	460...575V		Cat. No.	Cat. No.
1	27	7-1/2	10	30	512-BA⊗-⊕-24R	512-BF⊗-⊕-24R
2	45	15	25	60	512-CA⊗-⊕-25R	512-CF⊗-⊕-25R
3	90	30	50	100	512-DA⊗-⊕-26R	512-DF⊗-⊕-26R
4	135	50	100	200	512-EA⊗-⊕-27R	512-EF⊗-⊕-27R
		50	100	400	512-EA⊗-⊕-28J	512-EF⊗-⊕-28J
5	270	75	200	400	512-FA⊗-⊕-28R	512-FF⊗-⊕-28R
6	540	200	400	600 ³	–	512-GF⊗-⊕-29R

513 NEMA Non-Reversing Combination Starters

Size	Cont. Ampere Rating [A]	Max. Hp Rating ² Motor Voltage, 60 Hz			Type 1 General Purpose	Type 3R/4/12 Rainproof, Waterproof, Dustproof
		230V	460V	575V	Cat. No.	Cat. No.
1	27	1/2...1	0...1	0...1	513-BA⊗-⊕-35	513-BF⊗-⊕-35
		1-1/2...3	1-1/2...3	1-1/2...3	513-BA⊗-⊕-38	513-BF⊗-⊕-38
		5...7-1/2	5...7-1/2	5...7-1/2	513-BA⊗-⊕-40	513-BF⊗-⊕-40
2	45	10	–	–	513-CA⊗-⊕-41	513-CF⊗-⊕-41
		15	15	15	513-CA⊗-⊕-42	513-CF⊗-⊕-42
		–	20...25	20...25	513-CA⊗-⊕-44	513-CF⊗-⊕-44
3	90	30	–	30	513-DA⊗-⊕-45	513-DF⊗-⊕-45
		–	30...50	40...50	513-DA⊗-⊕-47	513-DF⊗-⊕-47
4	135	–	–	60	513-EA⊗-⊕-48	513-EF⊗-⊕-48
		–	60...75	–	513-EA⊗-⊕-49	513-EF⊗-⊕-49
		–	100	75...100	513-EA⊗-⊕-50	513-EF⊗-⊕-50
5	270	100	–	–	513-FA⊗-⊕-50	513-FF⊗-⊕-50
		–	–	125	513-FA⊗-⊕-51	513-FF⊗-⊕-51
		–	125...150	–	513-FA⊗-⊕-52	513-FF⊗-⊕-52
6	540	150	–	–	–	513-GF⊗-⊕-52T
		200	–	–	–	513-GF⊗-⊕-54T
		–	250	250	–	513-GF⊗-⊕-56T

⊗ ⊕ The catalog number as listed is incomplete. Select coil voltage and overload relay codes from the tables.

¹ Fuses not included. Select per NEC.

² Full load current must not exceed continuous ampere rating.

³ For 230V and 460V Hp ratings, limit the maximum fuse sizing to 125% of motor full load current.

⊗ AC Coil Voltage Codes

Common or Transformer Control

Code	Line Voltage
H	208V, 60Hz
A	240V, 60Hz
B	480V, 60Hz
C	600V, 60Hz

120V Separate Control (No Transformer)

Code	Description
HD	208V / 120V, 60Hz
AD	240V / 120V, 60Hz
BD	480V / 120V, 60Hz
CD	600V / 120V, 60Hz

⊕ Overload Relay Code

NEMA Size	FLC Adjustment Range [A]	Overload Relay Code
0, 1	0.2...1.0	A2C
	1.0...5.0	A2E
	3.2...16	A2F
	5.4...27	A2G
1	9...45	A2J
2	5.4...27	A2G
	9...45	A2J
3	9...45	A2J
	18...90	A2L
4	30...150	A2M
5	60...300	A2N
6	120...600	A2R

Drives



1-70...1-75

For more information on our complete family of IEC starter products, please visit:
<http://ab.rockwellautomation.com/Motor-Control/Low-Voltage-Starters>



Motor Protection

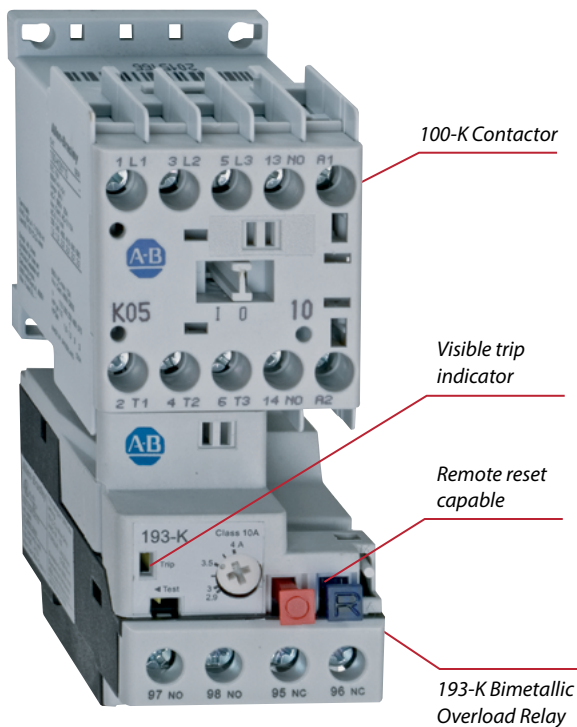


Bimetallic Overload Relays 193-K/193-T1

- Most basic motor protection device
- Overload protection trip class 10
- Phase loss sensitivity
- Rated for DC and variable frequency drives applications up to 400 Hz
- 1 N.O. and 1 N.C. auxiliary contacts

Bimetallic Thermal Overload Relays are motor protectors for IEC applications.

- 193-K bimetallic overload relays are for use with 100-K and 104-K miniature reversing contactors.
- 193-T1 bimetallic overload relays are for use with 100-C and 104-C Contactors.





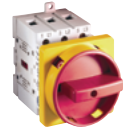




Applications

- Conveyors
- Fans
- Pumps
- VFD-controlled motors



Remote Reset Solenoid

For remote reset of 193-K and 193-T1 overload relays

Motor Protection						
<p>Circuit Breakers</p>  <p>1-2...1-15</p>	<p>Disconnect Switches</p>  <p>1-16...1-23</p>	<p>Control & Load Switches</p>  <p>1-24...1-27</p>	<p>Contactors</p>  <p>1-28...1-39</p>	<p>Starters</p>  <p>1-40...1-53</p>	<p>193-K/193-T1</p>  <p>1-54...1-59</p>	<p>Smart Motor Control</p>  <p>1-60...1-69</p>

Product Selection

Mounts to Contactor	Adjustment Range [A]	Cat. No.
100-C09...100-C23	0.90...1.3	193-T1AB13
	1.8...2.5	193-T1AB25
	2.9...4.0	193-T1AB40
	4.5...6.3	193-T1AB60
	5.5...7.5	193-T1AB75
	7.2...10	193-T1AC10
	9.0...12.5	193-T1AC12
	11.3...16	193-T1AC16
	21...25	193-T1AC25
100-C30...100-C37	15...20	193-T1BC20
	21...25	193-T1BC25
	29...36	193-T1BC36
	33...38	193-T1BC38
100-C43...100-C55	17...25	193-T1CC25
	35...47	193-T1CC47
	45...60	193-T1CC60
100-C60...100-C97	35...47	193-T1DC47
	45...60	193-T1DC60 ¹
	58...75	193-T1DC75 ¹
	72...90	193-T1DC90 ¹
	77...97	193-T1DC97 ¹

¹ Panel mount version available.

Mounts to Contactor	Adjustment Range [A]	Cat. No.
100-K05...K12	0.16...0.25	193-KA25
	0.25...0.40	193-KA40
	0.35...0.50	193-KA50
	0.45...0.63	193-KA63
	0.55...0.80	193-KA80
	0.75...1.0	193-KB10
	0.9...1.3	193-KB13
	1.1...1.6	193-KB16
	1.4...2.0	193-KB20
	1.8...2.5	193-KB25
	2.3...3.2	193-KB32
	2.9...4.0	193-KB40
	3.5...4.8	193-KB48
	4.5...6.3	193-KB63
	100-K09...K12	5.5...7.5
7.2...10.0		193-KC10
100-K12	9.0...12.5	193-KC12



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

Accessories

Description	For Use With	Cat. No.	
DIN Rail/Panel Mounting Adapter	193-T1AA, 193-T1AB, 193-T1AC, 193-T1BC	193-T1APM	
Screw Adapter	193-T1APM	140M-C-N45	
Remote Reset Solenoid	193-K, 193-T1	24V AC, 50/60 Hz	193-T1RKJ
		110/120V AC, 50/60 Hz	193-T1RD
		220/240V AC, 50/60 Hz	193-T1RKF
		24V DC	193-T1RZJ
		48V DC	193-T1RZY
		115V DC	193-T1RZD

Drives



1-70...1-75

For more information on our complete family of circuit protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Motor Protection

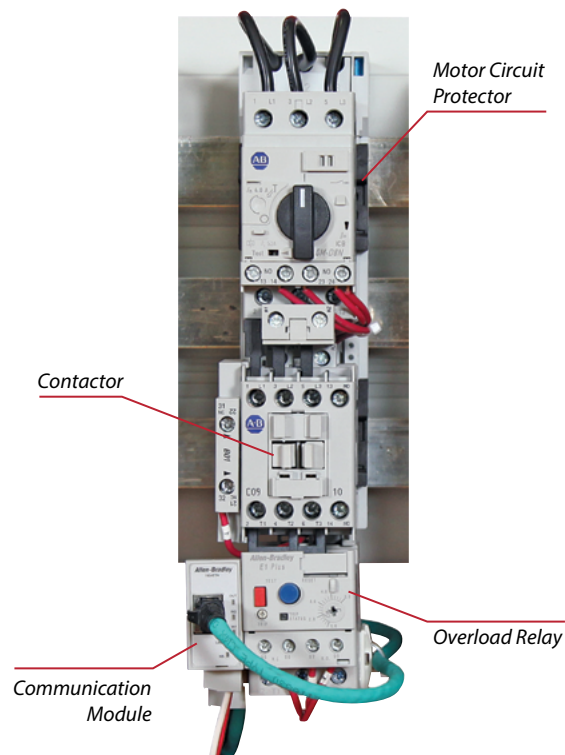
Power



Electronic Overload Relays E1 Plus

- Adjustable trip class, 10, 20 or 30
- Lower energy consumption compared to bimetallic overload relays
- Wide current adjustment
- Three- and single-phase protection
- Pass-thru style available

The solid-state design of the E1 Plus™ Electronic Overload Relay, offered in two models, provides ambient temperature compensation, thermal and phase loss protection and a wide 5:1 adjustment range. The ED model provides fixed protection while the EE model provides selectable trip class, manual/automatic reset and expandable protection with side mount modules.



Communication Modules ¹

- EtherNet/IP
- DeviceNet
- ProfiBus

Protection Modules ¹

- Ground fault
- Jam protection
- Ground fault/ jam protection
- PTC module

Reset Modules ¹

- Remote reset
- Remote indicator

¹ Side mount modules only available for EE model.



Motor Protection

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39

Starters



1-40...1-53



1-54...1-59

Smart Motor Control



1-60...1-69



Product Selection

193-EE IEC Overload Relays

Mounts to IEC Contactor	Adjustment Range [A]	Cat. No. ¹
100-C09...C23	1.0...5.0	193-EECB
	3.2...16	193-EEDB
	5.4...27	193-EEEB
100-C30...C55	3.2...16	193-EEDD
	5.4...27	193-EEED
	9...45	193-EEFD
100-C60...C97	11...55	193-EEQD
	9...45	193-EEFE
	18...90	193-EEGE
100-E116...E146	30...150	193-EEHJ
100-E190...E205	40...200	193-EEJJ
Pass-thru wiring, DIN Rail mount	1.0...5.0	193-EECP
	3.2...16	193-EEDP
	5.4...27	193-EEEP

¹ Selectable trip class 10, 15, 20 or 30. Selectable manual/automatic reset.

193-ED IEC Overload Relays

Mounts to IEC Contactor	Adjustment Range [A]	Cat. No. ²
100-C09...100-C23	1.0...5.0	193-ED1CB
	3.2...16	193-ED1DB
	5.4...27	193-ED1EB
100-C30...100-C43	5.4...27	193-ED1ED
	9...45	193-ED1FD
Integrated panel/DIN Rail mount and pass-thru wiring	1.0...5.0	193-ED1CP
	3.2...16	193-ED1DP
	5.4...27	193-ED1EP

² Manual reset, fixed trip class 10.

Ground Fault Sensors ³

Size	For use with	Cat. No.
20 mm (0.79 in.)	100-C09...100-C37 NEMA size 00...2	193-CBCT1
40 mm (1.57 in.)	100-C09...100-C97 NEMA size 00...3	193-CBCT2
63 mm (2.5 in.)	100-C09...100-C97, 100-D115...100-D180 NEMA size 00...4	193-CBCT3
82 mm (3.25 in.)	100-C09...100-C97, 100-D115...100-D420 NEMA size 00...5	193-CBCT4

³ Required when using either an E1 Plus Ground Fault Protection or Ground Fault/Jam Module.

Accessories

	Description	For Use With	Cat. No.
DIN Rail/panel adapter	For separate mounting – can be mounted to top-hat rail EN 50 022-35	193-EE_B	193-EPB
		193-EE_D	193-EPD
		193-EE_E	193-EPE
E1 Plus EtherNet/IP and protection module ⁴	Communicates motor diagnostic data via a network, includes additional I/O and provides enhanced motor protection options.	193-EE (all), 592-EE (all)	193-ETN
E1 Plus DeviceNet and protection module ⁴		193-EE (all), 592-EE (all)	193-EDN
Ground fault module ⁴	Provides adjustable 20 mA...5 A ground fault protection and an input to allow remote reset of a trip.	193-EE (all), 592-EE (all)	193-EGF
Ground fault/jam module ⁴	Description: Provides adjustable 20 mA...5 A ground fault and fixed jam protection and an input to allow remote reset of a trip.	193-EE (all), 592-EE (all)	193-EGJ
Remote reset solenoid	110/120V AC, 50/60 Hz	E1 Plus (Series C and later)	193-EMRD
	220/240V AC, 50/60 Hz		193-EMRA
	24V DC		193-EMRZ24

⁴ Only one module may be added.

Drives



1-70...1-75

For more information on our complete family of circuit protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Motor Protection

Power



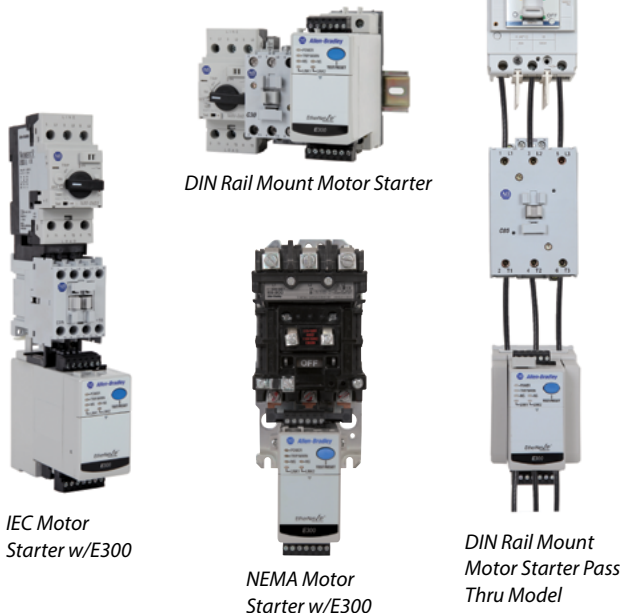
Electronic Overload Relay E300

- Modular design for application customization
- Sensing, control, and communication modules
- Diagnostic information to monitor motor performance
- Logix integration with add-on profiles, add-on instructions, and faceplates
- Dual port EtherNet/IP & DeviceNet communication
- Simplified wiring between E300™ Electronic Overload Relay and 100-C contactor

The E300 Electronic Overload Relay provides a flexible design and advanced intelligence. With real-time motor diagnostic information to proactively indicate when a motor is having a problem allowing you to efficiently troubleshoot.

Mounting Options

Multiple mounting options allow you to install the E300 Electronic Overload Relay into your existing system.



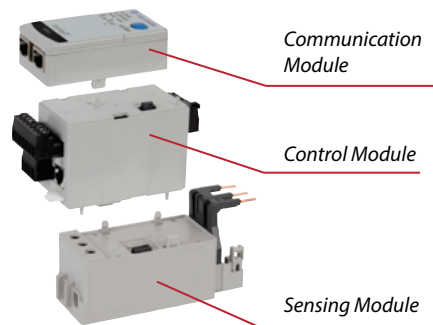
IEC Motor Starter w/E300

DIN Rail Mount Motor Starter

NEMA Motor Starter w/E300

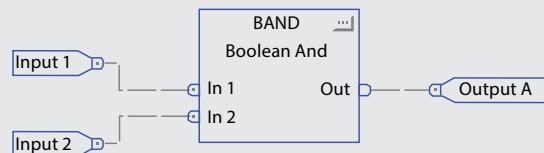
DIN Rail Mount Motor Starter Pass Thru Model

Modular Design



DeviceLogix

- Faster local I/O processing
- Helps improve control system performance
- Increase system reliability
- Increase system/machine modularity



Motor Protection

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39

Starters



1-40...1-53



1-54...1-59

Smart Motor Control



1-60...1-69



Product Selection

Sensing Modules

Mounting Options	Current Range [A]	For Use With	Cat. No.
IEC Contactors	0.5...30	100-C09...C23	193-ESM-⊗-30A-C23
		100-C30...C55	193-ESM-⊗-30A-C55
	6...60	100-C30...C55	193-ESM-⊗-60A-C55
		100-C60...100-C97	193-ESM-⊗-100A-C97
	20...200	100-E116...100-E146	193-ESM-⊗-200A-E146
		100-E190...100-E205	193-ESM-⊗-200A-E205
DIN Rail / Panel Mount Power Terminals	0.5...30	All contactors and external current transformers	193-ESM-⊗-30A-T
	6...60	All contactors	193-ESM-⊗-60A-T
	10...100		193-ESM-⊗-100A-T
DIN Rail / Panel Mount Power Terminals. Directly replaces 193-ECPM_	0.5...30	All contactors and external current transformers	193-ESM-⊗-30A-E3T
	6...60	All contactors	193-ESM-⊗-60A-E3T
	10...100		193-ESM-⊗-100A-E3T
DIN Rail / Panel Mount Pass-thru	0.5...30	All contactors and external current transformers	193-ESM-⊗-30A-P
	6...60	All contactors	193-ESM-⊗-60A-P
	10...100		193-ESM-⊗-100A-P
NEMA Contactors	0.5...30	NEMA Size 0...2	592-ESM-⊗-30A-S2
	6...60		592-ESM-⊗-60A-S2
	10...100	NEMA Size 3	592-ESM-⊗-100A-S3

⊗ The catalog number as listed is incomplete. Use an **I** (Current), **IG** (Current/Ground Fault) or **VIG** (Voltage/Current/Ground Fault) to complete the catalog number.

Control Modules

Description	No. of Inputs/Outputs	Rated Control Voltage [V]	Cat. No.
I/O Module	6 in/3 out	24V DC	193-EIO-63-24D
	2 in/2 out		193-EIO-22-24D
	4 in/3 out	110...120V AC, 50/60 Hz	193-EIO-43-120
	2 in/2 out		193-EIO-22-120
	4 in/3 out	220...240V AC, 50/60 Hz	193-EIO-43-240
	2 in/2 out		193-EIO-22-240
I/O and Protection Module. Thermistor (PTC) and External Ground Fault Current ¹	4 in/2 out	24V DC	193-EIOGP-42-24D
	2 in/2 out	110...120V AC, 50/60 Hz	193-EIOGP-22-120
	2 in/2 out	220...240V AC, 50/60 Hz	193-EIOGP-22-240

¹ Requires core balanced ground fault sensor, refer to chart on 1-57.

Communication Modules

Description	Cat. No.
EtherNet/IP	193-ECM-ETR
DeviceNet	193-ECM-DNT

Expansion Modules

Description	No. of Inputs/Outputs	Rated Control Voltage [V]	Cat. No.
Digital Expansion Module, 24V DC	4 in/2 out	24V DC	193-EXP-DIO-42-24D
Digital Expansion Module, 120V AC	4 in/2 out	110...120V AC, 50/60 Hz	193-EXP-DIO-42-120
Digital Expansion Module, 240V AC	4 in/2 out	220...240V AC, 50/60 Hz	193-EXP-DIO-42-240
Analog Expansion Module: mA, V, RTD, and Resistance	3 universal in/1 out	—	193-EXP-AIO-31 ²
Expansion Power Supply	—	24V DC	193-EXP-PS-DC
		110...240V AC, 50/60 Hz	193-EXP-PS-AC
Starter Control Station with 3-Meter Cable	—	—	193-EOS-SCS
Starter Diagnostic Station with 3-Meter Cable	—	—	193-EOS-SDS ²

² Module requires control module firmware v3.000 or higher.

Drives



1-70...1-75

For more information on our complete family of circuit protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>



Smart Motor Control

Power



Solid-State Contactors 156-C

- Ideal for high duty cycle applications
- Operational current rating 20...85 A
- 1, 2, or 3-phase capable
- AC and DC control options
- Zero cross switching to help reduce EMC emissions

The next generation 156-C solid-state contactors from Allen-Bradley are flexible in configuration and design, these devices can be panel or DIN Rail mounted complete with the integrated heatsink and do not require additional components or assembly. Microprocessor and PLC compatible, the solid-state contactors can be used in applications that range from heaters to small motors and valves.

Panel or DIN Rail mounting
for flexible installation

Compact modular design
with heatsink

Optimized to help reduce electrical costs and needs

- Low electrical and acoustical noise
- Low input power
- Operational current up to 85 A (AC-1), 65 A (AC-3)
- Line voltage ratings up to 600V
- UL/cUL as a motor controller
- IEC AC51/AC53 resistive/inductive rated



LED Status Indicators

2 or 3 phase capable in 3 pole configuration
(1 pole option available)

Smart Motor Control

1-60

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39

Starters



1-40...1-53

Motor Protection



1-54...1-59



1-60...1-69

Product Selection

Single-Phase Power Contactors

Current Rating [A]	Control Voltage	Rated Power @ 40 °C (104 °F)					Operational voltage < 240 V AC	Operational Voltage < 600 V AC	
			115V	230V	400V	480V			600V
20	20 - 275 V AC 24 - 190 V DC	Hp	1/3	1	2	3	3	156-C1P20NAB	156-C1P20NCB
	5 to 32 volts DC	kW	0.18	0.37	0.75	1.1	1.5	156-C1P20NAD	156-C1P20NCD
25	20 - 275 V AC 24 - 190 V DC	Hp	1/3	1	2	3	3	156-C1P25NAB	156-C1P25NCB
	5 to 32 volts DC	kW	0.18	0.37	0.75	1.1	1.5	156-C1P25NAD	156-C1P25NCD
43	20 - 275 V AC 24 - 190 V DC	Hp	1-1/2	3	5	7-1/2	10	-	156-C1P43NCB
	5 to 32 volts DC	kW	0.6	1.5	2.2	3.7	4.0	-	156-C1P43NCD
65	20 - 275 V AC 24 - 190 V DC	Hp	2	5	7-1/2	10	15	-	156-C1P65NCB
	5 to 32 volts DC	kW	0.75	1.5	4.0	4.0	5.5	-	156-C1P65NCD
85	20 - 275 V AC 24 - 190 V DC	Hp	2	5	7-1/2	10	15	-	156-C1P85NCB
	5 to 32 volts DC	kW	0.75	1.5	4.0	4.0	5.5	-	156-C1P85NCD

Dual-Phase Power Contactors

Current Rating [A]	Control Voltage	Rated Power @ 40 °C (104 °F)					Operational voltage < 240 V AC	Operational Voltage < 600 V AC	
			115V	230V	400V	480V			600V
25	20 - 275 V AC 24 - 190 V DC	Hp	1-1/2	3	5	7-1/2	10	-	156-C2P25NCB
	5 to 32 volts DC	kW	1.1	3.0	5.5	5.5	9.0	-	156-C2P25NCD
40	20 - 275 V AC 24 - 190 V DC	Hp	3	5	10	10	15	-	156-C2P40NCB
	5 to 32 volts DC	kW	1.5	4.0	7.5	9.0	11.0	-	156-C2P40NCD
75	20 - 275 V AC 24 - 190 V DC	Hp	5	10	15	20	25	-	156-C2P75NCBA
	5 to 32 volts DC	kW	3.0	7.5	11.0	15.0	22.0	-	156-C2P75NCDA

Three-Phase Power Contactors

Current Rating [A]	Control Voltage	Rated Power @ 40 °C (104 °F)					Operational voltage < 240 V AC	Operational Voltage < 600 V AC	
			115V	230V	400V	480V			600V
20	20 - 275 V AC 24 - 190 V DC	Hp	1	3	5	7-1/2	10	156-C3P20NAB	156-C3P20NCB
	5 to 32 volts DC	kW	0.8	2.2	4.0	5.5	7.5	156-C3P20NAD	156-C3P20NCD
25	20 - 275 V AC 24 - 190 V DC	Hp	2	3	7-1/2	10	10	-	156-C3P25NCB
	5 to 32 volts DC	kW	1.1	2.2	4.0	5.5	7.5	-	156-C3P25NCD
30	20 - 275 V AC 24 - 190 V DC	Hp	2	5	10	10	15	-	156-C3P30NCB
	5 to 32 volts DC	kW	1.5	3.0	5.5	7.5	11.0	-	156-C3P30NCD
40	20 - 275 V AC 24 - 190 V DC	Hp	2	5	10	10	15	-	156-C3P40NCBA
	5 to 32 volts DC	kW	1.4	4.0	7.5	9.0	11.0	-	156-C3P40NCDD
65	20 - 275 V AC 24 - 190 V DC	Hp	3	10	15	20	25	-	156-C3P65NCBA
	5 to 32 volts DC	kW	3.0	5.5	11.0	15.0	20.0	-	156-C3P65NCDA

Drives



1-70...1-75

For more information on our complete family of solid-state contactors, please visit:
<http://ab.rockwellautomation.com/Motor-Control/Contactors>



Smart Motor Control

Power



Starting Torque Controllers 154

- Ideal for reducing electrical and mechanical system shock
- Operational current rating 12...25 A
- 1 or 3-phase capable with 1 or 2 controlling phases
- AC and DC control options
- Adjustable torque setting and ramp time duration

The Allen-Bradley® Starting Torque Controller (STC) is designed for low horsepower single and three-phase squirrel cage induction motors. It is designed to help reduce system shock (electrical and mechanical) typically seen when directly starting on line voltage. This provides a smoother start and helps decrease downtime due to shock and vibration related problems. Typical applications include fans, material handling, pumps, palletizers, car washes and reduced voltage start single-phase applications.

Compact modular design with heat sink

Panel or DIN Rail mounting for flexible installation

Optimized to help reduce downtime due to shock and vibration problems

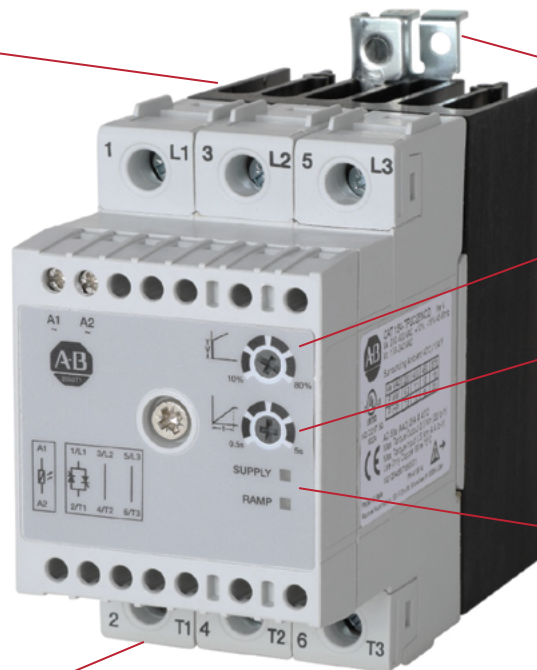
- 10%...80% initial torque value
- 0.5...5 secs ramp time
- Operational current up to 25A
- Line voltage ratings up to 600V
- UL/cUL as a motor controller
- IEC AC53 inductive ratings

Initial torque adjustment dial

Duration ramp adjustment dial

LED status indicators

1 or 3-phase capable



Smart Motor Control

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39

Starters



1-40...1-53

Motor Protection



1-54...1-59



1-60...1-69

Product Selection

Single-Phase with Single Control Phase Starting Torque Controllers

Current Rating [A]	Rated Power @ 40 °C (104 °F)			Control Voltage	
		115V	230V	24V AC/DC	100...240VAC
12	Hp	0.5	2	154-SP1C12NAR	154-SP1C12NAD
	kW	0.55	1.1		
16	Hp	0.5	2	154-SP1C16NAR	154-SP1C16NAD
	kW	0.75	1.5		
25	Hp	1	3	154-SP1C25NAR	154-SP1C25NAD
	kW	1.5	3		

Three-Phase with Single Control Phase Starting Torque Controllers

Current Rating [A]	Rated Power @ 40 °C (104 °F)				Control Voltage		
		220V	400V	460V	575V	24V AC/DC	100...240VAC
12	Hp	3	5	7.5	10	154-TP1C12NCR	154-TP1C12NCD
	kW	3	5.5	6.3	6.3		
16	Hp	5	7.5	10	10	154-TP1C16NCR	154-TP1C16NCD
	kW	4	7.5	7.5	7.5		
25	Hp	7.5	10	15	20	154-TP1C25NCR	154-TP1C25NCD
	kW	6.3	11	13	15		

Three-Phase with Two Control Phases Starting Torque Controllers

Current Rating [A]	Rated Power @ 40 °C (104 °F)				Control Voltage		
		220V	400V	460V	575V	24V AC/DC	100...240VAC
12	Hp	3	5	7.5	10	154-TP2C12NCR	154-TP2C12NCD
	kW	3	5.5	6.3	6.3		
16	Hp	5	7.5	10	10	154-TP2C16NCR	154-TP2C16NCD
	kW	4	7.5	7.5	7.5		
25	Hp	7.5	10	15	20	154-TP2C25NCR	154-TP2C25NCD
	kW	6.3	11	13	15		

Drives



1-70...1-75

For more information on our complete family of solid-state contactors, please visit:
<http://ab.rockwellautomation.com/Motor-Control/Contactors>



Smart Motor Control

Power



Smart Motor Controller 150 SMC™-3

- Solid-state soft-start motor controller with internal bypass
- Current ratings of 1...480 A
- Compact footprint
- Five Start/Stop modes
- Built-in machine overload protection
- 3-phase monitoring

Internal Bypass
The bypass automatically closes when the motor reaches its nominal speed, minimizing heat generation.

- Reduced enclosure size
- Reduced total cost

Easy and Secure Setup
DIP switches allow setting of the START/STOP profile, built-in overload, connection type, trip class, and auxiliary contact characteristics.

- Process optimization
- Setup efficiency

Hold to Test/ Push to Reset Button
Used to simulate fault conditions or reset the unit.

- Reduces downtime
- Assists during setup

Ultra-Compact Size
1...37 A units are only 45 mm wide.

- Reduced panel space
- Higher-density installations

Simplified Motor FLA Setup
Rotary switch allows quick and easy setup of motor FLA.

- Setup efficiency
- Protects motor assets


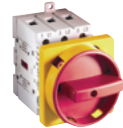

LED Display
Status information provided including RUN, Fault type and OFF.

- Instant status display
- Assists during troubleshooting

45 mm

Smart Motor Control

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<p>Circuit Breakers</p>  <p>1-2...1-15</p>	<p>Disconnect Switches</p>  <p>1-16...1-23</p>	<p>Control & Load Switches</p>  <p>1-24...1-27</p>	<p>Contactors</p>  <p>1-28...1-39</p>	<p>Starters</p>  <p>1-40...1-53</p>	<p>Motor Protection</p>  <p>1-54...1-59</p>	<p>Smart Motor Control</p>  <p>1-60...1-69</p>
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Product Selection

Line-Connected Controllers

Rated Voltage [V AC]	Current Rating [A]	Starting Duty		Open Type		IP65 (Type 4/12) Enclosed Non-Combination Controllers
		kW	Hp, 60 Hz	100...240V AC 50/60 Hz Control	24V AC/DC Control	
		350%	350%	Cat. No.	Cat. No.	
380/400/ 415/460	1...3	1.1	0.5...1.5	150-C3NBD	150-C3NBR	150-C3FBD
	3...9	4	1.5...5	150-C9NBD	150-C9NBR	150-C9FBD
	5.3...16	7.5	5...10	150-C16NBD	150-C16NBR	150-C16FBD
	6.3...19	7.5	5...10	150-C19NBD	150-C19NBR	150-C19FBD
	9.2...25	11	7.5...15	150-C25NBD	150-C25NBR	150-C25FBD
	10...30	15	7.5...20	150-C30NBD	150-C30NBR	150-C30FBD
	12.3...37	18.5	10...25	150-C37NBD	150-C37NBR	150-C37FBD
	14.3...43	22	10...30	150-C43NBD	150-C43NBR	150-C43FBD
	20...60	30	15...40	150-C60NBD	150-C60NBR	150-C60FBD
	28.3...85	45	25...60	150-C85NBD	150-C85NBR	150-C85FBD
	27...108	55	50...75	150-C108NBD	150-C108NBR ¹	150-C108FBD
	34...135	75	60...100	150-C135NBD	150-C135NBR ¹	150-C135FBD
	67...201	95...110	75...150	150-C201NBD	150-C201NBR ¹	150-C201FBD
	84...251	95...132	100...200	150-C251NBD	150-C251NBR ¹	150-C251FBD
	106...317	95...160	125...250	150-C317NBD	150-C317NBR ¹	150-C317FBD
120...361	110...200	250...300	150-C361NBD	150-C361NBR ¹	150-C361FBD	
160...480	160...250	300...400	150-C480NBD	150-C480NBR ¹	150-C480FBD	

¹ Separate 120V or 240V is required for operation.

Accessories

Protective Modules

Description	For Use With	Cat. No.
480V Protective Module	150-C3...37NB	150-C84
	150-C43...85NB (line and/or load)	150-C84P
	150-C108...480NB (line and/or load)	150-F84L

Replacement Fan

Description	For Use With	Cat. No.
Field installable replacement fan	150-C3...37	150-CF64
	150-C43...85	150-CF147
	150-C108, 150-C135	41391-801-03
	150-C201, 150-C251	41391-801-01
	150-C317...C480	41391-801-02

Terminal Lug Kits (108...480 A)

Current Rating [A] ²	Wire Size	Total No. of Line Controller Terminal Lugs		Pkg. Qty.	Cat. No.	Terminal Covers
		Per Line Side	Per Load Side			Cat. No.
108...135 ³	#6...250 MCM AWG	3	3	3	199-LF1	150-TC1
201...251 ³	16...120 mm ²	6	6			150-TC2
317...480 ³	#4...500 MCM AWG 25...240 mm ²	6	6			199-LG1

² 5...85 A units have box lugs standard. No additional lugs are required.

³ When a multi-conductor lug is required, refer to the Instruction Sheet for appropriate lug catalog number.

Auxiliary Contact Blocks

Description	N.O.	N.C.	Connection Diagram	Cat. No.
Side mount with sequence terminal designations • 1- and 2-pole • Quick and easy mounting without tools • One block per device only	1	0		150-CA10
	2	0		150-CA20
	0	1		150-CA01
	1	1		150-CA11 (Form C)

Drives



1-70...1-75

For more information on our complete family of soft starter products, please visit:
<http://ab.rockwellautomation.com/Motor-Control/LV-Soft-Starters>



Smart Motor Control

Power



Smart Motor Controller 150 SMC™ Flex

- Solid-state soft-start motor controller with internal bypass
- Current ratings of 1...1250 A
- Modular for installation and maintenance
- Built-in LCD and keypad
- Nine Start/Stop modes & up to three slow-speed modes
- Full metering and diagnostics

Integral Bypass
The bypass automatically closes when the motor reaches its nominal speed, minimizing heat generation.

- Reduced enclosure size
- Reduced total cost

Feed-through Wiring

Power Pole

Advanced Monitoring and Diagnostics
Built-in current and voltage protection provide enhanced power monitoring and diagnostic capabilities.

- No additional monitoring equipment required
- PTC input
- Ground fault detection

Communications
Optional communication modules allow the SMC-Flex to be connected to multiple networks.

- Common DPI modules reduce inventory
- EtherNet/IP, DeviceNet, ControlNet and other networks available

Simplified Application Setup
Built-in multilingual, backlit LCD display for programming and monitoring.

- Setup efficiency
- Process optimization

Smart Motor Control

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Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39

Starters



1-40...1-53

Motor Protection



1-54...1-59



1-60...1-69

Product Selection

Line-Connected Controllers

Rated Voltage [V AC]	Motor Current [A]	kW	Hp, 60 Hz	Open Type		IP65 (Type 4/12) Enclosed Non-Combination Controllers ^{3,4}
				100...240V AC 50/60 Hz Control ¹	24V AC/DC Control ²	
				Cat. No.	Cat. No.	
400/415/460	1...5	2.2	3	150-F5NBD	150-F5NBR	150-F5FBD
	5...25	11	15	150-F25NBD	150-F25NBR	150-F25FBD
	8.6...43	22	30	150-F43NBD	150-F43NBR	150-F43FBD
	12...60	30	40	150-F60NBD	150-F60NBR	150-F60FBD
	17...85	45	60	150-F85NBD	150-F85NBR	150-F85FBD
	27...108	55	75	150-F108NBD	150-F108NBR	150F-D10JCD
	34...135	75	100	150-F135NBD	150-F135NBR	150F-D13JCD
	67...201	110	150	150-F201NBD	150-F201NBR	150F-D20JCD
	84...251	132	200	150-F251NBD	150-F251NBR	150F-D25JCD
	106...317	160	250	150-F317NBD	150-F317NBR	150F-D31JCD
	120...361	200	300	150-F361NBD	150-F361NBR	150F-D36JCD
	160...480	250	400	150-F480NBD	150-F480NBR	150F-D48JCD
	208...625	355	500	150-F625NBE	–	150F-D62JCD
	260...780	450	600	150-F780NBE	–	150F-D78JCD
323...970	560	800	150-F970NBE	–	–	
416...1250	710	1000	150-F1250NBE	–	–	

¹ 625...1250 A devices listed are only available for 110/120V control. For 230/240V control, change the **E** in the catalog number to an **A**.
Example: Catalog number 150-F625NBE becomes 150-F625NBA.

² Separate 120V or 240V single-phase power supply is required for fan operation.

³ Line and load termination are provided as standard.

⁴ These controllers require a separate 100...240V, 50/60 Hz single-phase control source. To add a control circuit transformer to the enclosure, add the appropriate option code to the catalog number.

Accessories

Terminal Lug Kits (108...1250 A)

Current Rating [A] ⁵	Wire Size	Total No. of Line Controller Terminal Lugs		Cat. No.	Terminal Covers
		Per Line Side	Per Load Side		Cat. No.
108...135 ⁶	#6...250 MCM AWG	3	3	199-LF1	150-TC1
201...251 ⁶	16...120 mm ²	6	6		150-TC2
317...480 ⁶	#4...500 MCM AWG 25...240 mm ²	6	6	199-LG1	150-TC3
625...780	2/0...500 MCM AWG	6	6	100-DL630	
970	4/0...500 MCM AWG	3	3	100-DL860	
1250 ⁷	2/0...500 MCM AWG	3	3	100-DL630	
	4/0...500 MCM AWG	3	3	100-DL860	

⁵ 5...85 A units have box lugs standard. No additional lugs are required.

⁶ When a multi-conductor lug is required, see the SMC-Flex user manual for recommended lugs.

⁷ The 1250 A device requires (1) catalog number 100-DL630 and (1) catalog number 100-DL860 per connection.

Protective Modules

Current Rating [A]	Description	Cat. No.
5...85	480V Protective Module	150-F84
108...1250		150-F84L
5...85	600V Protective Module	150-F86
108...1250		150-F86L
5...480 ⁸	Core Balance Current Transformer	825-CBCT

⁸ For the 625...1250 A devices, please see user manual.

Communication Modules

Network	Cat. No.
EtherNet/IP	20-COMM-ER
DeviceNet	20-COMM-D
ControlNet (Coax)	20-COMM-C
PROFIBUS DP	20-COMM-P

Drives



1-70...1-75

For more information on our complete family of soft starter products, please visit:
<http://ab.rockwellautomation.com/Motor-Control/LV-Soft-Starters>



Smart Motor Control

Power



Smart Motor Controller 150 SMC™-50

- Internal Bypass Power Structure
 - Ideal for standard applications
 - Current ratings of 108...480 A
- Solid-State Power Structure
 - Ideal for harsh environments
 - Ideal for more aggressive duty-cycle applications
 - Current ratings of 90...520 A
 - Normal and heavy-duty ratings
- 17 Start/stop modes and 3 slow-speed modes
- Switch, LCD or PC setup

The scalable design of the SMC-50 satisfies a wide variety of control needs. Advanced monitoring, superior communications capabilities and Energy Saver mode help increase efficiency and reduce downtime. The Internal Bypass power structure automatically closes when the motor reaches its nominal speed, minimizing heat generation. It offers reduced enclosure size and cost. The Solid-State power structure offers higher operations per hour, scalable thermal ratings and higher SCCR ratings.



Simplified, Scalable Application Setup	<i>Optional parameter configuration module, human interface module, or PC-based software for programming and monitoring simplifies setup.</i>	<ul style="list-style-type: none"> • Setup efficiency • Process optimization 	✓	✓
Hardware Expansion Ports	<i>Three hardware expansion ports accept optional digital and analog I/O expansion modules as well as a protection module (PTC, Ground Fault, Current Feedback).</i>	<ul style="list-style-type: none"> • Process scalability and optimization • Application flexibility (simple to complex) 	✓	✓
Common Control Module	<i>All features/functions are included in standard control module including linear acceleration/deceleration, torque control, pump control, Smart Motor Braking (SMB), and Energy Saver mode.</i>	<ul style="list-style-type: none"> • Reduced inventory • Increased efficiency 	✓	✓
Hold to Test/Push to Reset Button	<i>Used to quickly test for fault conditions or reset the unit.</i>	<ul style="list-style-type: none"> • Reduces downtime • Assist during setup 	✓	✓
LED Display	<i>Multi-colored LED provides both diagnostics and controller status information.</i>	<ul style="list-style-type: none"> • Instant status display • Assists during troubleshooting 	✓	✓
Communications	<i>Optional communication modules allow the SMC-50 to be connected to multiple networks.</i>	<ul style="list-style-type: none"> • Common DPI modules reduce inventory • EtherNet/IP, DeviceNet, ControlNet and other networks available 	✓	✓

SMC-50 Virtual Demonstration

For more information please visit: www.marketing.rockwellautomation.com/smc50/

Smart Motor Control

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



1-28...1-39

Starters



1-40...1-53

Motor Protection



1-54...1-59



1-60...1-69



Product Selection Line-Connected Controllers

Rated Voltage [V AC]	Motor Current [A]	kW	Hp, 60 Hz	Open Type		IP65 (Type 4/12) Enclosed Non-Combination Controllers Cat. No. ^{1,2}
				100...240V AC, 50/60 Hz	24V DC	
				Cat. No.	Cat. No.	
Internal Bypass						
400/415 (kW) 460 (Hp)	27...108	55	75	150-S108NBD	150-S108NBR	150S-D10JDC
	34...135	75	100	150-S135NBD	150-S135NBR	150S-D13JDC
	67...201	110	150	150-S201NBD	150-S201NBR	150S-D20JDC
	84...251	132	200	150-S251NBD	150-S251NBR	150S-D25JDC
	106...317	160	250	150-S317NBD	150-S317NBR	150S-D31JDC
	120...361	200	300	150-S361NBD	150-S361NBR	150S-D36JDC
160...480	250	400	150-S480NBD	150-S480NBR	150S-D48JDC	
Solid-State						
400/415 (kW) 460 (Hp)	30...90	17	25...60	150-SB1NBD	150-S1NBR	150S-C90JCD-3B-BP ³
	37...110	20	30...75	150-SB2NBD	150-SB2NBR	150S-D11JCD-3B-BP ³
	47...140	30	40...100	150-SB3NBD	150-SB3NBR	150S-D14JCD-3B-BP ³
	60...180	37	50...150	150-SB4NBD	150-SB4NBR	150S-D18JCD-3B-BP ³
	70...210	40	60...150	150-SC1NBD	150-SC1NBR	150S-D21JCD-3B-BP ³
	87...260	50	75...200	150-SC2NBD	150-SC2NBR	150S-D26JCD-3B-BP ³
	107...320	63	100...250	150-SC3NBD	150-SC3NBR	150S-D32JCD-3B-BP ³
	120...361	75	100...300	150-SD1NBD	150-SD1NBR	150S-D36JCD-3B-BP ³
	140...420	80	125...300	150-SD2NBD	150-SD2NBR	150S-D42JCD-3B-BP ³
	174...520	100	150...450	150-SD3NBD	150-SD3NBR	150S-D52JCD-3B-BP ³

¹ Line and load termination are provided as standard.
² These controllers require a separate 100...240V, 50/60 Hz single-phase control source. To add a control circuit transformer to the enclosure, add the appropriate option code to the catalog number.
³ Requires a bypass contactor. Add **-BP** or **-NB** to the end of the catalog number to denote an IEC or NEMA bypass contactor, respectively. Example: For an IEC bypass contactor, catalog number 150-SB1NBD becomes catalog number 150-SB1NBD-**BP**.

Accessories

Option Modules

Description	Cat. No.
PTC, ground fault & current feedback	150-SM2
Analog I/O: 2 Inputs, 2 outputs	150-SM3
Digital I/O: 4 100...240V AC inputs, 3 relay outputs	150-SM4
Basic parameter configuration	150-SM6
Core Balance Ground Fault Sensor ⁴	825-CBCT

⁴ Used with a Cat. No. 150-SM2.

Communication Modules⁵

Network	Cat. No.
EtherNet/IP	20-COMM-E
Dual-port EtherNet/IP	20-COMM-ER
DeviceNet	20-COMM-D
ControlNet (Coax)	20-COMM-C
PROFIBUS DP	20-COMM-P

⁵ Additional modules are available.

Bypass Kit (Solid State Only)

Description	Cat. No.
C-Frame Bypass Kit (210...320 A)	150-SCBK
D-Frame Bypass Kit (361...520 A)	150-SDBK

Protective Modules

AC Line Voltage (VAC)	Cat. No.
200...480	150-F84L
200...600	150-F86L

Line-Connected Controllers Terminal Lug Kits

Current Rating [A]	Wire Size	Total No. of Line Controller Terminal Lugs		Pkg. Qty.	Cat. No.	Terminal Covers
		Per Line Side	Per Load Side			Cat. No.
Internal Bypass						
108...135 ⁶	#6...250 MCM AWG	3	3	3	199-LF1	150-TC1
201...251 ⁶	16...120 mm ²	6	6	3		150-TC2
317...480 ⁶	#4...500 MCM AWG 25...240 mm ²	6	6	3	199-LG1	150-TC3
Solid-State						
90...180	#6...250 MCM AWG, 16...120 mm ²	3	3	3	199-LF1 ⁷	150-STCB
210...320	#6...250 MCM AWG, 16...120 mm ²	6 ⁸	6	3	199-LF1	-
361...520	#4...500 MCM AWG, 25...240 mm ²	6 ⁸	6	3	199-LG1	-

⁶ When a multi-conductor lug is required, see the SMC-Flex user manual for recommended lugs.
⁷ For SMC-50 Solid-State with External Bypass see SMC Technical Data Document for recommended lugs.
⁸ Six additional line side terminal lugs needed for bypass kit.

Drives



1-70...1-75

For more information on our complete family of soft starter products, please visit:
<http://ab.rockwellautomation.com/Motor-Control/LV-Soft-Starters>



Drives

Power



AC Drives 22F PowerFlex® 4M

- Power ratings of 0.2...11 kW / 0.25...15 Hp at 120V, 240V, and 480V to meet a wide range of applications
- Volts per hertz and slip compensation to meet application demands
- Flexible, time-saving installation using DIN Rail mounting with A and B frame drives
- Feed-through wiring for simple retrofitting into applications requiring variable speed motor control
- Side-by-side mounting in ambient temperatures up to 40 °C (104 °F), saving valuable panel space

Providing powerful motor speed control in a compact, space saving design, the Allen-Bradley® PowerFlex 4M AC drive is the smallest and most cost effective member of the PowerFlex family of drives.

Integral human interface module (HIM) with a 4-digit display for simple configuration

Drives operate up to 50 °C (122 °F) with minimal spacing

*5 digital inputs (24V DC, 2 programmable)
1 analog input (unipolar voltage or current)
1 relay (form C)*

Supports a wide range of communication option cards, including EtherNet/IP and DeviceNet

An integral RS485/DSI port supports low-cost multi-drive networking

Feed-through wiring for simple retrofitting

A compact footprint requires a 120 mm (4.7 in.) air-flow gap at the top and bottom of the drive, helping save space inside a panel

1-70

Circuit Breakers



1-2...1-15

Disconnect Switches



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Control & Load Switches



1-24...1-27

Contactors



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Starters



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Motor Protection



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Smart Motor Control



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Product Selection

Single-Phase, 50/60 Hz, No Brake, IP20, NEMA/UL Type Open

Drive Ratings		100...120V AC			200...240V AC			Cat. No. with EMC Filter
kW	Hp	Output Current [A]	Frame Size	Cat. No.	Output Current [A]	Frame Size	Cat. No.	
0.2	0.25	1.6	A	22F-V1P6N103	1.6	A	22F-A1P6N103	22F-A1P6N113
0.4	0.5	2.5	A	22F-V2P5N103	2.5	A	22F-A2P5N103	22F-A2P5N113
0.75	1	4.5	B	22F-V4P5N103	4.2	A	22F-A4P2N103	22F-A4P2N113
1.1	1.5	6	B	22F-V6P0N103	–	–	–	–
1.5	2	–	–	–	8	B	22F-A8P0N103	22F-A8P0N113
2.2	3	–	–	–	11	B	22F-A011N103	22F-A011N113

Three-Phase, 50/60 Hz, No Brake, IP20, NEMA/UL Type Open

Drive Ratings		200...240V AC			380...480V AC			Cat. No. with EMC Filter
kW	Hp	Output Current [A]	Frame Size	Cat. No.	Output Current [A]	Frame Size	Cat. No.	
0.2	0.25	1.6	A	22F-B1P6N103	–	–	–	–
0.4	0.5	2.5	A	22F-B2P5N103	1.5	A	22F-D1P5N103	22F-D1P5N113
0.75	1	4.2	A	22F-B4P2N103	2.5	A	22F-D2P5N103	22F-D2P5N113
1.5	2	8	A	22F-B8P0N103	4.2	A	22F-D4P2N103	22F-B8P0N103
2.2	3	12	B	22F-B012N103	6	B	22F-D6P0N103	22F-D6P0N113
3.7	5	17.5	B	22F-B017N103	8.7	B	22F-D8P7N103	22F-D8P7N113
With Brake								
5.5	7.5	25	C	22F-B025N104	13	C	22F-D013N104	22F-D013N114
7.5	10	33	C	22F-B033N104	18	C	22F-D018N104	22F-D018N114
11	15	–	–	–	24	C	22F-D024N104	22F-D024N114

Specifications

Power Ratings	100...120V: 0.2...1.1 kW / 0.25...1.5 Hp 200...240V: 0.2...7.5 kW / 0.25...10 Hp	380...480V: 0.4...11 kW / 0.5...15 Hp	
Motor Control	Volts per hertz	Slip compensation	–
Application	Open loop speed regulation	–	–
Control I/O	5 digital inputs (24V DC, 2 programmable)	1 analog input (unipolar voltage or current)	1 relay (form C)
Communications	Integral RS485 with Modbus RTU/DSI	Optional: DeviceNet, Bluetooth, EtherNet/IP, PROFIBUS DP, ControlNet, BACnet (Optional networks for use only with external DSI communications kit)	
Control Features	Flying start V/F ratio	Bus regulator Auto Restart	4 preset speeds Multi-drive connectivity (requires communication option card)

Drives



1-70...1-75

For more information on our complete family of compact drives, please visit:
<http://ab.rockwellautomation.com/Drives/Compact>



Drives



AC Drives 25A PowerFlex® 523

- Power ratings of 0.2...22 kW / 0.25...30 Hp in global voltage classes from 100...600V to meet a wide range of applications
- Modular design features a removable control module that allows simultaneous wiring installation and software configuration to help increase productivity
- AppView® application parameter groups and CustomView™ configuration help speed machine commissioning
- Volts per hertz and sensorless vector control provide flexible motor control options

Allen-Bradley PowerFlex 523 AC drives are designed to help reduce installation and configuration time while offering the control you need for your application. These drives offer convenient programming features and installation flexibility in a cost-effective solution.

Supports a wide range of communication option cards, including dual port EtherNet/IP™ and DeviceNet

An integral LCD human interface module (HIM) eases configuration with multi-language support and QuickView™ scrolling text to help explain parameters and codes

An integral RS485/DSI port supports low-cost multi-drive networking

Drives operate in ambient temperatures from -20... +50 °C (-4... +122 °F). With current derating and a control module fan kit, up to 70 °C (158 °F)

A compact footprint requires a 50 mm (1.96 in.) mounting clearance for air flow at the top and bottom of the drive, helping save space inside a panel

*5 digital inputs (24V DC, 4 programmable)
1 analog input (unipolar voltage or current)
1 relay (form C)*

Explore the PowerFlex 523 AC drive in our virtual brochure:
www.rockwellautomation.com/global/go/powerflex520

Circuit Breakers	Disconnect Switches	Control & Load Switches	Contactors	Starters	Motor Protection	Smart Motor Control
						
1-2...1-15	1-16...1-23	1-24...1-27	1-28...1-39	1-40...1-53	1-54...1-59	1-60...1-69

Product Selection

Single-Phase

Drive Ratings, Normal & Heavy Duty		100...120V AC, 50/60 Hz			200...240V AC, 50/60 Hz			
kW	Hp	Output Current [A]	Frame Size	Cat. No.	Output Current [A]	Frame Size	Cat. No.	Cat. No. with EMC Filter
0.2	0.25	1.6	A	25A-V1P6N104	1.6	A	25A-A1P6N104	25A-A1P6N114
0.4	0.5	2.5	A	25A-V2P5N104	2.5	A	25A-A2P5N104	25A-A2P5N114
0.75	1	4.8	B	25A-V4P8N104	4.8	A	25A-A4P8N104	25A-A4P8N114
1.1	1.5	6	B	25A-V6P0N104	–	–	–	–
1.5	2	–	–	–	8	B	25A-A8P0N104	25A-A8P0N114
2.2	3	–	–	–	11	B	25A-A011N104	25A-A011N114

Three-Phase

Drive Ratings				200...240V AC, 50/60 Hz			380...480V AC, 50/60 Hz				525...600V AC, 50/60 Hz		
Normal Duty		Heavy Duty		Output Current [A]	Frame Size	Cat. No.	Output Current [A]	Frame Size	Cat. No.	Cat. No. with EMC Filter	Output Current [A]	Frame Size	Cat. No.
0.2	0.25	0.2	0.25	1.6	A	25A-B1P6N104	–	–	–	–	–	–	–
0.4	0.5	0.4	0.5	2.5	A	25A-B2P5N104	1.4	A	25A-D1P4N104	25A-D1P4N114	0.9	A	25A-E0P9N104
0.75	1	0.75	1	4.8	A	25A-B5P0N104	2.3	A	25A-D2P3N104	25A-D2P3N114	1.7	A	25A-E1P7N104
1.5	2	1.5	2	8	A	25A-B8P0N104	4	A	25A-D4P0N104	25A-D4P0N114	3	A	25A-E3P0N104
2.2	3	2.2	3	11	A	25A-B011N104	6	A	25A-D6P0N104	25A-D6P0N114	4.2	A	25A-E4P2N104
4	5	4	5	17.5	B	25A-B017N104	10.5	B	25A-D010N104	25A-D010N114	6.6	B	25A-E6P6N104
5.5	7.5	5.5	7.5	24	C	25A-B024N104	13	C	25A-D013N104	25A-D013N114	9.9	C	25A-E9P9N104
7.5	10	7.5	10	32.3	D	25A-B032N104	17	C	25A-D017N104	25A-D017N114	12	C	25A-E012N104
11	15	11	15	48.3	E	25A-B048N104	24	D	25A-D024N104	25A-D024N114	19	D	25A-E019N104
15	20	11	15	62.1	E	25A-B062N104	30	D	25A-D030N104	25A-D030N114	22	D	25A-E022N104
18.5	25	15	20	–	–	–	37	E	–	25A-D037N114	27	E	25A-E027N104
22	30	18.5	25	–	–	–	43	E	–	25A-D043N114	32	E	25A-E032N104

Specifications

Power Ratings	100...120V: 0.2...1.1 kW / 0.25...1.5 Hp 380...480V: 0.4...22 kW / 0.5...30 Hp	200...240V: 0.2...15 kW / 0.25...20 Hp 525...600V: 0.4...22 kW / 0.5...30 Hp	
Motor Control	Volts per hertz	Sensorless vector control	Sensorless vector control with Economizer
Application	Open loop speed regulation	–	–
Control I/O	5 digital inputs (24V DC, 4 programmable)	1 relay (form c)	1 analog input (unipolar voltage or current)
Communications	Integral RS485 with Modbus RTU/DSI PROFIBUS® DP option card	DeviceNet option card	Dual port EtherNet/IP option card
Control Features	Flying start V/F ratio Bus regulator Process PID	Common DC bus Fiber application specific features PTC input compatible 1/2 DC bus operation	8 datalinks (4 in and 4 out, requires comm. option card) Multi-drive connectivity (requires comm. option card) 8 preset speeds

Drives



1-70...1-75

For more information on our complete family of compact drives, please visit:
<http://ab.rockwellautomation.com/Drives/Compact>



Drives



AC Drives 25B PowerFlex® 525

- Power ratings of 0.4...22 kW / 0.5...30 Hp in global voltage classes from 100...600V to meet a wide range of applications
- Standard built-in single port for EtherNet/IP and Safe Torque-off
- AppView application parameter groups and CustomView configuration help speed machine commissioning

Allen-Bradley PowerFlex 525 AC drives are designed to support fast and easy installation and configuration and provide a variety of motor control and flexible mounting options. Available with standard built in EtherNet/IP communications and safe torque-off.

An embedded port for EtherNet/IP supports seamless integration into the Logix environment and EtherNet/IP networks

- 7 digital inputs (24V DC, 6 programmable)
- 2 analog inputs (1 bipolar voltage, 1 current)
- 2 digital outputs
- 1 analog output (1 unipolar voltage or current)
- 2 relays (1 form A relay & 1 form B relay; 24V DC, 120V AC, 240V AC)

Modular design features a removable control module that allows simultaneous wiring installation and software configuration to help increase productivity

Volts per hertz, sensorless vector control, closed loop velocity vector control and permanent magnet motor control to meet a wide range of applications¹

A built in DSI port supports multi-drive networking, connecting up to five PowerFlex AC drives on one node

Embedded Safe Torque-Off can help to protect personnel

¹ Permanent magnet motor control is scheduled for a future firmware release.

Circuit Breakers



1-2...1-15

Disconnect Switches



1-16...1-23

Control & Load Switches



1-24...1-27

Contactors



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Starters



1-40...1-53

Motor Protection



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Smart Motor Control



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Product Selection

Single-Phase

Drive Ratings, Normal & Heavy Duty		100...120V AC, 50/60 Hz			200...240V AC, 50/60 Hz			
kW	Hp	Output Current [A]	Frame Size	Cat. No.	Output Current [A]	Frame Size	Cat. No.	Cat. No. with EMC Filter
0.4	0.5	2.5	A	25B-V2P5N104	2.5	A	25B-A2P5N104	25B-A2P5N114
0.75	1	4.8	B	25B-V4P8N104	4.8	A	25B-A4P8N104	25B-A4P8N114
1.1	1.5	6	B	25B-V6P0N104	–	–	–	–
1.5	2	–	–	–	8	B	25B-A8P0N104	25B-A8P0N114
2.2	3	–	–	–	11	B	25B-A011N104	25B-A011N114

Three-Phase

Drive Ratings															
Normal Duty		Heavy Duty		200...240V AC, 50/60 Hz				380...480V AC, 50/60 Hz				525...600V AC, 50/60 Hz			
kW	Hp	kW	Hp	Output Current [A]	Frame Size	Cat. No.	Output Current [A]	Frame Size	Cat. No.	with EMC Filter	Output Current [A]	Frame Size	Cat. No.		
0.4	0.5	0.4	0.5	2.5	A	25B-B2P5N104	1.4	A	25B-D1P4N104	25B-D1P4N114	0.9	A	25B-E0P9N104		
0.75	1	0.75	1	4.8	A	25B-B5P0N104	2.3	A	25B-D2P3N104	25B-D2P3N114	1.7	A	25B-E1P7N104		
1.5	2	1.5	2	8	A	25B-B8P0N104	4	A	25B-D4P0N104	25B-D4P0N114	3	A	25B-E3P0N104		
2.2	3	2.2	3	11	A	25B-B011N104	6	A	25B-D6P0N104	25B-D6P0N114	4.2	A	25B-E4P2N104		
4	5	4	5	17.5	B	25B-B017N104	10.5	B	25B-D010N104	25B-D010N114	6.6	B	25B-E6P6N104		
5.5	7.5	5.5	7.5	24	C	25B-B024N104	13	C	25B-D013N104	25B-D013N114	9.9	C	25B-E9P9N104		
7.5	10	7.5	10	32.3	D	25B-B032N104	17	C	25B-D017N104	25B-D017N114	12	C	25B-E012N104		
11	15	11	15	48.3	E	25B-B048N104	24	D	25B-D024N104	25B-D024N114	19	D	25B-E019N104		
15	20	11	15	62.1	E	25B-B062N104	30	D	25B-D030N104	25B-D030N114	22	D	25B-E022N104		
18.5	25	15	20	–	–	–	37	E	–	25B-D037N114	27	E	25B-E027N104		
22	30	18.5	25	–	–	–	43	E	–	25B-D043N114	32	E	25B-E032N104		

Specifications

Power Ratings	100...120V: 0.2...1.1 kW / 0.25...1.5 Hp 380...480V: 0.4...22 kW / 0.5...30 Hp	200...240V: 0.2...15 kW / 0.25...20 Hp 525...600V: 0.4...22 kW / 0.5...30 Hp	
Motor Control	Volts per hertz	Sensorless vector control	Sensorless vector control with Economizer
Application	Open loop speed regulation	–	–
Control I/O	5 digital inputs (24V DC, 4 programmable)	1 relay (form c)	1 analog input (unipolar voltage or current)
Communications	Integral RS485 with Modbus RTU/DSI PROFIBUS® DP option card	DeviceNet option card	Dual port EtherNet/IP option card
Control Features	Flying start, Fiber application specific features, 8 datalinks (4 in and 4 out), V/F ratio, Common DC bus, Position control, Bus regulator, 1/2 DC bus operation, StepLogic Function (Relay & Timers), Process PID, Regulation with encoder feedback or analog input, 16 preset speeds, PTC input compatible, Multi-drive connectivity (requires communication option card)		

Drives



1-70...1-75

For more information on our complete family of compact drives, please visit:
<http://ab.rockwellautomation.com/Drives/Compact>







Additional Power Products



MachineAlert™ Dedicated Function Motor Protection Relays 809S/813S/814S/817S

- Programmable latching or inhibit at set level
- Adjustable time delay settings
- Three-phase devices are powered by the measuring circuit
- LED indication for relay, alarm, and power supply
- Global application with CE and UL approvals

Product Selection

Motor Protection Relay Type		Description	Cat. No.
	Bulletin 809S Current Monitoring Relays	1...10 A AC/DC (1-phase); 24/48 V AC/DC control power	809S-C1-10A-48
		1...10 A AC/DC (1-phase); 115/230 V AC control power	809S-C1-10A-230
	Bulletin 813S Voltage Monitoring Relays	Single-phase voltage monitoring relay, 2...500 V AC/DC; 24/48 V AC/DC control power	813S-V1-500V-48
		Single-phase voltage monitoring relay, 2...500 V AC/DC; 115/230 V AC control power	813S-V1-500V-230
		Three-phase voltage monitoring relay, 110...115 V AC	813S-V3-110V
		Three-phase voltage monitoring relay, 208...240 V AC	813S-V3-230V
		Three-phase voltage monitoring relay, 380...415 V AC	813S-V3-400V
		Three-phase voltage monitoring relay, 440...480 V AC	813S-V3-480V
	Bulletin 814S Power Monitoring Relays	Three-phase power (kW) monitoring relay, 380...480 V AC & 1...10 A AC	814S-W3-480V-10A
		Three-phase power (kW) monitoring relay, 600...690 V AC & 1...10 A AC	814S-W3-690V-10A
		Three-phase power factor monitoring relay, 380...480 V AC & 1...10 A AC	814S-PF3-480V-10A
		Three-phase power factor monitoring relay, 600...690 V AC & 1...10 A AC	814S-PF3-690V-10A
	Bulletin 817S Thermistor Monitoring Relay	Thermistor monitoring relay, 24/48 V AC/DC control power	817S-PTC-48
		Thermistor monitoring relay, 115 V AC control power	817S-PTC-115
		Thermistor monitoring relay, 230 V AC control power	817S-PTC-230

Circuit
Breakers



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Disconnect
Switches



1-16...1-23

Control &
Load Switches



1-24...1-27

Contactors



1-28...1-39

Starters



1-40...1-53

Motor
Protection



1-54...1-59

Smart
Motor Control



1-60...1-69

Busbar Mounting System

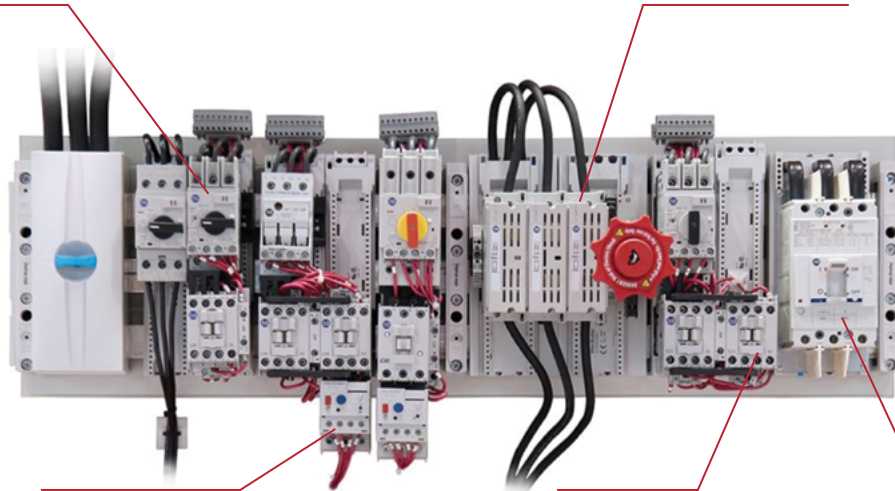
The 141A mounting system offers flexible, modular solutions for your power outputs. The mechanically and electrically coordinated components provide savings in planning, assembly, mounting, and operation.

- Reduced wiring and assembly time for cost savings
- Efficiently designed with decreased panel space
- High-fault short-circuit system ratings
- Classic system up to 1250 A
- Compact system up to 360 A



140M Motor Protection
Circuit Breaker

194R Rotary Disconnect



E1 Plus Overload Relay

100-C Contactor

140G Molded Case
Circuit Breaker

MCS Star Configuration Software

MCS Star provides the correct catalog number, wiring diagram, and drawing for the starters you choose. Configure mounting system assemblies, select and place busbar rack components, and lay out your system with the easy graphical interface.

<http://www.rockwellautomation.com/rockwellautomation/support/configuration.page>

Drives



1-70...1-75

For more information on our complete family of motor control products, please visit:
<http://ab.rockwellautomation.com/Motor-Control>



Additional Power Products



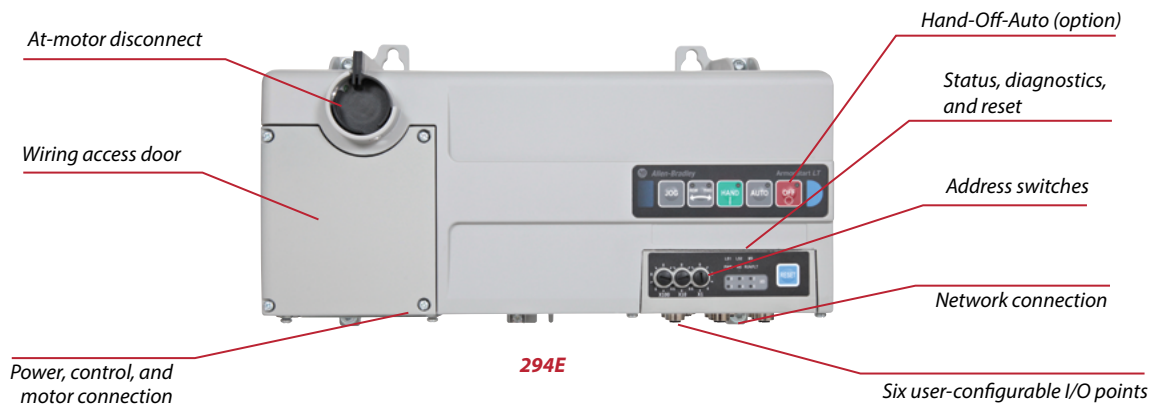
ArmorStart® LT Distributed Motor Controllers 290, 291 and 294

- Compact On-Machine™ motor control
- Ideal for material-handling industry
- EtherNet/IP with Device Level Ring (DLR)
- DeviceNet
- DeviceLogix™ embedded
- Multiple programmable I/O
- Full-voltage and reverse starting or variable frequency control (VFD)
- Quick disconnect wiring

ArmorStart LT 290/291/294 distributed motor controllers are economical, compact in size, and have a lightweight design. They are ideally suited for On-Machine conveyor and material handling applications. ArmorStart LT product line includes both full-voltage and reversing starters and an AC drive version.

Products

- 290E ArmorStart LT full voltage motor controller with EtherNet/IP communications
- 291E ArmorStart LT full voltage reversing motor controller with EtherNet/IP communications
- 294E ArmorStart LT variable frequency drive motor controller with EtherNet/IP communications



Learn more about the On-Machine Solution from the Armor Start virtual demo: http://literature.rockwellautomation.com/idc/groups/multi_media/documents/multimedia/files/virtualbrochure/armorstart/

Circuit Breakers	Disconnect Switches	Control & Load Switches	Contactors	Starters	Motor Protection	Smart Motor Control
						
1-2...1-15	1-16...1-23	1-24...1-27	1-28...1-39	1-40...1-53	1-54...1-59	1-60...1-69

ArmorStart Distributed Motor Controllers 280, 281 and 284

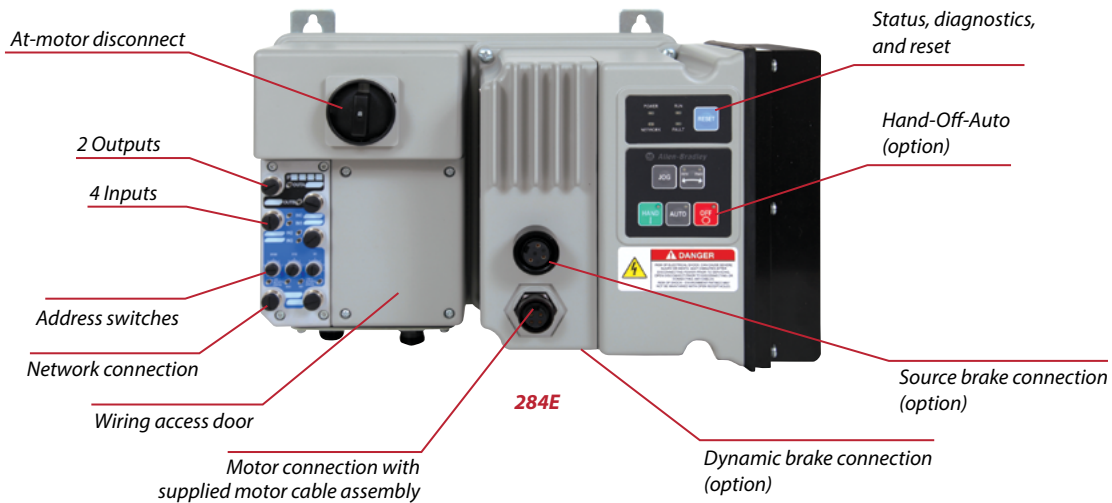
- On-Machine motor control
- Ideal for heavy industry
- Ethernet/IP with Device Level Ring (DLR)
- DeviceNet
- DeviceLogix embedded
- Full-voltage and reverse starting or variable frequency control (VFD)
- Quick disconnect wiring



ArmorStart 280/281/284 distributed motor controllers offer a simple, cost-effective method of integrating combination starters, AC drives, I/O, and network capabilities in your On-Machine architecture.

Products

- 280 ArmorStart full voltage motor controller
- 281 ArmorStart full voltage reversing motor controller
- 284 ArmorStart variable frequency drive motor controller



Learn more about the On-Machine Solution from the Armor Start virtual demo: http://literature.rockwellautomation.com/idc/groups/multi_media/documents/multimedia/files/virtualbrochure/armorstart/

Drives



1-70...1-75

For more information on our complete family of motor control products, please visit: <http://ab.rockwellautomation.com/Motor-Control>



Additional Power Products



Molded Case Circuit Breakers

140U-D molded case circuit breakers are current limiting and provide fixed short circuit and overcurrent protection. They offer high interrupting ratings.

- Meets UL 489
- 0.5...30 A
- Provides 100% rating up to 15 A
- Suitable for back feeding at 240V and 480Y/277V
- 2- or 3-pole
- Field installable accessories

NEMA Vacuum Contactors

1102C/1104C NEMA vacuum contactors provide motor control system reliability in harsh, dirty environments.

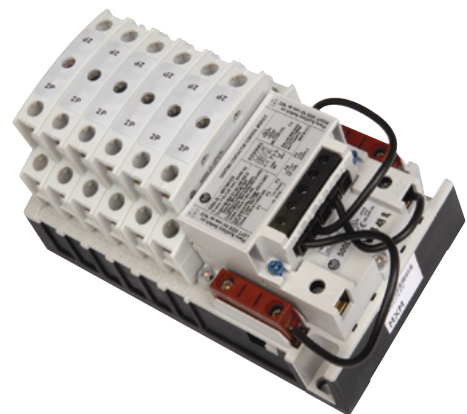
- 1500V AC maximum
- Current ratings: 200, 400, and 600 A
- Visual ON/OFF indicator
- Line and load terminals up front for ease of wiring
- Snap-on side mount auxiliary contacts



Lighting Contactors

The 500LG compact, modular-designed lighting contactors deliver simplicity and versatility in product configuration, to meet a wide range of applications including full-bus and split-bus lighting panelboards.

- Contacts switch ballast (fluorescent or HID), tungsten, and general use loads
- Available in 30 A rating, with up to 12 field-convertible poles (maximum of 8 N.C.)
- Finger and back-of-hand safe power terminals
- Electronically and mechanically held versions



Circuit Breakers



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Disconnect Switches



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Motor Protection



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Smart Motor Control



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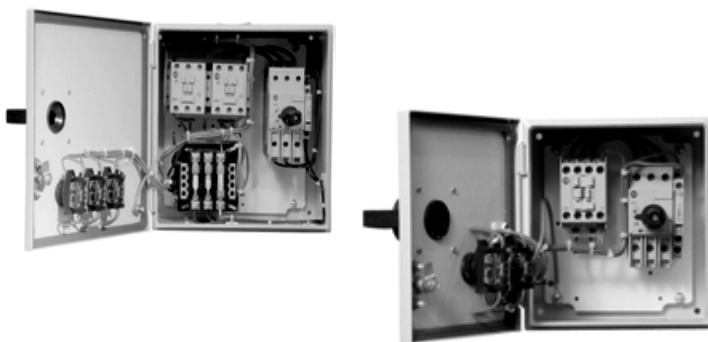
Enclosed At-motor Disconnecting Means

Suitable as at-motor disconnecting means (UL508), available in metal enclosures.

- 140M Motor Protection Circuit Breakers (MPCB)
- 194R Rotary Disconnect Switches

IEC Enclosures for Low Voltage Starters

198E starter enclosures are designed for a multitude of IEC starter configurations. They are available in metal or plastic, and are suitable for either indoor or outdoor environments. The enclosures are rated UL Type 1, 3, 4, 4X, 12, 12K (IP42 to IP66).



Combination Starter, IEC 103H/107H

- Type E and Type F combination motor controllers (UL/CSA)
- 0.1...45 A
- 140M Motor Protection Circuit Breakers
- 100-C / 104-C Contactor
- Factory – installed options available

Drives



1-70...1-75

For more information on our complete family of motor control products, please visit:
<http://ab.rockwellautomation.com/Motor-Control>



Additional Power Products

Enclosed Soft Starters 150, 152, 153

- 90...520 A
- Snap-together wiring technology
- Floor standing Type 1, 12, 3R (IP54) enclosures
- Up to 100 kA Interrupting Capacity



Pump Control Panels

Solutions for a wide variety of pumping applications. Designed for standalone usage, the water-tight NEMA Type 3R enclosure can be placed either indoors or outdoors. With pole mounting brackets on the enclosure, the panel can be installed in remote locations.

- NEMA starters: durable direct-on-line (DOL), up to 200 Hp
- Smart Motor Controllers: five start/stop modes, built-in overload protection, up to 300 Hp
- PowerFlex variable frequency drives up to 250 Hp

Hazardous Locations Solutions

- Copper-free cast aluminum alloy
- Compact designs for inside and outside applications
- Flexible configuration options
- Gasket inside cover to guard against moisture and corrosive elements



Certifications and Ratings

- UL listed/CSA certified
- UL classified enclosures
- Class I Division 1 & 2, Groups C, D
- 65 kA short circuit rating
- Class II Division 1 & 2, Groups E, F & G
- 10,000 A short circuit rating
- NEMA type 3R, 7-9 rated



Circuit Breakers



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Disconnect Switches



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Control & Load Switches



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Motor Protection



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Modified Industrial Controls

Instead of waiting weeks to get industrial control products with customer requested options, our availability strategy allows our products to be configured as close to the customer as possible.

Configure products such as:

- Enclosed starters
- Stack lights
- Wiring assemblies



Modified Industrial Control Panels

We will turn your high volume custom panels into a repeatable solution with panels tailored to your specifications so you get exactly what you need, when you need it.

Customizable Panels Include:

- Programmable controllers
- Starters
- Distributed I/O
- Servo drives
- Push buttons and pilot lights
- Partner products and other third-party devices



For more information on Modified Industrial Controls, please visit:
<http://www.rockwellautomation.com/go/lit/icp-modified>



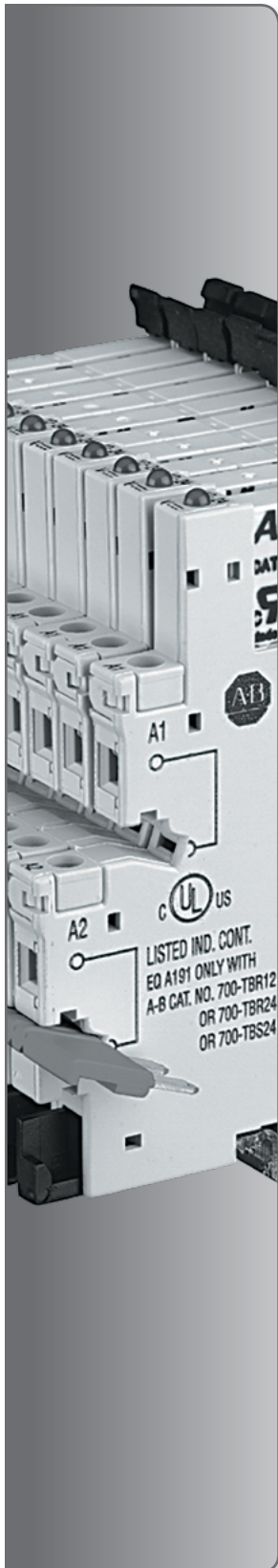
Drives



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For more information on our complete family of motor control products, please visit:
<http://ab.rockwellautomation.com/Motor-Control>





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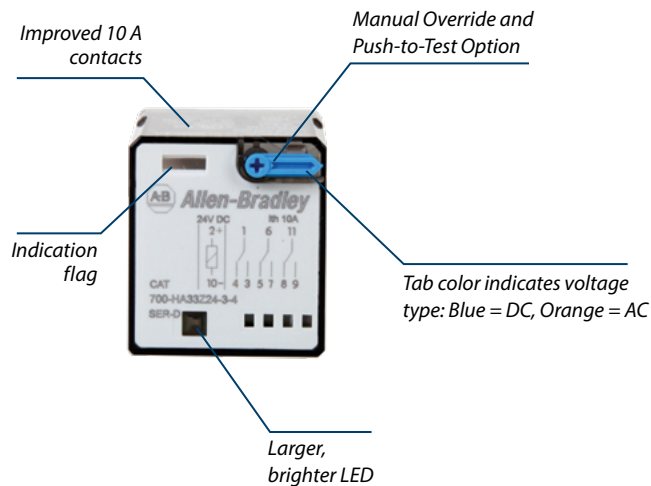
Relays & Timers



Tube Base Relays 700-HA

- 10 A contact rating
- DPDT or 3PDT
- Pin-style (8- or 11-pin)
- ON/OFF flag indicator
- LED, push-to-test with manual override options
- Optional bifurcated gold-plated contacts available for low energy switching

Tube-style bases are popular in general-purpose relay applications and meet a wide range of needs with 2-pole (8-pin) and 3-pole (11-pin) options. Socket bases are available in North American (open) and IEC (guarded) styles.



Ideal Applications

- Switching currents or voltage too high for PLC outputs to handle
- Interfacing two or more system voltages – for example, 24V to 120V

Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Tube Base Relays

Description	Contact Rating	Coil Voltage	Cat. No. ^{1,2,3,4}	
			2-pole (DPDT) 8-pin, 2 Form C	3-pole (3PDT) 11-pin, 3 Form C
General purpose relay single AgNi contact	10 A B300	12V AC	700-HA32A12	700-HA33A12
		24V AC	700-HA32A24	700-HA33A24
		120V AC	700-HA32A1	700-HA33A1
		230V AC	700-HA32A03	700-HA33A03
		240V AC	700-HA32A2	700-HA33A2
		12V DC	700-HA32Z12	700-HA33Z12
		24V DC	700-HA32Z24	700-HA33Z24
		110V DC	700-HA32Z1	700-HA33Z1
		125V DC	700-HA32Z01	700-HA33Z01

- ¹ LED Option: Add suffix **-4** to the selected 700-HA Relay Catalog number; for the 240V AC units, add **-4L**.
- ² Push-to-test, Manual Override, and LED Option: Add suffix **-3-4** to the selected 700-HA Relay Catalog number; for the 240V AC units, add **-3-4L**.
- ³ Push-to-test and Manual Override option: Add suffix **-3** to the selected 700-HA relay.
- ⁴ For Gold-plated bifurcated contacts, please visit our online product directory.



700-HN100



700-HN205

Accessories

Description	Pkg. Qty.	Cat. No.	
Screw terminal tube base socket – guarded terminal style	2-pole (DPDT) 8-pin	10	700-HN100
	3-pole (3PDT) 11-pin	10	700-HN101
Screw terminal tube base socket open style construction	2-pole (DPDT) 8-pin	10	700-HN125
	3-pole (3PDT) 11-pin	10	700-HN126
Screw terminal tube base socket For use with or without timing/surge suppression module – guarded terminal style	2-pole (DPDT) 8-pin	10	700-HN204
	3-pole (3PDT) 11-pin	10	700-HN205
Diode with LED surge suppressor ⁵	10	700-ADL1R	
Diode surge suppressor ⁵	10	700-ADR	
RC surge suppressor ⁵	10	700-AR2	
Timing module ⁵	1	700-AT3	
Varistor with LED surge suppressor ⁵	10	700-AV3R	
Multi-function multi-range time module ^{5,6}	1	700-HT3	

- ⁵ Suppressors and timer modules easily plug into sockets (catalog numbers 700-HN204 and 700-HN205). For use with 700-HA relays.
- ⁶ Catalog number 700-HT3 is wired with signal "S" connected to "A1". See wiring diagram marked on the timer module.

For more information on our complete family of general-purpose relay products, please visit:
<http://ab.rockwellautomation.com/Relays-and-Timers/General-Purpose-Relays>



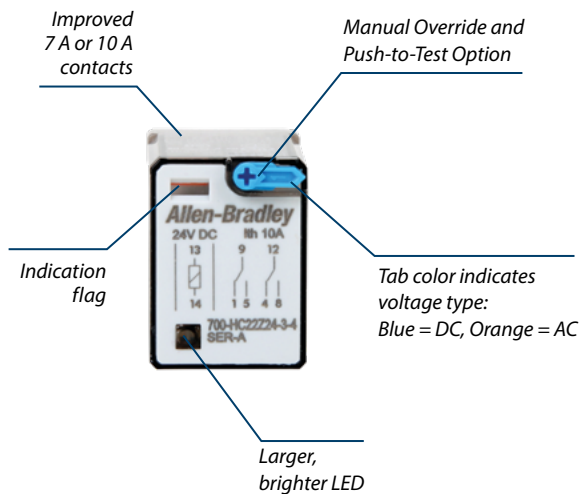
Relays & Timers



Miniature Ice Cube Relays 700-HC

- 7 or 10 A contact ratings
- DPDT or 4PDT
- Blade-style
- ON/OFF flag indicator
- LED, push-to-test with manual override options
- Optional bifurcated gold-plated contacts available for low energy switching

700-HC Miniature Square Base Relays are 2-pole or 4-pole plug-in relays for your low-energy switching applications. The same sockets can be used for DPDT or 4PDT versions, which improves flexibility and reduces inventory.



Ideal Applications

- Provides longer life for PLC, saving money and increasing efficiency
- Switching currents or voltages too high for PLC outputs to handle
- Interfacing two or more system voltages – for example, 24V to 120V
- Multiplies PLC outputs by using relays to turn many devices on and off simultaneously
- Provides isolation from solid-state output leakage current

Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Miniature Ice Cube Relays

Description	Contact Rating	Coil Voltage	Pkg. Qty.	Cat. No. ^{1,2,3,4}
DPDT 2-pole 2 form C contacts: 10 A = AgNi contacts	10 A C300 R300 Low energy rating; (10V, 10 mA)	24V DC	1	700-HC22Z24
		120V AC		700-HC22A1
4PDT 4-pole 4 form C contacts: 7 A = AgNi contacts	7 A C300 R300 Low energy rating; (10V, 10 mA)	24V AC	1	700-HC24A24
		120V AC		700-HC24A1
		240V AC		700-HC24A2
		12V DC		700-HC24Z12
		24V DC		700-HC24Z24
		48V DC		700-HC24Z48

¹ LED option: Add suffix **-4** to the selected 700-HC relay catalog number; for the 240V AC units, add **-4L**.

² Push-to-test and LED option: Add suffix **-3-4** to the selected 700-HC relay catalog number; for the 240V AC units, add **-3-4L**.

³ Push-to-test and Manual Override option: Add suffix **-3** to the selected 700-HC relay.

⁴ For Gold-plated bifurcated contacts, please visit our online product directory.



700-HN103



700-HN104

Accessories

Description	Pkg. Qty.	Cat. No.
Screw terminal socket – guarded terminal style	10	700-HN103
Screw terminal socket for use with or without timing/surge suppression module – guarded terminal style	10	700-HN104
Screw terminal base socket – Open-style construction	10	700-HN128
Diode with LED surge suppressor ⁵	10	700-ADL1R
Diode surge suppressor ⁵	10	700-ADR
RC surge suppressor ⁵	10	700-AR2
Timing module ⁵	1	700-AT3
Varistor with LED surge suppressor ⁵	10	700-AV3R
Multi-function multi-range time module ^{5,6}	1	700-HT3

⁵ Suppressors and Time Modules easily plug into socket (catalog number 700-HN104). For use with 700-HC relays.

⁶ Catalog number 700-HT3 is wired with signal "S" connected to "A1." See wiring diagram marked on the timer module.

For more information on our complete family of general-purpose relay products, please visit:
<http://ab.rockwellautomation.com/Relays-and-Timers/General-Purpose-Relays>



Relays & Timers

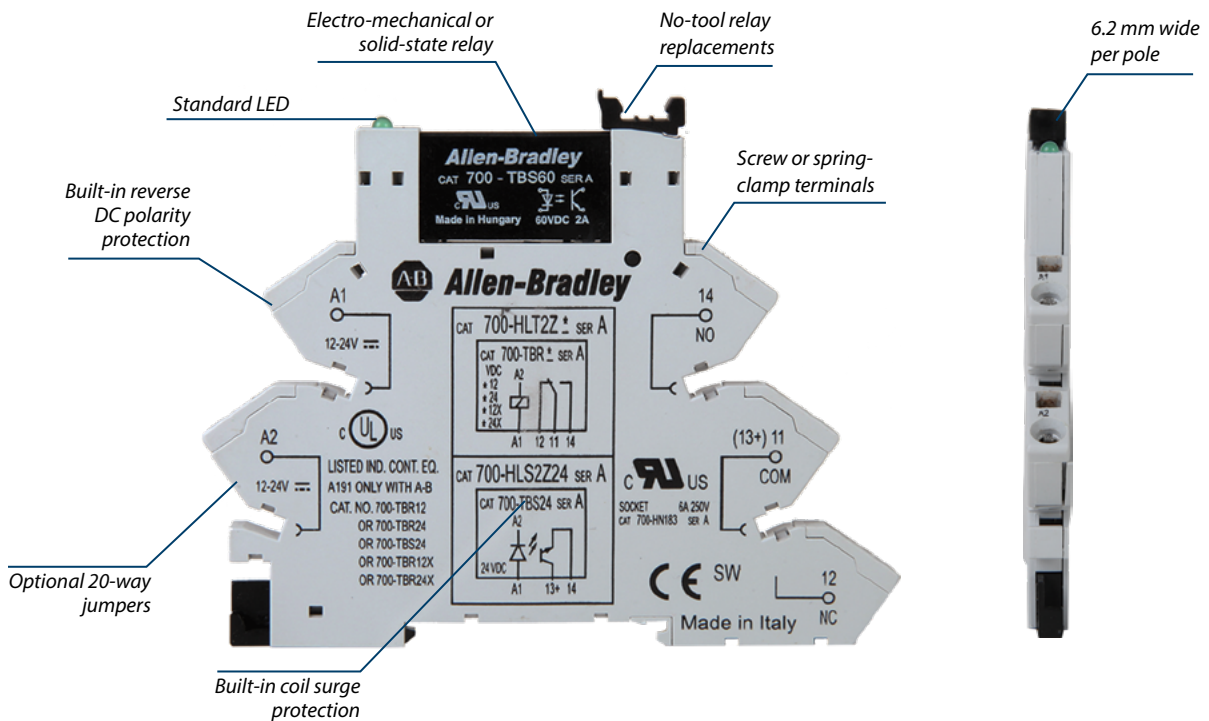


Terminal Block Relays 700-HL

- Terminal Block Style (1-pole: 6.2 mm wide)
- 6 A (1-pole) or 10 A (2-pole) contact rating
- SPDT or DPDT
- Screw or spring-clamp terminals
- Silver or gold contacts
- LED, reverse polarity and surge protection
- Replaceable relay modules

700-HL Terminal Block Relays work in a variety of high-density isolation and interposing applications. The thin per-pole interface (6.2 mm wide) and quick connections help reduce installation costs.

Optional leakage current suppression circuit design addresses nuisance coil turn-on or contact non-drop-out concerns for TRIAC controller outputs. The spring-clamp terminal base option is ideal for applications that are subject to vibration.



Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Terminal Block Relay – 1-pole

Assembled Devices Input Voltage	Output Type	Pkg. Qty.	Screw Terminals	Spring-Clamp Terminals	Solid-State			
					Screw Terminals (DC Output)	Spring Clamp Terminals (DC Output)	Screw Terminals (AC Output)	
					Cat. No. ¹			
24V DC	SPDT (1 C/O); $I_{th} = 6$ A	10	700-HLT1Z24 ³	700-HLT2Z24	700-HLS1Z24 ³	700-HLS2Z24	700-HLS11Z24	
24V AC/DC			700-HLT1U24	700-HLT2U24	–	–	–	
110/125V AC/DC			700-HLT1U1 ³	700-HLT2U1	700-HLS1U1 ³	700-HLS2U1	700-HLS11U1	
220...240V AC/DC			700-HLT1U2 ³	700-HLT2U2	700-HLS1U2 ³	700-HLS2U2	700-HLS11U2	
Built-in LCSC (leakage current suppression circuit) ^{2,3}			120V AC and 125V DC	700-HLT1L1 ³	–	700-HLS1L1 ³	–	700-HLS11L1
			240V AC	700-HLT1L2 ³	–	700-HLS1L2 ³	–	700-HLS11L2

Terminal Block Relay – 2-pole

Assembled Devices Input Voltage	Output Type	Pkg. Qty.	DC Output Screw Terminals	AC Output Spring-Clamp Terminals
			Cat. No. ¹	
12V DC	DPDT (2 C/O); $I_{th} = 10$ A	10	700-HLT12Z12	700-HLT22Z12
24V DC			700-HLT12Z24	700-HLT22Z24
24V AC/DC			700-HLT12U24	700-HLT22U24
110/125V AC/DC			700-HLT12U1	700-HLT22U1
220...240V AC/DC			700-HLT12U2	700-HLT22U2

¹ For gold-plated contacts, add the letter **X** at the end of the catalog number. For example: if catalog number 700-TBR24 is required with gold plating, it becomes catalog number 700-TBR24X. Gold-plated contacts are not available in the two-pole 12 and 48V DC relays.

² Leakage current suppression up to 2.2 mA off state current.

³ Electromechanical relay to solid-state relay interchangeability is possible.

Accessories – 1-pole

Description	Color	Pkg. Qty.	Cat. No.
20-way jumper ⁴ for 1-pole relay	Red	1	700-TBJ20R
	Grey	1	700-TBJ20G
	Blue	1	700-TBJ20B
End barrier	Black	10	700-HN177

Accessories – 2-pole

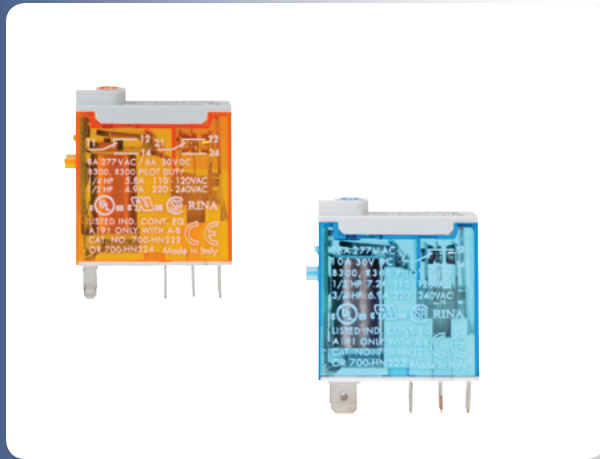
Description	Color	Pkg. Qty.	Cat. No.
8-way jumper ⁴ for 2-pole relay	Red	1	700-TBJ08R
	Grey	1	700-TBJ08G
	Blue	1	700-TBJ08B
End barrier	Black	10	700-HN177
Replacement relays, 24V AC/DC	–	20	700-TBR24

⁴ Cut to appropriate length.

Note: Terminal block relay bases are NOT sold separately.



Relays & Timers

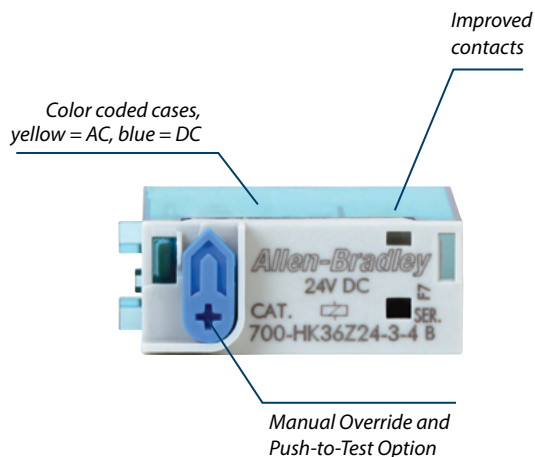
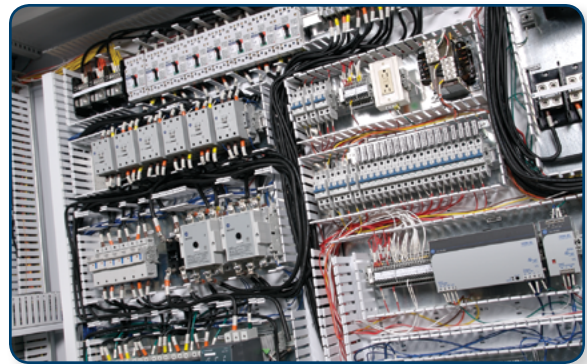


Slim Line Relays 700-HK

- 8 A (2-pole) or 16 A (1-pole) contact ratings
- DPDT or SPDT
- Blade-style
- ON/OFF flag indicator
- LED, push-to-test and manual override options
- Standard or gold-plated AgNi contacts
- Maximum duty version available
- Screw or push-in socket terminals

The 700-HK relays are designed for a variety of high-density isolation and interposing applications. Installation is easy and cost effective through the use of the 8-way jumper wiring system that requires only one wire connection to a coil, common or contact power distribution terminal.

Optional gold contacts switch low-energy loads reliably as low as 5V, 10 mA, 50 mW.



Ideal Applications

- Provides longer life for PLC, saving money and increasing efficiency
- Switching currents or voltages too high for PLC outputs to handle
- Interfacing two or more system voltages – for example, 24V to 120V
- Multiplies PLC outputs by using relays to turn two devices on and off simultaneously
- Provides isolation from solid-state output leakage current

Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Slim Line Relay

Description	Contact Rating	Coil Voltage	Pkg. Qty.	Cat. No. ^{1,2,3}
SPDT 1-pole 1 form C AgNi contacts	16 A	24V AC	1	700-HK36A24
		120V AC		700-HK36A1
		240V AC		700-HK36A2
		12V DC		700-HK36Z12
		24V DC		700-HK36Z24
		110V DC		700-HK36Z1
DPDT 2-pole 2 form C AgNi contacts	8 A	24V AC	1	700-HK32A24
		120V AC		700-HK32A1
		240V AC		700-HK32A2
		12V DC		700-HK32Z12
		24V DC		700-HK32Z24
		110V DC		700-HK32Z1

- ¹ LED option: Add suffix **-4** to the selected 700-HK relay catalog number; for the 240V AC units, add **-4L**.
- ² Push-to-test and LED option: Add suffix **-3-4** to the selected 700-HK relay catalog number; for 240V AC units, add suffix **-3-4L**.
- ³ For AgNi contact with gold plating: Replace **3** with **X** in catalog number For example, catalog number 700-HK36A1 becomes catalog number 700-HKX6A1.

Accessories

Description		Pkg. Qty.	Cat. No.
Screw terminal socket – guarded terminal style, accepts forked lug conductors. ⁵	1-pole, 5-blade, 10 A	10	700-HN121
	2-pole, 8-blade, 5 A		700-HN122
Push-in terminal socket ⁵	1-pole, 5-blade	10	700-HN223
Screw terminal socket for use with or without timing/surge suppression module – guarded terminal style ^{4,5}	1-pole, 5-blade, 16 A	10	700-HN221
	2-pole, 8-blade, 8 A		700-HN222
Push-in terminal socket ⁵	2-pole, 8-blade	10	700-HN224
8-way jumper (can be cut to length)	Red	1	700-HN180R
	Grey	1	700-HN180G
	Blue	1	700-HN180B

- ⁴ Suppressors and time modules easily plug into socket (catalog number 700-HN221). For use with 700-HK relays.
- ⁵ Socket includes retainer clip.



700-HN221



700-HN223



700-HN222



700-HN224

Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

www.rockwellautomation.com/sales-partners/overview.page



For more information on our complete family of general-purpose relay products, please visit: <http://ab.rockwellautomation.com/Relays-and-Timers/General-Purpose-Relays>

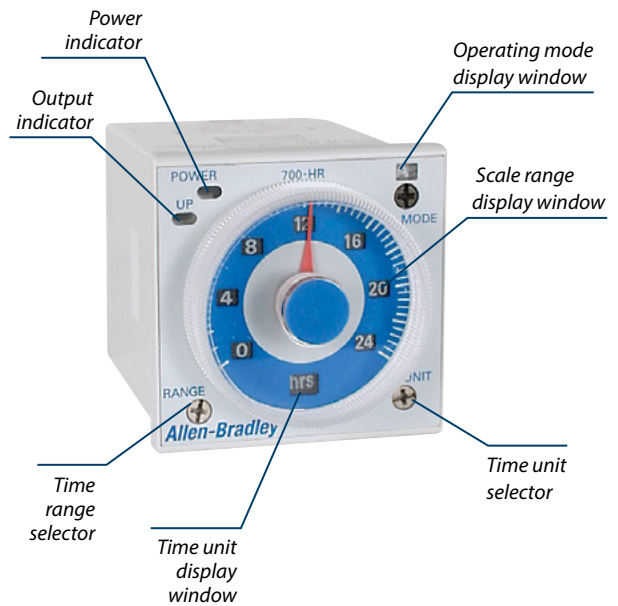
Relays & Timers



Dial Timing Relay 700-HR

- Timing range from 0.05 s...300 hr
- 5 A contact ratings or transistor outputs
- Socket- or panel-mount
- Single- or multi-function
- Multi-voltage inputs
- Up to 8 timing functions

700-HR Dial Timing Relays are plug-in, socket-mounted timing relays. They are easy to set, and can be panel- or DIN Rail-mounted.



Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Dial Timing Relay

Timing Mode	No. of Pins	Input Voltage	Contact Output	Cat. No. ¹
ON-delay (A), OFF-delay (D) One Shot (E), Repeat cycle OFF-Start (B), Repeat cycle ON-start (B2), Signal ON/OFF-delay (C), Delayed One Shot (J), Signal ON/OFF - delay (G)	11	24...48V AC 12...48V DC	DPDT	700-HR52TU24
		100...240V AC 100...125V DC		700-HR52TA17 ²
ON-delay (A), One Shot (E), Repeat cycle OFF-start (B), Repeat cycle ON-start (B2), Delayed One Shot (J)	11	24...48V AC 12...48V DC	SPDT timed + instantaneous contact	700-HRS42TU24
		24...48V AC/DC		700-HRP42TU24
		100...240V AC 100...125V DC		700-HRS42TA17
ON-delay (A)	8	24...48V AC/DC	SPDT timed + instantaneous contact	700-HRC12TU24
		24...48V AC 12...48V DC	DPDT	700-HRM12TU24
		100...240V AC	SPDT timed + instantaneous contact	700-HRM12TA17
Repeat cycle OFF-start (B)	8	12...48V DC/24...48V AC	DPDT	700-HRF72DU26
		100...125V DC/100...240V AC		700-HRF72DU27
Repeat cycle ON-start (B2)	8	100...125V DC/100...240V AC	DPDT	700-HRF82DU27

¹ Star-Delta model also available.

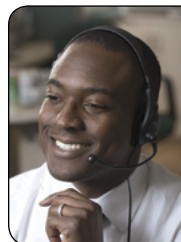
² Compatible with connections to 3-wire sensors.



700-HN100

Accessories

Description		Pkg. Qty.	Cat. No.
Screw terminal socket – guarded terminal style	8-pin	10	700-HN100
	11-pin		700-HN101
Frame adapter – For flush or door mounting		1	700-HN130
Protective cover		1	700-HN132



Need Help?

The Rockwell Automation Support Center is your 24/7 support for the answers you need now.

www.rockwellautomation.com/support/overview.page



Relays & Timers



Economy Timing Relays 700-FE

- Adjustable functions and timing
- Socket-free DIN Rail mount
- Coil surge protection

High Performance Timing Relays 700-FS

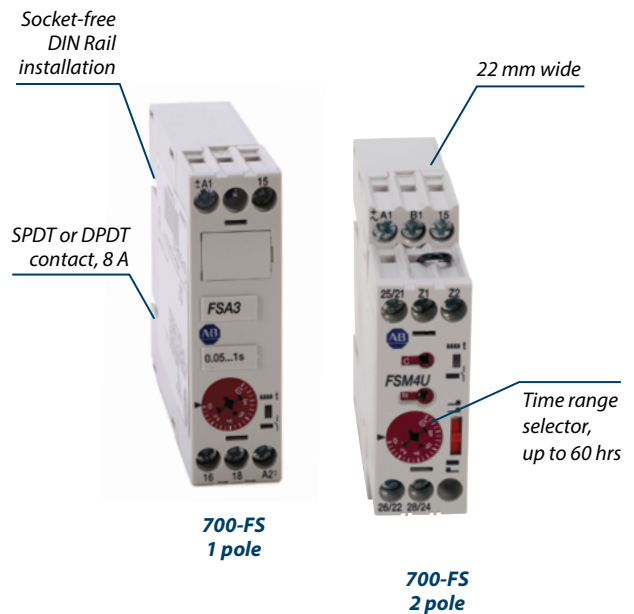
- Additional adjustable functions and timing
- Coil surge protection
- Hazardous location version available

700-FE Economy Timing Relays are a very narrow 17.5 mm wide. They have a timing range of 0.05 s...10 hr. The multi-function version helps reduce your spare parts inventory and standardize your design.



700-FE

700-FS DIN Rail High Performance Timing Relays have a 22.5 mm space-saving design and a timing range of 0.05 s...60 hr. The multi-function timing helps you reduce stock and standardize your design.



**700-FS
1 pole**

**700-FS
2 pole**

Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Economy Timing Relays

Operating Mode	Contact Output	Cat. No.
ON-delay	1 N.O.	700-FEA1TU22
	SPDT (1 C/O)	700-FEA3TU23
OFF-delay	1 N.O.	700-FEB1TU22
	SPDT (1 C/O)	700-FEB3TU23
One Shot	1 N.O.	700-FED1TU22
	SPDT (1 C/O)	700-FED3TU23
ON-delay, OFF-delay, One Shot, Flasher (repeat cycle starting with pulse)	1 N.O.	700-FEM1TU22
ON-delay, OFF-delay, One Shot, Flasher (repeat cycle starting with pulse)	SPDT (1 C/O)	700-FEM3TU23
Star-Delta	2 N.O. (1 side common)	700-FEY2QU23

700-FE Accessories

Description	Pkg. Qty	Cat. No.
Panel mounting adapter – For surface mounting according to drilling plan EN 50002	5	199-FSA

High Performance Timing Relays

Operating Mode	Contact Output	Timing Range	Cat. No.
ON-delay		0.05 s...60 hr	700-FSA3UU23
		0.05...1 s	700-FSA3AU23
		0.5...10 s	700-FSA3CU23
		0.5...10 min	700-FSA3GU23
OFF-delay	SPDT 1 C/O Contact	0.05 s...60 hr	700-FSB3UU23
		0.05...1 s	700-FSB3AU23
		0.5...10 s	700-FSB3CU23
		0.5...10 min	700-FSB3GU23
ON- and OFF-delay		0.05...1 s	700-FSC3AU23
		0.5...10 s	700-FSC3CU23
One shot		0.05...1 s	700-FSD3AU23
		0.5...10 s	700-FSD3CU23
ON-delay	DPDT 2 C/O Contacts	0.05 s...60 hr	700-FSA4UU23
OFF-delay		0.05 s...60 hr	700-FSB4UU23
Multi-function ¹	(SPDT) 1 C/O	0.05 s...60 hr	700-FSM3UU23 ²
		0.05 s...60 hr	700-FSM3UZ12
	(DPDT) 2 C/O	0.05 s...60 hr	700-FSM4UU23 ²
		0.05 s...60 hr	700-FSM4UZ12
Star-Delta	2 N.O. (1 side common)	1.5...30 s	700-FSY2DU23

¹ Catalog number ending in suffix U23 = input voltage of 24...48V DC/24...240V AC and suffix Z12 = input voltage 12V DC.

² Add **-EX** for hazardous location rating Class I Div 2, Class I, Zone 2, ATEX and IEC EX.

700-FS Accessories

Description	Pkg. Qty.	Cat. No.
Setting knob with scale (for time setting without tools)	10	700-FSK
Panel mounting adapter (for surface mounting according to drilling plan EN 50 002)	5	199-FSA



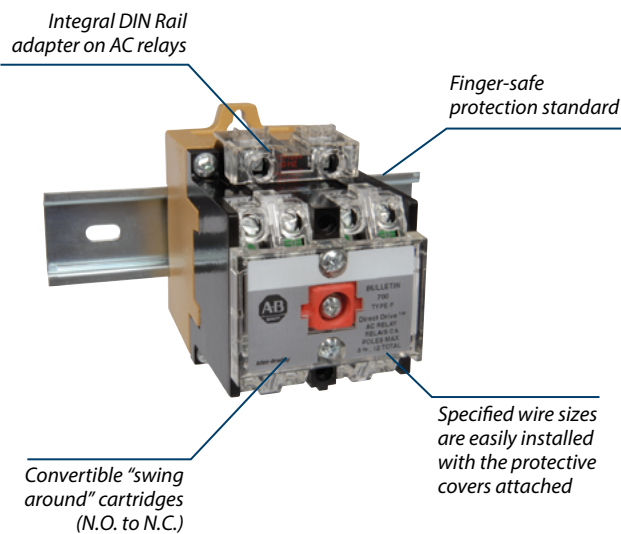
Relays & Timers



NEMA Heavy-Duty Relays 700-P

- NEMA and IEC ratings
- 600V maximum AC/DC
- Broad current switching options (10 A, 20 A, 35 A)
- For machine tool and other heavy-duty applications

Heavy-Duty Relays have four types of contact cartridges to meet your specific switching requirements. Time delay, latching attachments, overlapping, and logic reed contacts can be combined into one relay to yield a custom-tailored application solution.



Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

NEMA Heavy-Duty Modular Relay =
Base Blank Relay + Contact Cartridge Kit + Adder Decks (optional) + Operating Coil

Base Relays (up to 4 poles)

Description	Coil	Cat. No.
Base blank relay	AC	110/120V AC 700-P◆00A1
	DC	24V DC 700DC-P◆00Z24

◆ Change symbol to **0,2,4** for number of poles required. 2 and 4 pole models include standard contact cartridge.

Individual Cartridge Selection

Description	Cat. No.
Standard contact cartridge - 10A	700-CP1
Master cartridge - 20A	700-CPM

Contact Cartridge Kits

Description	Package Contents	Cat. No.
Master cartridge relay kit	(4) Master contact cartridges 20 A rating	700-PMCKIT
Heavy-duty contact relay kit	Master cartridge kit, plus: (4) jumper terminals (to make two 35 A power pole contacts)	700-PHDKIT



Standard contact cartridge
700-CP1



Master contact cartridge
700-CPM

Adder Decks

Device Description	Additional Contact Cartridge Kits Required	Cat. No.
8 pole device	1 additional kit	700-PB00
12 pole device	2 additional kits	700-PB00 (Qty. 1) 700-PC00 (Qty. 1)

AC Operating Coils

Coil Volts	60 Hz Cat. No.	50 Hz Cat. No.
24	PA013	PA407
110 ¹	—	PA236
115...120 ¹	PA236	—
110...115 ²	—	PA322
120	PA322	—

¹ This coil is optimized for 115...120V, 60 Hz applications and will operate satisfactorily at 110V, 50 Hz.

² This coil is optimized for 110...115V, 50 Hz applications and will operate satisfactorily at 120V, 60 Hz.



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page



Relays & Timers



Industrial Control Relays

700-K Mini

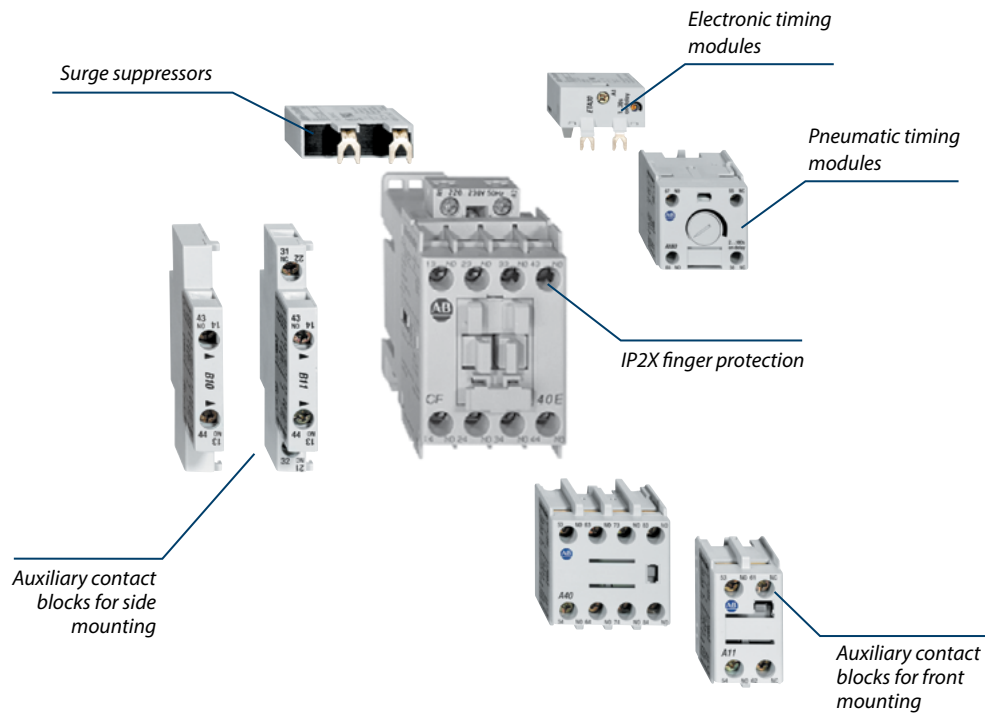
- Bifurcated contacts for low-level signals
- Optional integrated coil protection diode

700-CF

- Mechanically linked contact performance per IEC 60947-5-1
- Gold-plated, bifurcated version for low level switching
- Master control relay version rated 15 A (AC-15)
- Solid-state and pneumatic timing modules
- 4...10 poles

700-K and 700-CF IEC Control Relays are compact industrial relays capable of switching low-energy signals and providing features required for demanding industrial applications – mechanically linked contacts, timing options, long contact life – in an IEC design. These relays share accessories with the equivalent 100 IEC contactors.

Wide Range of Accessories to Meet Your Application Requirements



Relays & Timers



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Surge & Filter



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Product Selection

Control Relays

AC-12 I_{th} [A]		AC-15 I_e [A]				No. of Contacts		Screw Terminals	Spring Clamp Terminals
40 °C	60 °C	240V		400V		N.O.	N.C.	Cat. No.	Cat. No.
20	20	10	6	2	2	700-CF220⊗	700-CRF220⊗		
				3	1	700-CF310⊗	700-CRF310⊗		
				4	0	700-CF400⊗	700-CRF400⊗		

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table below.

Control Relay Accessories

Description	No. of Contacts		Standard Contacts
	N.O.	N.C.	Cat. No.
Front mounting auxiliary contact blocks	0	2	100-FA02
	1	1	100-FA11
	2	0	100-FA20
Side mounting auxiliary contact blocks	0	1	100-SA01
	1	0	100-SA10
	0	2	100-SA02

⊗ Coil Voltage Codes for AC and DC Control

AC Control		DC Control	
Code	Description	Code	Description
KJ	24V, 50/60 Hz	EJ	24V electronic (700-CF only)
D	110V, 50 Hz/120V, 60 Hz	ZJ	24V
KF	230V, 50 Hz	DJ	24V with integrated diode
KA	240V, 60 Hz		

Miniature Control Relays

AC-12 I_{th} [A]		AC-15 I_e [A]							No. of Contacts		Screw Terminals	Spring Clamp Terminals
40 °C	60 °C	24/48V	120V	240V	400V	500V	600V	690V	N.O.	N.C.	Cat. No.	Cat. No.
10	6	3	2	1	0.6	4	0	700-K40E-⊗	700-KR40E-⊗			
						3	1	700-K31Z-⊗	700-KR31Z-⊗			
						2	2	700-K22Z-⊗	700-KR22Z-⊗			
						1+1L ¹	1+1L ¹	700-KL22Z-⊗	700-KRL22Z-⊗			

¹ Late Break N.C. / Early Make N.O.

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table above.

Miniature Control Relays Accessories

Description	No. of Contacts		Standard Contacts
	N.O.	N.C.	Cat. No.
Front mounting auxiliary contact blocks	0	2	100-KFA02E
	1	1	100-KFA11E
	2	0	100-KFA20E

Pneumatic Timing Modules

Description	For Use With	Cat. No.	
ON-delay	100-C or 700-CF with AC coils or DC electronic coils	0.3...30 s range	100-FPTA30
		2...180 s range	100-FPTA180
OFF-delay	100-C all, 700-CF all	0.3...30 s range	100-FPTB30
		2...180 s range	100-FPTB180



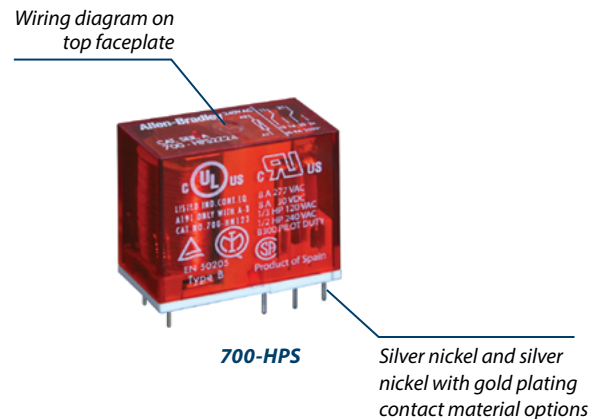
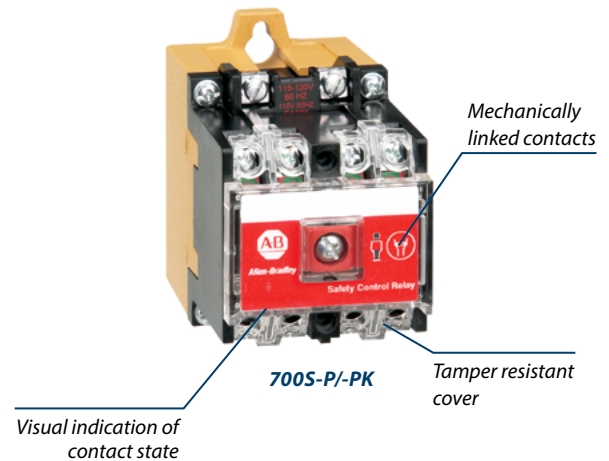
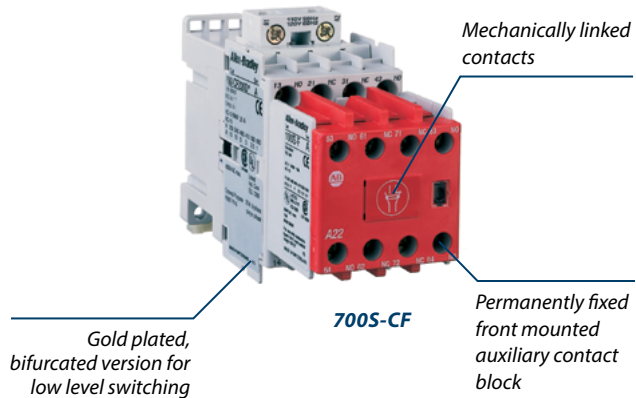
Relays & Timers



Safety Control Relays 700-HPS, 700S-CF, 700S-P/-PK

- Designed for use in safety circuits
- NEMA, IEC and general purpose styles
- Mechanically linked contacts

Allen-Bradley® relays designed for use in safety circuits are available in NEMA, IEC and general purpose styles. All feature mechanically linked contacts to comply with applicable IEC standards and are marked accordingly.



Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

IEC Safety Control Relays ¹

No. of Contacts		Standard Contacts (Main), Gold-Plated Bifurcated (Front)	Gold-Plated Bifurcated, All Contacts
N.O.	N.C.	Cat. No.	Cat. No.
4	4	700S-CF440⊗BC	700S-CFB440⊗C
5	3	700S-CF530⊗BC	700S-CFB530⊗C
6	2	700S-CF620⊗BC	700S-CFB620⊗C

¹ For contact ratings, see 700-CF on page 2-17.

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table at right.

NEMA Safety Control Relays – Standard, 10 A

No. of Contacts		AC Coils	24V DC Coil
N.O.	N.C.	Cat. No.	Cat. No.
3	1	700S-P310⊗	700S-DCP310DZ24
2	2	700S-P220⊗	700S-DCP220DZ24
7	1	700S-P710⊗	700S-DCP710DZ24
6	2	700S-P620⊗	700S-DCP620DZ24
5	3	700S-P530⊗	700S-DCP530DZ24
4	4	700S-P440⊗	700S-DCP440DZ24
3	5	700S-P350⊗	700S-DCP350DZ24
10	2	700S-P1020⊗	700S-DCP1020DZ24

⊗ The catalog number as listed is incomplete. Select a coil voltage code from the table at right.

NEMA Safety Control Relays – Master, 20 A

No. of Contacts		120V AC Coil	24V DC Coil
N.O.	N.C.	Cat. No.	Cat. No.
7	1	700S-PK710A1	700S-DCPK710Z24
6	2	700S-PK620A1	700S-DCPK620Z24
5	3	700S-PK530A1	700S-DCPK530Z24
4	4	700S-PK440A1	700S-DCPK440Z24
3	5	700S-PK350A1	700S-DCPK350Z24
10	2	700S-PK1020A1	700S-DCPK1020Z24
3	1	700S-PK310A1	700S-DCPK310Z24

⊗ Coil Voltage Codes for AC and DC Control

AC Control		DC Control	
Code	Description	Code	Description
IEC Safety Control Relays			
KJ	24V, 50/60 Hz	EJ	24V electronic
D	110V, 50 Hz/120V, 60 Hz	ZJ	24V
KF	230V, 50 Hz	DJ	24V with integrated diode
KA	240V, 60 Hz	NEMA Safety Control Relays	
NEMA Safety Control Relays		Z24	24V
A24	24V, 60 Hz		
B11	110V, 50Hz		
A1	120V, 60 Hz		

General Purpose Safety Control Relays

Description	Coil Voltage	AgNi + Au Gold Plated Contacts	AgNi Contacts
		Cat. No.	Cat. No.
8 A Relay	6V DC	700-HPSXZ06	700-HPS2Z06
	12V DC	700-HPSXZ12	700-HPS2Z12
	24V DC	700-HPSXZ24	700-HPS2Z24
	48V DC	700-HPSXZ48	700-HPS2Z48
	60V DC	700-HPSXZ60	700-HPS2Z60
	110V DC	700-HPSXZ1	700-HPS2Z1
	125V DC	700-HPSXZ01	700-HPS2Z01
Socket	–	700-HN123	



Safety

Our innovative safety products and solutions improve the functional operation of your machinery while helping to increase personnel safety, efficiency and productivity.

<http://ab.rockwellautomation.com/Safety>



Programmable Controllers



Micro Controllers Micro800® Family, Bulletin 2080

- Wide range of micro controllers (built-in I/O from 10...48 pts)
- Use Connected Components Workbench™ software to program your Micro800® Controllers
- Plug-in modules to customize your controller
- Supports a wide variety of communication protocols to suit specific application needs: EtherNet/IP™, DeviceNet™, Modbus TCP, Modbus RTU, ASCII and Open socket capabilities

Micro800 Control Systems are easy to install and maintain. One software package applies to the entire family. Right-size your controllers for your standalone machines. Invest in the functionality you need, and use plug-in modules for a system tailored to your specific application.



Micro810® Controllers Smart Relay Micro PLC

- Offers 12-point controllers
- Includes 8 A outputs, which replace the need for external relays
- Supports program download through USB programming port (adapter required)
- Allows you to configure and operate smart relay function blocks without a PC (LCD required)

* Product selection starts on page 2-22.



Micro820® Controllers Remote Automation Micro PLC

- Offers 20-point controllers
- Provides embedded 0...10V non-isolated 4-channel analog input and 1-channel analog output for speed control of an AC drive
- Communicates via EtherNet/IP™
- Supports program download through USB with an optional 3.5 in. remote LCD
- Supports up to two Micro800 plug-in modules

* Product selection starts on page 2-22.

Programmable Controllers

Relays & Timers



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Control Circuit & Load Protection



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Connected Components Workbench Software

- Single software to program your controllers, configure your drives, servo drives and safety relays, and design your HMI screens
- Easy to Configure – Single software package reduces initial machine development time and cost
- Easy to Program – Simplify programming process with sample code and user-defined function blocks
- Easy to Visualize – Reference Micro800 variables directly when creating HMI tags



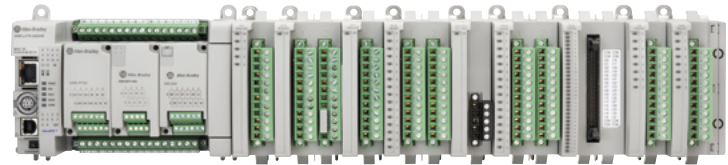
Download the Connected Components Workbench Software!
<http://www.rockwellautomation.com/go/lit/ccws>



Micro830® Controllers Flexible Micro PLC with Simple Motion

- Offers 10-point, 16-point, 24-point, and 48-point controllers
- Supports up to five Micro800 plug-in modules
- Provides embedded motion capabilities, up to three axes with 100 kHz pulse train outputs
- Provides embedded communications via USB programming port and non-isolated serial port

* Product selection starts on page 2-22.



Micro870 Controller with Expansion I/O Modules

Micro850® and Micro870™ Controllers

Scalable Micro PLCs with Ethernet.

- Provides embedded communications via USB programming port, non-isolated serial port (for RS-232 and RS-485 communications) and Ethernet port
- Provides embedded motion capabilities: Micro850® – up to three axes with 100 kHz PTO; Micro870™ – up to two axes with PTO

Micro850® Controllers

- Supports up to five Micro800® plug-in modules and up to four Micro800 expansion I/O modules
- Offers 24-point and 48-point controllers

Micro870™ Controllers

- Twice the memory capacity of Micro850 controller that supports up to 20,000 program steps and up to 128 KB user data
- Supports up to three plug-in modules, up to eight expansion I/O modules and up to 304 I/O points
- Offers 24-point controllers

* Product selection starts on page 2-23.



Programmable Controllers

Product Selection

Micro810 Controllers, 12 point



Line Power	Inputs	Outputs	Cat. No.
24V DC	(8) 12/24V DC ¹	(4) Relay	2080-LC10-12QWB
120/240V AC	(8) 120/240V AC	(4) Relay	2080-LC10-12AWA
24V DC	(8)12/24V DC ¹	(4) 24V Source DC	2080-LC10-12QBB
12V DC	(8) 12V DC ¹	(4) Relay	2080-LC10-12DWD
Accessories			
Description			Cat. No.
USB Adapter Plug			2080-USBADAPTER
1.5 in. LCD Display and Keypad			2080-LCD
120/240V AC to 24V DC Power Supply for Micro810, Micro820 and Micro830 10/16pt			2080-PSAC-12W

¹ Four configurable as analog.



Micro820 Controllers, 20 point

Line Power	Inputs	Outputs	Cat. No.
24V DC	(12) 24V DC	(7) 24V DC Source	2080-LC20-20QBB
	(12) 24V DC	(7) Relay	2080-LC20-20QWB
	(8) 120V AC (4) 24V DC	(7) Relay	2080-LC20-20AWB
	(12) 24V DC	(7) 24V DC Source	2080-LC20-20QBRR
	(12) 24V DC	(7) Relay	2080-LC20-20QWBR
	(8) 120V AC (4) 24V DC	(7) Relay	2080-LC20-20AWBR
	Accessories		
Description			Cat. No.
Micro800 3.5 inch remote LCD display module			2080-REMLCD
MicroSD™ card 2 GB			2080-SD-2GB
120/240V AC to 24V DC Power Supply Micro810, Micro820 and Micro830 10/16pt			2080-PSAC-12W

Micro830 Controllers, 10...48 Points



Line Power	Inputs	Outputs	Cat. No.
24V DC	(2) Normal 24V DC/AC, (4) Fast 24V DC	(4) Relay	2080-LC30-10QWB
	(2) Normal 24V DC/AC (4) Fast 24V DC	(2) Normal 24V DC Sink, (2) Fast 24V DC Sink	2080-LC30-10QVB
	(10) 120V AC	(6) Relay	2080-LC30-16AWB
	(6) Normal 24V DC/AC, (4) Fast 24V DC	(4) Normal 24V DC Sink, (2) Fast 24V DC Sink	2080-LC30-16QVB
	(6) Normal 24V DC/AC, (4) Fast 24V DC	(6) Relay	2080-LC30-16QWB
	(6) Normal 24V DC/AC, (8) Fast 24V DC	(8) Normal 24V DC Source, (2) Fast 24V DC Source	2080-LC30-24QBB
	(6) Normal 24V DC/AC, (8) Fast 24V DC	(8) Normal 24V DC Sink, (2) Fast 24V DC Sink	2080-LC30-24QVB
	(6) Normal 24V DC/AC, (8) Fast 24V DC	(10) Relay	2080-LC30-24QWB
	(28) 120V AC	(20) Relay	2080-LC30-48AWB
	(16) Normal 24V DC/AC, (12) Fast 24V DC	(16) Normal 24V DC Source, (4) Fast 24V DC Source	2080-LC30-48QBB
	(16) Normal 24V DC/AC, (12) Fast 24V DC	(16) Normal 24V DC Sink, (4) Fast 24V DC Sink	2080-LC30-48QVB
	(16) Normal 24V DC/AC, (12) Fast 24V DC	(20) Relay	2080-LC30-48QWB
Accessories			
Description			Cat. No.
120/240V AC to 24V DC Power Supply for Micro800			2080-PS120-240VAC

Programmable Controllers

Relays & Timers



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Control Circuit & Load Protection



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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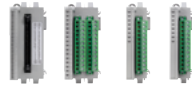


Product Selection

Micro850 Controllers, 24...48 point



Line Power	Inputs	Outputs	Cat. No.
24V DC	(14) 120V AC	(10) relay	2080-LC50-24AWB
	(14) 24V DC	(10) 24V DC source	2080-LC50-24QBB
	(14) 24V DC	(10) 24V DC sink	2080-LC50-24QVB
	(14) 24V DC	(10) relay	2080-LC50-24QWB
	(28) 120V AC	(20) relay	2080-LC50-48AWB
	(28) 24V DC	(20) 24V DC source	2080-LC50-48QBB
	(28) 24V DC	(20) 24V DC sink	2080-LC50-48QVB
	(28) 24V DC	(20) relay	2080-LC50-48QWB
Accessories			
Description			Cat. No.
120/240V AC to 24V DC power supply for Micro800			2080-PS120-240VAC



Expansion I/O Modules

Description	Cat. No.
8-point, 120V AC input	2085-IA8
8-point, 240V AC input	2085-IM8
8-point, 120/240V AC Triac output	2085-OA8
16-point, 12/24V DC sink/source input	2085-IQ16
32-point, 12/24V DC sink/source input	2085-IQ32T
16-point, 12/24V DC sink transistor output	2085-OV16
16-point, 12/24V DC source transistor output	2085-OB16
8-point, AC/DC relay output	2085-OW8
16-point, AC/DC relay output	2085-OW16
4-channel, 14-bit isolated voltage/current input	2085-IF4
8-channel, 14-bit isolated voltage/current input	2085-IF8
4-channel, 12-bit isolated voltage/current output	2085-OF4
4-channel, 16-bit RTD and TC isolated input module	2085-IRT4
2085 bus terminator	2085-ECR
Expansion Power Supply Module	2085-EP24VDC

Micro870 Controllers, 24 point



Line Power	Inputs	Outputs	Cat. No.
24V DC	(14) 24V DC	(10) relay	2080-LC70-24QWB
24V DC	(14) 24V DC	(10) 24V DC source	2080-LC70-24QBB



Plug-in Modules ¹

Description	Cat. No.
4-channel V/I analog input unipolar 0...20 mA, 0...10V 12bits (non-isolated)	2080-IF4
2-channel V/I analog input unipolar 0...20 mA, 0...10V, 12bits (non-isolated)	2080-IF2
2-channel V/I analog output unipolar 0...20 mA, 0...10V, 12 bits	2080-OF2
RS232/485 isolated serial port	2080-SERIALISOL
6-channel - trim pot analog input	2080-TRIMPOT6
Project, data log, recipe backup and high accuracy RTC 1	2080-MEMBAK-RTC 2080-MEMBAK-RTC2
2-channel RTD (non-isolated)	2080-RTD2
2-channel thermocouple (non-isolated)	2080-TC2
4-point, 12/24V DC sink/source input	2080-IQ4
4-point relay output, individually isolated, 2A	2080-OW4I
8-point combo, 12/24V DC, sink/source input, 12/24V DC sink output	2080-IQ4OV4
8-point, combo, 12/24V DC sink/source input 12/24V DC source output	2080-IQ4OB4
4-point, 24V DC source output	2080-OB4
4-point, 24V DC sink output	2080-OV4
High speed counter, 250 kHz	2080-MOT-HSC
20-node DeviceNet scanner	2080-DNET20

¹ All plug-in modules are for use with the Micro820, Micro830, Micro850 and Micro870 controllers, except catalog number 2080-MEMBAK-RTC and 2080-MEMBAK-RTC2. 2080-MEMBAK-RTC is for use with Micro830 and Micro850 controllers. 2080-MEMBAK-RTC2 is for use with Micro830, Micro850 and Micro870 controllers.

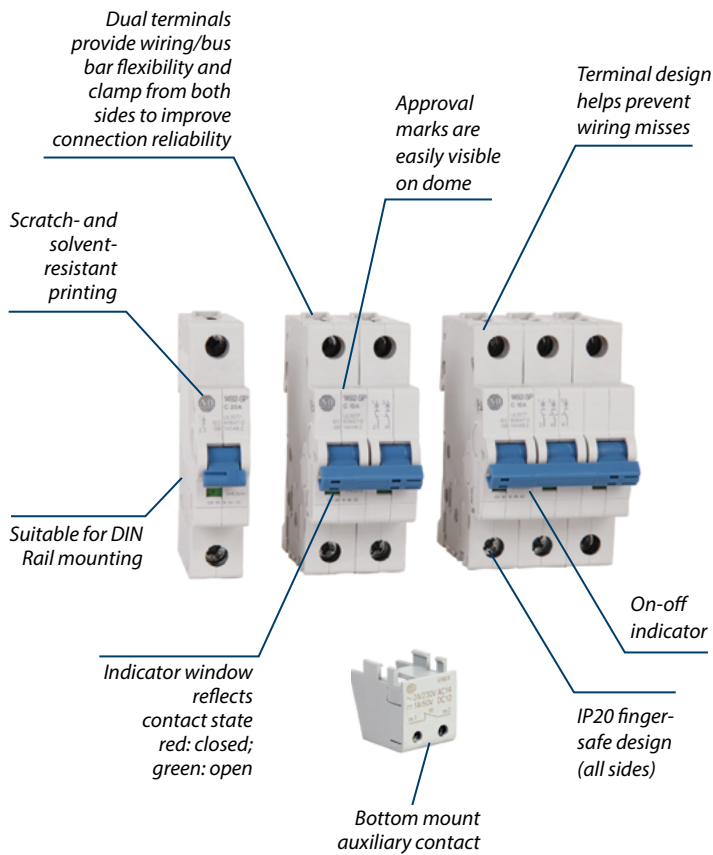


Control Circuit & Load Protection



Miniature Circuit Breakers 1492-SPM

- Supplemental protection for North America
- Current limiting
- Installation of up to six accessories per circuit breaker
- Reversible line and load connections
- Trip curves: B, C, and D



1492-SPM is a thermal-magnetic miniature circuit breaker as defined by IEC Standards. These devices are also rated as supplementary protectors, in North America, providing overcurrent protection for equipment where branch circuit protection is already provided, or is not required.

These supplementary protectors are offered as a broad portfolio of pole variants, current ratings, and trip curves to match the appropriate level of protection for your application. They may be used with bus bars for convenience in panel assembly, a wide range of left-, right- and space saving bottom-mount accessories, and lock out attachments for safety during maintenance.



Control Circuit & Load Protection

Relays & Timers



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Programmable Controllers



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Miniature Circuit Breakers/Supplemental Protectors

Continuous Current Rating (I_n) [A]	Trip Curve C – Inductive, 5...10 I_n ¹		
	1-Pole ²	2-Pole	3-Pole ²
	Cat. No.	Cat. No.	Cat. No.
0.5	1492-SPM1C005	1492-SPM2C005	1492-SPM3C005
1	1492-SPM1C010	1492-SPM2C010	1492-SPM3C010
2	1492-SPM1C020	1492-SPM2C020	1492-SPM3C020
3	1492-SPM1C030	1492-SPM2C030	1492-SPM3C030
4	1492-SPM1C040	1492-SPM2C040	1492-SPM3C040
5	1492-SPM1C050	1492-SPM2C050	1492-SPM3C050
6	1492-SPM1C060	1492-SPM2C060	1492-SPM3C060
7	1492-SPM1C070	1492-SPM2C070	1492-SPM3C070
8	1492-SPM1C080	1492-SPM2C080	1492-SPM3C080
10	1492-SPM1C100	1492-SPM2C100	1492-SPM3C100
13	1492-SPM1C130	1492-SPM2C130	1492-SPM3C130
15	1492-SPM1C150	1492-SPM2C150	1492-SPM3C150
16	1492-SPM1C160	1492-SPM2C160	1492-SPM3C160
20	1492-SPM1C200	1492-SPM2C200	1492-SPM3C200
25	1492-SPM1C250	1492-SPM2C250	1492-SPM3C250
30	1492-SPM1C300	1492-SPM2C300	1492-SPM3C300
32	1492-SPM1C320	1492-SPM2C320	1492-SPM3C320
40	1492-SPM1C400	1492-SPM2C400	1492-SPM3C400
50	1492-SPM1C500	1492-SPM2C500	1492-SPM3C500
63	1492-SPM1C630	1492-SPM2C630	1492-SPM3C630

¹ The catalog number listed represents Trip Curve C: Inductive. To order Trip Curve B (slightly inductive) replace the **C** in the catalog number with **B**. Example catalog number 1492-SPM1C005 becomes catalog number 1492-SPM1B005. To order Trip Curve D (highly inductive) replace the **C** in the catalog number with **D**.

² For 1+N and 3+N versions: add the suffix **-N** to the catalog number.



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

Replace with: www.rockwellautomation.com/global/support/product-selection-configuration

Accessories

Mounting Position	Description	Contacts	Cat. No.
Right mount	Shunt trip 110...415V AC/ 110...250V DC	–	189-AST1
	Shunt trip 12...60V AC/DC	–	189-AST2
	Auxiliary/signal contact	1 N.O./N.C. (1 C.O.)	189-ASCR3
	Auxiliary contact	1 N.O./N.C. (1 C.O.)	189-AR3
		1 N.O. + 1 N.C.	189-AR11
2 N.C.		189-AR02	
Bottom mount	Auxiliary contact	2 N.O.	189-AR20
		1 N.C.	189-AB01
		1 N.O.	189-AB10

Bus Bars

Description	Without Aux. Contact		With Aux. Contact	
	80 A	100 A	80 A	100 A
	Cat. No. ³	Cat. No. ³	Cat. No. ³	Cat. No. ³
1-phase	1492-A1B8	1492-A1B1	1492-A1B8H	1492-A1B1H
2-phase	1492-A2B8	1492-A2B1	1492-A2B8H	1492-A2B1H
3-phase	1492-A3B8	1492-A3B1	1492-A3B8H	1492-A3B1H

Bus Bar Accessories

Description	Cat. No.
Terminal power feed, 35 mm ² – straight lug	1492-AAT1S
Terminal power feed, 35 mm ² – offset lug low profile	1492-AAT1LP
Dedicated power feed, 50 mm ²	1492-AAT2
End cover, for 1-phase bus bars	1492-A1E
End cover, for 2-, 3-phase bus bars	1492-AME
Protective cover (for unused pins)	1492-AAP

³ Catalog numbers listed are for 1 meter bus bars.

Specifications

Standards Compliance	UL 1077, CSA C22.2 No. 235, EN 60947-2, GB 14048.2
Certifications	UL Recognized – File No. E65138 ⁴ , EAC Certified, CSA Certified – File No. 259391 ⁴ , CE Marked, CCC Certified, VDE Certified, RoHS Compliant
Rated Voltage	UL/CSA: Max. 480Y/277V AC, IEC: Ue 230/400V AC
Interrupting Capacity	UL/CSA: 5...10 kA, IEC: 15 kA

⁴ 1+N and 3+N devices are not UL recognized or CSA certified.

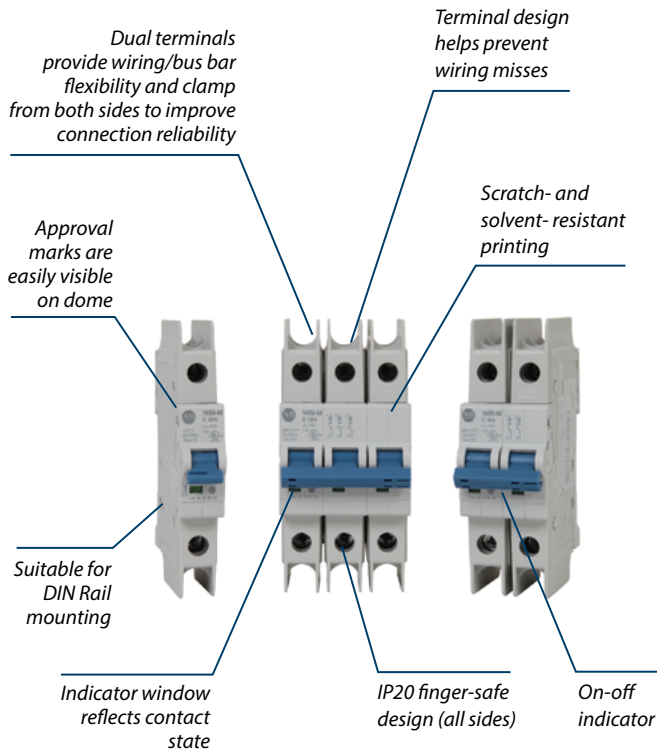


Control Circuit & Load Protection



Miniature Circuit Breakers 1489

- UL/CSA Listed for branch circuit protection
- Current limiting
- Reversible line and load connections
- Attachments available for Lockout/Tagout
- Trip curves: C and D



1489-M thermal-magnetic circuit breakers are approved for branch circuit protection in the United States and Canada, and are certified as Miniature circuit breakers for IEC applications.

These branch protectors are compatible with many accessories to meet diverse application needs, including UL 508 Listed bus bars for convenience in panel assembly, auxiliary contacts, signal contacts and shunt trips for versatility, and lockout attachments for safety during maintenance.



Control Circuit & Load Protection

Relays & Timers



2-2...2-19

Programmable Controllers



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Miniature Circuit Breakers

Continuous Current Rating (I_n) [A]	Trip Curve C ¹ – Inductive, 5...10 I_n		
	1-Pole	2-Pole	3-Pole
	Cat. No.	Cat. No.	Cat. No.
0.5	1489-M1C005	1489-M2C005	1489-M3C005
1	1489-M1C010	1489-M2C010	1489-M3C010
1.6	1489-M1C016	1489-M2C016	1489-M3C016
2	1489-M1C020	1489-M2C020	1489-M3C020
3	1489-M1C030	1489-M2C030	1489-M3C030
4	1489-M1C040	1489-M2C040	1489-M3C040
5	1489-M1C050	1489-M2C050	1489-M3C050
6	1489-M1C060	1489-M2C060	1489-M3C060
7	1489-M1C070	1489-M2C070	1489-M3C070
8	1489-M1C080	1489-M2C080	1489-M3C080
10	1489-M1C100	1489-M2C100	1489-M3C100
13	1489-M1C130	1489-M2C130	1489-M3C130
15	1489-M1C150	1489-M2C150	1489-M3C150
16	1489-M1C160	1489-M2C160	1489-M3C160
20	1489-M1C200	1489-M2C200	1489-M3C200
25	1489-M1C250	1489-M2C250	1489-M3C250
30	1489-M1C300	1489-M2C300	1489-M3C300
32	1489-M1C320	1489-M2C320	1489-M3C320
35	1489-M1C350	1489-M2C350	1489-M3C350

¹ The catalog number listed represents Trip Curve C: Inductive. To order Trip Curve D (highly inductive), replace the **C** in the catalog number with **D**. Example: Catalog number 1489-M1**C**005 becomes Catalog number 1489-M1**D**005.

Specifications

Standards Compliance	UL 489, CSA C22.2 No. 235, EN 60947-2, GB 14048.2
Certifications	UL Listed, File No. E197878, CSA Certified, CE Marked, CCC Certified, VDE Certified, RoHS Compliant, EAC Certified
Rated Voltage	UL/CSA: Max. 480Y/277V AC IEC: Ue 230/400V AC
Interrupting Capacity	UL/CSA: 10 kA IEC: 15 kA

Accessories

Description	Contacts	Cat. No.
Shunt trip 110...415V AC/110...250V DC	–	1489-AMST1
Shunt trip 12...60V AC/DC	–	1489-AMST2
Signal contact	1 N.O./N.C. (1 C.O.)	1489-AMRS3
Auxiliary contact	1 N.O./N.C. (1 C.O.)	1489-AMRA3

Bus Bars

Description	No. of Pins	No. of Circuit Breakers	Cat. No. ^{2,3,4}
1-phase	6	6	1489-AMCL106
	12	12	1489-AMCL112
	18	18	1489-AMCL118
2-phase	6	3	1489-AMCL206
	12	6	1489-AMCL212
	18	9	1489-AMCL218
3-phase	6	2	1489-AMCL306
	12	4	1489-AMCL312
	18	6	1489-AMCL318

Bus Bar Accessories

Description	Cat. No.
Terminal power feed, 35 mm ²	1489-AMCLT35
Dedicated power feed, 50 mm ²	1489-AMCLT50D
Protective shroud (for unused pins)	1489-AMCLPS

² Package quantity of 10

³ cULus, UL 508, EN 60947-1, CE Marked

⁴ Maximum of three bus bars allowed



Looking for More?

This catalog highlights only our most essential components; for a complete product selection, visit us at:

<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>



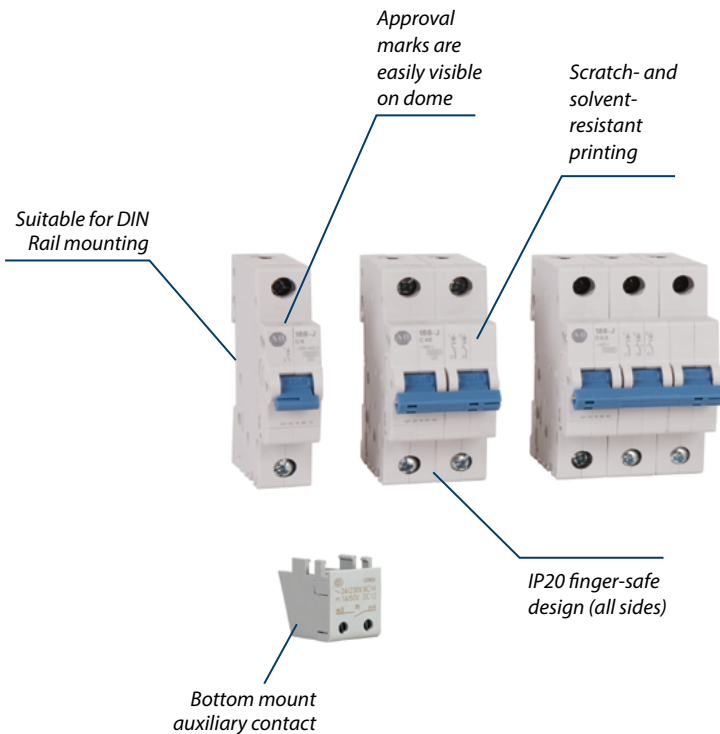
Control Circuit & Load Protection



Regional Circuit Breakers 188-J

- Available only in China and Europe
- 0.5...63 A; 1(+N), 2, 3(+N), 4 poles
- Current limiting
- Reversible line and load connections
- Trip curves: B, C, and D

188-J circuit breakers are for application at the equipment level. These products have regional certifications only and are available in China and Europe.



Control Circuit & Load Protection

Relays & Timers



2-2...2-19

Programmable Controllers



2-20...2-23



2-24...2-35

Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Regional Circuit Breakers

Continuous Current Rating (I_n) [A]	Trip Curve C – Inductive, 5...10 I_n ^{1,2}			
	1-Pole ³	2-Pole	3-Pole ³	4-Pole
	Cat. No.	Cat. No.	Cat. No.	Cat. No.
0.5	188-J1C005	188-J2C005	188-J3C005	188-J4C005
1	188-J1C010	188-J2C010	188-J3C010	188-J4C010
2	188-J1C020	188-J2C020	188-J3C020	188-J4C020
3	188-J1C030	188-J2C030	188-J3C030	188-J4C030
4	188-J1C040	188-J2C040	188-J3C040	188-J4C040
6	188-J1C060	188-J2C060	188-J3C060	188-J4C060
8	188-J1C080	188-J2C080	188-J3C080	188-J4C080
10	188-J1C100	188-J2C100	188-J3C100	188-J4C100
13	188-J1C130	188-J2C130	188-J3C130	188-J4C130
16	188-J1C160	188-J2C160	188-J3C160	188-J4C160
20	188-J1C200	188-J2C200	188-J3C200	188-J4C200
25	188-J1C250	188-Ja2C250	188-J3C250	188-J4C250
32	188-J1C320	188-J2C320	188-J3C320	188-J4C320
40	188-J1C400	188-J2C400	188-J3C400	188-J4C400
50	188-J1C500	188-J2C500	188-J3C500	188-J4C500
63	188-J1C630	188-J2C630	188-J3C630	188-J4C630

¹ The catalog number listed represents Trip Curve C: Inductive. To order Trip Curve B (slightly inductive) replace the **C** in the catalog number with **B**.

To order Trip Curve D (highly inductive) replace the **C** in the catalog number with **D**.

² Trip Curve B is not available in current ratings 0.5...4 A.

³ For 1+N and 3+N versions: add the suffix -N to the catalog number.

Specifications

Standards Compliance	EN 60898-1, GB 10963
Certifications	CE Marked, CCC Certified, VDE Certified, EAC Certified
Rated Voltage	IEC: Ue 230/400V AC
Interrupting Capacity	IEC: 10 kA

Accessories

Mounting Position	Description	Contacts	Cat. No.
Right mount	Shunt trip 110...415V AC/ 110...250V DC	–	189-AST1
	Shunt trip 12...60V AC/DC	–	189-AST2
	Auxiliary/signal contact	1 N.O./N.C. (1 C.O.)	189-ASCR3
	Auxiliary contact	1 N.O./N.C. (1 C.O.)	189-AR3
		1 N.O. + 1 N.C.	189-AR11
		2 N.C.	189-AR02
2 N.O.		189-AR20	
Bottom mount	Auxiliary contact	1 N.C.	189-AB01
		1 N.O.	189-AB10

Bus Bars

Description	Pkg. Qty.	Without Aux. Contact		With Aux. Contact	
		No. of Pins	Cat. No.	No. of Pins	Cat. No.
1-phase	1	60	189-CL1	38	189-CL1H
	20	12	189-CL112	9	189-CL1H09
	20	6	189-CL106	6	189-CL1H06
	20	2	189-CL102	2	189-CL1H02
2-phase	1	58	189-CL2	44	189-CL2H
	10	12	189-CL212	10	189-CL2H10
	10	6	189-CL206	6	189-CL2H06
	10	4	189-CL204	4	189-CL2H04
3-phase	1	60	189-CL3	48	189-CL3H
	10	12	189-CL312	12	189-CL3H12
	10	6	189-CL306	6	189-CL3H06
4-phase	1	56	189-CL4	48	189-CL4H
Description		Pkg. Qty.	No. of Pins	Cat. No.	
2-phase MCB to RCD		10	4	189-CL204	
4-phase MCB to RCD		10	8	189-CL408	
Bus Bar Accessories					
Terminal power feed, 25 mm ²		10	–	189-CLT25	
Terminal power feed, 50 mm ²		10	–	189-CLT50	
Dedicated power feed, 50mm ²		10	–	189-CLT50D	
End cover, for 1-phase bus bars		10	–	189-CL1EC	
End cover, for 2, 3 phase bus bars		10	–	189-CL3EC	
End cover, for 4 phase bus bars		10	–	189-CL4EC	
Protective cover (for unused pins)		10	–	189-CLPS	



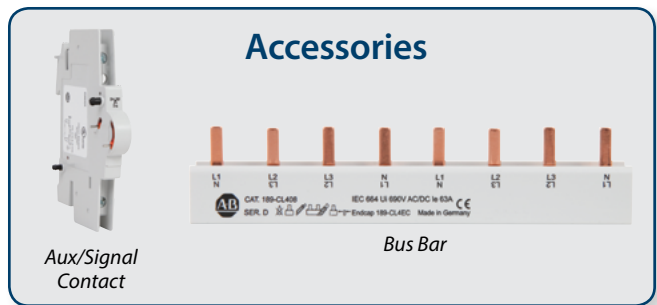
Control Circuit & Load Protection



Residual Current Devices 1492-RCDA

- 25...80 A residual current devices
- 30 mA sensitivity devices for personnel protection
- Reversible line and load connections
- Suitable for protection against AC and pulsating DC (rectified AC) earth leakage current
- Dual terminals allow a more secure connection of two wires, or both a wire and bus bar

By detecting small leakage currents and disconnecting all ungrounded connectors quickly, RCDs can prevent injury to exposed personnel and damage to equipment.



Control Circuit & Load Protection

Relays & Timers



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Programmable Controllers



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Residual Current Devices

Sensitivity (mA)	Rated Current (A)	2-Pole (1-Pole + Neutral)		4-Pole (3-Pole + Neutral)		
		Ut min = 110V	Ut min = 170V	Ut min = 110V	Ut min = 110V (With Delay)	Ut min = 170V
30	25	1492-RCDA2A25-US	1492-RCDA2A25	1492-RCDA4A25-US	–	1492-RCDA4A25
	40	1492-RCDA2A40-US	1492-RCDA2A40	1492-RCDA4A40-US	–	1492-RCDA4A40
	63	–	–	1492-RCDA4A63-US	–	1492-RCDA4A63
	80	–	–	–	–	1492-RCDA4A80
100	25	1492-RCDA2B25	–	1492-RCDA4B25	–	–
	40	1492-RCDA2B40	–	1492-RCDA4B40	1492-RCDA4B40S	–
	63	–	–	1492-RCDA4B63	1492-RCDA4B63S	–
300	25	1492-RCDA2C25	–	1492-RCDA4C25	–	–
	40	1492-RCDA2C40	–	1492-RCDA4C40	1492-RCDA4C40S	–
	63	–	–	1492-RCDA4C63	1492-RCDA4C63S	–
	80	–	–	1492-RCDA4C80	–	–
500	25	–	–	1492-RCDA4D25	–	–
	40	–	–	1492-RCDA4D40	–	–
	63	–	–	1492-RCDA4D63	–	–
	80	–	–	1492-RCDA4D80	–	–
Diagram						

Accessories

Contact Blocks

Description ^{1,2,3}	Contacts	Cat. No.
Auxiliary/signal contact	1 N.O./N.C. (1 C.O.)	189-ASCR3

- ¹ A maximum of one C.O. type signal contact and one C.O. type auxiliary contact OR two C.O. type auxiliary contacts may be installed per 1492-RCD.
- ² A maximum of one 189-AR11, -AR02, or AR20 auxiliary contact may be installed per 1492-RCD. They may not be combined with C.O. type contacts.
- ³ A maximum of three accessories of any type may be installed per 1492-RCD. The signal contact must be mounted closest to the RCD, then the auxiliary contact(s). For allowed combinations and installation instructions, please contact your local Rockwell Automation sales office or Allen-Bradley distributor.

Bus Bars

Description	Pins	Pkg. Qty.	Cat. No. ⁴
2-Phase MCB to RCD	4	10	189-CL204
4-Phase MCB to RCD	8	10	189-CL208

⁴ These devices are CE marked, but not certified to any UL, CSA, or other standard.

Specifications

Standards Compliance	UL 1053, ANSI/NFPA 70, EN 61008, CSA C22.2 No. 144, GB 16916
Certifications	cURus Recognized, File No. E53935, CE Marked, CCC Certified, VDE Certified, RoHS Compliant, EAC Certified
Rated Voltage	UL/CSA: Max. 480Y/277V AC IEC: Ue 230/400V AC
Interrupting Capacity	Rated conditional short-circuit 10 kA (SCPD – fuse gG 100 A) Rated residual breaking capacity 1 kA



Control Circuit & Load Protection



Fuse Holders 1492-FB

- For Class CC, J and Midget fuses
- Compact size
- Handle isolates the fuse from top-wired power when installing or removing fuse
- Terminals are shipped in open position
- Optional blown fuse indicator

Optional blown fuse indicators for easy circuit troubleshooting



Terminal power feed

Busbar

Suitable for DIN Rail mounting

Label holder



IP20 finger-safe design (front)

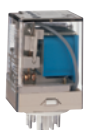
The 1492-FB fuse holder family is designed for use in many OEM applications, such as power supplies, equipment protection, primary and secondary control transformers, solenoids, lighting and heater loads, and drives.

1492-FB fuse holders provide a safe and convenient means for installation of Class CC, J and Midget fuses. To support correct fuse type installation, the Class CC fuse holder is designed to reject a Midget fuse or international 10 x 38 mm fuse. The Class J fuse holder will reject all fuses other than a Class J fuse.

All fuse holders are UL Listed and CSA Certified for branch circuit protection. They are excellent for wire protection, small motor loads, and group protection of small motor loads. The Midget fuse holder is also CE Marked for 10 x 38 mm IEC Midget fuses.

Control Circuit & Load Protection

Relays & Timers



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Programmable Controllers



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

Fuse Holders

Description		Midget Fuse	Class CC Fuse	Class J Fuse	
		30 A	30 A ¹	30 A	60 A
1-Pole	Fuse block	1492-FB1M30	1492-FB1C30	1492-FB1J30	1492-FB1J60
	Fuse block with indication, 110...600V ²	1492-FB1M30-L	1492-FB1C30-L	1492-FB1J30-L	1492-FB1J60-L
	Fuse block with indication, 12...72V	1492-FB1M30-D1	1492-FB1C30-D1	–	–
	Pieces per carton	12	12	6	6
2-Pole	Fuse block	1492-FB2M30	1492-FB2C30	1492-FB2J30	1492-FB2J60
	Fuse block with indication, 110...600V ²	1492-FB2M30-L	1492-FB2C30-L	1492-FB2J30-L	1492-FB2J60-L
	Pieces per carton	6	6	3	3
3-Pole	Fuse block	1492-FB3M30	1492-FB3C30	1492-FB3J30	1492-FB3J60
	Fuse block with indication, 110...600V ²	1492-FB3M30-L	1492-FB3C30-L	1492-FB3J30-L	1492-FB3J60-L
	Pieces per carton	4	4	2	2

¹ All major fuse brands and current ranges have been evaluated for this fuse holder. Due to the heat they generate, the following fuses must be derated: Mersen ATQR 1.25 I = 0.42 A max., Mersen ATQR 1.40 I = 0.47 A max.

² 690V when used in IEC applications.

Accessories

Description	Size	Pkg. Qty.	Cat. No.
Fuse holder identification slide-in markers (blank marker squares slip into molded slot. 100 markers/card)	5 mm x 5 mm	5 cards	1492-MCSX5
	6 mm x 5 mm		1492-MC6X5

Specifications

Certifications	UL Listed, File No. E34648, CSA Certified, CE Marked
Standards Compliance	UL 512, CSA 22.2 No. 39, EN 60269-2

Bus Bars

Description	Devices Per Meter	80 A	100 A
		Cat. No.	Cat. No.
1 phase	57	1492-A1B8	1492-A1B1
2 phase	29	1492-A2B8	1492-A2B1
3 phase	19	1492-A3B8	1492-A3B1

Bus Bar Accessories

Description	Cat. No.
Terminal Power Feed, 35 mm ² – offset lug	1492-AAT1
End Cover, for 1 phase bus bars	1492-A1E
End Cover, for 2, 3 phase bus bars	1492-AME
Protective cover (for unused pins)	1492-AAP



Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

www.rockwellautomation.com/sales-partners/overview.page

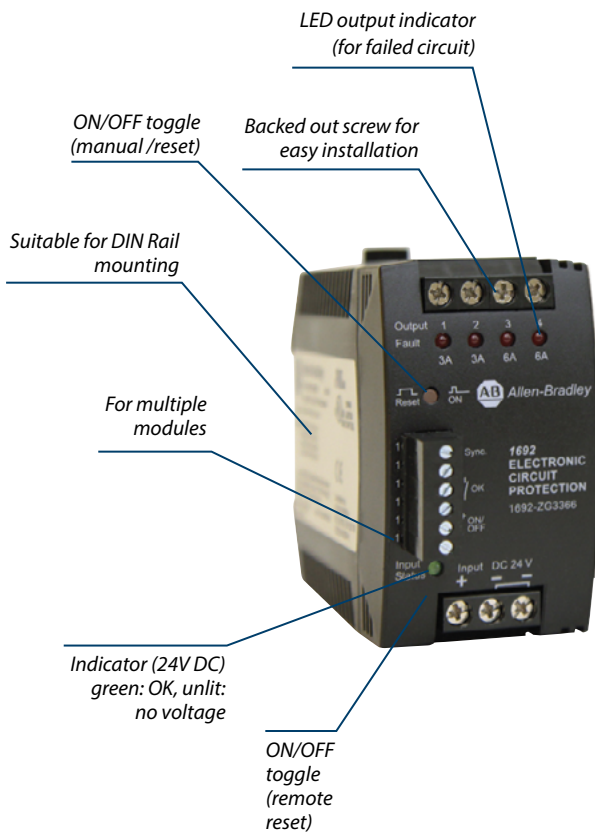


Control Circuit & Load Protection



Electronic Circuit Protector 1692

- Monitors both supply voltage and load current
- Select devices offer certified NEC Class 2 circuits
- Used on power supply 24V DC secondary circuits
- Protects against equipment damage due to short circuit and overload
- Faster than the self protection of the power supply



1692 electronic circuit protection modules protect the secondary circuits of 24V DC switched mode power supplies. These modules monitor both supply voltage and load currents, and you can monitor and control the modules both locally and remotely.

Electronic circuit protection is useful where traditional fuses and circuit breakers do not provide adequate protection for devices connected to switch mode power supplies.

Designed for 24V DC circuits, the 1692 provides comprehensive protection against short circuit and overcurrent conditions while allowing for inrush current.



Control Circuit & Load Protection

Relays & Timers



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Programmable Controllers



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection Electronic Circuit Protector

Voltage	NEC Class 2	Output Current Rating [A]				Cat. No.
		Output 1	Output 2	Output 3	Output 4	
24V DC	Yes	1	1	1	1	1692-ZR1111
	Yes	2	2	2	2	1692-ZR2222
	No	3	3	3	3	1692-ZG3333
	No	4	4	4	4	1692-ZG4444
	No	6	6	6	6	1692-ZG6666
	No	10	10	10	10	1692-ZGAAAA
	No	3	3	6	6	1692-ZG3366
	No	6	6	12	12	1692-ZG66BB
	Yes	(4) NEC Class 2 circuits (100 VA /circuit max)				1692-ZRCLSS

Specifications

Standards Compliance	UL 508, UL 2367, CSA C22.2, No. 142, ISA 12.12, EN 60950-1, NEC Class 2 (select devices)
Certifications	cULus Listed (UL 508), File No. E56639, cURus Recognized, CE Marked, Class I, Div II (CSA only)
Voltage	24V DC (18...30V DC)
Output Current	1 A...12 A, select devices – NEC Class 2
Output Ratings	Isolated safety extra-low voltage (SELV)
Operating Temperature	-25...+70 °C (-13...+158 °F) (non-condensing)
Storage Temperature	-40...+85 °C (-40...+185 °F)
Humidity	5...95% (non-condensing)
Terminal Type/Wire Gauge	Screw/24...10 AWG (0.2...4mm ²)
Dimensions [in. (mm)]	1.77 x 2.95 x 3.58 (45 x 75 x 91)
Weight [lb. (g)]	0.26 (120)



Need Help?

The Rockwell Automation Support Center is your 24/7 support for the answers you need now.

www.rockwellautomation.com/support/overview.page



Power Supplies



Basic Power Supplies 1606-XLB

- Rated outputs of 120W and 240W (5 A, 10 A)
- Designed for extended mean time between failure for longer service – at a significant price advantage
- Rated up to 1.37 million hours mean time between failure (MTBF)
- DC-OK signal allows monitoring of unit's output voltage
- Single-board design enables up to 95.2% efficiency, reducing heat output

* Product selection starts on page 2-38.

Essential Power Supplies 1606-XLE

- Rated outputs between 80...960 W (3.3...40 A at 24V DC)
- Multiple single- and three-phase inputs available for global applications
- Redundancy modules provide a means for managing dual power supplies for back-up power
- Superior efficiency and temperature ratings
- 20% extra power reserve for continuous use

* Product selection starts on page 2-38.



Compact Power Supplies 1606-XLP



- Rated outputs between 15...100 W (0.6...4.2 A at 24V DC)
- Multiple output voltages available
- Multiple single and three-phase inputs available for global applications
- Exceptional overload handling capability

* Product selection starts on page 2-39.

Power Supplies

Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Quality & Energy Management



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Surge & Filter



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Performance Power Supplies 1606-XLS

- Rated outputs between 80...960 W (3.3...40 A at 24V DC)
- World-class efficiency (up to 95%)
- 150% power boost feature handles startup loads
- Buffer modules for extended ride through
- Superior efficiency and temperature rating
- Extra-low inrush current requirement

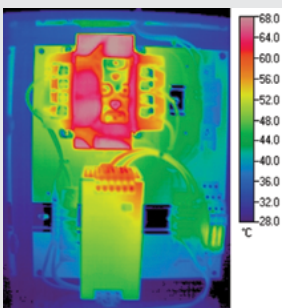
* Product selection starts on page 2-40.

Selection Criteria

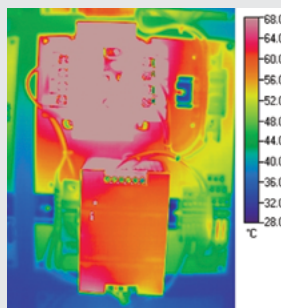
	XLB	XLE	XLP	XLS
Input Voltage	Single phase	Single/multi phase	Single/multi phase	Single/multi phase
Watt Range	120...240 W	80...960 W	15...100 W	80...960 W
Multiple Output Voltages	24...28VDC	X	X	X
Terminations	Screw	Screw	Cam lock spring / Screw	Cam lock spring / Screw
Auto Select Input	X	X	X	X
Power Boost	–	120%	–	150%/5 s
DC OK Relay Output	X	–	–	X
DC OK LED Indicator	X	X	X	X
Conformal Coat for Harsh Environments	–	X	–	X
Hazardous Location Approvals	–	X	X	X

Allen-Bradley efficiency = smaller enclosures

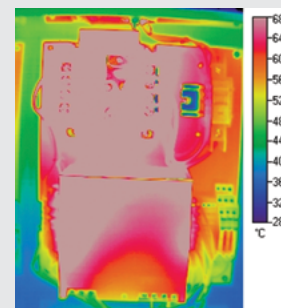
These thermal images show the difference an efficient power supply can make in a panel. All three power supplies are using the same transformer, but the Allen-Bradley power supply has the whole package running cooler due to its more efficient design.



A-B 1606-XLS – 10A, 24V DC – 93% Efficiency



Competitor A – 10A, 24V DC – 91% Efficiency



Competitor B – 10A, 24V DC – 84% Efficiency



Power Supplies

Product Selection – 1606-XLB

Basic Power Supplies - Single-phase

Input Voltage	Output Voltage [V DC]	Output Power [W]	Output Current [A]	Steady-state Input Current [V AC]		Cat. No.
				120	230	
100...120V/200...240V AC	24...28VDC	120W	5A	1.72	1.05	1606-XLB120E
100...240V AC	24...28VDC	240W	10A	2.17	1.18	1606-XLB240E



Product Selection – 1606-XLE

Essential Power Supplies – Single-phase

Input Voltage	Output Voltage [V DC]	Output Power [W]	Output Current [A]	Steady-state Input Current [V AC / V DC]		Cat. No.
				120	230	
100...120/200...240V AC	24...28	80	3.3	1.50	0.68	1606-XLE80E
		120	5	2.34	1.23	1606-XLE120E
		120	5	2.34	1.23	1606-XLE120EC ¹
90...132V AC	24...28	120	5	1.23	–	1606-XLE120EN
180...264V AC		120	5	–	1.17	1606-XLE120EE
100...120/200...240V AC	48...52	240	10	4.34	2.23	1606-XLE240E
		90...132V AC	240	10	3.73	–
180...264V AC	48...52	240	10	–	2.20	1606-XLE240EE
100...120/200...240V AC	24...28	240	10	4.34	2.00	1606-XLE240EP
100...120/200...240V AC	48...52	240	5	4.34	2.23	1606-XLE240F
100...240V AC	24...28	480	20	4.36	2.33	1606-XLE480EP
100...240V AC	48...56	480	10	4.36	2.33	1606-XLE480FP
100...240V AC	24...28	480	20	4.36	2.33	1606-XLE480EPC ¹
110...300V DC	24...28	480	20	4.68A @ DC 110V	1.69A @ DC 300V	1606-XLE480EP-D
100...240V AC	48...56	480	10	4.36	2.33	1606-XLE480FPC ¹
110...300V DC	48...56	480	10	4.68A @ DC110V	1.69A @ DC 300V	1606-XLE480FP-D



¹ The C suffix in the catalog number indicates that the product has conformal coating.

Essential Power Supplies – Two and Three Phases

Input Voltage	Output Voltage [V DC]	Output Power [W]	Output Current [A]	Steady-state Input Current [V AC]	Cat. No.
				400...480	
380...480V AC	12...15	480	20	3 x 0.65	1606-XLE96B-2
	48...56				1606-XLE240F-3
	24...28			3 x 0.85	1606-XLE120E-2
	24...28				1606-XLE240-3
480V AC	24	960	13.3	3 x 0.65	1606-XLE960DX-3N
	48				1606-XLE960MX-3N

Power Supplies

Relays & Timers



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Programmable Controllers



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Power Quality & Energy Management



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Surge & Filter



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Product Selection – 1606-XLP Compact Power Supplies – Single-phase



Input Voltage	Output Voltage [V DC]	Output Power [W]	Output Current [A]	Steady-state Input Current [V AC]		Cat. No.
				120	230	
100...240V AC, 85...375V DC	5...5.5	15 ¹	3	0.28	0.17	1606-XLP15A
	12...15	15 ¹	1.3	0.28	0.17	1606-XLP15B
	24...28	15 ¹	0.6	0.28	0.17	1606-XLP15E
	5...5.5	25 ¹	5	0.60	0.30	1606-XLP25A
	10...12	30 ¹	3	0.60	0.25	1606-XLP30B
	24...28	30 ¹	1.3	0.60	0.35	1606-XLP30E
	24...28	30 ¹	1.3	0.54	0.30	1606-XLP30EQ
	±12/15	36 ¹	2.8	0.65	0.40	1606-XLP36C
	12...15	50 ¹	4.2	1.00	0.60	1606-XLP50B
	24...28	50 ¹	2.1	0.77	0.44	1606-XLP50E
	24...28	50 ¹	2.1	1.00	0.60	1606-XLP50EZ
100...240V AC, 110...300V DC	12...15	60 ¹	4.5	0.91	0.54	1606-XLP60BQ
		60 ¹	4.5	0.97	0.61	1606-XLP60BQT
	24...28	72 ¹	2.5	0.98	0.58	1606-XLP60EQ
		90 ¹	2.5	1.05	0.66	1606-XLP60EQT
100...120/220...240V AC, 220...375V DC	12...15	95 ¹	3	1.60	0.80	1606-XLP72E
		100	7.5	1.90	0.90	1606-XLP90B
100...200/200...240V AC, 220...375V DC	24...28	100	3.9	2.00	0.95	1606-XLP95E
		90 ¹	4.2	2.10	1.00	1606-XLP100E
	48...56	100	2.1	2.10	1.00	1606-XLP100F

¹ NEC CLASS 2 Rated

Compact Power Supplies – Two-phase

Input Voltage	Output Voltage [V DC]	Output Power [W]	Output Current [A]	Steady-state Input Current [V AC]	Cat. No.
				400...480	
380...480V AC	24...28	90	3.75	2 x 0.36	1606-XLP90E-2
		100	4.2	2 x 0.40	1606-XLP100E-2

For more information on our complete family of power supply products, please visit:
<http://ab.rockwellautomation.com/Power-Supplies>



Power Supplies

Product Selection – 1606-XLS



Performance Power Supplies – Single-phase

Input Voltage	Output Voltage [V DC]	Output Power [W]	Output Current [A]	Steady-state Input Current [V AC / V DC]		Cat. No.
				120	230	
100...240V AC, 110...300V DC	24...48	80	3.3	1.42	0.82	1606-XLS80E
		120	5	1.10	0.62	1606-XLS120E 1606-XLS120EX
	12...15	180	15	1.65	0.93	1606-XLS180B
	24...48	240	10	2.22	1.22	1606-XLS240E
						1606-XLS240EA ¹
						1606-XLS240EC ¹
	48...56	240	5	2.22	1.22	1606-XLS240F
	28...32	240	8	2.22	1.22	1606-XLS240K
	24...48	480	20	4.56	2.48	1606-XLS480E
						1606-XLS480EA ¹
1606-XLS480EC ¹						
600V DC				0.79A @ 600VDC	1606-XLS480E-D	
200...240V AC	24...48	480	20	–	4.45	1606-XLS480EE
100...240V AC, 110...300V DC	48...56	480	10	4.56	2.48	1606-XLS480F
	36...42	480	13.3	4.56	2.48	1606-XLS480G
200...240V AC, 220...300V DC	24...28	960	34.3	–	4.6	1606-XLS960EE
	48...56	960	20	–	4.6	1606-XLS960FE
100...240V AC	24...28	960	40	8.6	4.5	1606-XLS960E
100...240V AC	48...56	960	20	8.6	4.5	1606-XLS960F

Performance Power Supplies – Three-phase

Input Voltage	Output Voltage [V DC]	Output Power [W]	Output Current [A]	Steady-state Input Current [V AC] 400...480	Cat. No.
380...480V AC	24...28	480	20	3 x 0.65	1606-XLS480E-3 1606-XLS480E-3C ¹
380...480V AC	48...56		10	3 x 0.65	1606-XLS480F-3
	36...42	13.3	1606-XLS480G-3		
	24...28	960	40	3 x 1.35	1606-XLS960E-3
	48...54		20		1606-XLS960F-3

¹ The **C** suffix in the catalog number indicates that the product has conformal coating. The **A** suffix in the catalog number indicates that the product carries the ATEX rating.

Power Supplies

Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Quality & Energy Management



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Surge & Filter



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Redundancy Modules 1606

- Provide back-up power in the event the primary power supply fails
- For all switched mode power supply lines
- Status indication for each switched mode power supply



Buffer Modules 1606

- Buffer load currents during typical mains faults, switching events or load peaks
- Prevent application interruption due to short voltage dips, drops or inrush spikes
- Typically greater than 10 years operational lifetime expectancy

DC UPS Modules

- Back-up power for bridge dips, sags or loss of power
- Extensive diagnostic and monitoring functions to aide in troubleshooting
- When power supply provides sufficient voltage, module charges the battery



Capacitor based

- Built-in capacitors as energy source, Electrochemical Double Layer Capacitors (EDLC) technology

Battery based

- Battery selections allow for scalable backup runtimes



Power Supplies



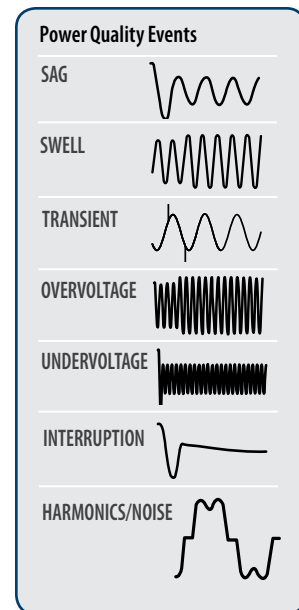
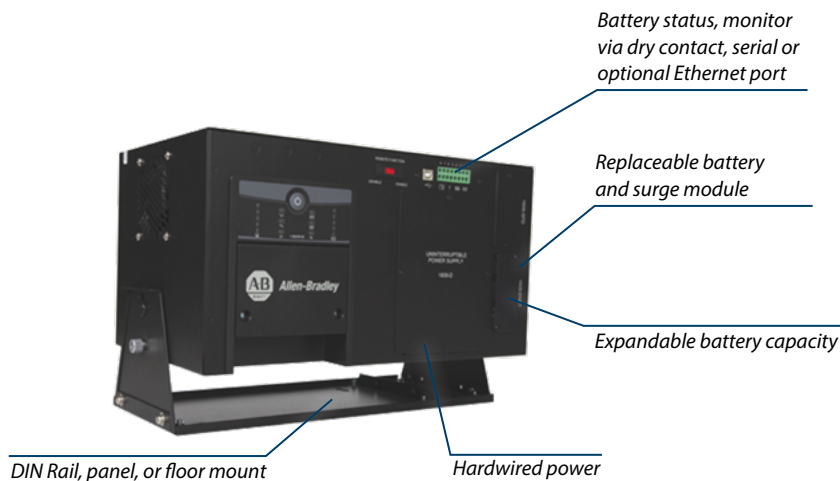
Uninterruptible Power Supplies 1609-B, 1609-D

- Integrated remote on/off and dry I/O contacts
- USB communications
- Available EtherNet/IP communications (1609-D only)
- Remote on/off enables UPS to deactivate when servicing electrical panel
- Logix integration with add on profiles (1609-D only)

Fast Recovery from Power Failures

The 1609 Uninterruptible Power Supply (UPS) is uniquely designed for the industrial market to provide back-up AC power to the control cabinet. The 1609 UPS will bridge dips, sags, or brief losses of power.

If necessary, the 1609 UPS will provide enough time to facilitate a safe shut-down of your industrial PC, PLC, data logging HMI, or any other critical device in the control scheme.



Product	Panel Mount	Integrated Dry I/O Contacts	Remote On/Off	Replaceable Surge Protection	EtherNet/IP	USB	Auto Voltage Regulation	Expandable Battery
1609-B	•	•	•	•	•	•	•	•
1609-D	•	•	•	•	•	•	•	•

Power Supplies

Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Quality & Energy Management



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Surge & Filter



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Product Selection Uninterruptible Power Supplies

Product Family ¹	Input/ Output Voltage [V]	Output Power [VA]	Cat. No.
1609-B Basic	120	600	1609-B600N
		1000	1609-B1000N
	230	600	1609-B600
		1000	1609-B1000E
1609-D Deluxe (full featured)	120	600	1609-D600N
		1000	1609-D1000N
		1500	1609-D1500N
	230	600	1609-D600E
		1000	1609-D1000E
		1500	1609-D1500E

¹ Requires two/three (1609-B/1609-D)12V batteries that must be ordered separately from the Accessories table below.

Specifications

Input

Capacity	VA	1609-B	1609-D		
	600	600VA (390 W)	600VA (390 W)		
1000	1000VA (390 W)	1000VA (650 W)			
1500	N/A	1500VA (980 W)			
Voltage Range 120VAC/230VAC	90...145V/184...264				
Current	1609-B	Input Voltage	600VA	1000VA	1500VA
		120V	5.4 A	8.9 A	N/A
	230V	2.8 A	4.7 A	N/A	
	1609-D	120V	5.5 A	8.8 A	13 A
230V		3.3 A	4.7 A	7.1A	
Capacity Frequency	50/60 Hz +/- 3 Hz				
PFC	None (load power factor is reflected in the input line)				

Output

Capacity	VA	1609-B	1609-D
	600	600VA (390 W)	600VA (390 W)
1000	1000VA (390 W)	1000VA (650 W)	
1500	N/A	1500VA (980 W)	

Accessories

Description	Cat. No.
Standard replacement battery 32...104 °F (0...40 °C)	1609-SBAT
High-temperature replacement battery 32...122 °F (0...50 °C)	1609-HBAT
External battery pack	1609-EXBAT
Surge protection module	1609-SPD
Replacement mounting bracket	1609-BRK



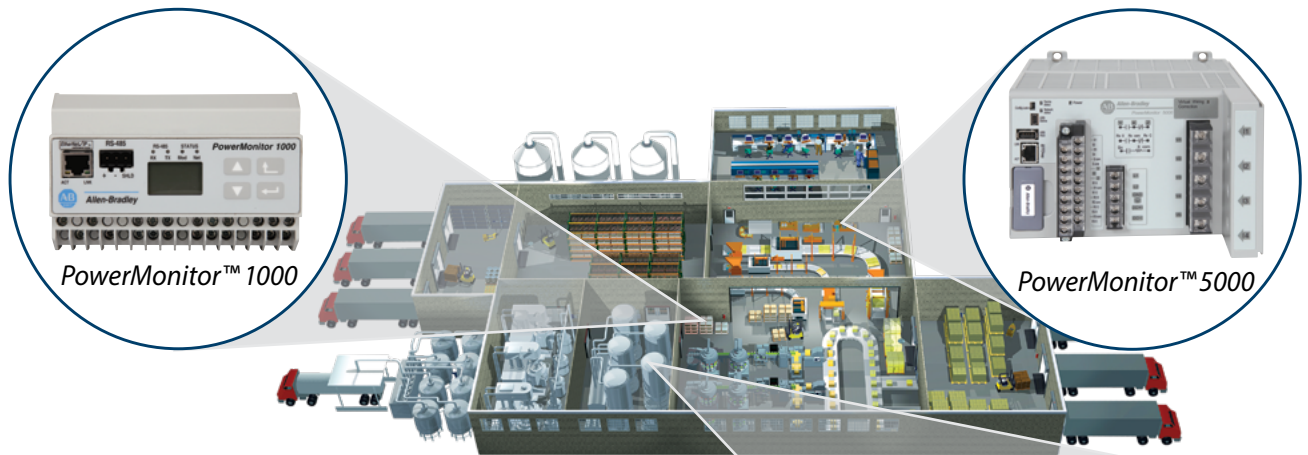
Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page



Power Quality & Energy Management



Energy Management

The use of energy monitoring hardware and software products can improve your equipment productivity and life, reduce your power use and its costs, and increase your company's profits. When is the right time to implement them?

- You are beginning an energy savings initiative
- You notice a spike in utility bills
- You need demand and consumption measured
- You have meters implemented currently and are looking for a sub-metering option
- You want to monitor individual processes and subprocesses

METERING LEVELS	PowerMonitor 500	PowerMonitor 1000 ¹	PowerMonitor 5000
Energy (Consumption) (kWh)	X	X	X
Demand (kW)	X	X	X
Power factor	X	X	X
Power quality aspects (sag/swell detection, harmonics, and transients)			X
Waveform capture			X
Door-mounted display	X	Optional	Optional
Ethernet/IP Network Communication	X	X	X
Configurable by using webpage		X	X
Accuracy levels (per standard EN62053-22)			
Class 1, 1% energy accuracy	X	X	
Class 0.2, 0.2% energy accuracy			X

¹ The PowerMonitor 1000 unit has an LCD display option and can be used with any Rockwell Automation operator interface.

* For more information, see FactoryTalk® EnergyMetrix™ software on page 2-50.

Power Quality & Energy Management

Relays & Timers



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Programmable Controllers



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Power Supplies



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Surge & Filter



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Product Selection

PowerMonitor 500

Type	Communication Network	Cat. No.
PowerMonitor 500 V1	Serial power meter	1420-V1-485
	Serial power meter, analog output	1420-V1A-485
	Serial power meter, pulse (digital) output	1420-V1P-485
	EtherNet/IP power meter	1420-V1-ENT
	EtherNet/IP power meter, analog output	1420-V1A-ENT
	EtherNet/IP power meter, pulse (digital) output	1420-V1P-ENT
PowerMonitor 500 V2	Serial power meter	1420-V2-485
	Serial power meter, analog output	1420-V2A-485
	Serial power meter, pulse (digital) output	1420-V2P-485
	EtherNet/IP power meter	1420-V2-ENT
	EtherNet/IP power meter, analog output	1420-V2A-ENT
	EtherNet/IP power meter, pulse (digital) output	1420-V2P-ENT

PowerMonitor 1000

Type	Communication Network	Cat. No.
PowerMonitor 1000 BC3	Basic consumption meter w/serial	1408-BC3A-485
	Basic consumption meter w/Ethernet	1408-BC3A-ENT
PowerMonitor 1000 TS3	Consumption + Volt/Current w/serial	1408-TS3A-485
	Consumption + Volt/Current w/Ethernet	1408-TS3A-ENT
PowerMonitor 1000 EM3	Energy management meter w/serial	1408-EM3A-485
	Energy management meter w/Ethernet	1408-EM3A-ENT

PowerMonitor 5000

Type	Communication Network	Cat. No.
PowerMonitor 5000 M5	Basic Power Quality w/Ethernet	1426-M5E
	Ethernet and optional ControlNet	1426-M5E-CNT
	Ethernet and optional DeviceNet	1426-M5E-DNT
PowerMonitor 5000 M6	Power Quality w/Ethernet	1426-M6E
	Ethernet and optional ControlNet	1426-M6E-CNT
	Ethernet and optional DeviceNet	1426-M6E-DNT
PowerMonitor 5000 M8	Advanced Power Quality w/Ethernet	1426-M8E
	Ethernet and optional ControlNet	1426-M8E-CNT
	Ethernet and optional DeviceNet	1426-M8E-DNT

Specifications

PowerMonitor 500

Parameter	Accuracy in % of Reading at 25 °C 50/60 Hz Unity Power Factor	Nominal/Range
Voltage sense inputs: V1	±0.5%	Line-neutral rms: 120 V nominal, 40...144V Line-line rms: 208 V nominal, 70...250V
Voltage sense inputs: V2		Line-neutral rms: 400 V nominal, 160...480V Line-line rms: 600 V nominal, 277...830V
Current	±0.5%	5A nominal, 0.01...6 A rms
Real Energy	Class 1 according to EN62053-21, ANSI C12.1 Class B according to EN50470-3	–
Reactive Energy	Class 1 according to EN62053-23, ANSI C12.1	–

PowerMonitor 1000

Parameter	Accuracy in % of Reading at 25 °C 50/60 Hz Unity Power Factor	Nominal/Range
Voltage sense inputs: V1, V2, V3	±0.5%	Line-neutral rms: 347V nominal, 15...399V Line-line rms: 600V nominal, 26...691V
Current sense	±0.5%	5 A rms
Power functions: kW, kVA, kVAR Demand functions: kW, kVA, kVAR Energy functions: kWH, kVAH, kVARH	EN62053-21:2003 Accuracy Requirement Class 1	–

PowerMonitor 5000

Parameter	Accuracy in % of Reading at 25 °C 50/60 Hz Unity Power Factor	Nominal/Range
Voltage sense inputs: V1, V2, V3, VN	±0.1%	Line-neutral rms: 398V nominal, 15...660V Line-line rms: 690V nominal, 26...1144V
Current sense input: I1, I2, I3, I4	±0.1%	5A nominal, 0.05...15.6 A rms
Power functions: kW, kVA, kVAR Demand functions: kW, kVA, kVAR Energy functions: kWH, kVAH, kVARH	ANSI C12.20 -2010 Class 0.2 EN 62053-22 -2003 Class 0.2 accuracy	–



Surge & Filter



DIN Rail AC Power Surge Protector 4983-DS

- Compact modular design
- Visual fault indicator linked to internal thermal disconnect
- A controlled end-life occurrence will trigger SPD replacement indicator
- Equipped standard with safety remote signaling AC network connection

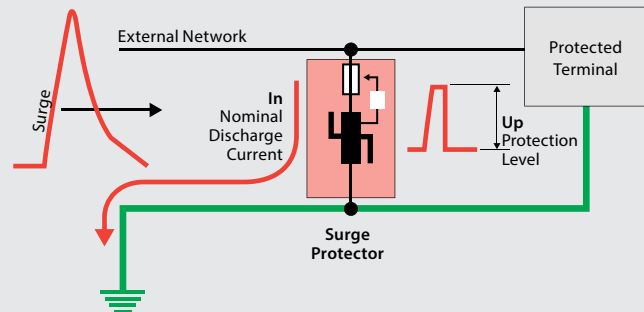
Application Information

Brief voltage spikes and surges can be caused by a wide range of factors originating from both within and outside of a production facility. Whatever their source, these transients can damage electronic equipment, requiring expensive replacement and production delays.

Bulletin 4983-DS surge protectors use metal oxide varistor (MOV) technology. Unlike most MOV-based surge protection, these devices are larger, replaceable and designed for DIN Rail mounting in an electrical environment.

The MOV technology is a high impedance component (high resistance device) When a surge occurs, the MOV changes to a low impedance (resistance) device and diverts surges away from the load and directs it to ground. MOVs have high energy capability and consistent clamping performance.

Because MOV-based surge protectors are sacrificial – they break down every time they divert surges away from a load – 4983-DS protectors can be replaced after an event. Many electronic components have some form of built-in protection and are not user-replaceable.



Relays & Timers



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Programmable Controllers



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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Product Selection

AC Network	Connection Mode	No. of Poles	Max. Continuous Operating Voltage (MCOV) (U _c) [V AC]	Max. Discharge Current 8/20 ms (I _{max}) [kA]	Protection Level (Up) [kV]	UL 1449 Voltage Protection Rating (VPR) [V]	Cat. No. Base and Module			
120	L/G or N/G	1	150	40	0.9	700	4983-DS120-401			
	L/G, N/G	2					4983-DS120-402			
120/208Y	L1/G, L2/G, L3/G	3					4983-DS120-403			
	L1/G, L2/G, L3/G, N/G	4					4983-DS120-404			
230/400	L/G or N/G	1					275	1.25	1000	4983-DS230-401
	L/G, N/G	2								4983-DS230-402
	L1/G, L2/G, N/G	3	4983-DS230-403							
277	L/G or N/G	1	420		1.8	1500	4983-DS277-401			
277/480Y	L1/G, L2/G, L3/G	3					4983-DS277-403			
	L1/G, L2/G, L3/G, N/G	4					4983-DS277-404			
480D	L1/G, L2/G, L3/G	3					550	1.8	1800	4983-DS480-403
230/400	L/G, N/G	2	275		1.25	1000	4983-DS230-401G			
	L1/G, L2/G, L3/G, N/G	4		1000		4983-DS230-403G				
120	L/G or N/G	1	150	80	0.9	700	4983-DS120-801			
120/208Y	L/G, N/G	2					4983-DS120-802			
	L1/G, L2/G, L3/G	3					4983-DS120-803			
230/400	L/G or N/G	1	275		1.25	1000	4983-DS230-801			
	L/G, N/G	2					4983-DS230-802			
	L1/G, L2/G, N/G	3					4983-DS230-803			
277	L/G or N/G	1	420		1.8	1500	4983-DS277-801			
277/480Y	L1/G, L2/G, L3/G	3					4983-DS277-803			
	L1/G, L2/G, L3/G, N/G	4					4983-DS277-804			
480D	L1/G, L2/G, L3/G	4					680	2500	4983-DS277-804	
600D	L1/G, L2/G, L3/G	4	690		2500	4983-DS600-804				

Specifications

Connection/mounting type	Parallel/DIN Rail mount
Certifications	cURus, CSA, CE Marked
Conductor material	Cu, solid, or stranded
Conductor range	#10...4 AWG (4...28 mm ²)
Strip length	0.4 in. (10 mm)
Tightening torque	17.8...22.1 lb•in. (2.0...2.5 N•m)
No. of conductors/terminal	1
Operating temperature	-40...+80 °C



Product Certifications

Global certifications available online:

www.rockwellautomation.com/global/certification/overview.page


For more information on our complete family of circuit and load protection products, please visit:
<http://ab.rockwellautomation.com/Circuit-and-Load-Protection>

Surge & Filter



Filter Protective Devices

4983-PF

- Filter for low-level transients and high-frequency noise
- UL 1283, CSA, CE
- Features Islatrol® filter technology
- LED power indication
- Panel (flange) mount

4983-DC

- UL 1449 Third Edition, UL 1283, CE
- Small combination (filter and SPD) package size
- Features Islatrol filter technology
- LED power indication
- Form C contact for remote status indication

Bulletin 4983-PF and 4983-DC filter protective devices address low-level voltage transients and high-frequency noise disturbances that, over time, cause premature aging. The long term effects of noise are just as damaging as high voltage transients. The 4983-PF and 4983-DC devices feature Islatrol filter technology. Islatrol filter technology continually tracks and monitors the input signal to provide clean and reliable AC power for critical equipment.

Bulletin 4983-PF and 4983-DC filters are connected in series. Protection is best when the devices are installed directly in front of the load requiring protection. Typical applications include any microprocessor based products such as PLCs, motion control systems, and computers exposed to harsh environments.



Surge & Filter

Relays & Timers



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Programmable Controllers



2-20...2-23

Control Circuit & Load Protection



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Power Supplies



2-36...2-43

Power Quality & Energy Management



2-44...2-45



2-46...2-49



Product Selection

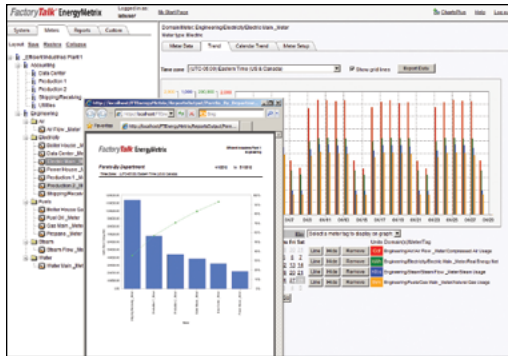
Operating Voltage [V AC]	Max. Continuous Operating Voltage [V AC]	Line Frequency [Hz]	Ampacity [A]	4983-PF	4983-DC
				Cat. No.	Cat. No.
120	150	47...63	2.5	4983-PF120-02	–
			3	–	4983-DC120-03
			5	4983-PF120-05	4983-DC120-05
			10	–	4983-DC120-10
			15	4983-PF120-15	–
			20	–	4983-DC120-20
			30	4983-PF120-30	–
240	275		2.5	4983-PF240-02	–
	320		3	–	4983-DC240-03
	275		5	4983-PF240-05	–
	320		5	–	4983-DC240-05
	320		10	–	4983-DC240-10
	275		15	4983-PF240-15	–
	320		20	–	4983-DC240-20
	275	30	4983-PF240-30	–	

Specifications

	4983-PF	4983-DC
Connection/Mounting Type	Series/panel (flange) mount	Series/DIN Rail mount
Enclosure	Grey, high-impact plastic	Metal
Modes of Protection	Line – Neutral	
	Line – Line	
	Line – PE	
	Neutral – PE	
Certifications	UR Recognized component, CE Marked	UR Recognized, CSA, CE Marked
Typical Cat. A Ringwave Rating	< 10V peak	< 60V peak
Typical Cat. B Ringwave Rating	< 50V peak	< 100V peak
Response Time	Normal mode: < 0.5 ns	
	Common mode: < 5 ns	
Operating Temperature	-40...+60 °C derate linearly to 60% @ +70 °C	
Fusing	Appropriate external fusing is required	
Frequency Response (Forward - Reverse) 100 kHz...50 MHz	Normal mode – 90 dB min.	Normal mode (100 kHz...50 MHz) – 90 dB min.
	Common mode – 60 dB min.	Common mode (5...50 MHz) – 60 dB min.
	3 kHz cut-off frequency	50 kHz cut-off frequency



Additional Logic Products



FactoryTalk EnergyMetrix

FactoryTalk® EnergyMetrix™ is a web-enabled management software package that gives you access to critical energy information from virtually any location. With FactoryTalk EnergyMetrix, you can capture, analyze, store, and share energy data with key stakeholders using a standard web browser. This makes it simple to distribute the knowledge necessary to optimize energy consumption, manage power quality, correlate energy usage, determine cost to production, negotiate energy rates, and improve efficiency.

i-Sense/i-Grid Intelligent Network 1608S

The i-Sense® voltage event monitor is ideal for analyzing the feed into your facility with limited investment. Voltage quality data is viewed on the i-Grid® cloud-based application, which means that there is no software to install or maintain. Instant event e-mail and text notifications will keep power quality data at your fingertips.



DySC Voltage Sag Correctors 1608

DySC® voltage sag correctors protect against voltage sags and momentary outages that account for a significant amount of manufacturing downtime and damaged equipment.

- Single- and three-phase portfolio
- Up to five seconds of ride-through
- 1608N Mini DySC (0.25...14 kVA)
- 1608P Pro DySC (10...165 kVA)
- 1608M Mega DySC (333...2000 kVA)



Relays & Timers



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Programmable Controllers



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Control Circuit & Load Protection



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Power Supplies



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Power Quality & Energy Management



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Surge & Filter



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ArmorPower On-Machine Power Supplies 1607-XT

ArmorPower™ On-Machine™ Power Supplies are for applications where voltage drop occurs due to line loss, and where compact size, high efficiency, and reliability are critical.

- IP67 and NEC Class 2 ratings
- Vacuum encapsulation technology
- Quick connectors
- Smooth surface, suitable for washdown



Control Circuit Transformers 1497

- Designed to reduce supply voltages to control circuits, providing greater safety to operators
- P2X finger-safe terminal covers and fuse covers
- 1497 global control transformers (63...2000 VA (50, 60 and 50/60 Hz)
- 1497A machine tool transformers 50...3000 VA (50/60 Hz)
- 1497B control power transformers 50...3000 VA (60 Hz)
- 1497D general purpose transformers 0.050...25.0 kVA (60 and 50/60 Hz)



Additional Logic Products



Electromechanical Temperature Controls 837

The electromechanical temperature controls family of condition sensing products includes rugged, industrial-grade temperature controls that use vapor pressure technology to sense changes in temperature.

- Adjustable ranges from -60...570 °F
- Adjustable differential from 2...87 °F
- Open type or Type 1, 4/13, 4X, 7/9 and 4/13 combined enclosures

Hockey Puck Solid State Relay 700-SH

As a solid-state relay, the “hockey puck” is flexible yet rugged. Built for long life and high-frequency switching, these relays use less energy than equivalent electro-mechanical relays, but are highly compatible to reduce downtime and spare parts.



ProposalWorks Proposal Builder

Now including the Product Lifecycle Status, ProposalWorks gives you access to Allen-Bradley products and services with an easy-to-use interface. Find the exact catalog number you need, access current pricing, product certifications, and view related documents and photos.

<http://www.rockwellautomation.com/support/selection.page>

Relays & Timers



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Programmable Controllers



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Power Supplies



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Power Quality & Energy Management



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Push Buttons

22 mm Push Buttons, Pilot Lights, and Selector Switches	3-2
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16 mm Push Buttons, Pilot Lights, Selector Switches, and E-Stops	3-22

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Graphic Terminals

PanelView 800 Graphic Terminals	3-36
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Additional Operator Interface Products

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Push Buttons



22 mm Push Buttons, Pilot Lights, and Selector Switches 800F

- 800FP plastic operators
 - IP65/66/69k, Type 4/4X/13
 - Engineering grade thermoplastics
 - Chemical-resistant for harsh environments
- 800FM metal operators
 - IP65/66, Type 4/13
 - Die-cast metal construction
 - Chrome-plated

800F Push Buttons

- Momentary or alternate action
- Illuminated or non-illuminated
- Flush or extended
- 2-color legend caps
- Multi-operators

800F Pilot Lights

- LED and incandescent
- Multiple voltages
- 24V, 120V, 240V
- 6 color options

800F Selector Switches

- 2-, 3-, and 4-position
- Illuminated or non-illuminated
- Maintained or spring return
- Key selector switches



Dependable Sealing

- IP66 and Type 4/13
- Superior ingress protection
- Diaphragm seals

Selection Switches feature Positive Detent

- No hang-up between positions
- Constant energy solution
- Vibration insensitive



Rotating Latch Collar

- Easier installation
- One-hand removal
- Plastic or metal



Push Buttons



3-2...3-23

Signaling



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Graphic Terminals



3-36...3-37

Product Selection

800F – Momentary and Maintained Push Button Operators – Flush, Extended, Guarded, Alternate Action, Non-Illuminated, Illuminated



Type	Button Color	Text Color	Legend Text	Flush	Extended	Guarded	Alternate Action	
				Cat. No.	Cat. No.	Cat. No.	Cat. No.	
Non-Illuminated	● Orange	Orange	–	–	800F⊗-F0	800F⊗-E0	800F⊗-G0	800F⊗-FA0
	○ White	White	–	–	800F⊗-F1	800F⊗-E1	800F⊗-G1	800F⊗-FA1
	● Black	Black	–	–	800F⊗-F2	800F⊗-E2	800F⊗-G2	800F⊗-FA2
	● Black	White	→	→	800F⊗-F208	800F⊗-E208	800F⊗-G208	–
	● Green	Green	–	–	800F⊗-F3	800F⊗-E3	800F⊗-G3	800F⊗-FA3
	● Green	Green	White	START	800F⊗-F301	–	800F⊗-G301	–
	● Green	Green	White		800F⊗-F306	–	800F⊗-G306	–
	● Red	Red	–	–	800F⊗-F4	800F⊗-E4	800F⊗-G4	800F⊗-FA4
	● Red	Red	White	STOP	800F⊗-F402	800F⊗-E402	800F⊗-G402	–
	● Red	Red	White	○	800F⊗-F405	800F⊗-E405	800F⊗-G405	–
	● Yellow	Yellow	–	–	800F⊗-F5	800F⊗-E5	800F⊗-G5	800F⊗-FA5
	● Blue	Blue	–	–	800F⊗-F6	800F⊗-E6	800F⊗-G6	800F⊗-FA6
	● Blue	Blue	White	R	800F⊗-F611	800F⊗-E611	800F⊗-G611	–
	● Grey	Grey	–	–	800F⊗-F8	–	–	–
	○ No Cap	No Cap	–	–	800F⊗-F9	800F⊗-E9	800F⊗-G9	800F⊗-FA9
Illuminated	● Amber	Amber	–	–	800F⊗-LF0	800F⊗-LE0	800F⊗-LG0	800F⊗-LFA0
	● Green	Green	–	–	800F⊗-LF3	800F⊗-LE3	800F⊗-LG3	800F⊗-LFA3
	● Red	Red	–	–	800F⊗-LF4	800F⊗-LE4	800F⊗-LG4	800F⊗-LFA4
	● Yellow	Yellow	–	–	800F⊗-LF5	800F⊗-LE5	800F⊗-LG5	800F⊗-LFA5
	● Blue	Blue	–	–	800F⊗-LF6	800F⊗-LE6	800F⊗-LG6	800F⊗-LFA6
	○ Clear	Clear	–	–	800F⊗-LF7	800F⊗-LE7	800F⊗-LG7	800F⊗-LFA7
	○ No Cap	No Cap	–	–	800F⊗-LF9	800F⊗-LE9	800F⊗-LG9	800F⊗-LFA9

⊗ To complete the catalog number, replace the ⊗ with one of the following letters: **P** – Plastic operator, or **M** – Metal operator.

Pilot Light Operators

Color	Color	Plastic	Metal
		Cat. No.	Cat. No.
● Amber	Amber	800FP-P0	800FM-P0
● Green	Green	800FP-P3	800FM-P3
● Red	Red	800FP-P4	800FM-P4
● Yellow	Yellow	800FP-P5	800FM-P5
● Blue	Blue	800FP-P6	800FM-P6
○ Clear	Clear	800FP-P7	800FM-P7
○ No Cap	No Cap	800FP-P9	800FM-P9



Specifications

Material	Plastic	Glass-filled Polyamide
	Metal	Chromated Zinc
Degree of Protection	Plastic	IP65/66(Type 3/3R/4/4X/12/13)
	Metal	IP65/66(Type 3/3R/4/12/13)
Operational Temperature Range		-25...+70 C (-13...+158F)
Certifications		UR/UL, CSA, CCC, CE
Standards Compliance		NEMA ICS-5; UL 508; EN ISO 13850; EN60947-1; EN 60947-5-1; EN 60947-5-5

For more information on our complete family of 22 mm push button products, please visit:
<http://ab.rockwellautomation.com/Push-Buttons/IEC-22-mm-Push-Buttons>



Push Buttons

Product Selection

Selector Switch Operators –
Non-illuminated, Illuminated, Key-operated



Type	Knob Color	# of Positions	Knob Type or Keyed	Plastic	Metal
				Cat. No.	Cat. No.
Non-Illuminated	● Black	2	Standard	800FP-S⊗2	800FM-S⊗2
	● Black	2	Knob Lever	800FP-H⊗2	800FM-H⊗2
	● Black	3	Standard	800FP-S⊗3	800FM-S⊗3
	● Black	3	Knob Lever	800FP-H⊗3	800FM-H⊗3
	● Black	4	Standard	800FP-SM4	800FM-SM4
	● Black	4	Knob Lever	800FP-HM4	800FM-HM4
	● Black	2	Keyed	800FP-K⊗2◆	800FM-K⊗2◆
	● Black	3	Keyed	800FP-K⊗3☒	800FM-K⊗3☒
Illuminated	● Amber	2	Standard	800FP-LS⊗20	800FM-LS⊗20
	● Green	2	Standard	800FP-LS⊗23	800FM-LS⊗23
	● Red	2	Standard	800FP-LS⊗24	800FM-LS⊗24
	● Yellow	2	Standard	800FP-LS⊗25	800FM-LS⊗25
	● Blue	2	Standard	800FP-LS⊗26	800FM-LS⊗26
	○ Clear	2	Standard	800FP-LS⊗27	800FM-LS⊗27
	○ Clear	2	Knob Lever	800FP-LH⊗27	800FM-LH⊗27
	● Amber	3	Standard	800FP-LS⊗30	800FM-LS⊗30
	● Green	3	Standard	800FP-LS⊗33	800FM-LS⊗33
	● Red	3	Standard	800FP-LS⊗34	800FM-LS⊗34
	● Yellow	3	Standard	800FP-LS⊗35	800FM-LS⊗35
	● Blue	3	Standard	800FP-LS⊗36	800FM-LS⊗36
	○ Clear	3	Standard	800FP-LS⊗37	800FM-LS⊗37
	○ Clear	3	Knob Lever	800FP-LH⊗37	800FM-LH⊗37

⊗ - add **M**- Maintained, **R**-spring return from Right, **L**-spring return from Left.

⊗ - add **M**- Maintained, **R**-spring return from Right, **L**-spring return from Left, **B**-spring return from Both.

◆ - add **1**-key removal in Left, **2**-key removal in Right, **3**-key removal in All.

☒ - add **1**-key removal in Left, **2**-key removal in Right, **3**-key removal in All, **4**-key removal in center, **5**-key removal in Left and Center, **7**-key removal in Center and Right.

Push Buttons



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Signaling



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Graphic Terminals



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Product Selection



2-Position Push-Pull Operators

Color	Non-Illuminated		Illuminated			
	40 mm Cap	90 mm Half Dome	30 mm Cap	40 mm Cap	60 mm Cap	90 mm Half Dome
	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
● Black	800F⊗-MP42	800F⊗-MP92	–	–	–	–
● Green	800F⊗-MP43	–	800F⊗-LMP33	800F⊗-LMP43	800F⊗-LMP63	–
● Red	800F⊗-MP44	800F⊗-MP94	800F⊗-LMP34	800F⊗-LMP44	800F⊗-LMP64	800F⊗-LMP94
● Yellow	800F⊗-MP45	800F⊗-MP95	800F⊗-LMP35	800F⊗-LMP45	800F⊗-LMP65	800F⊗-LMP95
● Blue	800F⊗-MP46	–	800F⊗-LMP36	800F⊗-LMP46	800F⊗-LMP66	–

⊗ - To complete the catalog number, replace the ⊗ with one of the following letters: **P** – Plastic operator, or **M** – Metal operator.



Momentary Mushroom Operators

Color	Non-Illuminated			Illuminated
	40 mm Cap	60 mm Cap	90 mm Cap	40 mm Cap
	Cat. No.	Cat. No.	Cat. No.	Cat. No.
● Black	800F⊕-MM42	800F⊕-MM62	800F⊕-MM92	–
● Green	800F⊕-MM43	800F⊕-MM63	–	800F⊕-LMM43
● Red	800F⊕-MM44	800F⊕-MM64	800F⊕-MM94	800F⊕-LMM44
● Yellow	800F⊕-MM45	800F⊕-MM65	800F⊕-MM95	800F⊕-LMM45
● Blue	800F⊕-MM46	800F⊕-MM66	–	800F⊕-LMM46
○ Clear	–	–	–	800F⊕-LMM47

⊕ - To complete the catalog number, replace the ⊕ with one of the following letters: **P** – Plastic operator, or **M** – Metal operator.



3-Position Push-Pull Operator

Type	Color	Function	Cat. No.	Function	Cat. No.
Non-Illuminated	● Black	Out – Momentary Center – Maintained In-Momentary	800FM-MM42E3	Out – Momentary Center – Maintained In-Maintained	800FM-MP42E3
	● Green		800FM-MM43E3		800FM-MP43E3
	● Red		800FM-MM44E3		800FM-MP44E3
Illuminated	● Amber		800FM-LMM40E3		800FM-LMP40E3
	● Green		800FM-LMM43E3		800FM-LMP43E3
	● Red		800FM-LMM44E3		800FM-LMP44E3
	● Blue		800FM-LMM46E3		800FM-LMP46E3
	○ Clear	800FM-LMM47E3	800FM-LMP47E3		

For more information on our complete family of 22 mm push button products, please visit:
<http://ab.rockwellautomation.com/Push-Buttons/IEC-22-mm-Push-Buttons>



Push Buttons

Product Selection

Multi-Function Operators –
2-Function, 3-Function, Non-Illuminated, Illuminated



Top Cap			Bottom Cap				Non-Illuminated		Illuminated
Color	Type	Graphic	Color	Type	Graphic	2-Function	3-Function	2-Function	
Color	Type	Graphic	Color	Type	Graphic	Cat. No.	Cat. No.	Cat. No.	
● Green	Flush		● Red	Extended	○	800F⊕-U2EFFE	800F⊕-U3EFFE4	800F⊕-LU2EFFE	
● Green	Flush	–	● Red	Extended	–	800F⊕-U2E4F3	800F⊕-U3E4F34	800F⊕-LU2E4F3	
● Green	Flush	–	● Green	Flush	–	800F⊕-U2F3F3	800F⊕-U3F3F34	800F⊕-LU2F3F3	
○ White	Flush		● Black	Extended	○	800F⊕-U2EHFG	800F⊕-U3EHFG4	800F⊕-LU2EHFG	
○ White	Flush	–	● Black	Flush	–	800F⊕-U2F2F1	800F⊕-U3F2F14	800F⊕-LU2F2F1	
● Black	Flush	–	● Black	Flush	–	800F⊕-U2F2F2	800F⊕-U3F2F24	800F⊕-LU2F2F2	
○ White	Flush	–	○ White	Flush	–	800F⊕-U2F1F1	800F⊕-U3F1F14	800F⊕-LU2F1F1	

⊕ - To complete the catalog number, replace the ⊕ with one of the following letters: **P** – Plastic operator, or **M** – Metal operator.

Potentiometer – Single Turn



Resistive Element	Cat. No
None	800FP-POT
150 Ω	800FP-POT1
500 Ω	800FP-POT2
1000 Ω	800FP-POT3
2500 Ω	800FP-POT4
5000 Ω	800FP-POT5
10000 Ω	800FP-POT6

Toggle Switch Operators – Mechanical and/or Electrical Reset



Positions	Function	Cat. No.
— 2	Maintained	800FM-JM2
	Momentary	800FM-JR2
+ 4	Maintained	800FM-JM4
	Momentary	800FM-JR4

Selector Push Button



Positions	Cap Color	Cat. No.
2	● Black	800F☒-SJ22
	● Green	800F☒-SJ23
3	● Black	800F☒-SJ32
	● Green	800F☒-SJ33

☒ To complete the catalog number, replace the ☒ with one of the following letters: **P** – Plastic operator, or **M** – Metal operator.

Reset Operators – Mechanical and/or Electrical Reset



Button Color	Text Color	Legend Text	Flush		
			Plastic	Metal	
			Cat. No.	Cat. No.	
● Blue	Blue	White	R	800FP-R611	800FM-R611
● Blue	Blue	–	–	800FP-R6	800FM-R6

Push Buttons



3-2...3-23

Signaling



3-24...3-35

Graphic Terminals



3-36...3-37

Product Selection

Mounting Latches



Material	Cat. No.
Plastic	800F-ALP
Metal	800F-ALM

Contact Blocks



Contact Type – Screw Termination	Cat. No.
N.O. – Normally Open	800F-X10
N.C. – Normally Closed	800F-X01
N.C. - Self-Monitoring	800F-X01S
N.O. Low Voltage – add voltage	800F-X10V
N.C. Low Voltage – add voltage	800V-X01V
Dual circuit – 2 N.O.	800F-X20D
Dual circuit – 2 N.C.	800F-X02D
Dual circuit – 1 N.O./1 N.C.	800F-X11D
N.O.E.M. – Early Make	800F-X10E
N.O.L.M. – Late Make	800F-X10N
N.C.E.B. – Early Break	800F-X01B
N.C.L.B – Late Break	800F-X01L



LED Power Modules

Color	Volts	Cat. No.
● Green	24V AC/DC	800F-N3G
● Red		800F-N3R
○ White		800F-N3W
● Green	120V AC	800F-N5G
● Red		800F-N5R
○ White		800F-N5W
● Green	240V AC	800F-N7G
● Red		800F-N7R
○ White		800F-N7W

Legend Plates



Type	Available Colors	Text / Symbol	Cat. No.
30 x 40 mm 2-piece Snap-in Plate and Frame	○ White	Blank	800F-11☒E100
	● Black	START	800F-11☒E208
	● Red	STOP	800F-11☒E212
	● Aluminum	- ○	800F-11☒U232
30 x 50 mm 2-piece Snap-in Plate and Frame	○ White	Blank	800F-12◆E100
	● Black	HAND-OFF-AUTO	800F-12◆E128
	● Aluminum	ON-OFF	800F-12◆E165
30 x 40 mm 1-piece	○ White	-	800F-34☒E100
	● Black		
30 x 50 mm 1-piece	● Red	-	800F-35☒E100
	● Aluminum		

☒ To complete the catalog number, replace the ☒ with one of the following letters for the desired color: **W** = White, **B** = Black, **A** = Aluminum or **R** = Red.

◆ To complete the catalog number, replace the ◆ with one of the following letters for the desired color: **W** = White, **B** = Black, **A** = Aluminum.



Enclosures

Holes	Gray Plastic	Yellow Plastic	Metal
1	800F-1P☒	800F-1Y☒ 800F-1Y☒D ¹	800F-1M☒
2	800F-2P☒	-	800F-2M☒
3	800F-3P☒	-	800F-3M☒
4	800F-4P☒	-	-
5	-	-	800F-5M☒
6	800F-6P☒	-	-

☒ To complete the catalog number, replace the ☒ with one of the following letters for through holes: **M** = metric knock out, **P** = PG knock out.

¹ Dual circuit contact blocks allowed.



Push Buttons

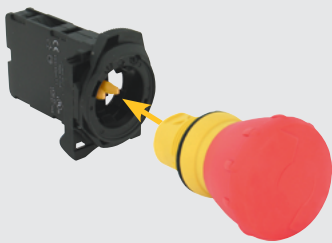


22 mm Emergency Stop Operators 800F/800FD

- Trigger action
- 30, 40, 60, and 90 mm operating heads
- Complies with EN ISO 13850 and EN 60947-5-5
- Self-monitoring contact blocks for increased safety
- Global certifications

Rockwell Automation® safety products and solutions improve the functional operation of your machinery while helping to increase personnel safety, efficiency and productivity. 800F 22 mm E-stops offer a wide variety of devices to meet individual customer application requirements.

Self-Monitoring Contact Blocks (SMCB)



- Opens controlled circuit in unlikely event contact block is separated from operator
- Monitors proper installation between:
 - Operator and latch
 - Latch and SMCB

800F Enclosed E-stops for SensaGuard, GuardLink or Series Wiring

The pre-wired 800F E-stop push button stations allow for quick installation with the 5- and 8-pin SensaGuard™ and GuardLink family of non-contact safety switches. The 5-pin stations can also be wired in series with each other for easy conveyor or long run installation.



- 24V AC/DC
- Pre-tested and factory sealed for time savings on wiring and set-up
- Illuminated when activated for ease and speed of identification
- Maintains SensaGuard PLe, Cat 4, SIL 3 rating
- Flexibility for use in non-SensaGuard and GuardLink applications

To learn more about GuardLink technology and its benefits, see page 5-2



For additional emergency stop devices, see page 5-44



Push Buttons



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Signaling



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Graphic Terminals



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Product Selection

E-Stop Twist-To-Release, Push-Pull Operators – Non-Illuminated, Illuminated, Keyed



Color	Size [mm]	Twist-to-Release			
		Non-Illuminated		Illuminated	
		Plastic	Metal	Plastic	Metal
		Cat. No.	Cat. No.	Cat. No.	Cat. No.
Red	30	800FP-MT34	800FM-MT34	–	–
	40	800FP-MT44	800FM-MT44	800FP-LMT44	800FM-LMT44
	60	800FP-MT64	800FM-MT64	800FP-LMT64	800FM-LMT64
	40 Keyed	800FP-MK44	800FM-MK44	–	–
Color	Size [mm]	Push-Pull			
		Non-Illuminated		Illuminated	
		Plastic	Metal	Plastic	Metal
		Cat. No.	Cat. No.	Cat. No.	Cat. No.
Red	30	–	–	800FP-LMP34	800FM-LMP34
	40	800FP-MP44	800FM-MP44	800FP-LMP44	800FM-LMP44
	60	–	–	800FP-LMP64	800FM-LMP64
	90	800FP-MP94	800FM-MP94	800FP-LMP94	800FM-LMP94

Assembled E-Stop Stations – Unwired, Series Wiring, SensaGuard and GuardLink



Description	Contact Type	Pins	SensaGuard/ GuardLink	Series Wiring	Cat. No.
Unwired	1 N.C.	–	–	–	800F-1YM1
Unwired	1 N.C./1 N.O.	–	–	–	800F-1YM2
Unwired	2 N.C.	–	–	–	800F-1YM3
End Station	2 N.C./1 N.O. 24V DC Illuminated	5	–	X	800F-1YMD51
T-Port Station		5	X	X	800F-1YMD52
Safety Distribution Block		8	X	–	800F-1YMD81

Monolithic Twist-to-Release/Push-Pull



Color	Size [mm]	Pkg. Qty.	Contact Type	Plastic Cat. No.
Red	40	1	1 N.C.	800FD-MT44X01
			2 N.C.	800FD-MT44X02

Accessories

Mounting Latches

Description	Cat. No.
Metal	800F-ALM
Plastic	800F-ALP

Contact Blocks

Contact Type	Cat. No.
N.O.	800F-X10
N.C.	800F-X01
Self-monitoring	800F-X015

Legend Plate



Description	Cat. No.
EMERGENCY STOP	800F-15YSE112
Blank	800F-15YS



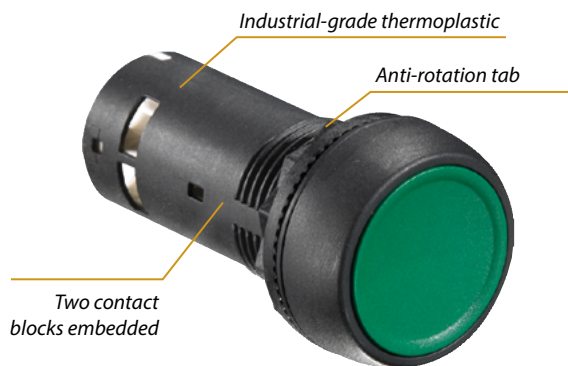
Push Buttons



22 mm Monolithic Push Buttons, Pilot Lights, and Selector Switches 800FD

- Single-piece construction with integrated contact block
- Cost-effective design
- Low back-of-panel profile (45.7 mm)
- IP66, Type 3/3R/4/4X/12/13

800FD monolithic push buttons feature a self-contained design that combines the contact block and operator for ease of ordering, stocking, and installation.



Push Button Operator



Pilot Light Device

Products

- Non-illuminated
 - Momentary push button
 - 2-position push-pull/twist-to-release E-stop
 - 2-position selector switch
 - 3-position selector switch
- Illuminated
 - Pilot light, LED
 - Pilot light, incandescent

Pilot Light Devices

		LED		
		24V AC/DC	120V AC	240V AC
Color		Cat. No.	Cat. No.	Cat. No.
●	Amber	800FD-P0N3	800FD-P0N5	800FD-P0N7
●	Green	800FD-P3N3	800FD-P3N5	800FD-P3N7
●	Red	800FD-P4N3	800FD-P4N5	800FD-P4N7
●	Yellow	800FD-P5N3	800FD-P5N5	800FD-P5N7
●	Blue	800FD-P6N3	800FD-P6N5	800FD-P6N7
○	Clear	800FD-P7N3	800FD-P7N5	800FD-P7N7

Push Buttons



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Signaling



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Graphic Terminals



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Product Selection

Momentary Push Button Operators – Flush, Extended, Non-illuminated

Type	Button Color	Text Color	Legend Text	Contact Block Configuration				
				1 N.O.	1 N.C.	1 N.O. & 1 N.C.	2 N.O.	
				Cat. No.	Cat. No.	Cat. No.	Cat. No.	
Flush	○	White	–	–	800FD-F1X10	800FD-F1X01	800FD-F1X11	800FD-F1X20
	●	Black	–	–	800FD-F2X10	800FD-F2X01	800FD-F2X11	800FD-F2X20
	●	Black	White	→	800FD-F208X10	800FD-F208X01	800FD-F208X11	800FD-F208X20
	●	Green	–	–	800FD-F3X10	800FD-F3X01	800FD-F3X11	800FD-F3X20
	●	Green	White	START	800FD-F301X10	800FD-F301X01	800FD-F301X11	800FD-F301X20
	●	Green	White		800FD-F306X10	800FD-F306X01	800FD-F306X11	800FD-F306X20
	●	Red	–	–	800FD-F4X10	800FD-F4X01	800FD-F4X11	800FD-F4X20
	●	Yellow	–	–	800FD-F5X10	800FD-F5X01	800FD-F5X11	800FD-F5X20
	●	Blue	–	–	800FD-F6X10	800FD-F6X01	800FD-F6X11	800FD-F6X20
Extended	○	White	–	–	800FD-E1X10	800FD-E1X01	800FD-E1X11	800FD-E1X20
	●	Black	–	–	800FD-E2X10	800FD-E2X01	800FD-E2X11	800FD-E2X20
	●	Black	White	→	800FD-E208X10	800FD-E208X01	800FD-E208X11	800FD-E208X20
	●	Green	–	–	800FD-E3X10	800FD-E3X01	800FD-E3X11	800FD-E3X20
	●	Red	–	–	800FD-E4X10	800FD-E4X01	800FD-E4X11	800FD-E4X20
	●	Red	White	STOP	800FD-E402X10	800FD-E402X01	800FD-E402X11	800FD-E402X20
	●	Red	White	○	800FD-E405X10	800FD-E405X01	800FD-E405X11	800FD-E405X20
	●	Yellow	–	–	800FD-E5X10	800FD-E5X01	800FD-E5X11	800FD-E5X20
	●	Blue	–	–	800FD-E6X10	800FD-E6X01	800FD-E6X11	800FD-E6X20
	●	Blue	White	R	800FD-E611X10	800FD-E611X01	800FD-E611X11	800FD-E611X20

Selector Switches – Non-illuminated

# of Positions	Contact Block Type	Contact Block Location	Contact Type	Target Table			Cat. No.
							
2	1 N.C.	Left	N.C.	X	NA	0	800FD-S⊗2X01
		Right	–	–	NA	–	
2	1 N.O.	Left	–	–	NA	–	800FD-S⊗2X10
		Right	N.O.	0	NA	X	
2	1 N.O. & 1 N.C.	Left	N.C.	X	NA	0	800FD-S⊗2X11
		Right	N.O.	0	NA	X	
2	2 N.C.	Left	N.C.	X	NA	0	800FD-S⊗2X02
		Right	N.C.	X	NA	0	
2	2 N.O.	Left	N.O.	0	NA	X	800FD-S⊗2X20
		Right	N.O.	0	NA	X	
3	1 N.O. & 1 N.C.	Left	N.C.	0	X	X	800FD-S⊗3X11
		Right	N.O.	0	0	X	
3	2 N.C.	Left	N.C.	0	X	X	800FD-S⊗3X02
		Right	N.C.	X	X	0	
3	2 N.O.	Left	N.O.	X	0	0	800FD-S⊗3X20
		Right	N.O.	0	0	X	

⊗ - add **M**- Maintained, **R**-spring return from **Right**, **L**-spring return from **Left**

⊗ - add **M**- Maintained, **R**-spring return from **Right**, **L**-spring return from **Left**, **B**-spring return from **Both**



For more information on our complete family of 22 mm push button products, please visit:
<http://ab.rockwellautomation.com/Push-Buttons/IEC-22-mm-Push-Buttons>



Push Buttons

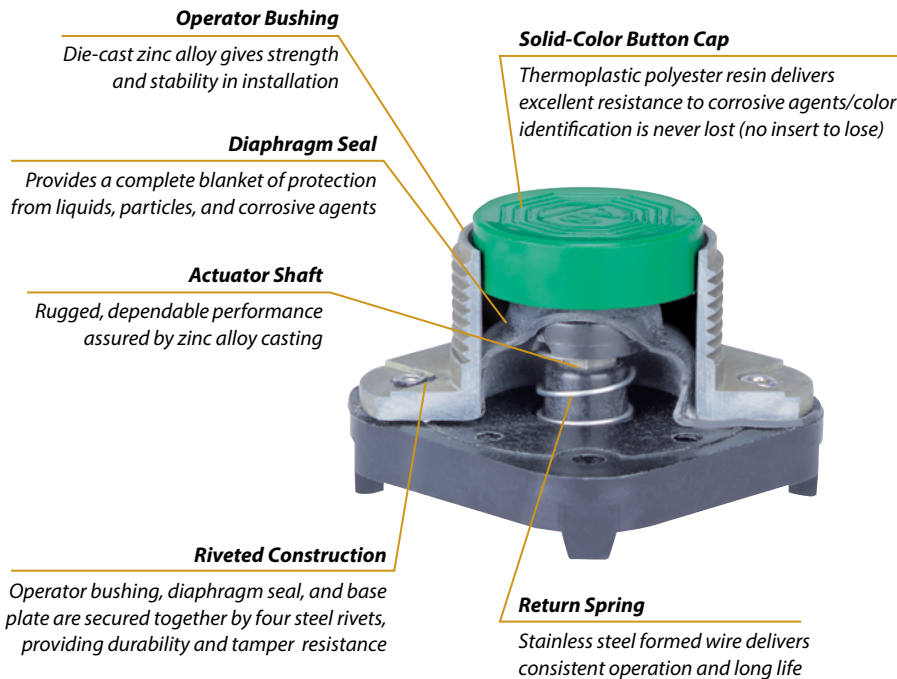


30 mm Push Buttons, Pilot Lights, Selector Switches, and Push-Pulls 800T/H

- Heavy industrial stations and operators
- Type 4/13 watertight/oiltight (800T)
- Type 4/4X/13 watertight/corrosion-resistant/oiltight (800H)
- Universal LED for long life, simplified product selection and reduced energy usage
- Class I, Div. 2 solutions available

Imitated, But Never Duplicated

800T and 800H push button product lines are in a class by themselves. They are designed and constructed to perform in the most demanding industrial environments. Bold yet functional, rugged yet attractive, Allen-Bradley® push buttons represent the world's most innovative and unique offering.



Explosion-Protected Contact Block

- Class I Div. 2 certified
- Ideal for high shock and vibration applications
- 1 N.O., 1 N.C., A600-rated
- Positive opening N.C. contact



Push Buttons



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Signaling



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Graphic Terminals



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Product Selection



Momentary Contact Push Button Units – Non-Illuminated

Contact Type	Button Color	Type 4/13		Type 4/4X/13	
		Flush Head	Extended Head	Booted ¹	Bootless Flush Head
		Cat. No.	Cat. No.	Cat. No.	Cat. No.
No Contact	Green	800T-A1	800T-B1	800H-R1	800H-AR1
	Black	800T-A2	800T-B2	800H-R2	800H-AR2
	Red	800T-A6	800T-B6	800H-R6	800H-AR6
1 N.O.	Green	800T-A1D1	800T-B1D1	800H-R1D1	800H-AR1D1
	Black	800T-A2D1	800T-B2D1	800H-R2D1	800H-AR2D1
	Red	800T-A6D1	800T-B6D1	800H-R6D1	800H-AR6D1
1 N.C.	Green	800T-A1D2	800T-B1D2	800H-R1D2	800H-AR1D2
	Black	800T-A2D2	800T-B2D2	800H-R2D2	800H-AR2D2
	Red	800T-A6D2	800T-B6D2	800H-R6D2	800H-AR6D2
1 N.O. – 1 N.C.	Green	800T-A1A	800T-B1A	800H-R1A	800H-AR1A
	Black	800T-A2A	800T-B2A	800H-R2A	800H-AR2A
	Red	800T-A6A	800T-B6A	800H-R6A	800H-AR6A

¹ Underlying operators are extended head. Boot material is chlorosulfonated polyethylene.



Momentary Contact Push Button Units – Illuminated, LED

Type	Voltage	Color	Type 4/13		Type 4/4X/13	
			Extended Head without Guard ²	Extended Head with Guard ²	Extended Head without Guard ²	Extended Head with Guard ²
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
Universal	12...130V AC/DC	Red	800T-QBH2R	800T-QAH2R	800H-QRBH2R	800H-QRAH2R
		Green	800T-QBH2G	800T-QAH2G	800H-QRBH2G	800H-QRAH2G
		Amber	800T-QBH2A	800T-QAH2A	800H-QRBH2A	800H-QRAH2A

² Includes as standard one catalog number 800T-XA (1 N.O. - 1 N.C.) contact block.



Need Help?

The Rockwell Automation Support Center is your 24/7 support for the answers you need now.

www.rockwellautomation.com/support/overview.page



For more information on our complete family of 30 mm push button products, please visit:
<http://ab.rockwellautomation.com/Push-Buttons/30-mm>

Push Buttons

Product Selection

Selector Switch Units – 2-Position, Non-Illuminated



Contact Type	Operator Position		M = Maintained S = Spring Return	Type 4/13		Type 4/4X/13	Type 4/13 Cylinder Lock		
				Standard Knob	Knob Lever	Standard Knob	Key Removal (Left) ²	Key Removal (Right) ²	Key Removal (Both) ²
	Cat. No.	Cat. No.		Cat. No.	Cat. No.	Cat. No.	Cat. No.		
No contacts	–	–	MM	800T-H2	800T-H17	800H-HR2	800T-H31	800T-H32	800T-H33
			S→M	800T-H4	800T-H18	800H-HR4	–	–	–
			M←S	800T-H5	800T-H19	800H-HR5	800T-H48	–	–
1 N.O.	0	X	MM	800T-H2D1	800T-H17D1	800H-HR2D1	800T-H31D1	800T-H32D1	800T-H33D1
			S→M ¹	800T-H4D1	800T-H18D1	800H-HR4D1	–	800T-H42D1	–
			M←S	800T-H5D1	800T-H19D1	800H-HR5D1	800T-H48D1	–	–
1 N.O. 1 N.C.	0 X	X 0	MM	800T-H2A	800T-H17A	800H-HR2A	800T-H31A	800T-H32A	800T-H33A
			S→M ¹	800T-H4A	800T-H18A	800H-HR4A	–	800T-H42A	–
			M←S	800T-H5A	800T-H19A	800H-HR5A	800T-H48A	–	–

¹ Target tables are reversed from those shown.

² Keys removable from maintained positions only.



Selector Switch Units – 3-Position, Non-Illuminated

Contact Type	Operator Position			M = Maintained S = Spring Return	Type 4/13		Type 4/4X/13	Type 4/13 Cylinder Lock		
					Standard Knob	Knob Lever	Standard Knob	Key Removal (Left) ²	Key Removal (Right) ²	Key Removal (All) ²
	Cat. No.	Cat. No.	Cat. No.		Cat. No.	Cat. No.	Cat. No.			
No contacts	–	–	–	MMM	800T-J2	800T-J17	800H-JR2	800T-J41	800T-J42	800T-J44
				S→MM	800T-J4	800T-J18	800H-JR4	–	800T-J50	–
				MM←S	800T-J5	800T-J19	800H-JR5	800T-J69	800T-J38	–
				S→M←S	800T-J91	800T-J20	800H-JR91	–	800T-J631	–
1 N.O. 1 N.C.	0 X	0 0	X 0	MMM	800T-J2A	800T-J17A	800H-JR2A	800T-J41A	800T-J42A	800T-J44A
				S→MM	800T-J4A	800T-J18A	800H-JR4A	–	800T-J50A	–
				MM←S	800T-J5A	800T-J19A	800H-JR5A	800T-J69A	800T-J38A	–
				S→M←S	800T-J91A	800T-J20A	800H-JR91A	–	800T-J631A	–

¹ Target tables are reversed from those shown.

² Keys removable from maintained positions only.

Push Buttons



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Signaling



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Graphic Terminals



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Product Selection

Pilot Light Units – LED



Contact Type	Volts	Color	Type 4/13		Type 4/4X/13	
			Pilot Light	Push-to-Test ¹	Pilot Light	Push-to-Test ¹
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
Universal	12...130V AC/DC	Red	800T-QH2R	800T-QTH2R	800H-QRH2R	800H-QRTH2R
		Green	800T-QH2G	800T-QTH2G	800H-QRH2G	800H-QRTH2G
		Amber	800T-QH2A	800T-QTH2A	800H-QRH2A	800H-QRTH2A

¹ Includes one standard catalog number 800T-XA (1 N.O. - 1 N.C.) contact block.



2-Position Push-Pull and Push-Pull/Twist Release Units – Non-Illuminated

Contact Type	Operator Position		Type 4/13		Type 4/4X/13
			Push-Pull	Push-Pull/Twist Release	Push-Pull/Twist Release
	Out	In	Cat. No.	Cat. No.	Cat. No.
N.C.L.B	X	0	800T-FX6D4	800T-FXT6D4	800H-FRXT6D4
N.O.	0	X	800T-FX6A1	800T-FXT6A1	800H-FRXT6A1
N.C.L.B	X	0			
N.C.L.B	X	0	800T-FX6A5	800T-FXT6A5	800H-FRXT6A5
N.C.L.B	X	0			
S.M.C.B.	X	0	800TC-FX6D4S	800TC-FXT6D4S	800HC-FRXT6D4S
N.O.	0	X	800TC-FX6A1S	800TC-FXT6A1S	800HC-FRXT6A1S
S.M.C.B.	X	0			
S.M.C.B	X	0	800TC-FX6A5S	800TC-FXT6A5S	800HC-FRXT6A5S
S.M.C.B	X	0			



2-Position Push-Pull and Push-Pull/Twist Release Units – Illuminated, LED

Contact Type	Volts	Contacts	Operator Position		Type 4/13		Type 4/4X/13
					Push-Pull	Push-Pull/Twist Release	Push-Pull/Twist Release
			Out	In	Cat. No.	Cat. No.	Cat. No.
Universal	12...130V AC/DC	N.O. N.C.L.B	0 X	X 0	800T-FXQH2RA1	800T-FXTQH2RA1	800H-FRXTQH2RA1



Push Buttons

Product Selection



Enclosures

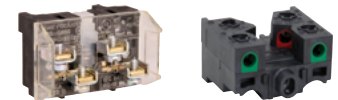
	Die Cast ^{1,2} (Type 4/13)	Stainless Steel ¹ (Type 4/4X/13)	Glass-Filled Polyester (Type 4/4X/13)	Fiberglass ³ (Type 4/4X/13)	Thermoplastic Polyester ⁴ (Type 4/4X)
Operator Openings	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
1	800T-1TZ	800H-1HZ4	800H-1HZ4R	800H-1HZ4Y	800H-1HZ4C
2	800T-2TZ	800H-2HZ4	800H-2HZ4R	800H-2HZ4Y	800H-2HZ4C
3	800T-3TZ	800H-3HZ4	800H-3HZ4R	800H-3HZ4Y	800H-3HZ4C
4	800T-4TZ	800H-4HZ4	800H-4HZ4R	–	800H-4HZ4C
6	800T-6TZ	800H-6HZ4	800H-6HZ4R	–	–

¹ Bottom conduit entry. Grounding screw provided.

² Enclosure depth will accommodate one shallow and one mini-contact block stacked.

³ Extra deep – accommodates two levels of explosion-protected contact blocks.

⁴ No conduit openings provided.



Contact Blocks

Contact Type	Shallow Block ⁵	Mini Block ⁵	PenTUFF (Low Voltage) Block ⁵	Explosion-Protected Block ⁶	Self-Monitoring Contact Block	Max Duty Block
	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
1 N.O.	800T-XD1	800T-XD5	800T-XD1V	–	–	800T-XD1M
1 N.C.	800T-XD2	800T-XD6	800T-XD2V	–	–	800T-XD2M
1 N.O.E.M.	800T-XD3	–	800T-XD3V	–	–	–
1 N.C.L.B.	800T-XD4	–	800T-XD4V	–	–	800T-XD4M
1 N.O. – 1 N.C.	800T-XA	–	800T-XAV	800TC-XAF	–	–
2 N.O.	800T-XA2	–	–	–	–	–
2 N.C.	800T-XA4	–	–	–	–	–
1 N.C.L.B. – 1 N.O.	800T-XA1	–	–	–	–	–
1 N.C.L.B. – 1 N.C.	800T-XA7	–	–	–	–	–
1 N.C.L.B. (wired in series with 1 N.O. monitoring contact)	–	–	–	–	800TC-XD4S	–

⁵ Contact blocks with normally closed contacts meet direct drive positive opening standard requirements when properly fused to IEC 269-1 and 269-2.

Shallow/mini contacts: 10 A gl or N type cartridge fuse. PenTUFF contacts: 6 A gl or N type cartridge fuse.

⁶ 800T operators using explosion protected, sealed switch or logic reed contact blocks and installed in a suitable enclosure are UL Listed as suitable for use in Class I, Division 2 hazardous locations.

Push Buttons



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Signaling



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Graphic Terminals



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Product Selection



Blank and Custom Legend Plates

	Start/Stop Legend Plates	Emergency Stop Legend Plates		
	Grey	Yellow	Yellow (Large Size)	Yellow IEC Ring
Type	Cat. No.	Cat. No.	Cat. No.	Cat. No.
Blank	–	–	800T-X645Y	800T-X646
Custom	–	–	800T-X645YE	–
Emergency Stop	–	–	–	800T-X646EM
Push-to-Stop Pull-to-Start or Push-to-Stop Twist or Pull Release	800T-X618	800T-X618Y	800T-X647Y	–



Standard Legends

Marking	Aluminum, Type 4/13	Grey Plastic, Type 4/4X	Marking	Aluminum, Type 4/13	Grey Plastic, Type 4/4X	Marking	Aluminum, Type 4/13	Grey Plastic, Type 4/4X
	Cat. No.	Cat. No.		Cat. No.	Cat. No.		Cat. No.	Cat. No.
AUTO-MAN-OFF	800T-X625	800H-W059	JOG	800T-X517	800H-W110	RUN	800T-X540	800H-W123
AUTO-OFF-HAND	800T-X501	800H-W154	JOG FORWARD	800T-X518	800H-W111	RUN-JOG	800T-X541	800H-W032
CLOSE	800T-X502	800H-W101	JOG REVERSE	800T-X519	800H-W112	SAFE-RUN	800T-X542	800H-W033
DOWN	800T-X503	800H-W102	JOG RUN	800T-X520	800H-W135	SLOW	800T-X544	800H-W125
EMERG. STOP (Red) ¹	800T-X504	800H-W372	JOG-STOP-RUN	800T-X521	800H-W057	SLOW-FAST	800T-X545	800H-W136
EMERG. STOP (Yellow)	800T-X504Y	–	LOW	800T-X524	800H-W113	SLOW-OFF-FAST	800T-X546	800H-W157
EMERGENCY STOP (Red) ¹	800T-X648	800H-W373	OFF	800T-X527	800H-W116	SPEED ²	800T-X608	800H-W081
FAST	800T-X505	800H-W104	OFF-ON	800T-X529	800H-W133	START	800T-X547	800H-W126
FOR.-OFF-REV.	800T-X507	800H-W152	ON	800T-X530	800H-W117	START-JOG	800T-X548	800H-W138
FOR.-REV.	800T-X506	800H-W132	ON-OFF	800T-X622	–	START-STOP	800T-X549	800H-W137
FORWARD	800T-X508	800H-W105	OPEN	800T-X531	800H-W118	STOP (Red)	800T-X550	800H-W371
HAND-AUTO	800T-X510	800H-W131	OPEN-CLOSE	800T-X532	800H-W134	STOP-START	800T-X551	800H-W038
HAND-OFF-AUTO	800T-X511	800H-W151	OPEN-OFF-CLOSE	800T-X533	800H-W153	TEST	800T-X554	800H-W128
HIGH	800T-X512	800H-W107	POWER ON	800T-X639	800H-W001	UP	800T-X556	800H-W009
HIGH-LOW	800T-X513	800H-W030	RESET	800T-X538	800H-W121	UP-DOWN	800T-X557	800H-W039
HIGH-OFF-LOW	800T-X514	800H-W058	REVERSE	800T-X539	800H-W122	UP-OFF-DOWN	800T-X558	800H-W160

¹ These legend plates do not comply with E-Stop standards that specify a yellow background, such as IEC 60947-5-5 and NFPA 79.

² Potentiometer type with graduated markings.



Push Buttons

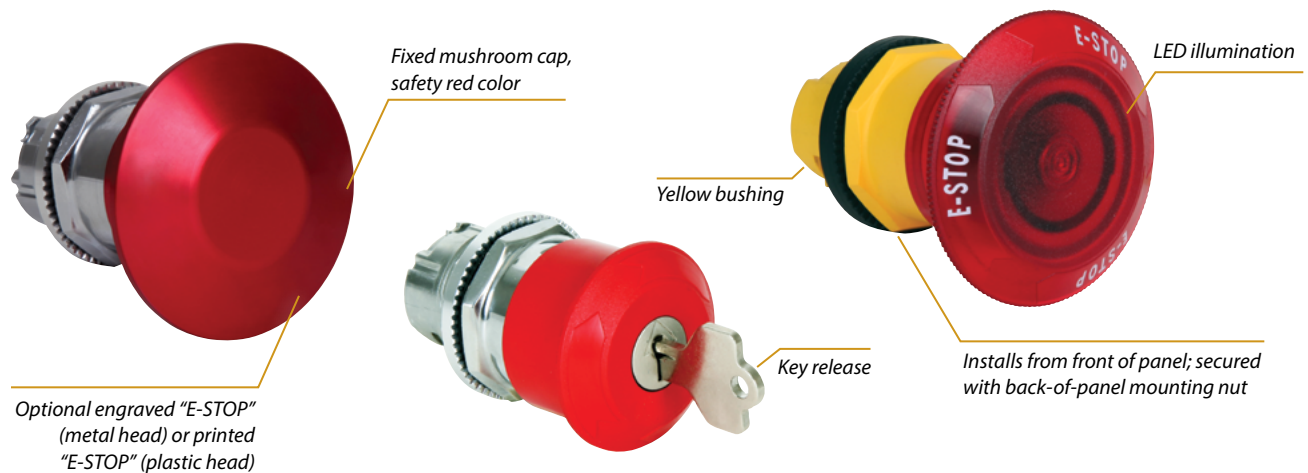


30 mm Emergency Stop Operators 800T/H

- Trigger action
- Certified UL Category NISD and NNTO Emergency Stop Devices
- Complies with EN ISO 13850 and EN 60947-5-5
- Tamper-resistant front-of-panel mounting
- Non-removable mushroom cap
- Non-teasible with standard normally closed (N.C.) contacts

State-of-the-art, Tamper-resistant Design

Trigger action functionality provided in the 800T/H trigger action E-stop delivers operators that meet global requirements and are ideal for installation in heavy duty applications. The twist release design conforms to functional safety guidelines where intentional action is required to reset the E-stop device.



Self-Monitoring Contact Block



- Opens controlled circuit in the unlikely event the contact block becomes separated from the operator
- 10 A max., A600 rated
- Bifurcated spanner with pure fine silver contacts
- Color-coded yellow for easy identification
- IP2X finger-safe protection standard

Push Buttons



3-2...3-23

Signaling



3-24...3-35

Graphic Terminals



3-36...3-37

Product Selection



2-Position Red Trigger Action Twist-to-Release – Non-Illuminated

Contact Type	Operator Position		Type 4/13			Type 4/4X/13
			45 mm Plastic	63 mm Metal	Key Release	45 mm Plastic
	Out	In	Cat. No. ^{1,2,3}	Cat. No. ^{1,4}	Cat. No. ¹	Cat. No. ^{1,2,3}
No contacts	–	–	800T-TFXT6	800T-TFXLT6	800T-TFXK6	800H-TFRXT6
1 N.C.	X	0	800T-TFXT6D2	800T-TFXLT6D2	800T-TFXK6D2	800H-TFRXT6D2
1 N.O. - 1 N.C.	0 X	X 0	800T-TFXT6A	800T-TFXLT6A	800T-TFXK6A	800H-TFRXT6A
1 S.M.C.B. ⁵	X	0	800TC-TFXT6D4S	800TC-TFXLT6D4S	800TC-TFXK6D4S	800HC-TFRXT6D4S
2 N.C.	X X	0 0	800T-TFXT6A4	800T-TFXLT6A4	800T-TFXK6A4	800H-TFRXT6A4
2 S.M.C.B.	X X	0 0	800TC-TFXT6A5S	800TC-TFXLT6A5S	800TC-TFXK6A5S	800HC-TFRXT6A5S

¹ For finger-safe contact block terminals, add a **C** to the catalog number Example: Catalog number 800TC-TFXT6 or 800HC-TFRXT6.

² To order a device with a jumbo (60 mm) plastic head add the letter **J** after X. Example: Catalog number 800T-TFXJT6A or 800H-TFRXJT6A.

³ To order a jumbo head device with "E-STOP" printed on the cap add the letters **JE** after X. Example: Catalog number 800T-TFXJET6 or 800H-TFRXJET6.

⁴ To order a device with "E-STOP" engraved on the cap add the letter **E** after L. Example: Catalog number 800TC-TFXLET6D4S.

⁵ Self-monitoring contact block.



2-Position Red Trigger Action Twist-to-Release – Illuminated

Type	Voltage	Contact Type	Operator Position		Type 4/13			Type 4/4X/13
					45 mm	60 mm	45 mm	60 mm
			Out	In	Cat. No. ⁶	Cat. No. ^{6,7}	Cat. No. ⁶	Cat. No. ^{6,7}
Operator only ⁸		No contacts			800T-TFXTS00R	800T-TFXJTS00R	800H-TFRXTS00R	800H-TFRXJTS00R
Universal	12...130V AC/DC	N.O. - N.C.	0 X	X 0	800T-TFXTQH2RA	800T-TFXJQH2RA	800H-TFRXQH2RA	800H-TFRXJQH2RA

⁶ For finger-safe contact block terminals, add a **C** to the catalog number Example: Catalog number 800TC-TFXTS00R or 800HC-TFRXTS00R.

⁷ To order a device with "E-STOP" printed on the cap add the letter **E** after J. Example: Catalog number 800T-TFXJETQH2RA or 800H-TFRXJETQH2RA.

⁸ Operator-only supplied without power module, lamp, or contact blocks.

Accessories

30 mm push button accessories start on page 3-16.



Safety

Our innovative safety products and solutions improve the functional operation of your machinery while helping to increase personnel safety, efficiency and productivity.

<http://ab.rockwellautomation.com/Safety>



Push Buttons



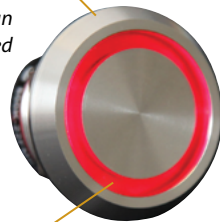
Piezoelectric Push Buttons 800K

- IP69K rating
- 22.5 mm and 30.5 mm
- 316 stainless-steel
- Smooth, crevice-free surface
- Custom engraving (text and symbols) available

The 800K Piezoelectric push buttons represent an innovative rethinking of push button technology and its industrial applications. The potted piezoelectric circuit detects pressure on the surface of the button to provide a momentary actuation signal with no moving parts. These push buttons are ideal for food, beverage and other industries where high-pressure, caustic washdowns can challenge even the most robust push buttons.

Smooth, Crevice-free Surface

- Easier to clean
- Minimizes areas on the button in which contaminants can potentially be lodged



Illumination

Red, green, white, blue or yellow

316 Stainless-steel

Corrosion resistant to caustic wash-down solutions



Potted Circuit

- Helps prevent fluids from corroding operator components
- Provides an additional barrier of protection

No Moving Parts

By using piezoelectric technology, moving seals and crevices can be eliminated from the push button

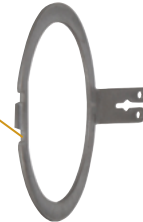
Mounting Ring

Nickel-plated Brass



Anti-rotation Washer

316 Stainless Steel



Push Buttons



3-2...3-23

Signaling



3-24...3-35

Graphic Terminals



3-36...3-37



Product Selection



Momentary Push Button Operators – Screw Termination, 24VDC

Hole Size		Color	Contact Type	Engraving	Cat. No.		
22.5 mm		Non-Illuminated	N.O.	Blank	800K-22FMN24X10		
	●	Green	N.O.		800K-22FMG24X10		
	●	Red	N.C.		800K-22FMR24X01		
	○	White	N.O.		800K-22FMW24X10		
	●	Blue	N.O.		800K-22FMB24X10		
	●	Yellow	N.O.		800K-22FMY24X10		
		Non-Illuminated	N.O.	Custom Text or Symbol	800K-22FMN24X10⊗		
	●	Green	N.O.		800K-22FMG24X10⊗		
	●	Red	N.C.		800K-22FMR24X01⊗		
	○	White	N.O.		800K-22FMW24X10⊗		
	●	Blue	N.O.		800K-22FMB24X10⊗		
	●	Yellow	N.O.		800K-22FMY24X10⊗		
	30.5 mm		Non-Illuminated		N.O.	Blank	800K-30FMN24X10
		●	Green		N.O.		800K-30FMG24X10
●		Red	N.C.	800K-30FMR24X01			
○		White	N.O.	800K-30FMW24X10			
●		Blue	N.O.	800K-30FMB24X10			
●		Yellow	N.O.	800K-30FMY24X10			
		Non-Illuminated	N.O.	Custom Text or Symbol	800K-30FMN24X10⊕		
●		Green	N.O.		800K-30FMG24X10⊕		
●		Red	N.C.		800K-30FMR24X01⊕		
○		White	N.O.		800K-30FMW24X10⊕		
●		Blue	N.O.		800K-30FMB24X10⊕		
●		Yellow	N.O.		800K-30FMY24X10⊕		

⊗ - Add custom text Font Code **E100G** (12 pt), **E100H** (16 pt), **E100J** (20 pt) or custom symbol code **U100**.

⊕ - Add custom text codes **E100H** (16 pt), **E100J** (20 pt) or custom symbol code **U100**.

Custom Text Lines / Character Chart

Font Code	No. of Lines	Characters per Line			
		22.5 mm		30.5 mm	
		Non-Illuminated	Illuminated	Non-Illuminated	Illuminated
E100G (12 pt)	1	8	6	–	–
	2	8/8	5...6/5...6	–	–
	3	7/8/7	4/6/4	–	–
E100H (16 pt)	1	6...7	5	9	6...7
	2	6/6	4/4	8/8	6/6
	3	4/6/4	–	7/9/7	4/6/4
E100J (20 pt)	1	5	1...4	7	5
	2	5/5	–	6...7/6...7	5/5
	3	–	–	6/7/6	–

For more information on our complete family of specialty push button products, please visit:
ab.rockwellautomation.com/Push-Buttons/Specialty



Push Buttons

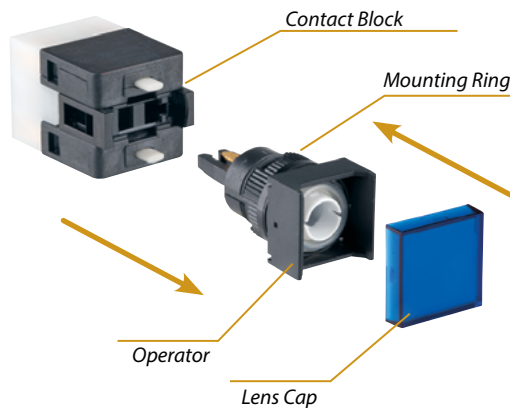


16 mm Push Buttons, Pilot Lights, Selector Switches, and E-Stops 800B

- Ergonomic design
- Designed to global standards
- IP66 and Type 4/13
- Excellent for panels with limited space
- Illuminated and non-illuminated
- Trigger action E-stop

800B 16 mm push buttons can meet your light industrial and instrumentation application needs with their highly configurable and flexible design. These operators are excellent for applications with limited panel space or a small footprint. They are made of corrosion-proof plastic to ensure long push button life.

Ease of Installation



Push Buttons & Pilot Lights

- Momentary or maintained options
- Bright, bold, consistent operators (green, red, yellow, blue, white)
- Contoured button surface for comfort
- Diaphragm seals

Selector Switches

- 2 or 3 position
- V seal – High pressure sealing
- Gold-plated snap action contacts

E-stop

- Anti-tease feature
- Trigger-action design
- K seal – Dual wiping action

Push Buttons



3-2...3-23

Signaling



3-24...3-35

Graphic Terminals



3-36...3-37



Product Selection



Push Button & Pilot Light Operators

Operator Type	Round	Square	Rectangle	Large Square
	Cat. No.	Cat. No.	Cat. No.	Cat. No.
Momentary, push button/pilot light	800B-EPA	800B-EPB	800B-EPC	800B-EPD
Maintained, push button	800B-EAA	800B-EAB	800B-EAC	800B-EAD

Note: All operators are sold without a lens cap and diffuser.



Lens Cap with Diffuser

Lens Color	Round	Square	Rectangle	Large Square
	Cat. No.	Cat. No.	Cat. No.	Cat. No.
Green	800B-ALA3	800B-ALB3	800B-ALC3	800B-ALD3
Red	800B-ALA4	800B-ALB4	800B-ALC4	800B-ALD4
Yellow	800B-ALA5	800B-ALB5	800B-ALC5	800B-ALD5
Blue	800B-ALA6	800B-ALB6	800B-ALC6	800B-ALD6
White	800B-ALA7	800B-ALB7	800B-ALC7	800B-ALD7



Selector Switch Operators

Operator Type	Maintained	Return from Right	Keyed, Maintained	Keyed, Return from Right
	Cat. No.	Cat. No.	Cat. No.	Cat. No.
2-position	800B-SM2A	800B-SR2A	800B-KM2A	800B-KR2A
Operator Type	Maintained	Return from Both	Keyed, Maintained	Keyed, Return from Both
	Cat. No.	Cat. No.	Cat. No.	Cat. No.
3-position	800B-SM3A	800B-SB3A	800B-KM3A	800B-KB3A

Emergency Stop Operator

Operator Type	Cat. No.
Emergency stop operator	800B-MT



Illumination



Description	Lamp Color	Lamp Voltage	Cat. No.
LED bulb ¹	Green	12...24V AC/DC	800B-N3G
		120V AC	800B-N5G
	Red	12...24V AC/DC	800B-N3R
		120V AC	800B-N5R
	White	12...24V AC/DC	800B-N3W
		120V AC	800B-N5W
Incandescent bulb ²	Clear	6V AC/DC	800B-N1C
		12V AC/DC	800B-N2C
		24V AC/DC	800B-N3C

¹ Not available in 6V AC/DC.

² Not available in 120V AC.



Contact Block/Latch Module

Description	Cat. No.
Push Button/Selector Switch	
1 N.O./1 N.C. snap action	800B-PS11
2 N.O./2 N.C. snap action	800B-PS22
Pilot Light	
Dummy block	800B-PL
Emergency Stop/Push Button/Selector Switch	
1 N.C. slow make/break	800B-PT01
2 N.C. slow make/break	800B-PT02
1 N.O./1 N.C. slow make/break	800B-PT11

Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

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Signaling



Panel Mount Alarms 855P

- Visual, audible, or combined indication
- Completely enclosed front, suitable for harsh washdown environments
- Ingress protection rating UL Type 4/4X/13, IP65
- Rear-securing and finger-safe terminals
- Mount in a standard 22.5 mm hole or 30.5 mm hole with adapter

855P panel mount alarms allow local indication of the status of a machine or equipment while enhancing space efficiency with devices ready to be installed in a control panel. These devices include features that preserve the control panel integrity and reduce installation time. Alarm options include sounders, status indicator beacons, xenon strobes, and sounders with status indicator combination, as well as dual-circuit alarms.

Bulletin 855PB LED Beacon

Mounting ring to secure device to the rear of the panel



855P Sounders

Removable plug-in terminal block
Keyed to avoid wiring mistakes



855PC Combined Sounder w/ LED beacon

Completely enclosed front
tamper/vandal resistant suitable
for wash down environments



Bulletin 855PS Xenon Strobe Beacon

Voltage color coding for easy
identification of the circuit



2-Color Half-Lens (with barrier)

Signal up to two different conditions
on a machine with only one device

Signaling

Push Buttons



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3-24...3-35

Graphic Terminals



3-36...3-37

Product Selection

855P Panel Mount Sounders

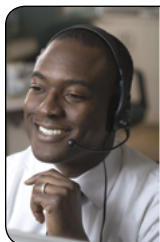
Voltage	Size [mm]	Cat. No.
12...24V AC/DC	30 (72 dB)	855P-B30SE22
	30 (80 dB)	855P-B30SH22
	45	855P-B30ME22
	65	855P-B30LE22
120V AC	30 (72 dB)	855P-B10SE22
	30 (80 dB)	855P-B10SH22
	45	855P-B10ME22
	65	855P-B10LE22

Accessories

Description	Cat. No.
22.5...30.5 mm hole adapter kit	855P-AHA1

Specifications

Housing Material	Base	Polycarbonate (black)
	Lens	Polycarbonate (red, amber, yellow, green, blue, and clear)
Environmental Ratings	UL Type 4/4X/13, IP65	
Operation Temperature Range	-25...+60 °C (-13...+140 °F)	
Mounting	Central mounting for bore holes 22 mm or 30.5 mm with hole adapter kit (Cat. No. 855P-AHA1)	
Certifications	cULus Listed, CE Marked	



Need Help?

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www.rockwellautomation.com/support/overview.page

855PS Panel Mount Strobes and 855PB Selectable Steady or Flashing LED Beacons

Voltage	Diameter [mm]	Lens Color	Panel Mount Strobe	Selectable Steady/Flashing LED Beacon
			Cat. No.	Cat. No.
24V AC/DC	30	Green	855PS-B24SE322	855PB-B24SE322
		Red	855PS-B24SE422	855PB-B24SE422
	45	Green	855PS-B30ME322	855PB-B24ME322
		Red	855PS-B30ME422	855PB-B24ME422
	65	Green	855PS-B30LE322	855PB-B24LE322
		Red	855PS-B30LE422	855PB-B24LE422
120V AC	30	Green	855PS-B10SE322	855PB-B10SE322
		Red	855PS-B10SE422	855PB-B10SE422
	45	Green	855PS-B10ME322	855PB-B10ME322
		Red	855PS-B10ME422	855PB-B10ME422
	65	Green	855PS-B10LE322	855PB-B10LE322
		Red	855PS-B10LE422	855PB-B10LE422

855PC Combined Sounders with LED Beacon and 855PD Dual-Circuit Alarms

Function	Voltage	Diameter [mm]	Color(s)	Combined Sounder with LED Beacon	Dual Circuit Alarm
				Cat. No.	Cat. No.
Sounder with LED	24V AC/DC	45	Green	855PC-B24ME322	855PD-B24MEC1322
			Red	855PC-B24ME422	855PD-B24MEC1422
		65	Green	855PC-B24LE322	855PD-B24LEC1322
			Red	855PC-B24LE422	855PD-B24LEC1422
	120V AC	45	Green	855PC-B10ME322	855PD-B10MEC1322
			Red	855PC-B10ME422	855PD-B10MEC1422
Half-lens, steady LED beacon ¹	24V AC/DC	30	Red & Green	-	855PD-B24SEH4322
		45			855PD-B24MEH4322
		65			855PD-B24LEH4322
	120V AC	45	Red & Green	-	855PD-B10MEH4322
		65			855PD-B10LEH4322

¹ Full lens style with 2 LED beacons also available.



Signaling



Control Tower™ Stack Lights 854J (40 mm) & 854K (60 mm)

- Suitable for indoor and outdoor use
- IP66 rated housing
- Expandable to five levels per stack or up to ten modules in a single arrangement via the double-sided base option
- Piezoelectric sound modules maintain the ingress rating when mounted in the stack

The Control Tower stack lights are designed to communicate status of different conditions alerting you to critical equipment and systems needs on plant floor. Available in a wide variety of light and sound functions, sizes, colors, voltages and mounting options, our stack lights help monitor some of your most challenging control panel and on-machine applications.

Lens Colors Options

		
3 = Green	4 = Red	5 = Amber
		
6 = Blue	7 = Clear	8 = Yellow

Piezo Sound Module

Light Modules

- LED or incandescent
- Multiple color options

Terminal Block mounted on top of the base for easy wiring

Mounting Options

- Pole
- Quick release
- Surface
- Tube
- Vertical
- Double-sided base
- Half-inch NPT base
- Surface mount with M12-5 pin connector

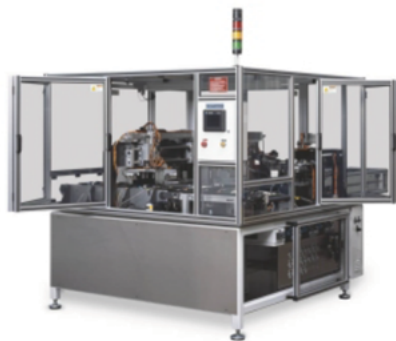
Tool-free lens assembly

Up to ten circuits maximum on double sided base

Five circuits maximum in one stack

854K (60mm)

854J (40mm)



Signaling

Push Buttons



3-2...3-23



3-24...3-35

Graphic Terminals



3-36...3-37

Product Selection

Pre-configured Devices

Voltage	Mounting Base	Level 1		Level 2		Level 3		Piezo Sound Module	40 mm	60 mm
		LED Module	Color	LED Module	Color	LED Module	Color		Cat. No.	Cat. No.
24V AC/DC	10 cm pole mount	Steady	Red	–	–	–	–	–	854JC-P10B24Y4	854KC-P10B24Y4
	10 cm pole mount	–	–	–	–	–	–	Yes	854JC-P10B24P1	854KC-P10B24P1
	10 cm pole mount	Steady	Blue	Steady	Green	Steady	Red	–	854JC-P10B24Y6Y3Y4	854KC-P10B24Y6Y3Y4
	1/2 in. NPT thread	Steady	Green	Steady	Red	Steady	Amber	–	854JC-NPTB24Y3Y4Y5	854KC-NPTB24Y3Y4Y5

Accessories

Description	For use with 854J	For use with 854K
	Cat. No.	Cat. No.
10 cm plastic base extension, black	854J-ABBE	854K-ABBE
Plastic vertical bracket for pole foot, black	854J-ABPB	854J-ABPB
O-rings for lenses	854J-ALSG ¹	854K-ALSG ¹
O-rings for bases	854J-ABSG ¹	–
Gasket for SH surface mount bases	854J-ASG2 ¹	854K-ASG2 ¹
Upper base with terminal block, black	854J-ABUB	854K-ABUB
Cap, black	854J-ABCAP	854K-ABCAP
Conduit mount adapter for threaded tube base (1/2 in. NPT to M20x1.5)	854J-ACMK	854J-ACMK
L-bracket for threaded tube base (vertical mount kit)	854J-ABVM	854J-ABVM
Direct mount kit for threaded tube base	854J-ARDM	854J-ARDM

¹ Order quantity of 1 to receive package of 5.

Specifications

Housing Material	Modules (lenses, caps, bases)	Polycarbonate
	Seals and Gaskets	Nitrile Rubber
	Pole and Base	Aluminum pole with polycarbonate base
	Mounting screw washers	Polypropylene
Environmental Ratings		UL Type 4/4X/13, IP66
Operating Temperature Range		-25...+60 °C (-13...+140 °F)
Mounting		Surface mount base, vertical base, aluminum pole base dual sided base, quick release base, threaded tube, or NPT conduit mounting for indoor and outdoor use
Flash Frequency		Flashing Modules: 1.5 Hz (Time On/Time Off = 1:1) Strobe Modules: 2 Hz (flash duration 1/50,000 second)
Sound Module dB Rating		Max. 80 dB (non-adjustable) at 1m from sound module for 854J or Max. 90 dB (adjustable) at 1m from sound module for 854K
Certifications		cULus Listed, CE Marked, RoHS Compliant



Configure the Control Tower Stack Lights to meet your application needs through Product Selection:

<http://ab.rockwellautomation.com/signaling-devices/854j-854k-control-tower-stack-lights>



Looking for More?

This catalog highlights only our most essential components; for a complete product selection, visit us at:

<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>



Signaling



Control Tower™ Stack Lights 856T

- Up to 7 modules in a single stack
- Outstanding brightness with low power consumption
- Light modules with multi-function capabilities available in seven colors
- Choice of piezoelectric, transducer and recordable sound modules to complement visual indication
- Beacon shaped light modules available for low profile signaling applications
- Mounting bases feature push-in terminal connections for quick, easy wiring

Component Selection

4 Select Top Sounder or Beacon



3 Select Light Modules or In-Line Sounders



2 Select the Power Module*



1 Select the Base Mounting Adaptor



Signaling

* Not required for M12 5- or 8-pin connector bases.

Push Buttons



3-2...3-23



3-24...3-35

Graphic Terminals



3-36...3-37



Product Selection

856T – Bases / Power Modules 1 2

Base Style	Base Adaptor ¹	Power Module 24V AC/DC up to 7 circuits	Power Module 120/240V AC up to 3 circuits	Power Module 120/240V AC up to 7 circuits
	Cat. No.	Cat. No. ⁵	Cat. No. ⁵	Cat. No. ⁵
Surface Mounting 1/2 NPT	856T-BMASN	856T-B24C	856T-BAC3C	856T-BAC7C
Surface Mounting 1/2 NPT w/ pre-installed screws	856T-BMASH	856T-B24C	856T-BAC3C	856T-BAC7C
Vertical Mount	856T-BMAVM	856T-B24C	856T-BAC3C	856T-BAC7C
Tube Mount	856T-BMAT ³	856T-B24C	856T-BAC3C	856T-BAC7C
Pole Mount	856T-BMAP ⁴	856T-B24C	856T-BAC3C	856T-BAC7C
M12 5-pin connector ²	856T-B24QD5C	–	–	–
M12 8-pin connector ²	856T-B24QD8C	–	–	–
Quick Release Base-10 cm ²	856T-B24Q10C	–	–	–
Quick Release Base-25 cm ²	856T-B24Q25C	–	–	–

¹ A complete mounting base requires a Base Adaptor and one of the Power Modules listed in the table.(i.e. 856T-BMASN+856T-B24C for a 24V DC surface mounting base).
² These are factory pre-assembled bases for 24V AC/DC only. They don't require power module selection.
³ Available tube mount lengths are 10 and 25 cm choose one length to complete Base adaptor cat. Number. (i.e. 856T-BMAT10 or 856T-BMAT25)
⁴ Available pole mount lengths are 10, 25, 40 and 60 cm. Select one length to complete Base adaptor cat. Number. (i.e. 856T-BMAP10 or 856T-BMAP40)
⁵ All factory pre-assembled bases and power modules include a cap.

856T – Light Modules 3

Function	Colors available ⁶	Cat. No.
LED Steady	G,R,A,B,W,Y,M	856T-BT ⁷
LED Multi function		856T-BB ⁷
LED Rotating	G,R,A,B,W,Y	856T-BR ⁷
7 color RGB LED Module	Can produce up to 7 colors	856T-BMC
LED Steady/Flashing - Beacon shape	G,R,A,B,W,Y	856T-BGB ⁷
LED Strobe - Beacon shape	R,A,B	856T-BSB ⁷
LED Rotating - Beacon shape	R,A	856T-BRB ⁷
7 color RGB LED Module - Beacon shape	Can produce up to 7 colors	856T-BMB

⁶ Denotes color where G=Green, R=Red, A=Amber, B=Blue, W=White, Y=Yellow, M=Magenta.
⁷ Catalog number is not complete. Please select a color designator: 3=Green, 4=Red, 5=Amber, 6=Blue, 7=White, 8=Yellow, 9= Magenta to complete catalog (i.e. 856T-BT4 is a LED steady Red).

856T – Accessories

Description	Cat. No.
Black Cap	856T-ABCAP
O-ring for light modules, power modules and base adaptors	856T-ARNG
Gasket for surface mount base adaptor	856T-ASFG
Gasket for vertical mount base adaptor	856T-AVFG
Lens diffuser kit	856T-ADK
Screws for pole connection boxes	856T-AJBS

856T – Sound Modules 4

Function	Tones / Circuits	Sound Output	Cat. No.
Piezo Sounder - Top mount	8 tones - single circuit	105dB at 1 m	856T-BP1
Piezo Sounder - In Line	8 tones - single circuit	102dB at 1 m	856T-BPL1
Transducer Sounder ⁸	16 tables / 7 tones per table - 3 circuits	105dB at 1 m	856T-BTR3

⁸ 856T-BTR3 is a three circuit device that also can produce 3 tones with 2 circuits available or 1 tone when used with one circuit only.

Specifications

Materials	Bases, Cap, Sound Module Housing, Lens, Pole foot, Diffuser	Polycarbonate
	Threaded Tube/Pole Bases	Aluminum with clear powdercoat
	Gaskets and O-rings	Nitrile rubber
	Mounting screw washers	Polypropylene
Light Modules and Sounders Environmental Ratings	UL Type 4/4X/13, IP 66/67	
Operating Temperature Range	-30° to +70° C (-22° to +158° F)	
Mounting Options	Surface mount base, vertical base, aluminum pole base, M12 connector base, Quick release base, threaded tube base, 1/2" NPT conduit mount	
Flashing Frequency Multi-function Module	Flashing mode 2 Hz Single Strobe mode (1.4 Hz) Double Flash Strobe mode (1.4 Hz)	
Sound Module dB Rating	Piezo Top sounder (105 dB) In-line Piezo sounder (102 dB) Transducer sounder (105 dB)	
Certifications	cULus, CE Marked, KCC, RCM, RoHs compliant	

For more information on our complete family of visual signaling device products, please visit:
<http://ab.rockwellautomation.com/Signaling-Devices/Visual-Signaling-Devices>



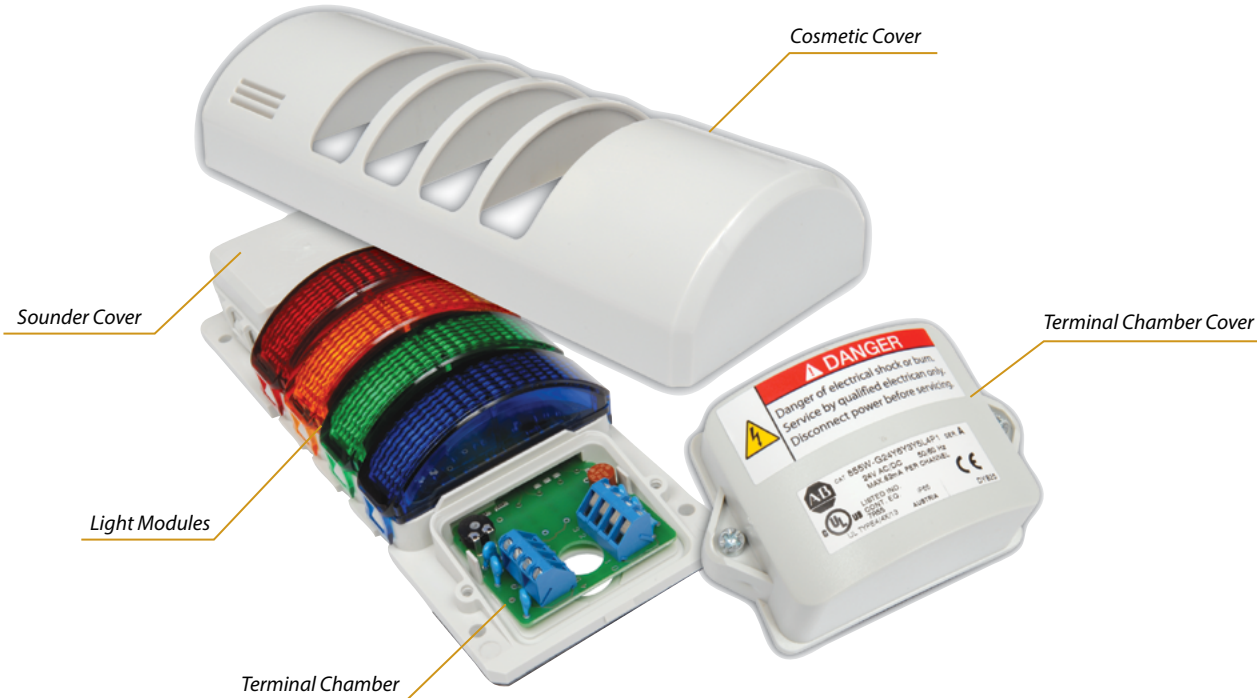
Signaling



Wall Mount Signal Lights 855W

- Up to six different conditions can be indicated (five visual and one audible) in the same device
- Wall mount does not add extra height to machine or equipment
- Units can be mounted vertically or horizontally
- IP65 ingress protection rating for indoor/outdoor and harsh environment use

855W wall mount signal lights are designed to communicate the status of different conditions in the machine or critical equipment in a compact size housing. Our signal lights are available in configurations from two- to five-light indicators with optional sound in the same unit.



Signaling

Push Buttons



3-30

3-2...3-23



3-24...3-35

Graphic Terminals



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Product Selection

Voltage	Level 1		Level 2		Level 3		Level 4		Level 5		Grey Cover	Chrome Cover
	LED Module	Color	LED Module	Color	LED Module	Color	LED Module	Color	LED Module	Color	Cat. No. ¹	Cat. No. ¹
24V AC/DC	Steady	Green	Steady	Red	–	–	–	–	–	–	855W-G24Y3Y4	855W-C24Y3Y4
	Steady	Clear	Steady	Green	–	–	–	–	–	–	855W-G24Y7Y3	855W-C24Y7Y3
	Steady	Green	Flashing	Red	–	–	–	–	–	–	855W-G24Y3L4	855W-C24Y3L4
	Steady	Green	Steady	Amber	Steady	Red	–	–	–	–	855W-G24Y3Y5Y4	855W-C24Y3Y5Y4
	Steady	Red	Steady	Amber	Steady	Green	–	–	–	–	855W-G24Y4Y5Y3	855W-C24Y4Y5Y3
	Steady	Green	Flashing	Yellow	Flashing	Red	–	–	–	–	855W-G24Y3L8L4	855W-C24Y3L8L4
	Steady	Green	Steady	Red	Flashing	Amber	–	–	–	–	855W-G24Y3Y4L5	855W-C24Y3Y4L5
	Steady	Amber	Steady	Blue	Steady	Green	Steady	Red	–	–	855W-G24Y5Y6Y3Y4	855W-C24Y5Y6Y3Y4
	Steady	Clear	Steady	Green	Steady	Amber	Steady	Red	–	–	855W-G24Y7Y3Y5Y4	855W-C24Y7Y3Y5Y4
	Steady	Red	Steady	Amber	Steady	Blue	Steady	Green	Steady	Clear	855W-G24Y4Y5Y6Y3Y7	855W-C24Y4Y5Y6Y3Y7
	Flashing	Blue	Flashing	Amber	Flashing	Red	Flashing	Green	Flashing	Yellow	855W-G24L6L5L4L3L8	855W-C24L6L5L4L3L8
	Flashing	Clear	Steady	Red	Steady	Blue	Steady	Amber	Steady	Yellow	855W-G24L7Y4Y6Y5Y8	855W-C24L7Y4Y6Y5Y8
120V AC	Steady	Green	Steady	Red	–	–	–	–	–	–	855W-G10Y3Y4	855W-C10Y3Y4
	Steady	Green	Flashing	Red	–	–	–	–	–	–	855W-G10Y3L4	855W-C10Y3L4
	Flashing	Red	Steady	Yellow	–	–	–	–	–	–	855W-G10L4Y8	855W-C10L4Y8
	Flashing	Blue	Flashing	Clear	–	–	–	–	–	–	855W-G10L6L7	855W-C10L6L7
	Steady	Green	Steady	Amber	Steady	Red	–	–	–	–	855W-G10Y3Y5Y4	855W-C10Y3Y5Y4
	Flashing	Red	Flashing	Amber	Flashing	Blue	Flashing	Yellow	–	–	855W-G10L4L5L6L8	855W-C10L4L5L6L8
	Steady	Blue	Steady	Green	Steady	Amber	Steady	Red	–	–	855W-G10Y6Y3Y5Y4	855W-C10Y6Y3Y5Y4
	Steady	Clear	Steady	Blue	Steady	Green	Steady	Amber	Steady	Red	855W-G10Y7Y6Y3Y5Y4	855W-C10Y7Y6Y3Y5Y4

¹ For a signal light with piezo sound module add **P1** to the end of the catalog number. For example, Catalog number 855W-G24Y3Y4 becomes Catalog number 855W-G24Y3Y4**P1**.

Specifications

Housing Material	Base	Polycarbonate (94V-0)
	Lens	Polycarbonate (94V-0)
	Rubber Seals and Gaskets	NBR 70
Environmental Ratings		UL Type 4/4X/13, IP65

Operation Temperature Range	-25...+50 °C (-13...+122 °F)
Mounting	Surface mounting. Can be mounted in any orientation.
Flashing LED Frequency	2 Hz
Piezo Sounder dB Rating	90 dBA (potentiometer adjustable down to 70 dB) determined at a distance of 1 meter from sound module

For more information on our complete family of visual signaling device products, please visit:
<http://ab.rockwellautomation.com/Signaling-Devices/Visual-Signaling-Devices>



Signaling



Industrial Horns 855H/855HM

- Multi-tone, multi-stage (circuits), and voice playback capabilities
- Visualization option for enhanced industrial applications
- Surface and wall mount styles
- Multi-horn synchronization for most models
- Plastic and metal housings are heat and shock resistant, corrosion-free, suitable for harsh environments and outdoor applications

855H audible devices include general purpose, high-performance, and recordable electronic horns that provide multi-stage, multi-tone voice messaging and volume control capabilities. The high-performance and recordable horns are available as stand-alone devices or with beacons attached.

General Purpose



Mounting Options

- Surface mount
- Semi-flush mount

Sound Options

- 108...113 dB tones
- Three tones

Environmental Ratings

- Semi-flush Mount: UL Type 3R/13, IP54
- Surface Mount: UL Type 4/4X/13/3R, IP66

High Performance



855H



855HM

Mounting Options

Surface mount

Illumination Options

- 855H – Xenon tube (strobe, 5 J)
- 855HM – LED

Sound Options

- 855H – 10...126 dB outputs
- 855HM – 119 dB output
- Up to 45 tones and 3 circuits

Environmental Ratings

- 855H – Frame C and E: UL Type 3R, 4/4X, 13, IP66
- 855H – Frame A, B, and D: UL Type 13/3R, IP56
- 855HM – UL Type 4/4X/13/3R, IP66

Recordable



Mounting Options

- Surface mount
- Adjustable bracket (flare style)

Illumination Options

LED beacon (red, green, or amber)

Sound Options

- 101...111 dB voice
- 110...126 dB tone
- Up to 45 tones

Environmental Ratings

- Frame C and E: UL Type 3R, 4/4X, 13, IP66
- Flare: UL Type 3R, 4/4X, 13, IP66/IP67

Signaling

Push Buttons



3-2...3-23



3-24...3-35

Graphic Terminals



3-36...3-37



Product Selection

855H General Purpose Horns

Mounting Type	Function	Supply Voltage	Cat. No.
Surface base with conduit entrance	Standard (1 stage)	24V AC/DC	855H-SG24GPA
		120V AC	855H-SG10GPA
		240V AC	855H-SG20GPA
	Enhanced (2 stages)	10...30V DC	855H-SG30GPE
		40...260V AC/DC	855H-SG45GPE
Semi-flush wall plate	Standard (1 stage)	24V AC/DC	855H-FG24GPA
		120V AC	855H-FG10GPA
		240V AC	855H-FG20GPA

855H High Performance Horns and Combination Units with Optional Attached Beacon

Sound Output	Supply Voltage	Horn Only	Horn with Beacon
		Cat. No.	Cat. No. ¹
100 dB max. at 1 m, 2 circuit DC, 1 circuit AC, 10 selectable tones Frame A	24V DC	855H-BD30AD	855H-BCD24ADR3
	115V AC, 50/60 Hz	855H-BA10AD	855H-BCA10ADR3
	230V AC, 50/60 Hz	855H-BA20AD	855H-BCA20ADR3
104 dB max. at 1 m, 3 circuit AC or DC, 32 selectable tones Frame B	24V DC	855H-BD30BD	855H-BCD24BDR3
	115V AC, 50/60 Hz	855H-BA10BD	855H-BCA10BDR3
	230V AC, 50/60 Hz	855H-BA20BD	855H-BCA20BDR3
112 dB max. at 1 m, 3 circuit AC or DC, 32 selectable tones Frame C	24V DC	855H-BD30CD	855H-BCD24CDR3
	115V AC, 50/60 Hz	855H-BA10CD	855H-BCA10CDR3
	230V AC, 50/60 Hz	855H-BA20CD	855H-BCA20CDR3
119 dB max. at 1 m, 3 circuit AC or DC, 45 selectable tones Frame D	24V DC	855H-BD30DD	855H-BCD24DDR3
	115V AC, 50/60 Hz	855H-BA10DD	855H-BCA10DDR3
	230V AC, 50/60 Hz	855H-BA20DD	855H-BCA20DDR3
126 dB max. at 1 m, 3 circuit AC or DC, 45 selectable tones Frame E	24V DC	855H-BD30ED	855H-BCD24EDR3
	115V AC, 50/60 Hz	855H-BA10ED	855H-BCA10EDR3
	230V AC, 50/60 Hz	855H-BA20ED	855H-BCA20EDR3

¹ Catalog number listed is for a green beacon. For a different color, replace the **3** at the end of the catalog number with a **4** (red), **5** (amber), **6** (blue), **7** (clear), or **8** (yellow). Example: Catalog number 855H-BCD24ADR**3** becomes Catalog number 855H-BCD24ADR**5** for a horn with amber beacon.

855H Recordable Horns with Optional Attached Beacon


Description	Supply Voltage	Horn Only	Horn with Beacon
		Cat. No.	Cat. No. ¹
101 db(A) voice, 110 dB(A) tone at 1 m, 45 selectable tones, 4 stages, Frame C	10...30V DC	855H-R30C	855H-RC30C3
		855H-R45C	855H-RC45C3
111 db(A) voice, 126 dB(A) tone at 1 m, 45 selectable tones, 4 stages, Frame E	14...30V DC	855H-R30E	855H-RC30E3
		855H-R45E	855H-RC45E3
111 db(A) voice, 126 dB(A) tone at 1 m, 45 selectable tones, 4 stages, Flare style	14...30V DC	855H-R30F	–
		855H-R45F	–

¹ Catalog number listed is for a green beacon. For a different color, replace the **3** at the end of the catalog number with a **4** (red) or **5** (amber). Example: Catalog number 855H-RC30C**3** becomes Catalog number 855H-RC30C**5** for a horn with amber beacon.

855HM High Performance Horn, Metal

Description	Supply Voltage	Horn Only	Horn with Beacon
		Cat. No.	Cat. No. ¹
119 dB max. at 1 m, 3 circuit AC or DC, 45 selectable tones	12...30V DC	855HM-GMD30D	855HM-CGMD30DL3
		855HM-GMA10D	855HM-CGMA10DL3
		855HM-GMA20D	855HM-CGMA20DL3

¹ Catalog number listed is for a green beacon. For a different color, replace the **3** at the end of the catalog number with a **4** (red), **5** (amber), **6** (blue) or **7** (clear). Example: Catalog number 855HM-CGMD30DL**3** becomes Catalog number 855HM-CGMD30DL**5** for a horn with amber beacon.



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page



Signaling



Industrial Beacons 855B

- Three diameter sizes
- Illumination options: LED, halogen, and xenon tube
- Six colors available: green, red, amber, blue, clear, and yellow
- 855BS, 855BM, 855BL
 - Surface, NPT conduit, or tube mounting options
 - UL Type 4/4X/13, IP65
- 855B-GMS
 - Surface mount only
 - UL Type 3R, IP66

855B industrial beacons offer flexibility in size, mounting, voltages, colors, and illumination options to fit your application needs. The three diameter sizes are available in steady halogen, flashing halogen and rotating halogen versions. The 90 mm size offers also LED steady, flashing, strobe and three-color functionality.



855BS - 90 mm¹

Illumination Options

- Halogen bulb (steady/ flashing/rotating)
- LED (steady/flashing/strobe/3-color)
- Xenon tube (strobe)

¹ LED option shown



855BM - 120 mm

Illumination Options

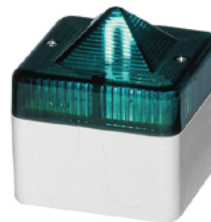
- Halogen bulb (steady/ flashing/rotating)
- Xenon tube (strobe)



855BL - 160 mm

Illumination Options

- Halogen bulb (steady/ flashing/rotating)
- Xenon tube (strobe)



855B-GMS - Square

Illumination Options

- Xenon tube (strobe)



Signaling

Push Buttons



3-2...3-23



3-24...3-35

Graphic Terminals



3-36...3-37



Product Selection

855BS 90 mm LED Round Beacons

	Steady/Flashing	Strobe	Multi-Color (green/red/amber)
Surface mount ¹	855BS-S◆SL□	855BS-S■BL□	855BS-S●ML345□
0.5 in. NPT mount	855BS-N◆SL□	855BS-N■BL□	855BS-N●ML345□
25 mm tube mount	855BS-T◆SL□	855BS-T■BL□	855BS-T●ML345□

¹ Surface mount base must be installed with rough wall plate (Catalog number 855BS-AWP) for UL Type 4/4X/13 rating, otherwise UL Type 1 only.

- ◆ Voltage Code: **35** = 24/48V AC/DC, **45** = 120/240V AC/DC
- Voltage Code: **35** = 24/48V AC/DC, **10** = 120V AC, **20** = 240V AC
- Voltage Code: **24** = 24V AC/DC, **10** = 120V AC, **20** = 240V AC
- Add lens color option code from table at right.

Lens Colors Options

		
3 = Green	4 = Red	5 = Amber
		
6 = Blue	7 = Clear	8 = Yellow

855BM 120 mm Round Beacons

	Steady	Rotating	Flashing	Strobe
Surface mount ²	855BM-S●DH□	855BM-S●RH□	855BM-S●FH□	855BM-S●BR□
0.5 in. NPT mount	855BM-N●DH□	855BM-N●RH□	855BM-N●FH□	855BM-N●BR□

² Surface mount base must be installed with rough wall plate (Catalog number 855BM-AWP) for UL Type 4/4X/13 rating, otherwise UL Type 1 only.

- Voltage Code: **24** = 24V AC/DC, **10** = 120V AC
- Add lens color option code from table at right.

855BL 160 mm Round Beacons

	Steady	Rotating	Flashing	Strobe
Surface mount ³	855BL-S●DH□	855BL-S●RH□	855BL-S●FH□	855BL-S●BR□
1 in. NPT mount	855BL-N●DH□	855BL-N●RH□	855BL-N●FH□	855BL-N●BR□

³ Surface mount base must be installed with rough wall plate (Catalog number 855BL-AWP) for UL Type 4/4X/13 rating, otherwise UL Type 1 only.

- Voltage Code: **24** = 24V AC/DC, **10** = 120V AC
- Add lens color option code from table at right.

855B Mini Square Beacon

Supply Voltage	Cat. No.
24V AC/DC	855B-GMS24R□
115V AC, 50/60 Hz	855B-GMS10R□

- Add lens color option code from table at right.



Looking for More?

This catalog highlights only our most essential components; for a complete product selection, visit us at:

<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>



Graphic Terminals

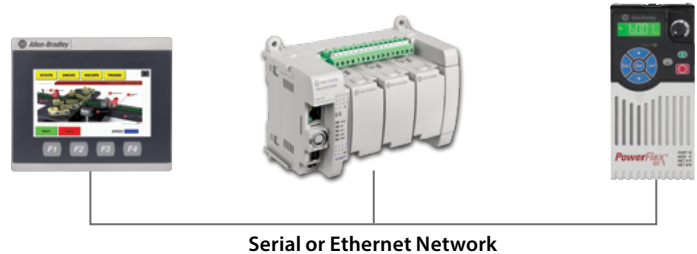


PanelView 800 Graphic Terminals 2711R

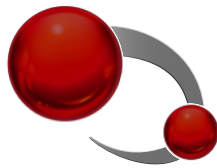
- High-resolution display with LED backlight supporting 65K colors
- Communicate to micro controllers (MicroLogix™, Micro800®) and other devices using serial (RS232, RS422/485) protocols and Ethernet
- Review alarm status, history and time/date of equipment events even after power cycle
- Languages supported: French, German, Italian, Portuguese, Spanish and Simplified Chinese

The PanelView 800 Graphic Terminal features a high-speed processor, high-resolution display with LED backlight and internal memory; helping to improve productivity and maintenance, while enjoying the convenience and efficiencies of single-source buying.

Landscape and Portrait Modes



Optimized for use with the Micro800 and MicroLogix controllers.



Download the Connected Components Workbench Software!

<http://www.rockwellautomation.com/go/lit/ccws>

Connected Components Workbench Software

Connected Components Workbench is a single software platform supporting Allen-Bradley HMI, component-class drives, configurable safety relays, soft starters, motion products and Micro800 controllers in your standalone machine.

Graphic Terminals

Push Buttons



3-2...3-23

Signaling





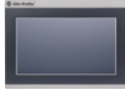

3-24...3-35



3-36...3-37



PanelView 800 Specifications

Feature	4-inch	7-inch	10-inch
			
Catalog Number	2711R-T4T	2711R-T7T	2711R-T10T
Resolution	480 x 272 WQVGA	800 x 480 WVGA	800 x 600 SVGA
Display type	TFT touch screen, wide LCD		
Display hour	40,000 hours		
Colors	65K colors		
Backlight	LED		
Operator input	Resistive touch and tactile function keys	Resistive touch	
Power supply	24V DC		
Processor, CPU speed	800 MHz		
Internal storage	128 MB	256 MB	
RAM	128 MB DDR	256 MB DDR	
Operation system	Microsoft Windows CE 6.0		
Real-time clock with battery	Yes		
Operating temperature	0...50 °C		
RS232/RS422/485 (isolated)	Separate RS232 and RS422/RS485 connectors		
Ethernet 10/100 Mbps	1		
USB host (USB 2.0)	Yes		
microSD™ slot	Yes		
Product dimension (mm) (height x width x depth)	116 x 138 x 43	144 x 197 x 54	225 x 287 x 55
Panel cutout (mm) (height x width)	99 x 119	125 x 179	206 x 269
Weight	0.35 kg (0.76 lb)	0.68 kg (1.48 lb)	1.57 kg (3.41 lb)
Front bezel protection	IP65, NEMA 4X, 12, 13		
Certifications	cULus listed; Class I Div 2, Groups A,B,C,D, T4A, CE, RCM, KC, RoHS		
Software	Connected Components Workbench software release 8.00 or later		
Accessories	–	7" Adapter plate kit	10" Adapter plate kit
Catalog Number	–	2711R-APK7	2711R-APK10



Additional Operator Interface Products



800G



800H Type 7 & 9



800R

Hazardous Location Push Buttons 800G, 800H Type 7 & 9, and 800R

Hazardous location push buttons are designed for use in process applications where dangerous gases or other materials may be present. Units are available as factory assembled stations or as components for field assembly.

Bulletin No.	Ratings	Certifications
800G	Class I Zone 1, ATEX Zone 1, and Class I, Div. 2	UL, ATEX
800H Type 7 & 9	Classes I and II, Div. 1 and 2, and Class III	UL, CSA
800R	Class I, Div. 2	UL, CSA

Hazardous location signaling devices are designed to alert you to critical equipment and system needs on the plant floor.

Hazardous Location Horns & Beacons 855X

- UL Type 4/4X/13, IP66
- 1/2 in. NPT conduit entry & pre-wired with flying leads
- Electronic horn sounder, multi-tone, and multi-stage
- Xenon strobe beacon
- Class I, Div. 2 (Groups A, B, C, D) and Class II, Div. 2 (Groups F and G) rated devices



Hazardous Location Horns & Beacons 855XM

- Marine-grade aluminum housing
- UL Type 4/4X/13, IP66
- Class I, Div. 2 (Groups A, B, C, D) and Class II, Div. 2 (Groups F and G) and Class III
- ATEX/IECEX Zone 2, Zone 22 and Class/Zone ratings for US and Canada
- 4 stages / circuits and 64 tones to select via DIP switch
- Optional Xenon strobe beacon in clear, red or amber

Push Buttons



3-2...3-23

Signaling



3-24...3-35

Graphic Terminals



3-36...3-37

For more information on our hazardous location products visit:
<http://www.rockwellautomation.com/global/products/industrial-control-products/overview.page>



Control Tower Stack Lights 855E (50 mm) & 855T (70 mm)

Control Tower stack lights provide multi-status indication of your application with a variety of light and sound functions, colors, voltages, and mounting options. Stack lights can be pre-assembled to save time or ordered as separate light and sound modules for customized field assembly.

- UL Type 4/4X/13, IP65
- Stacking configurations 1...5 modules high
- Continuous or pulsing piezo sound modules
- Transducer sound modules up to 15 tones



Compact Control Tower Stack Lights 855D (30 mm) & 855F (70 mm)

Compact Control Tower stack lights provide multi-status indication to meet the most challenging panel and on-machine applications.

- UL Type 4/4X/13, IP65
- Steady and flashing LED light modules
- Continuous or pulsing piezo sound modules
- Multiple mounting options
- Factory pre-assembled and pre-wired

Panel Light Bars 855L

These LED panel lights offer a long life and low voltage option for OEMs and panel builders.

- Low voltage potential in panel
- Low heat output
- Low weight due to absence of heavy ballast
- Ideal for environments with high shock and vibration



Notes

Operator Interface

Push Buttons



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Terminal Blocks

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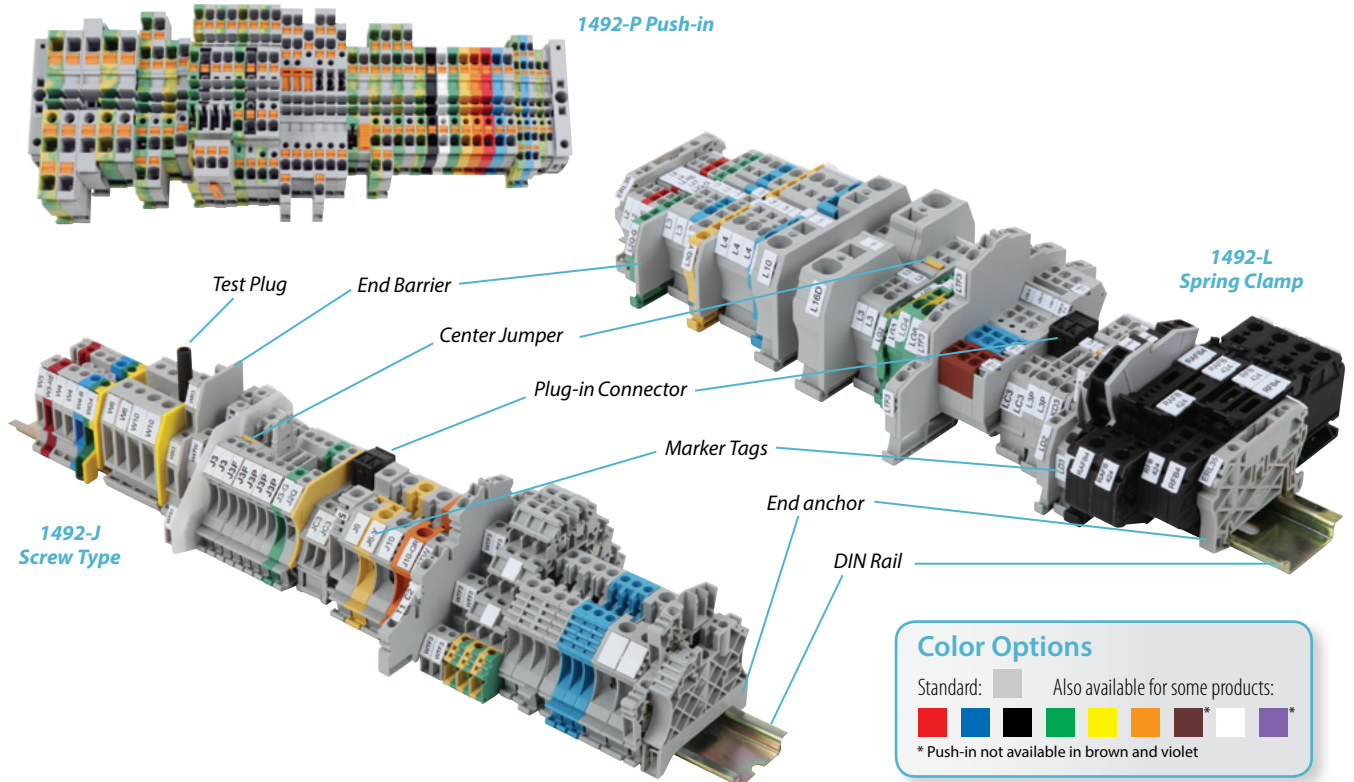
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Terminal Blocks



Leading the industry in efficiency and productivity, our family of IEC terminal blocks includes a broad range of DIN Rail mountable products. With push-in, screw and spring clamp connections available, they are designed for safety, installation ease, and ruggedness.

Push-in, Screw Type and Spring Clamp Terminal Blocks are Available in the Following Styles:

Standard Feed-through Terminal Blocks

- Designed for single-circuit feed-through applications

Multi-circuit Feed-through Terminal Blocks

- Designed for high-density wiring applications

Sensor Terminal Blocks

- Provide all connections needed for two-, three-, and four-wire applications in one terminal block

Grounding Terminal Blocks

- Provides easy to identify grounding bus that is mounted on the DIN Rail

Plug-in Style Terminal Blocks

- Allow for insertion of fixed components into control circuits (resistor, diodes, surge suppression circuit and shunt bars)

Fuse Blocks*







- Provide better overcurrent protection in hinged-arm design

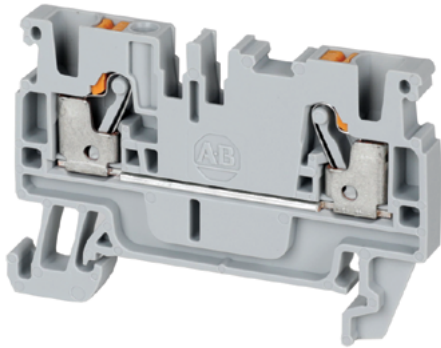
Control Power Distribution

- Available in Push-in Terminal Blocks

* Not available yet for 1492-P

Terminal Blocks

	Wiring Systems	Signal Interface	Connection Systems	Safety Connection Systems	Network Media
					
4-2...4-29	4-30...4-31	4-32...4-35	4-36...4-45	4-46...4-49	4-50...4-57



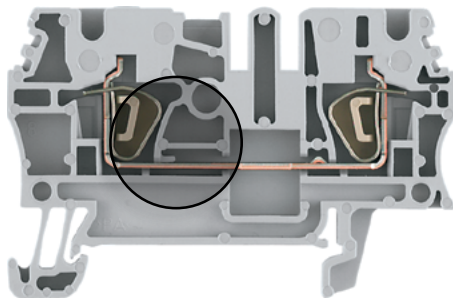
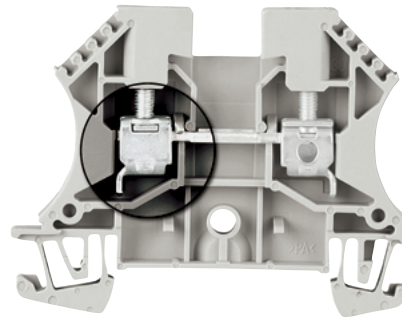
Push-in Terminal Blocks 1492-P

- When using an automated ferrule machine, installation time can be up to 65% faster than a screw clamp
- One-hand, one-second installation
- No torque values are needed to install or double check

Screw Clamp Terminal Blocks 1492-J

- All screw clamps have self-locking feature for unmatched connection reliability
- UL tested and approved for multiple wire terminations per connection terminal
- Use strong clamping materials to form gas-tight connection

* Product selection begins on page 4-10.



Spring Clamp Terminal Blocks 1492-L

- Help reduce wiring connection time by up to 30...50%
- Excellent reliability performance in high-vibration environments
- Easy top-wire installation

* Product selection begins on page 4-17.

Available Accessories¹

- Marker cards
- Partition Plates
- DIN Rail
- End Anchor
- Jumpers

¹ DIN Rail and End Anchors can be found on page 4-25. For accessory options, please visit our online product directory.

All IEC Terminal Blocks are:

- IP2x finger-safe
- DIN Rail mount
- High fault short-circuit current rating (SCCR*) with fuses and circuit breakers
- Meet IEC, UL, CSA and ATEX standards

* Not available yet for 1492-P



Terminal Blocks

Product Selection

Standard Feed-through Terminal Blocks, Push-in

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>										
		1492-P3			1492-P4			1492-P6		
Standards		UR/CSA	IEC	ATEX	UR/CSA	IEC	ATEX	UR/CSA	IEC	ATEX
Voltage rating [V AC/DC]		600	800	550	600	800	550	600	800	550
Maximum current [A]		20	24	21	30	32	30	38	41	36
Wire range (Rated cross section)		#28...12 AWG	2.5 mm ²	2.5 mm ²	#26...10 AWG	4 mm ²	4 mm ²	#22...8 AWG	6 mm ²	6 mm ²
Terminal block		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.	
Grey		1492-P3	100		1492-P4	100		1492-P6	50	
Color		1492-P3-⊗			1492-P4-⊗			1492-P6-⊗		
Accessories		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.	
End Barrier		1492-EBP3	50		1492-EBP4	50		1492-EBP6	50	
Center Jumpers ¹	2-pole	Orange	1492-CJP3-2	60	1492-CJP4-2	60	1492-CJP6-2	60		
	3-pole		1492-CJP3-3	20	1492-CJP4-3	20	1492-CJP6-3	20		
	4-pole		1492-CJP3-4		1492-CJP4-4		1492-CJP6-4	60		
	5-pole		1492-CJP3-5		1492-CJP4-5		–	–		
	6-pole		1492-CJP3-6		1492-CJP4-6		–	–		
	7-pole		1492-CJP3-7		1492-CJP4-7		–	–		
	8-pole		1492-CJP3-8		1492-CJP4-8		–	–		
	9-pole		1492-CJP3-9		1492-CJP4-9		–	–		
	10-pole		1492-CJP3-10		1492-CJP4-10		–	–		
	20-pole		1492-CJP3-20		–		–	–		
50-pole	1492-CJP3-50	1492-CJP4-50	5		–		–			
Test Plugs	Start Test Plug	1492-PTPS	50		1492-PTPS	50		1492-PTPS	50	
	Test Plug	1492-P3TPE			1492-P4TPE			1492-P6TPE		
Marking Systems	ClearPlot Basic Marker Cards	1492-MR5X8 (120/card)	5 cards		1492-MR6X8 (120/card)	5 cards		1492-MR6X8 (120/card)	5 cards	
	ClearMultiprint Markers	1492-MT5X8 (800/roll)	1 roll		1492-MT6X8 (600/roll)	1 roll		1492-MT8X8 (500/roll)	1 roll	
Ferrules		For specific information on which Panduit ferrules to use with individual Bulletin 1492-P Push-in Terminal Blocks, consult Appendix sections in Publication 1492-TD017.								

⊗ For colored terminal blocks, replace the ⊗ in the catalog number with the following: **RE** = Red, **B** = Blue, **BL** = Black, **G** = Green, **Y** = Yellow, **OR** = Orange, **W** = White, to the end of the catalog number.

¹ Available in orange as standard, to order other colors add the appropriate suffix to the catalog number listed: Blue =B, Red = RE. Example for a red 2-pole center jumper, the catalog number will be 1492-CJP3-2-RE.

Terminal Blocks

	Wiring Systems		Signal Interface		Connection Systems		Safety Connection Systems		Network Media
4-2...4-29	4-30...4-31	4-32...4-35	4-36...4-45	4-46...4-49	4-46...4-49	4-50...4-57			

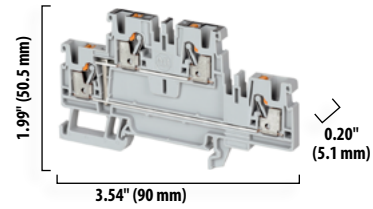
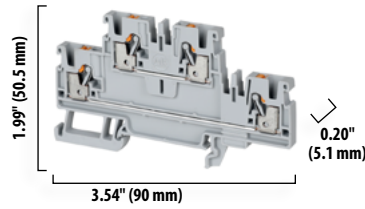


Product Selection

Multi-circuit Feed-through Terminal Blocks, Push-in

Dimensions are not intended to be used for manufacturing purposes.

Note: Height for dimension is measured from top of rail to top of terminal block.



1492-PD3

1492-PD3C

Two-level, Feed-through terminal block with commoning bar

Standards		UR/CSA	IEC	ATEX	UR/CSA	IEC	ATEX	
Voltage rating [V AC/DC]		600	800	550	600	800	550	
Maximum current [A]		20	24	21	20	24	21	
Wire range (Rated cross section)		#28...12 AWG	2.5 mm ²	2.5 mm ²	#28...12 AWG	2.5 mm ²	2.5 mm ²	
Terminal block		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.		
Grey Color		1492-PD3	50		1492-PD3C	50		
		1492-PD3-⊗			1492-PD3C-⊗			
Accessories		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.		
End Barrier		1492-EBPD3	20		1492-EBPD3	20		
Center Jumpers ¹	2-pole	Orange	1492-CJP3-2	20		1492-CJP3-2	20	
	3-pole							
	4-pole							
	5-pole							
	6-pole							
	7-pole							
	8-pole							
	9-pole							
	10-pole							
	20-pole							
50-pole								
Test Plugs		Start Test Plug	1492-PTPS	50		1492-PTPS	50	
		Test Plug	1492-P3TPE			1492-P3TPE		
Marking Systems		ClearPlot Basic Marker Cards	1492-MR5X8 (120/card)	5 cards		1492-MR5X8 (120/card)	5 cards	
		ClearMultiprint Markers	1492-MT5X8 (800/roll)	1 roll		1492-MT5X8 (800/roll)	1 roll	
Ferrules		For specific information on which Panduit ferrules to use with individual Bulletin 1492-P Push-in Terminal Blocks, consult Appendix sections in Publication 1492-TD017.						

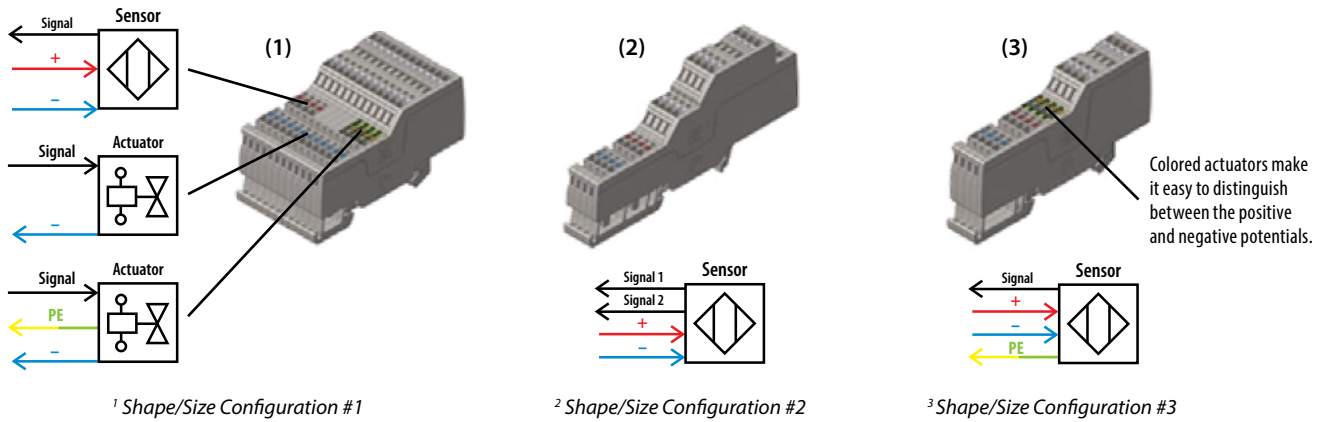
⊗ For colored terminal blocks, replace the ⊗ in the catalog number with the following: RE = Red, B= Blue, BL = Black, G= Green, Y= Yellow, OR= Orange, W=White, to the end of the catalog number.

¹ Available in orange as standard, to order other colors add the appropriate suffix to the catalog number listed: Blue =B, Red = RE. Example for a red 2-pole center jumper, the catalog number will be 1492-CJP3-2-RE.



Terminal Blocks

Sensor/Signal Blocks



Sensor/Signal				
Color	Catalog Number			Wire Range (Rated cross section)
	2 Circuit	3 Circuit	4 Circuit	
Standard	1492-PS2-2 ¹	1492-PS2-3 ¹	1492-PS2-4 ²	26-14 AWG (1.5mm ²)
with Grounding	—	1492-PSG2-3 ¹	1492-PSG2-4 ³	26-14 AWG (1.5mm ²)
Ferrules	For specific information on which Panduit ferrules to use with individual Bulletin 1492-P Push-in Terminal Blocks, consult Appendix sections in Publication 1492-TD017.			



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.
www.rockwellautomation.com/support/selection.page

Simplify Your Wiring

Learn how Push-in Terminal Blocks can make electricians twice as fast while enabling wiring accuracy and reliability.
<https://ab.rockwellautomation.com/connection-devices/terminal-blocks/push-in>

Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

Safety Connection Systems



4-46...4-49

Network Media

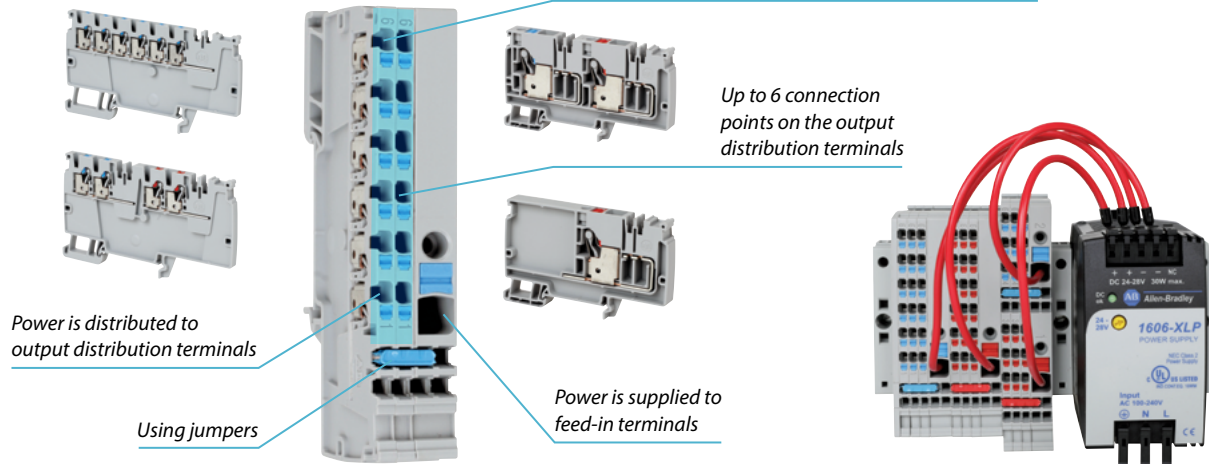


4-50...4-57



Control Power Distribution Blocks

Colored actuators make it easy to distinguish between the positive and negative potentials



Control Power Distribution			
Color	Catalog Number		Wire Range (Rated cross section)
	Start (Feed-in)	End (Output)	
Standard	1492-P6PD2S-1B ¹	–	22-8 AWG (6.0 mm ²)
Standard	1492-P6PD2S-1RE ¹	–	
with Grounding ³	1492-PG6PD2S ¹	–	
Standard	–	1492-P6PD2E-6B ¹	26-14 AWG (1.5mm ²)
Standard	–	1492-P6PD2E-6RE ¹	
Standard	1492-P6PD2S-1B1RE ²	–	22-8 AWG (6.0 mm ²)
with Grounding ³	1492-P6PD2S-1RE1G ²	–	
Standard	–	1492-P6PD2E-3B3RE ²	26-14 AWG (1.5mm ²)
Ferrules	For specific information on which Panduit ferrules to use with individual Bulletin 1492-P Push-in Terminal Blocks, consult Appendix sections in Publication 1492-TD017.		

Control Power Distribution			
Color	Catalog Number		Wire Range (Rated cross section)
	Start (Feed-in)	End (Output)	
Standard	1492-P10PD3S-1B ¹	–	22-6 AWG (10.0 mm ²)
Standard	1492-P10PD3S-1RE ¹	–	
with Grounding ³	1492-PG10PD3S ¹	–	
Standard	–	1492-P10PD3E-5B ¹	28-12 AWG (2.5mm ²)
Standard	–	1492-P10PD3E-5RE ¹	
Standard	1492-P10PD3S-1B1RE ²	–	22-6 AWG (10.0 mm ²)
with Grounding ³	1492-P10PD3S-1RE1G ²	–	
Standard	–	1492-P10PD3E-2B2RE ²	28-12 AWG (2.5mm ²)
Ferrules	For specific information on which Panduit ferrules to use with individual Bulletin 1492-P Push-in Terminal Blocks, consult Appendix sections in Publication 1492-TD017.		

¹ Shape/Size Configuration #1: (+/-) on separate terminal blocks.

² Shape/Size Configuration #2: (+/-) integrated into a single terminal block.

³ Not grounded to the DIN Rail. This is a functional earth ground that allows you ground the minus potential of the power supply to 0V.

For more information on our complete family of terminal block products, please visit: <http://ab.rockwellautomation.com/Terminal-Blocks>



Terminal Blocks

Product Selection

Grounding Terminal Blocks, Push-in

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>										
		1492-PG3		1492-PG4		1492-PG6				
Standards		UR/CSA	IEC	ATEX	UR/CSA	IEC	ATEX	UR/CSA	IEC	ATEX
Wire range (Rated cross section)		#28...12 AWG	2.5 mm ²	2.5 mm ²	#26...10 AWG	4 mm ²	4 mm ²	#22...8 AWG	6 mm ²	6 mm ²
Voltage rating [V AC/DC]		600	800	550	600	800	550	600	800	550
Wire strip length		0.4 in. (10 mm)			0.47 in. (12 mm)			0.47 in (12 mm)		
Density		59 pcs/ft (196 pcs/m)			49 pcs/ft (163 pcs/m)			37 pcs/ft (123 pcs/m)		
Housing temperature range		-76...266°F (-60...130 °C)			-76...266°F (-60...130 °C)			-76...266°F (-60...130 °C)		
Terminal block		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.	
Green/Yellow		1492-PG3	50		1492-PG4	50		1492-PG6	50	
Accessories		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.	
End Barrier		1492-EBP3-Y	50		1492-EBP4-Y	50		1492-EBP6-Y	50	
Center Jumpers ¹	2-pole	Orange	1492-CJP3-2	60	1492-CJP4-2	60	1492-CJP6-2	60		
	3-pole		1492-CJP3-3	20	1492-CJP4-3	20	1492-CJP6-3	20		
	4-pole		1492-CJP3-4		1492-CJP4-4		1492-CJP6-4	60		
	5-pole		1492-CJP3-5		1492-CJP4-5		–	–		
	6-pole		1492-CJP3-6		1492-CJP4-6		–	–		
	7-pole		1492-CJP3-7		1492-CJP4-7		–	–		
	8-pole		1492-CJP3-8		1492-CJP4-8		–	–		
	9-pole		1492-CJP3-9		1492-CJP4-9		–	–		
	10-pole		1492-CJP3-10		1492-CJP4-10		–	–		
	20-pole		1492-CJP3-20		–		–	–		
50-pole	1492-CJP3-50	1492-CJP4-50	5		–		–			
Test Plugs	Start Test Plug	1492-PTPS	50	1492-PTPS	50	1492-PTPS	50			
	Test Plug	1492-P3TPE		1492-P4TPE		1492-P6TPE				
Marking Systems	ClearPlot Basic Marker Cards	1492-MR5X8 (120/card)	5 cards	1492-MR6X8 (120/card)	5 cards	1492-MR6X8 (120/card)	5 cards			
	ClearMultiprint Markers	1492-MT5X8 (800/roll)	1 roll	1492-MT6X8 (600/roll)	1 roll	1492-MT8X8 (500/roll)	1 roll			
Ferrules		For specific information on which Panduit ferrules to use with individual Bulletin 1492-P Push-in Terminal Blocks, consult Appendix sections in Publication 1492-TD017.								

⊗ For colored terminal blocks, replace the ⊗ in the catalog number with the following: **RE** = Red, **B** = Blue, **BL** = Black, **G** = Green, **Y** = Yellow, **OR** = Orange, **W** = White, to the end of the catalog number.

¹ Available in orange as standard, to order other colors add the appropriate suffix to the catalog number listed: Blue =B, Red = RE. Example for a red 2-pole center jumper, the catalog number will be 1492-CJP3-2-RE.

Terminal Blocks

	Wiring Systems	Signal Interface	Connection Systems	Safety Connection Systems	Network Media
4-2...4-29	4-30...4-31	4-32...4-35	4-36...4-45	4-46...4-49	4-50...4-57

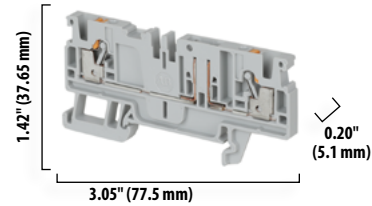
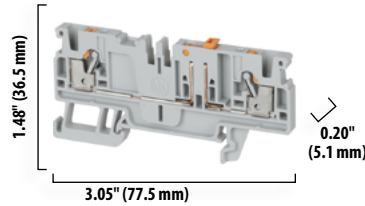


Product Selection

Isolation & Plug-in Terminal Blocks, Push-in

Dimensions are not intended to be used for manufacturing purposes.

Note: Height for dimension is measured from top of rail to top of terminal block.



		1492-PKD3			1492-P3P	
Standards		UR/CSA	IEC	ATEX	UR/CSA	IEC
Voltage rating [V AC/DC]		300	500	400	300	500
Maximum current		20	20	20	20	20
Wire range (Rated cross section)		#28...12 AWG	2.5 mm ²	2.5 mm ²	#28...12 AWG	2.5 mm ²
Terminal block		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.
	Gray	1492-PKD3	50		1492-P3P	50
	Blue	1492-PKD3-B			–	–
Accessories		Cat. No.	Pkg. Qty.		Cat. No.	Pkg. Qty.
End Barrier		1492-EBP3Q	50		1492-EBP3Q	20
Plug-in center jumper	10-pole	1492-CJP3-10	20		1492-CJP3-10	20
	2-pole	1492-CJP3-2	60		1492-CJP3-2	60
Disconnect plug		–	–		1492-DPL	50
Component plug		–	–		1492-CPL	50
Fuse plugs	Without blown fuse indicator	–	–		1492-FPK2	20
	10...36V blown fuse indicator	–	–		1492-FPK224	20
	35...75V blown fuse indicator	–	–		1492-FPK248	20
	60...150V blown fuse indicator	–	–		1492-FPK2120	20
	140...250V blown fuse indicator	–	–		1492-FPK2250	20
Test Plugs	Start Test Plug	1492-PTPS	50		1492-PTPS	50
	Test Plug	1492-P3TPE			1492-P3TPE	
Marking Systems	ClearPlot Basic Marker Cards	1492-MR5X8 (120/card)	5 cards		1492-MR5X8 (120/card)	5 cards
	ClearMultiprint Markers	1492-MT5X8 (800/roll)	1 roll		1492-MT5X8 (800/roll)	1 roll
Ferrules	For specific information on which Panduit ferrules to use with individual Bulletin 1492-P Push-in Terminal Blocks, consult Appendix sections in Publication 1492-TD017.					

⊗ For colored terminal blocks, replace the ⊗ in the catalog number with the following: **RE** = Red, **B** = Blue, **BL** = Black, **G** = Green, **Y** = Yellow, **OR** = Orange, **W** = White, to the end of the catalog number.

¹ Available in orange as standard, to order other colors add the appropriate suffix to the catalog number listed: Blue =B, Red = RE. Example for a red 2-pole center jumper, the catalog number will be 1492-CJP3-2-RE.



Terminal Blocks

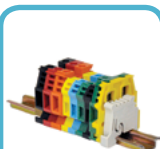
Product Selection

Standard Feed-through Terminal Blocks, Screw Type

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>												
	1492-J3				1492-J4				1492-J6			
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Voltage rating [V AC/DC]	600		800	550	600		800	690	600		800	550
Maximum current [A]	25	20	24	21	35	25	32	28	50		41	36
Wire range (Rated cross section)	#28... 12 AWG	#26... 12 AWG	2.5 mm ²	2.5 mm ² (#20... 14 AWG)	#22... 10 AWG	#26... 10 AWG	4 mm ²	4 mm ² (#20... 12 AWG)	#22... 8 AWG	6 mm ²		6 mm ² (#20... 10 AWG)
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Grey	1492-J3		100		1492-J4		100		1492-J6		100	
Color	1492-J3-⊗		100		1492-J4-⊗		100		1492-J6-⊗		100	
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier	1492-EBJ3		50		1492-EBJ3		50		1492-EBJ3		50	
Screw center jumper 10-pole	1492-CJ5-10		20		1492-CJ6-10		20		1492-CJ8-10		20	
Screw center jumper 2-pole	1492-CJ5-2		50		1492-CJ6-2		50		1492-CJ8-2		50	
Plug-in center jumper 10-pole	1492-CJL5-10		20		1492-CJL6-10		20		-		-	
Plug-in center jumper 2-pole	1492-CJL5-2		60		1492-CJL6-2		60		-		-	
Partition plates	1492-EBJ16		20		1492-EBJ16		20		1492-EBJ16		20	
Snap-in marker cards	1492-MR5X12		5 cards (120/card)		1492-MR6X12		5 cards (120/card)		1492-MR8X12		5 cards (84/card)	
Snap-in marker tags for ClearMultiprint	1492-MT5X12		800		1492-MT6X12		600		1492-MT8X12		500	

⊗ For colored terminal blocks, replace the ⊗ in the catalog number with the following: **RE** = Red, **B** = Blue, **BL** = Black, **G** = Green, **Y** = Yellow, **OR** = Orange, **BR** = Brown, **W** = White, to the end of the catalog number.

Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

Safety Connection Systems



4-46...4-49

Network Media



4-50...4-57




Product Selection

Standard Feed-through Terminal Blocks, Screw Type

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>												
	1492-J10				1492-J16				1492-J35			
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Voltage rating [V AC/DC]	600		1000	550	600		1000	690	1000	600	1000	690
Maximum current [A]	65	50	57	50	85	76	66	150	120	125	109	
Wire range (rated cross section)	#18... 6 AWG		10 mm ²	10 mm ² (#16... 8 AWG)	#18... 4 AWG		16 mm ²	16 mm ² (#16... 6 AWG)	12... 1/0 AWG	12... 2 AWG	35 mm ²	35 mm ² (#14... 2 AWG)
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Grey	1492-J10		50		1492-J16		50		1492-J35		40	
Color	1492-J10-⊗		50		1492-J16-⊗		50		-		-	
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier	1492-EBJ3		50		1492-EBJ16		20		1492-EBJ16		20	
Screw center jumper – 10-pole	1492-CJJ10-10		20		1492-CJJ12-10		10		1492-CJJ16-10		10	
Screw center jumper – 2-pole	1492-CJJ10-2		50		1492-CJJ12-2		20		1492-CJJ16-2		20	
Partition plates	1492-EBJ16		20		1492-PPJD3		20		1492-PPJD3		20	
Snap-in marker cards	1492-M7X12		5 cards (108/card)		1492-M7X12		5 cards (108/card)		1492-M7X12		5 cards (108/card)	
Snap-in marker tags for ClearMultiprint	1492-MT5X12		800		1492-MT6X12		600		1492-MT8X12		500	

⊗ For colored terminal blocks, replace the ⊗ in the catalog number with the following: **RE** = Red, **B** = Blue, **BL** = Black, **G** = Green, **Y** = Yellow, **OR** = Orange, **BR** = Brown, **W** = White, to the end of the catalog number.



Product Selection Tools

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Terminal Blocks

Product Selection

Multi-circuit Feed-through Terminal Blocks, Screw Type

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>								
	1492-JD3				1492-JD4			
	Two-level, Feed-through terminal block							
	1492-JD3C				1492-JD4C			
Two-level, Feed-through terminal block with commoning bar								
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Voltage rating [V AC/DC]	600	300	400	275	600	300	800	550
Maximum current [A]	20	10	24	21	35	30	32	28
Wire range (rated cross section)	#22... 12 AWG	#26... 12 AWG	2.5 mm ²	2.5 mm ² (#20... 14 AWG)	#26...10 AWG		0.5...4 mm ²	4 mm ² (#20... 12 AWG)
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Grey	1492-JD3		100		1492-JD4		100	
Color	1492-JD3-⊗		100		1492-JD4-⊗		100	
Grey w/commoning bar	1492-JD3C		100		1492-JD4C		100	
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier	1492-EBJD3		20		1492-EBJD4		20	
Center jumper – 10-pole	1492-CJJS-10		20		1492-CJLJ6-10		20	
Center jumper – 2-pole	1492-CJJS-2		50		1492-CJLJ6-2		60	
Partition plates	1492-PPJD3		20		1492-PPJD3		20	
Snap-in marker cards	1492-MR5X8		5 cards (120/card)		1492-MR6X8		5 cards (120/card)	
Snap-in marker cards	1492-MSX5		5 cards (200/card)		1492-M6X5		5 cards (200/card)	
Snap-in marker tags for ClearMultiprint	1492-MT5X8		800		1492-MT6X8		600	

⊗ For colored terminal blocks, replace the ⊗ in the catalog number with the following: **RE** = Red, **B**= Blue, **BL** = Black, **G**= Green, **Y**= Yellow, **OR**= Orange, **BR**= Brown, **W**=White, to the end of the catalog number.

Terminal Blocks

	Wiring Systems	Signal Interface	Connection Systems	Safety Connection Systems	Network Media
4-2...4-29	4-30...4-31	4-32...4-35	4-36...4-45	4-46...4-49	4-50...4-57



Product Selection

Sensor Terminal Blocks, Screw Type

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>							
		1492-WTF3			1492-WTS3		
Standards		UL	CSA	IEC	UL	CSA	IEC
Voltage rating [V AC/DC]		300			300		
Maximum current [A]		10			10		
Wire range (rated cross section)		#26...14 AWG			#26...14 AWG		
Terminal block	Type	Cat. No.		Pkg. Qty.	Cat. No.		Pkg. Qty.
	Grey	1492-WTF3		50	1492-WTS3		50
	Blue	-		-	1492-WTS3-B		50
	Grey for PNP devices	1492-WTF3LP		50	1492-WTS3LP		50
	Grey for NPN devices	1492-WTF3LN		50	1492-WTS3LN		50
End barrier		1492-EBTF3		50	1492-EBTS3		50
Center jumpers	50-pole	1492-CJT5-50		5	1492-CJT5-50		5
	10-pole	1492-CJT5-10		10	1492-CJT5-10		10
	3-pole	1492-CJT5-3		10	1492-CJT5-3		10
	2-pole	1492-CJT5-2		10	1492-CJT5-2		10
Partition plate		1492-PPTS3		50	1492-PPTS3		50
Snap-in marker cards		1492-MS5X9		5 cards (80/card)	1492-MS5X9		5 cards (80/card)

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Terminal Blocks

Product Selection

Grounding Terminal Blocks, Screw Type

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>													
		1492-JG3				1492-JG4				1492-JG6			
Standards		UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Wire range (Rated cross section)		#22...12 AWG		2.5 mm ²	2.5 mm ² (#20...14 AWG)	#22...10 AWG		4 mm ²	4 mm ² (#20...12 AWG)	#22...8 AWG		6 mm ²	6 mm ² (#20...10 AWG)
Terminal block	Type	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
	Green/Yellow	1492-JG3		100		1492-JG4		100		1492-JG6		50	
End barrier	Yellow	1492-EBJ3-Y		50		Not required		-		Not required		-	
Snap-in markers		1492-MR5X12 (120/card)		5		1492-MR6X12 (120/card)		5		1492-MR8X12 (84/card)		5	
Snap-in marker tags for ClearMultiPrint		1492-MT5X12		800		1492-MT6X12		600		1492-MT8X12		500	
<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>													
		1492-JG10				1492-JG16				1492-JG35			
Standards		UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Wire range (Rated cross section)		#16...6 AWG		10 mm ²	10 mm ² (#16...8 AWG)	#14...4 AWG		16 mm ²	16 mm ² (#16...6 AWG)	#12...1 AWG	#12...2 AWG	35 mm ²	35 mm ² (#14...2 AWG)
Terminal block	Type	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
	Green/Yellow	1492-JG10		50		1492-JG16		50		1492-JG35		25	
End barrier		Not required		-		Not required		-		Not required		-	
Snap-in markers		1492-MR8X12		5 cards (84/card)		1492-MR8X12		5 cards (84/card)		1492-MR8X12		5 cards (84/card)	
Snap-in marker tags for ClearMultiPrint		1492-MT8X12		500		1492-MT8X12		500		1492-MT8X12		500	

Terminal Blocks

	Wiring Systems	Signal Interface	Connection Systems	Safety Connection Systems	Network Media
4-2...4-29	4-30...4-31	4-32...4-35	4-36...4-45	4-46...4-49	4-50...4-57



Product Selection

Plug-in Style Terminal Blocks, Screw Type

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>						
	1492-J3P			1492-JD3P		
Standards	UL	CSA	IEC	UL	CSA	IEC
Voltage rating [V AC/DC]	600	300	500	300		500
Maximum current [A]	20	10	24	20		24
Wire range (Rated cross section)	#30...12 AWG		2.5 mm ²	#24...12 AWG	#30...12 AWG	2.5 mm ²
Terminal Block	Type	Cat. No.		Cat. No.		Pkg. Qty.
	Grey	1492-J3P		1492-J3DP		50
	Red	1492-J3P-RE		-		-
End barrier	1492-EBJ3		50	1492-EBJD3P		20
Center jumpers	10-pole	1492-CJLJ5-10		1492-CJJ5-10		20
	2-pole	1492-CJLJ5-2		1492-CJJ5-2		50
Disconnect plug	1492-DPL		50	1492-DPL		50
Component plug	1492-CPL		50	1492-CPL		50
Fuse plugs 	Without blown fuse indicator	1492-FPK2		1492-FPK2		20
	10...36V blown fuse indicator	1492-FPK224		1492-FPK224		20
	35...75V blown fuse indicator	1492-FPK248		1492-FPK248		20
	60...150V blown fuse indicator	1492-FPK2120		1492-FPK2120		20
	140...250V blown fuse indicator	1492-FPK2250		1492-FPK2250		20
Snap-in marker cards	1492-MR5X12		5 cards (120/card)	1492-M5X5		5 cards (200/card)
Snap-in marker cards	1492-M5X5		5 cards (200/card)	1492-MS5X10		5 cards (144/card)
Snap-in marker tags for ClearMultiPrint	1492-MT5X12		800	1492-MT5X5		800

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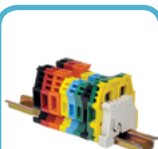
Terminal Blocks

Product Selection Fuse Blocks, Screw Type

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>								
		1492-H...		1492-WFB4...		1492-JD3FB/-JDG3FB		
Specifications		Single-circuit fusible terminal block with or without fuse indication (1/4" x 1-1/4" Fuse)		Single-circuit fuse block with or without fuse indication (5 x 20 mm Fuse)		2-Level fuse block with or without ground connection (5 x 20 mm Fuse)		
Standards		UR	CSA	IEC	UR	CSA	IEC	
Voltage rating	H6/WFB4/JD3FB/JDG3FB	300V AC/DC		500V AC/DC		300V AC/DC		500V AC/DC
	H5/WFB424/JD3FB24/JDG3FB24	10...57V AC/DC		10...57V AC/DC		10...36V AC/DC		
	JD3FB48/JDG3FB48	-		-		30...70V AC/DC		
	JD3FB120/JDG3FB120	-		-		60...150V AC/DC		
	H4/WFB4250/JD3FB250/JDG3FB250	100...300V AC		85...264V AC		100...250V AC/DC		
Maximum current		15 A		15 A	15 A*	-		
Fuse circuit		-		-		10 A	10 A/250V AC/DC	6.3A*
Feed-through circuit		-		-		20 A	25 A/300V AC/DC	
Wire range (rated cross section)		#30...12 AWG	0.5...4 mm ²	#30...12 AWG	0.5...4 mm ²	#22...12 AWG	#26...12 AWG	0.5...4 mm ²
Terminal block		Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.	
Black (non-indicating)		1492-H6	25	1492-WFB4	50	-	-	
Grey (non-indicating) 2-level without ground		-	-	-	-	1492-JD3FB	50	
Grey (non-indicating) 2-level with Ground		-	-	-	-	1492-JDG3FB	50	
Black with blown fuse indication (10...57V AC/DC)		1492-H5	25	1492-WFB424	50	-	-	
Black with blown fuse indication (100...300V AC/DC)		1492-H4	25	1492-WFB4250	50	-	-	
Accessories		Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.	
End barrier		1492-N37	50	Not required	-	1492-EBJD3FB	20	
Marker card for base block		1492-MS8X12	5 (56/card)	1492-MS8X12	5 (56/card)	1492-M6X5	5 (200/card)	
		1492-MS8X9	5 (56/card)	1492-MS8X9	5 (56/card)	-	-	
Marker card for handle		1492-MS8X12	5 (56/card)	1492-MS8X9	5 (56/card)	1492-M7X12	5 (108/card)	

* IEC standards for 5 x 20 mm fuses do not include rating above 6.3 A.

Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

Safety Connection Systems



4-46...4-49

Network Media



4-50...4-57



Product Selection


Standard Feed-through Terminal Blocks, Spring Clamp

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>												
	1492-L2				1492-L3				1492-L4			
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Voltage rating [V AC/DC]	300		500	550	600		800	550	600		800	550
Maximum current [A]	15	20	17.5	15	25	27	24	21	33	35	32	28
Wire range (rated cross section)	#26...14 AWG		1.5 mm ²	1.5 mm ² (#20...16 AWG)	#26...12 AWG	#26...12 AWG	2.5 mm ²	2.5 mm ² (#20...12 AWG)	#26...10 AWG		4 mm ²	4 mm ² (#20...10 AWG)
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Grey	1492-L2		50		1492-L3 [†]		100		1492-L4 [†]		50	
Color	1492-L2-⊗		50		1492-L3-⊗		100		1492-L4-⊗		50	
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier (Grey)	1492-EBL2		50		1492-EBL3 [†]		50		1492-EBL4 [†]		50	
Plug-in center jumper 10-pole	1492-CJL4-10		20		1492-CJK5-10		20		1492-CJK6-10		20	
Plug-in center jumper 2-pole	1492-CJL4-2		60		1492-CJK5-2		60		1492-CJK6-2		60	
Marker card (edge marking)	1492-M3X5		5 cards (120/card)		1492-M5X10		5 cards (144/card)		1492-M6X10		5 cards (120/card)	
Marker card (center marking)	1492-M3X12		5 cards (200/card)		1492-MR5X8		5 cards (200/card)		1492-M6X5		5 cards (200/card)	
Snap-in marker tags for ClearMultiprint	1492-MT3X12		1000		1492-MT5X8		800		1492-MT6X8		600	

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† For blocks with 1-in and 2-out, add a **T** after the L3 or L4. For blocks with 2-in and 2-out a **Q** after the L3 or L4. Example: catalog number 1492-L3T, 1492-L4Q, 1492-L3T-RE, 1492-L4Q-BL.

* You must also add a **T** or **Q** to the end barrier part number when using 3 or 4 connection terminal blocks. Example: The end barrier for Bulletin 1492-L3T is catalog number 1492-EBL3T. For the Bulletin 1492-L2Q, the end barrier is catalog number 1492-EBL2Q.



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Terminal Blocks

Product Selection

Standard Feed-through Terminal Blocks, Spring Clamp

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>								
	1492-L6				1492-L10			
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Voltage rating [V AC/DC]	600		800	550	600		800	550
Maximum current [A]	50		41	36	60	55	57	50
Wire range (rated cross section)	#22...8 AWG	#20...8 AWG	6 mm ²	6 mm ² (#20...8 AWG)	#16...6 AWG		10 mm ²	10 mm ² (#16...8 AWG)
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Grey	1492-L6 †		50		1492-L10		25	
Color	1492-L6-⊗		50		1492-L10-⊗		25	
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier (grey)	1492-EBL6 *		50		1492-EBL10		50	
Plug-in center jumper 2-pole	1492-CJL8-2		60		1492-CJL10-2		60	
Marking systems: marker card (corner marking)	1492-MR8X12		5 cards (84/card)		1492-MR8X12		5 cards (84/card)	
Marker card (center marking)	1492-M8X5		5 cards (160/card)		1492-M8X5		5 cards (160/card)	
Snap-in marker tags for ClearMultiprint	1492-MT8X12		500		1492-MT8X12		500	

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>								
	1492-L16				1492-L35			
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Voltage rating [V AC/DC]	600		800	550	600		800	690
Maximum current [A]	65		76	66	120		125	109
Wire range (rated cross section)	#14...4 AWG		16 mm ²	16 mm ² (#16...6 AWG)	#12...2 AWG		35 mm ²	35 mm ² (#14...2 AWG)
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Grey	1492-L16		25		1492-L35		10	
Color	1492-L16-⊗		25		1492-L35-⊗		25	
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier (grey)	1492-EBL16		20		Not required		-	
Marker card (edge marking)	1492-MR8X12		5 cards (84/card)		1492-MR8X12		5 cards (84/card)	
Marker card (center marking)	1492-M8X5		5 cards (160/card)		1492-M8X5		5 cards (160/card)	
Snap-in marker tags for ClearMultiprint	1492-MT8X12		500		1492-MT8X12		500	

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† For blocks with 1-in and 2-out, add a **T** after the L6. Example: catalog number 1492-L6T, 1492-L6T-BR.

* You must add a **T** to the end barrier catalog number when selecting the end barrier for catalog number 1492-L6T. Example: catalog number 1492-EBL6T.

Terminal Blocks

	Wiring Systems	Signal Interface	Connection Systems	Safety Connection Systems	Network Media
4-2...4-29	4-30...4-31	4-32...4-35	4-36...4-45	4-46...4-49	4-50...4-57



Product Selection

Multi-circuit Feed-through Terminal Blocks, Spring Clamp

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>												
	1492-LD3				1492-LD4				1492-LTF3			
Specifications	Two-circuit feed-through terminal block (LD3)				Two-circuit feed-through terminal block (LD4)				Three-circuit feed-through terminal block with optional cross-connection links to common multiple levels			
	Two-circuit feed-through terminal block with commoning bar (LD3C)				Two-circuit feed-through terminal block with commoning bar (LD4C)							
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Voltage rating [V AC/DC]	600		800	550	600		800		300		500	
Maximum current [A]	20	25	24	20	25	30	32		15		20	
Wire range (rated cross section)	#30...12 AWG		2.5 mm ²	0.5...2.5 mm ² (#20...14 AWG)	#26...10 AWG		4 mm ²		#26...12 AWG		0.5...2.5 mm ²	
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Two-circuit feed-through	Grey	1492-LD3	25		1492-LD4	20		–		–		
	Color	1492-LD3-⊗	25		1492-LD4-⊗	20		–		–		
Two-circuit block with commoning bar	Grey	1492-LD3C	25		1492-LD4C	20		–		–		
Three-circuit feed-through block with commoning link	–		–		–		–		1492-LTF3	25		
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier (grey)	1492-EBLD3		20		1492-EBLD4		20		1492-EBLTF3		20	
Plug-in center jumper 10-pole	1492-CJK5-10		20		1492-CJK6-10		20		1492-CJK5-10		20	
Plug-in center jumper 2-pole	1492-CJK5-2		60		1492-CJK6-2		60		1492-CJK5-2		60	
Vertical cross connector	–		–		–		–		1492-CJL5D		20	
Marker card	1492-M5X10		5 cards (144/card)		1492-M6X10		5 cards (120/card)		1492-M5X5		5 cards (200/card)	
Snap-in marker tags for ClearMultiPrint	1492-MT5X8		800		1492-MT6X8		600		1492-MT5X5		800	

⊗ For colored terminal blocks, replace the ⊗ in the catalog number with the following: **RE** = Red, **B** = Blue, **BL** = Black, **G** = Green, **Y** = Yellow, **OR** = Orange, **BR** = Brown, **W** = White, to the end of the catalog number.

For more information on our complete family of terminal block products, please visit:
<http://ab.rockwellautomation.com/Terminal-Blocks>



Terminal Blocks

Product Selection

Sensor Terminal Blocks, Spring Clamp

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>												
		1492-LS2-3/-LS2-4		1492-LSG2-3/-LSG2-4		1492-LS2-B/-LS2-BR/-LSG2						
Standards		UR	CSA	IEC	UR	CSA	IEC	UR	CSA	IEC		
Voltage rating [V AC/DC]		300			250			300			250	
Maximum current [A]		10			17.5			10			17.5	
Wire range (rated cross section)		#26...14 AWG			1.5 mm ²			#26...14 AWG			0.5...1.5 mm ²	
Terminal block	Color	Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.			
3-Conductor	Grey	1492-LS2-3	50	–	–	–	–	–	–			
	Green	–	–	1492-LSG2-3	20	–	–	–	–			
3-Conductor led indication	Grey	1492-LS2-3L	50	–	–	–	–	–	–			
4-Conductor	Grey	1492-LS2-4	50	–	–	–	–	–	–			
	Green	–	–	1492-LSG2-4	20	–	–	–	–			
4-Conductor led indication	Grey	1492-LS2-4L	50	–	–	–	–	–	–			
Self-linking plug-in connection blocks	Blue	–	–	–	–	–	–	1492-LS2-B	100			
	Brown	–	–	–	–	–	–	1492-LS2-BR	100			
	Green	–	–	–	–	–	–	1492-LSG2	100			
Accessories		Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.					
End barrier	3-Conductor	1492-EBSL2-3	50	1492-EBSL2-3	50	Not required	–					
	4-Conductor	1492-EBSL2-4	50	1492-EBSL2-4	50	Not required	–					
Plug-in center jumper (50-pole)		1492-CJK5-50	10	–	–	–	–					
Plug-in center jumper (10-pole)		1492-CJK5-10	20	–	–	–	–					
Plug-in center jumper (2-pole)		1492-CJK5-2	60	–	–	–	–					
Marker card		1492-MS5X5	5 (200/card)	1492-MS5X5	5 (200/card)	–	–					
Snap-in marker tags for ClearMultiprint		1492-MT5X8	800	1492-MT5X8	800	–	–					

Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

Safety Connection Systems



4-46...4-49

Network Media



4-50...4-57



Product Selection Grounding Terminal Blocks, Spring Clamp

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>												
	1492-LG2				1492-LG3				1492-LG4			
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Wire range (rated cross section)	#26...14 AWG		0.5... 1.5 mm ²	0.5... 1.5 mm ² (#20... 16 AWG)	#30...12 AWG	#26...12 AWG	2.5 mm ²	2.5 mm ² (#20... 12 AWG)	#26...10 AWG		4 mm ²	4 mm ² (#20... 10 AWG)
Maximum current	Grounding				Grounding				Grounding			
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Green/Yellow	1492-LG2		50		1492-LG3 †		50		1492-LG4 †		50	
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier (yellow)	1492-EBL2-Y		50		1492-EBL3-Y ^o		50		1492-EBL4-Y ^o		50	
Marker card (edge marking)	1492-M3X12		5 cards (120/card)		1492-M5X10		5 cards (144/card)		1492-M6X10		5 cards (120/card)	
Marker card (center marking)	1492-M3X5		5 cards (100/card)		1492-MR5X8		5 cards (120/card)		1492-MR6X8		5 cards (120/card)	
Snap-in marker tags for ClearMultiPrint	1492-MT3X8		1000		1492-MT5X8		800		1492-MT6X8		600	

- † For blocks with 1-in and 2-out, add a **T** after the LG3 or LG4. For blocks with 2-in and 2-out, add a **Q** after the LG3 or LG4. Example: catalog number 1492-LG3T, 1492-LG4Q.
- o You must also add a **T** or **Q** to the end barrier part number when using 3 or 4 connection terminal blocks. Example: The end barrier for Bulletin 1492-LG3T is catalog number 1492-EBL3T-Y. For the Bulletin 1492-LG2Q, the end barrier is catalog number 1492-EBL2Q-Y.



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For more information on our complete family of terminal block products, please visit:
<http://ab.rockwellautomation.com/Terminal-Blocks>

Terminal Blocks

Product Selection

Grounding Terminal Blocks, Spring Clamp

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>								
	1492-LG6				1492-LG10			
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Voltage rating [V AC/DC]	–				–			
Maximum current	Grounding				Grounding			
Wire range (rated cross section)	#22...8 AWG	#20...8 AWG	6 mm ²	6 mm ² (#20...8 AWG)	#16...6 AWG	10 mm ²	10 mm ² (#16...8 AWG)	
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Green/Yellow	1492-LG6 †		50		1492-LG10		25	
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier (yellow)	1492-EBL6-Y ◊		50		1492-EBL10-Y		20	
Marker card (edge marking)	1492-MR8X12		5 cards (84/card)		1492-MR8X12		5 cards (84/card)	
Marker card (center marking)	1492-M8X5		5 cards (160/card)		1492-M8X5		5 cards (160/card)	
Snap-in marker tags for ClearMultiprint	1492-MT8X12		500		1492-MT8X12		500	

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>								
	1492-LG16				1492-LG35			
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Voltage rating [V AC/DC]	–				–			
Maximum current	Grounding				Grounding			
Wire range (rated cross section)	#14...6 AWG	#14...4 AWG	16 mm ²	16 mm ² (#16...6 AWG)	#12...2 AWG	35 mm ²	35 mm ² (#14...2 AWG)	
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Green/Yellow	1492-LG16 †		25		1492-LG35		10	
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier (yellow)	1492-EBL16-Y		20		Not required		–	
Marker card (edge marking)	1492-MR8X12		5 cards (84/card)		1492-MR8X12		5 cards (84/card)	
Marker card (center marking)	1492-M8X5		5 cards (160/card)		1492-M8X5		5 cards (160/card)	
Snap-in marker tags for ClearMultiprint	1492-MT8X12		500		1492-MT8X12		500	

† For blocks with 1-in and 2-out, add a **T** after the LG6. Example: catalog number 1492-LG6T.

◊ You must also add a **T** to the end barrier catalog number when selecting the end barrier for catalog number 1492-LG6T. Example: catalog number 1492-EBL6T-Y.

Terminal Blocks

	Wiring Systems	Signal Interface	Connection Systems	Safety Connection Systems	Network Media
4-2...4-29	4-30...4-31	4-32...4-35	4-36...4-45	4-46...4-49	4-50...4-57



Product Selection

Isolation & Plug-in Terminal Blocks, Spring Clamp

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>								
	1492-LKD3				1492-L3P			
Standards	UR	CSA	IEC	ATEX	UR	CSA	IEC	ATEX
Voltage rating [V AC/DC]	600		500		600		500	
Maximum current	20		24		20		24	
Wire range (rated cross section)	#30...12 AWG		2.5 mm ²		#30...12 AWG		4 mm ²	
Terminal block	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
Grey	1492-LKD3		25		1492-L3P		25	
Accessories	Cat. No.		Pkg. Qty.		Cat. No.		Pkg. Qty.	
End barrier (grey)	1492-EBL3		50		1492-EBL3		50	
Plug-in center jumper (10-pole)	1492-CJK5-10		20		1492-CJK5-10		20	
Plug-in center jumper (2-pole)	1492-CJK5-2		60		1492-CJK5-2		60	
Fuse plug non-indicating	–		–		1492-FPK2		20	
10...36V LED	–		–		1492-FPK224		20	
35...70V LED	–		–		1492-FPK248		20	
60...150V LED	–		–		1492-FPK2120		20	
140...250V LED	–		–		1492-FPK2250		20	
Disconnect plug	–		–		1492-DPL		50	
Component plug	–		–		1492-CPL		50	
Snap-in marker cards	1492-MR5X8		5 cards (120/card)		1492-MR5X8		5 cards (120/card)	
Snap-in marker tags for ClearMultiPrint	1492-MT5X8		800		1492-MT5X8		800	



Terminal Blocks

Product Selection Fuse Blocks, Spring Clamp

<p>Dimensions are not intended to be used for manufacturing purposes.</p> <p>Note: Height for dimension is measured from top of rail to top of terminal block.</p>							
		1492-RFB4...		1492-RAFB4...		1492-LAFB6...	
Specifications		Single-circuit fuse terminal block with or without fuse indication (5...20 mm Fuse)		Single-circuit fuse terminal block with or without fuse indication (1/4 x 1-1/4" Fuse)		Automotive style fuse block	
Standards		UR	CSA	IEC	UR	CSA	IEC
Voltage rating	RFB4/RAFB4/LAFB6	300V AC/DC		500V AC/DC		300V AC/DC	
	RFB424/RAFB424/LAFB624	10...57V AC/DC		10...57V AC/DC		10...36V AC/DC	
	RFB4250/RAFB4250	85...264V AC		85...264V AC		-	
Leakage current	RFB424/RAFB424/LAFB624	2 mA @ 24V		2 mA @ 24V		2 mA @ 24V	
	RFB4250/RAFB4250	1 mA @ 264V		1 mA @ 264V		-	
Maximum current		15 A*		15 A		30 A	25 A
Wire range (rated cross section)		#22...12 AWG	0.5...4 mm ²	#22...12 AWG	0.5...4 mm ²	#22...12 AWG	#22...10 AWG
Terminal block		Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.
Black (non-indicating)		1492-RFB4	25	1492-RAFB4	25	1492-LAFB6	25
Black with blown fuse indication (10...57V AC/DC)		1492-RFB424	25	1492-RAFB424	25	1492-LAFB624	25
Black with blown fuse indication (85...264V AC/DC)		1492-RFB4250	25	1492-RAFB4250	25	-	-
Accessories		Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.	Cat. No.	Pkg. Qty.
Plug-in center jumper (10-pole)		1492-CJR8-10	10	-	-	1492-CJL8-32 (32-pole)	10
Plug-in center jumper (2-pole)		1492-CJR8-2	20	1492-CJRA10-2	10	1492-CJL8-2	60
Center jumper link		1492-CJRL6	60	1492-CJRL5	10	-	-
Marker card for base block		1492-MS8X12	5 (56/card)	1492-MS8X12	5 (56/card)	1492-MSX8	5 (144/card)
Marker card for handle		1492-MS6X9	5 (80/card)	1492-MS6X9	5 (80/card)	-	-

* IEC standards for 5 x 20 mm fuses do not include ratings above 6.3 A.





Terminal Blocks

	Wiring Systems	Signal Interface	Connection Systems	Safety Connection Systems	Network Media
4-2...4-29	4-30...4-31	4-32...4-35	4-36...4-45	4-46...4-49	4-50...4-57



Accessories

End Anchors and End Retainers

	Dimensions (W x L x H)	Tightening Torque	Markers	Used With	Color	Pkg. Qty.	Cat. No
	0.31 x 2.20 x 1.85 in. (8 x 56 x 47 mm)	4.4 lb-in (0.5 N•m)	1492-GM5X30 1492-M7X12 1492-M8X5	199-DR1, 199-DR2, 1492-DR4, 1492-DR5, 1492-DR6, 1492-DR7, 1492-DR8, 1492-DR9	Grey	100	1492-EAJ35
	0.48 x 2.20 x 2.48 in. (12.2 x 56 x 63 mm)	7.0 lb-in (0.8 N•m)	1492- M7X12 1492- M5X5	199-DR1, 199-DR2, 1492-DR4, 1492-DR5, 1492-DR6, 1492-DR7, 1492-DR8, 1492-DR9	Grey	50	1492-EAHJ35
	0.24 x 2.19 x 1.63 in. (6 x 55.6 x 41.5 mm)	–	1492-GM5X30 1492- M5X10 1492- M5X5	199-DR1, 199-DR2, 1492-DR4, 1492-DR5, 1492-DR6, 1492-DR7, 1492-DR8, 1492-DR9	Grey	20	1492-ERL35
	0.31 x 2.28 x 1.42 in (8 x 58 x 36 mm)	5.3 lb-in (0.6 N•m)	1492-GM5X30 1492-MT8X8	199-DR1, 199-DR2, 1492-DR4, 1492-DR5, 1492-DR6, 1492-DR7, 1492-DR8, 1492-DR9	Grey	50	1492-EAP35

DIN Mounting Rails

	Description	Pkg. Qty.	Cat. No
	<ul style="list-style-type: none"> Symmetrical rail 35 x 7.5 mm 3.28 ft (1 m) long Zinc-plated Chromated steel EN60715 Din#3 	10	199-DR1
	<ul style="list-style-type: none"> Symmetrical rail 35 x 7.5 mm 6.56 ft (2 m) long Zinc-Plated Chromated steel EN60715 Din#3 	20	199-DR2
	<ul style="list-style-type: none"> Raised symmetrical rail 35 x 7.5 mm 2.26 in. (57.4 mm) high 3.28 ft (1 m) long Copper-free Aluminum Din#3 	2	1492-DR6
	<ul style="list-style-type: none"> Angled symmetrical rail 35 x 7.5 mm 2.80 in. (71.0 mm) high 3.28 ft (1 m) long Angled 30° Zinc-plated Chromated steel Din#3 	2	1492-DR7

For accessory options, please visit our online product directory.

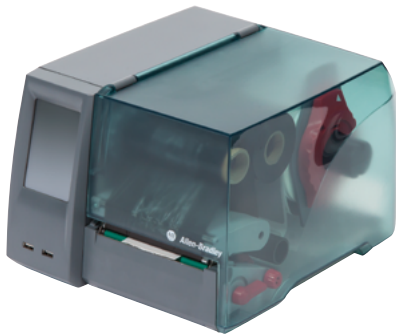


Terminal Blocks



Terminal Block Marking Systems 1492

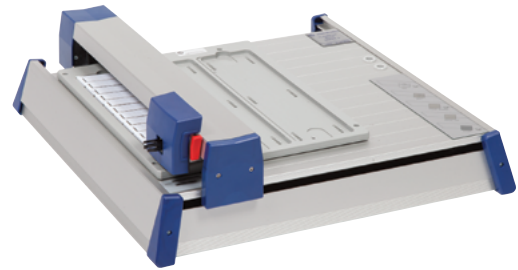
- Choose from two marking system technologies
- ClearMultiPrint™ for cost sensitive applications using spool format marker tags
- ClearPlot™ for high quality applications using card format marker tags



ClearMultiPrint™ Marking System

The ClearMultiPrint marking system provides high-quality spool media printing in an easy-to-use format for all users.

- Thermal transfer technology eliminates ink dry out issues
- Less than a minute to print and set a full row of marker cards
- Provides high contrast on white marker tags and wire labels
- Wide range of print media: terminal block tags, wire and cable labeling, heat shrink, and adhesive device markers



ClearPlot™ Marking System

The ClearPlot marking system provides high-quality printing for low to medium volume users on terminal block marker cards.

- Plot partial marker cards
- Load up to three marker cards at a time (mix and match)
- Character customization
- Extensive marker card library offers optimal flexibility

ClearTools™ Software

Free ClearTools software makes it easy to create everything from basic numbering and sequences to images. You can import from a variety of file formats or use the included library of symbols.

Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

Safety Connection Systems



4-46...4-49

Network Media



4-50...4-57



Product Selection

Marking Systems

Marking System	Cat. No
ClearMultiprint™	1492-PRINTCMP
ClearPlot™ Basic	1492-PLOTBSC



Marker Tags for ClearMultiprint

Catalog	Used With	Markers Per Roll	Size
1492-MT3X5	1492-L	1000	3mm x 5mm
1492-MT5X5	1492-J,L	800	5mm x 5mm
1492-MT6X5	1492-J,L	600	6mm x 5mm
1492-MT8X5	1492-J,L	500	8mm x 5mm
1492-MT3X12	1492-L	1000	3mm x 12mm
1492-MT5X12	1492-J,L	800	5mm x 12mm
1492-MT6X12	1492-J,L and 1738 ArmorPoint	600	6mm x 12mm
1492-MT8X12	1492-J,L	500	8mm x 12mm
1492-MT3X8	1492	1000	3mm x 8mm
1492-MT5X8	1492-J,L	800	5mm x 8mm
1492-MT6X8	1492-J,L	600	6mm x 8mm
1492-MT8X8	1492	500	8mm x 8mm
1492-GM8X30	1492-EAJ35, 1492-ERL35	50	8mm x 30mm
1492-MGT6X30	1492-GM8X30, 1492-MWCTC8X30	100	6mm x 30mm

Accessories for ClearMultiprint

Description	Cat. No
Marker Tag Ribbon	1492-PRIBTB
Wire Label & Adhesive Marker Ribbon	1492-PRIBLAB
Heat Shrink Ribbon	1492-PRIBHS
Terminal Block Marker Tag Roller	1492-PROLLTB
Flat Media Roller	1492-PROLLLAB

Accessories for ClearPlot


Marking System	Cat. No
Disposable Pen Tip 0.25mm	1492-PLOTPEN25
Disposable Pen Tip 0.35mm	1492-PLOTPEN35
Pen Adapter	1492-PLOTADPT



Plotpen25



Pen adapter



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

Selection for additional media types can be found in Product Selection



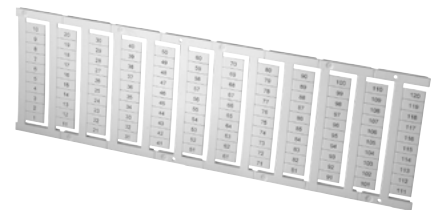
Heat shrink



Wire labels



Adhesive device markers



Marker tags



Terminal Blocks

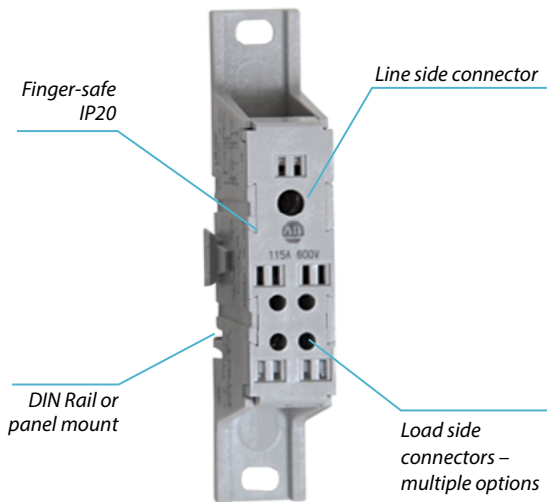


Power Distribution Blocks 1492-PDE

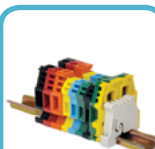
- IP20 Finger-safe protection
- Power distribution through 510 A
- DIN Rail and panel mountable
- High fault SSCR up to 100 kA

Finger-safe power distribution terminal blocks are designed to prevent accidental contact with live connectors – without the use of additional barriers or shields. These panel mount devices have a compact footprint, and are available with either aluminum or copper terminals. Captive termination screws ensure that parts never get lost and the rugged thermoplastic housing will resist physical damage.

These single-pole devices are available with DIN or panel mount options and can easily be assembled together to create multi-pole solutions.



Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

Safety Connection Systems



4-46...4-49

Network Media



4-50...4-57



Product Selection

Power Distribution Blocks

Amps (Cu Wire) 75° C	No. of Poles	Line			Load			Flexible Copper Wire *	Cat. No.
		Connector Diagram	Wire Range [kcmil / AWG (mm ²)]	Openings per Pole	Connector Diagram	Wire Range [kcmil / AWG (mm ²)]	Openings per Pole		
115			#2...#14 (35...2.5)	1		#2...#14 (35...2.5) †	1	Yes	1492-PDME1111 ^β
						#10...#14 (6...2.5) ^ø	4	Yes	1492-PDME1141 ^β
200	1-pole		2/0...#14 (70...2.5)	1		2/0...#14 (70...2.5)	1	Yes	1492-PDE11112 ^β
						#2...#14 (35...2.5) †	4	Yes	1492-PDE1142 ^β
			250 ... #6 (120...16)	2		250...#6 (120...16)	2	Yes (line side)	1492-PDE1225
						250...#6 (120...16)	2	Yes (line side)	1492-PDE1C255 ^Δ
335			(1) 400...#6 (185...16) (1) 2/0...#14 (70..2.5)	1		#2...#14 (35...2.5) †	8	Yes (line side)	1492-PDE1183
						#2...#14 (35...2.5) †	8	Yes (line side)	1492-PDE1C183 ^Δ

† Wire openings rated for #2-14 AWG are multiple wire rated: (2) #6 CU Str, (2) #8 CU Str, (2-4) #10 CU Str, (2 to 4) #12 CU Str, and (2 to 4) #14 CU Str.

ø Wire openings rated for #2/0 -14 AWG are multiple wire rated: (2) #4 CU Str, (2) #6 CU Str, (2) #8 CU Str, (2) #10 CU Str, (2) #12 CU Str.

* Flexible copper wire connections approved for flexible wire, stranding Classes G, H, I, K and DLO wire without the need for additional crimp connectors.

Δ The C in the catalog number designates copper terminals. The catalog numbers without the C, have aluminum connectors.

β UL 1953 Listed E 313475 Guide QPQS.

Standards Compliance and Certifications

Standards Compliance	UL 1059, UL 1953, CSA C22.2 No. 158, EN/IEC 60947-1, -7-1
Certifications	CE Marked, CSA Certified (File No. 72582, Class 6228-01), UL Component Recognized (File No. E40735, Guide No. XCFR2), UL Listed (File No. E313475, Guide No. QPQS), RoHS
Flammability Ratings	94V-0

For more information on our complete family of terminal block products, please visit:
<http://ab.rockwellautomation.com/Terminal-Blocks>



Wiring Systems



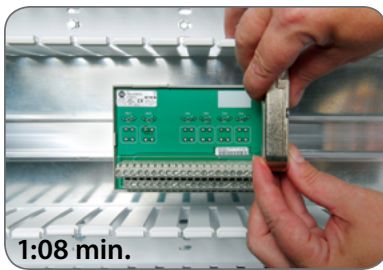
Wiring Systems 1492

- Interface modules (IFM) connect through pre-wired cables to digital and analog I/O
- Simplified design reduces bill of materials – one IFM module and cable replaces multiple terminal blocks, wires and terminations
- Design flexibility – feed-through, LED indication, fusing, and interposing relay IFMs are available to meet application variables

Value Add of Wiring Systems

You can achieve up to 75% savings on your control wiring time and reduce wiring errors when using a Bulletin 1492 Wiring System compared with wiring to traditional terminal blocks.

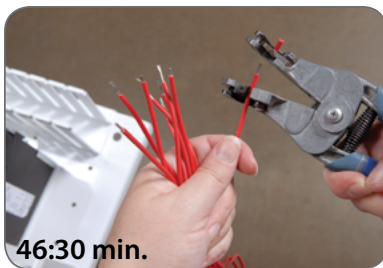
1492 Wiring Systems



1:08 min.

Replace multiple terminal blocks, wires and terminations with single IFM and cable.

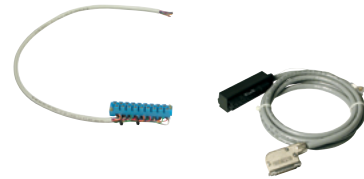
Conventional Wiring



46:30 min.

Cables:

- Pre-wired
- IFM Ready
- I/O Ready



Interface Modules (IFM):

Digital

- Straight Feed-through
- LED indicating
- Fused
- Relay



Analog

- Straight Feed-through
- Fused
- Specialty



Wiring Systems

Terminal Blocks



4-2...4-29



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

Safety Connection Systems



4-46...4-49

Network Media



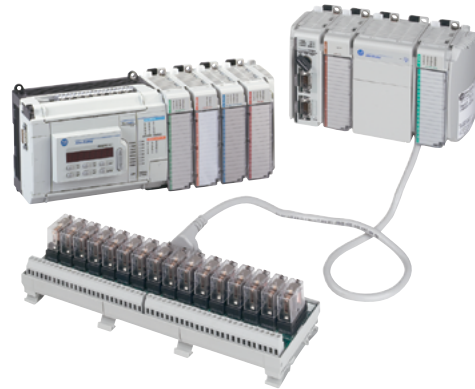
4-50...4-57

Wiring systems replace the point-to-point wiring between a PLC I/O module and individual terminal blocks – providing quicker, more accurate connections between control and factory devices.

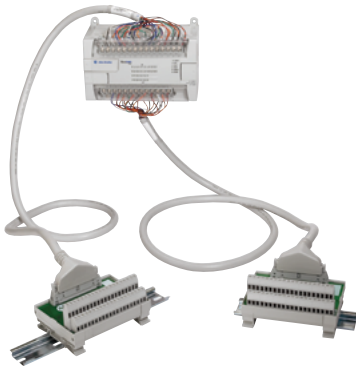
ControlLogix® Controllers
1756



CompactLogix™ Controllers
1769



MicroLogix™ 1200 Controllers (40 Embedded I/O)
1762



MicroLogix™ 1500 Controllers
1764



Flex™ I/O (with Flex D-Shell Base Modules)
1794



CompactLogix™ L1/L2 (Embedded I/O)
5370



Signal Interface



Signal Conditioners 931 S/H/U

- Isolation of analog measurement and control signals with 2 way isolation or 3 way isolation
- Conversion of specialty signals to commonly used type signals
- Amplification, linearization, and transmission of low level sensor signals
- Transmission of analog signals over long distances
- Provides local display using a splitter or remote status indications and alarms via relay contact closures based on the analog signals

Signal Conditioners are designed for use with I/O systems to provide reduced installation and maintenance costs in process applications. A wide range of products are available for use wherever temperature, pressure, speed, weight, level, and flow are measured and controlled as part of a continuous or batch production process.

A variety of product types are offered to meet your application needs, including:

931U Universal

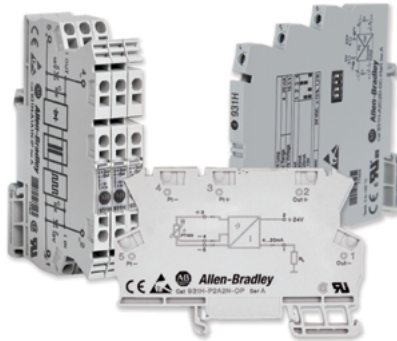
Programmable – allowing the devices to be used on a wide variety of analog signals, available in 12.5 mm and 45 mm wide sizes

931H High-Density

Cost-effective analog signal conditioning in a high-density (6 mm wide) housing

931S Standard

Solutions for a wide variety of analog signals, available in compact sizes ranging from 12.5 mm to 22.5 mm wide



Signal Interface

Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31



4-32...4-35

Connection Systems



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Safety Connection Systems



4-46...4-49

Network Media



4-50...4-57



Product Selection

Signal Conditioners

Description	Width (mm)	Input Ratings	Output Ratings	Power	Cat. No.
Current/Voltage					
Passive isolator, 1 channel	6.0	0(4)...20 mA	0(4)...20 mA	ILP ⁴	931H-A1A1N-IP
Active converter, 3 way	6.1	0...20 mA, 4...20 mA, 0...10V DC	0...20 mA, 4...20 mA, 0...10V DC	AUX	931H-C2C2D-DC
Active converter, 3 way	17.5	0(4)...20 mA	0(4)...20 mA	AUX	931S-A1A1N-DC
Passive isolator, 2 channel	17.5	0(4)...20 mA	0(4)...20 mA	ILP ⁴	931S-A1A1N-IP2
Active isolator	12.5	4...20 mA	4...20 mA	AUX	931S-A2A2N-DC
Passive isolator, splitter	17.5	4...20 mA	(2x) 4...20 mA	OLP ⁵	931S-A2A5N-OP
Passive converter	17.5	0...20 mA, 4...20 mA, 0...5V DC, 0...10V DC	4...20 mA	OLP ⁵	931S-C1A2D-OP
Active converter, 3 way	12.5	±0.1 mA...±100 mA ³ , ±20 mV...±200V DC ³	0...±20 mA, 0...+10V DC	AUX ¹	931S-C4C5D-BC
Temperature – RTD/Thermocouple					
Active converter, PT100/RTD	6.0	PT100, 2 or 3 conds (0...200 °C)	4...20 mA	OLP ⁵	931H-P2A2N-OP
Active converter, 3 way, RTD	17.5	Pt100, Ni100 2, 3 or 4 conds; Pot.: 0...100 kΩ; Res.: 0...4.5 kΩ	0...20 mA, 4...20 mA, 0...10V DC	AUX	931S-P1C2D-DC
Thermocouple, Type J	6.1	Type J (0...700 °C)	0...20 mA, 4...20 mA, 0...5V DC, 0...10V DC	AUX	931H-T1C1D-DC
Thermocouple, Type K	6.1	Type K, (0...1000 °C)	0...20 mA, 4...20 mA, 0...5V DC, 0...10V DC	AUX	931H-T2C1D-DC
Universal thermocouple, 3 way	17.5	Type K, J, T, E, N, R, S, B (-200...+1820 °C)	0...20 mA, 4...20 mA, 0...10V DC	AUX	931S-T9C2D-DC
Line Monitoring					
Passive converter, monitoring	22.5	0...1 A or 0...5 A or 0...10 A (AC)	4...20 mA	OLP ⁵	931S-A3A2D-OP
Active converter, monitoring	22.5	0...1 A or 0...5 A or 0...10 A (AC)	0...20 mA, 4...20 mA, 0...10V DC	AUX	931S-A3C2D-DC
Application Specific					
Bridge converter, 3 way	17.5	-500 mV...+500 mV (Excitation = +10V DC, +5V DC or 4.8...10.2V DC adjustable)	0...20 mA, 4...20 mA, 20...0 mA, 20...4 mA, 0...5V DC, 0...10V DC, 5...0V DC, 10...0V DC	AUX	931S-B1C6D-DC
Frequency converter, 3 way	12.5	2 or 3 wire PNP/NPN, NAMUR initiator, push-pull step	0...20 mA, 4...20 mA, 0...10V DC	AUX	931S-F1C2D-DC
Active isolator, 3 way, Hart	6.1	4...20 mA (HART)	0...20 mA, 4...20 mA, 0...10V DC (HART)	AUX	931H-A2C2D-DCHart
Universal					
Active converter, universal	12.5	Current/Voltage: -10...20 mA; -5...10V DC / -10...20 mA; -5...10V / -100...200 mV; TC: B, C, E, J, K, L, N, R, S, T, W3, W5 (-200...+2300 °C); RTD: Pt100/200, Ni100, Cu100 2/3/4 cond. (-200...+850 °C)	4...20 mA	OLP ⁵	931U-C9A2C-OP ⁶
Active converter, 3 way, universal	45.0	Current/Voltage: -20...50 mA; -200...500 mV, -20...50V DC; TC: B, E, J, K, L, N, R, S, T; RTD: PT100, PT1000, Ni100, Ni1000, Cu10, Cu25, Cu50, Cu100 2/3/4 cond; Pot: 100 Ω...100 kΩ; Res.: 10 Ω...5 kΩ Freq.: 2 Hz...100 kHz	0...20 mA, -10...10V DC (programmable); 2 relays	AUX ²	931U-C9C7C-BC ⁶
Programming cable	NA	NA	NA	NA	931U-CABLE
Accessories					
Endbarrier	1.5	NA	NA	NA	931H-EB1

¹ 22...230V AC/DC³ These ranges are scalable⁵ Output Loop Powered⁷ All non-marked AUX are 24V DC² 18...264V AC/DC⁴ Input Loop Powered⁶ Software Programmable

Signal Interface



Intrinsic Safety Modules 937 Z/T/C

- For analog and digital signals in hazardous locations
- Simple maintenance with integrated diagnostics and quick change of modules during ongoing operation
- Comprehensive standards compliance, including up to SIL3 compliance for easy and reliable planning and documentation
- Horizontal or vertical mounting with no reduction in operational ratings
- Power Rail for drastically reduced wiring, collective error messaging, efficient troubleshooting and installation

Bulletin 937 Intrinsic Safety Modules connect intrinsically safe rated equipment – such as transmitters, solenoids, proximity sensors and encapsulated assemblies – with control systems.

Product Range Overview

- From simple switch amplifiers to highly functional signal converters
- Modules available with galvanic isolation
- Low heat dissipation thanks to low power consumption
- Broad supply voltage range including AC, DC and universal power supply (AC/DC)

Easy Configuration

- DIP switches or Pushbuttons with LCD display
 - FDT Interface between devices and control system

Power Rail System

- Allows simple snap-in of modules
- Power supply and monitoring of lead breakages/short circuit on gold-plates rails
- Reduces wiring
- Vertical and horizontal mounting
- Simplifies future expansions

Compact Size

- 12.5 mm housing allowed for 2 channel densities

Removable Terminals

- Rapid connection
- Up to 2.5mm/14 AWG wiring
 - Keyed terminals eliminate misconnection



Power Feed Module

- Link power supply to the Power Rail
- Group fusing
- Redundancy options
- Alarming for lead breakage, short circuit, and power failure
- Reduces I/O overhead
- Front switch for mode of operation

Signal Interface

Terminal Blocks



4-2...4-29

Wiring Systems



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Connection Systems



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Safety Connection Systems



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Network Media



4-50...4-57

Product Selection

Isolated/Converter Barriers

Module Type	Signal Type	Device Power	Channels	Signal Splitter	Width	Cat. No.		
Switch amplifier	Digital input, Transistor output	24V DC	1-channel	Yes	12.5 mm	937TH-DISTS-DC1		
			2-channel	No		937TH-DISAT-DC2		
			1-channel	Yes		937TH-DISRS-DC1		
			2-channel	No		937TH-DISAR-DC2		
	Digital input, Relay output	115V AC	1-channel	Yes	20 mm	937TS-DISRS-KD1		
			2-channel	No		937TS-DISAR-KD2		
		230V AC	1-channel	Yes		937TS-DISRS-KF1		
			2-channel	No		937TS-DISAR-KF2		
	Solenoid driver	Digital output	Input loop powered	1-channel		No	12.5 mm	937TH-DOSND-IP1
	SMART transmitter supply	Analog input	24V DC	1-channel		No	12.5 mm	937TH-AITXP-DC1
1-channel				Yes		12.5 mm	937TH-AITXS-DC1	
2-channel				No		20 mm	937TS-AITXP-DC2	
Temperature repeater	Analog input	1-channel		No	12.5 mm	937TH-AIRRP-DC1		
SMART current driver	Analog output			No	12.5 mm	937TH-AOSCD-DC1		
Universal temp converter	Analog input			20 mm	937CS-AITMP-DC1 ¹			
Transmitter supply converter	Analog input			40 mm	937CU-AITXF-DC1			
HART loop converter	Analog input				937CU-AIHLP-DC1			
Strain gauge converter	Analog input				937CU-AISTR-DC1			
Frequency converter	Digital input				937CU-DIFRQ-DC1			
	Digital input		20-90V DC/48-253 V AC		937CU-DIFRQ-BC1			

¹ Configured via Field Device Tool (FDT) software such as Rockwell Software FactoryTalk AssetCentre or PACTware.

Zener Barriers

Signal Type	Max Resistance	Other Functionality	Channels	Width	Cat. No.
Positive polarity DC	646 Ohm	–	2-channel	12.5 mm	937ZH-DPAN-2
	327 Ohm	–	1-channel		937ZH-DPBN-1
	36 + 0.9V Ohm	Diode return	2-channel		937ZH-DPCD-2
	327 Ohm	–	2-channel		937ZH-DPBN-2
	250 Ohm	Diode return, high power	2-channel		937ZH-DPDP-2

Accessories

Power rail feed module	Power feed module for power rail system	Width: 20 mm	937A-PSFD
Power rail 0.8 meter	Power rail with cover and 2 end caps	Length: 0.8 M	937A-PR08
Power rail 2 meter	Power rail with cover and 2 end caps	Length: 2 M	937A-PR20
Power rail end caps	Power rail end caps	–	937A-PREC
USB interface cable	USB interface programming cable	–	937A-USBA
Cold junction compensation connector	Cold junction compensation for 937CS-AITMP-DC1 (thermocouples)	–	937A-TCJC

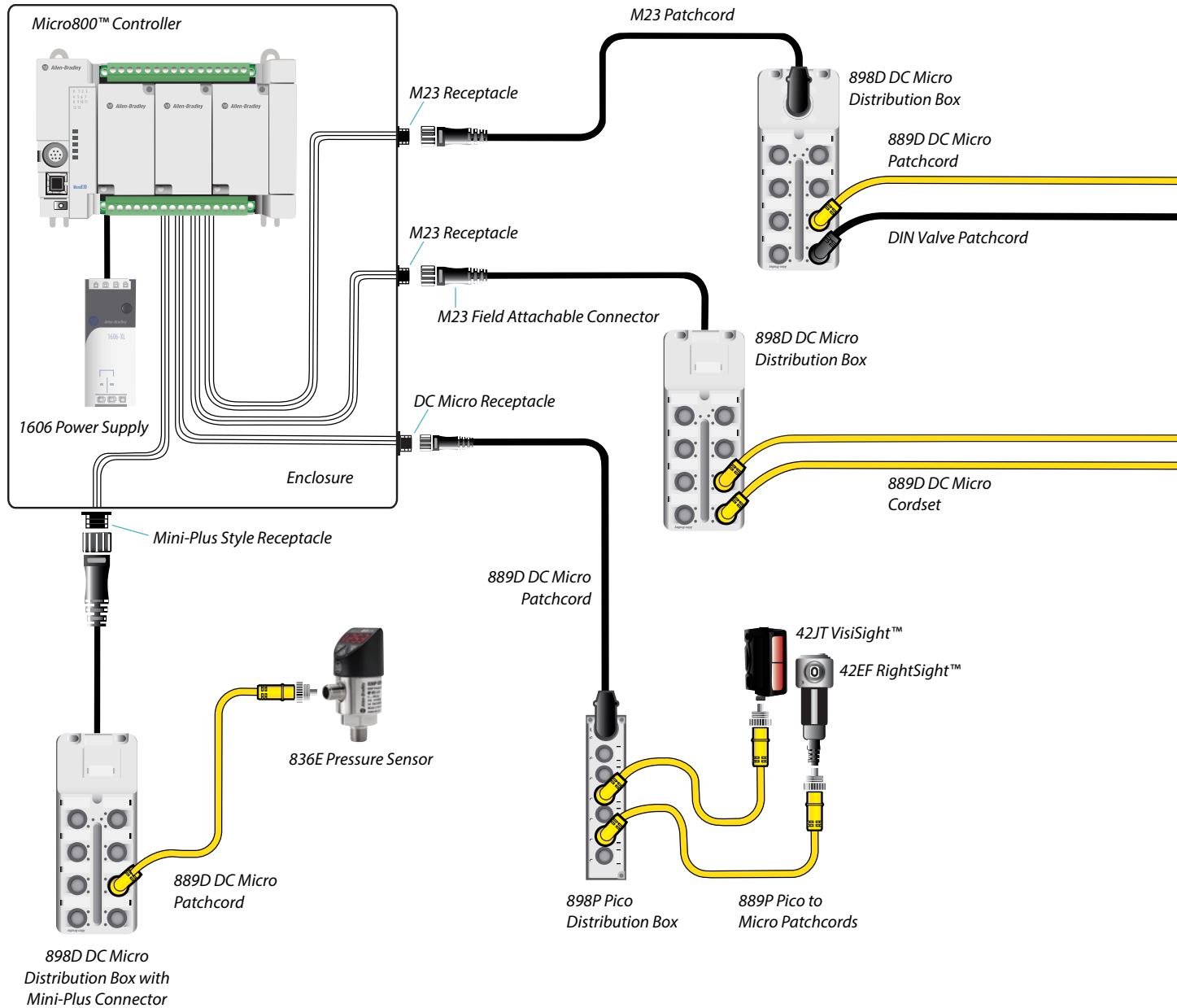
For more information on our complete family of signal interface products, please visit:
<http://ab.rockwellautomation.com/Signal-Interface>



Connection Systems

Non-network Connectivity Solutions

Allen-Bradley® passive connectivity components make up a complete plug & play solution that simplifies and consolidates wiring, while providing secure connections for proximity sensors, limit switches, photoelectric sensors, and other field devices.



Connection Systems

Terminal Blocks



4-2...4-29

Wiring Systems



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Signal Interface



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Safety Connection Systems



4-46...4-49

Network Media

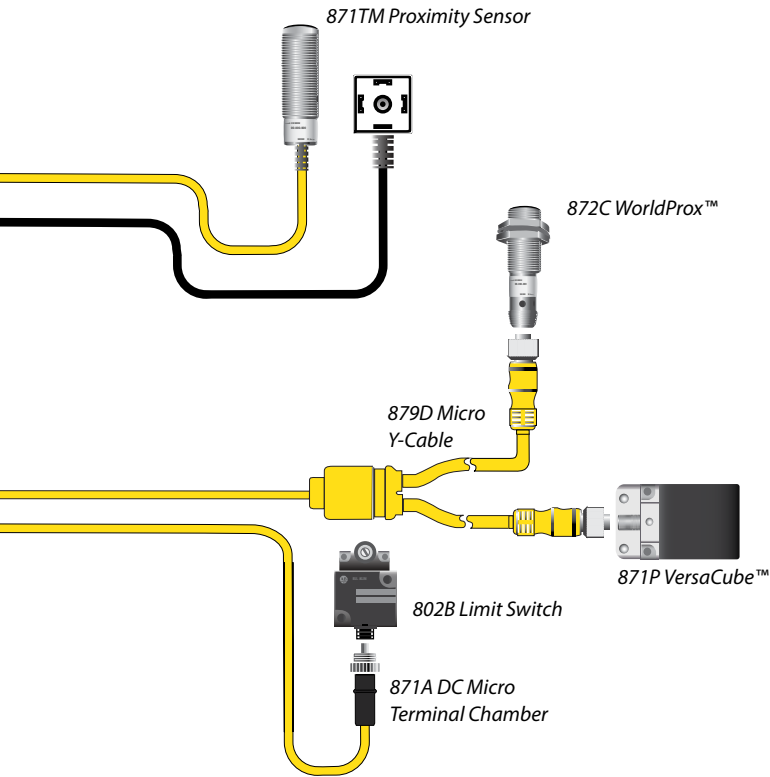


4-50...4-57



Application

Non-network Connectivity is ideal for compact machines, cost-sensitive applications or those where minimal diagnostics are required.



 We offer many standard and custom connectivity products not shown in this catalog. Our free ProposalWorks software is the easiest way to select or configure a solution from our wide range of connectivity products. www.rockwellautomation.com/support/selection.page

A complete connectivity solution, including:

- Cordsets (connector at one end, leads on the other)
- Patchcords (connectors at each end)
- Field-attachable connectors
- Panel-mount receptacles
- Distribution boxes
- V- and Y-cables
- Splitters and tees
- Raw cable spools

Connectivity Styles

- DC micro (M12)
- AC micro (1/2 in.)
- Mini (7/8 in.)
- M23
- Pico
- Mini Plus
- EAC micro
- DIN Valve

Various cable jacket materials, colors, and flex ratings for a wide range of applications and environments:

- PVC – General purpose applications
- Yellow, black, grey, red, or blue
- TPE – Bending and flexing applications, temperature extremes
- Yellow and black
- PUR – Bending and flexing applications, chemical environments, water submersion
- Yellow and black
- ToughWeld™ (CPE) – Welding applications, chemical environments
- ToughLink™ (TPE) – UV and water resistant, chemical environments
- High Flex TPE and PUR – rated to 5 million, 9 million, and 10 million flex cycles



Connection Systems



DC Micro Cordsets & Patchcords 889D

- 4-, 5-, and 8-pin connectors
- Straight or right angle versions
- 22 or 24 AWG cable
- Oil-resistant yellow, black or red PVC jacket

Product Selection

Cordsets

Female (Sensor End) Connector Style	Cable			Cat. No. ^{1,3}
	Wire Color	Assembly Rating	Length [m (ft)]	
4-pin straight	1 Brown 2 White	3 Blue 4 Black	22 AWG 250V, 4 A	889D-F4AC-2
4-pin right angle				889D-R4AC-2
5-pin straight	1 Brown 2 White	3 Blue 4 Black 5 Grey		889D-F5AC-2
8-pin straight				1 White 2 Brown 3 Green 4 Yellow

Patchcords

Female (Sensor End) Connector Style	Male (I/O End) Connector Style	Cable		Cat. No. ¹
		Assembly Rating	Length [m (ft)]	
4-pin straight	4-pin straight	22 AWG 250V, 4 A	2 (6.56)	889D-F4ACDM-2
	4-pin right angle			889D-F4ACDE-2
4-pin right angle	4-pin straight			889D-R4ACDM-2
	4-pin right angle			889D-R4ACDE-2
5-pin straight	5-pin straight			889D-F5ACDM-2
8-pin straight	8-pin straight			889D-F8ABDM-2 ²

¹ Replace the **2** after the dash with **1, 5, or 10** for additional lengths in meters.

² The 8-pin cordset is for Safety devices. To order with a red PVC jacket, replace the **A** in the catalog number with an **N**. For example, 889D-F8**N**B-2 or 889D-F8**N**BDM-2.

³ To order with black PVC jacket, replace the **A** in the catalog number with a **B**. For example, 889D-F4**B**C-2.

Connection Systems

Terminal Blocks



4-2...4-29

Wiring Systems



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Signal Interface



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4-36...4-45

Safety Connection Systems



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Network Media



4-50...4-57



AC Micro Cordsets & Patchcords 889R

- 3-, 4-, 5- and 6-pin connectors
- Straight or right angle female connector
- Standard 18 or 22 AWG braided cable
- Oil-resistant yellow PVC jacket



Product Selection

Cordsets

Female Connector Style	Cable			Length [m (ft)]	Cat. No. ¹
	Wire Color	Wire Rating			
3-pin straight	1 Green (GND) 2 Red/Black Tr.	3 Red/White Tr.	Braided 22 AWG 250V, 4 A	2 (6.5)	889R-F3ECA-2
3-pin straight	1 Green (GND) 2 Red/Black Tr.	3 Red/White Tr.	18 AWG 250V 4 A		889R-F3AEA-2
4-pin straight	1 Red/Black Tr. 2 Red/White Tr.	3 Red 4 Green (GND)			889R-F4AEA-2
3-pin right angle	1 Green (GND) 2 Red/Black Tr.	3 Red/White Tr.			889R-R3AEA-2
4-pin right angle	1 Red/Black Tr. 2 Red/White Tr.	3 Red 4 Green (GND)			889R-R4AEA-2
5-pin straight	1 Red/White Tr. 2 Red 3 Green	4 Red/Yellow Tr. 5 Red/Black Tr.			889R-F5AEA-2
6-pin straight	1 Red/White Tr. 2 Red 3 Green	4 Red/Yellow Tr. 5 Red/Black Tr. 6 Red/Blue Tr.	Braided 22 AWG 250V 4 A		889R-F6ECA-2

Patchcords

Female (Sensor End) Connector Style	Male (I/O End) Connector Style	Cable		Cat. No.
		Assembly Rating	Length [m (ft)]	
3-pin straight	3-pin straight	18 AWG, 250V, 4 A	2 (6.5)	889R-F3AERM-2

¹ Replace the 2 after the dash with 1, 5, or 10 for additional lengths in meters.



Connection Systems



Mini Cordsets 889N

- 3-, 4-, and 5-pin connectors
- Straight or right angle versions
- Heavy duty STOOW 16 AWG cable
- Oil-resistant yellow PVC jacket

Product Selection

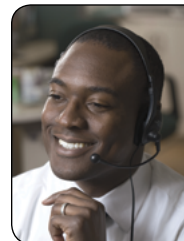
Cordsets

Female Connector Style	Wire Rating	Length [m (ft)]	Cat. No. ¹	
			IEC	US
3-pin straight	16 AWG, 600V, 13 A	1.8 (6)	–	889N-F3AFC-6F
4-pin straight	16 AWG, 600V, 10 A	1.8 (6)	889N-F4AF-6F	889N-F4AFC-6F
5-pin straight	16 AWG, 600V, 8 A	1.8 (6)	889N-F5AF-6F	889N-F5AFC-6F
3-pin right angle	16 AWG, 600V, 13 A	1.8 (6)	–	889N-R3AFC-6F
4-pin right angle	16 AWG, 600V, 10 A	1.8 (6)	889N-R4AF-6F	889N-R4AFC-6F
5-pin right angle	16 AWG, 600V, 8 A	1.8 (6)	889N-R5AF-6F	889N-R5AFC-6F

¹ Replace the **6F** after the dash with **12F** or **20F** for additional lengths in feet.

Color Code

	3-pin	4-pin	5-pin
US	1 Green 2 Black 3 White	1 Black 2 White 3 Red 4 Green	1 White 2 Red 3 Green 4 Orange 5 Black
IEC	–	1 Black 2 Blue 3 Brown 4 White	1 Black 2 Blue 3 Orange 4 Brown 5 White



Need Help?

The Rockwell Automation Support Center is your 24/7 support for the answers you need now.

www.rockwellautomation.com/support/overview.page

Connection Systems

Terminal Blocks



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Wiring Systems



4-30...4-31

Signal Interface



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Safety Connection Systems



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Network Media



4-50...4-57



Pico Cordsets & Patchcords 889P

- 3- or 4-pin connectors
- Straight or right angle female
- Standard 24 AWG cable
- Oil-resistant yellow PVC jacket



Product Selection

Cordsets

Female (Sensor End) Connector Style	Cable			Cat. No. ¹
	Wire Color	Wire Rating	Length [m (ft)]	
3-pin straight	1 Brown 3 Blue 4 Black	24 AWG 60V AC/75V DC 4 A	2 (6.5)	889P-F3AB-2
3-pin right angle			2 (6.5)	889P-R3AB-2
4-pin straight			2 (6.5)	889P-F4AB-2

¹ Replace the **2** after the dash with **5** or **10** for additional lengths in meters.

Patchcords

Female (Sensor End) Connector Style	Male Connector (I/O End) Connector Style	Cable		Cat. No. ²
		Wire Rating	Length [m (ft)]	
3-pin straight	3-pin straight	24 AWG 60V AC/75V DC 4 A	1 (3.3)	889P-F3ABPM-1

² Replace the **1** after the dash with **2**, **5**, or **10** for additional lengths in meters.



Connection Systems



DC Micro & Pico Distribution Boxes 898D & 898P

- 4-pin DC micro or 3-pin pico connectors
- Top mount inputs
- 4- or 8-port parallel wired
- PNP wired LED versions
- Single input per port
- Prewired master cable
- Rugged grey Pocan® body

Product Selection

Style	No. of Connections	Illuminated	Operating Voltage/ Supply Current	Cable Length [m (ft)]	Cat. No.
DC Micro	4	PNP LED	10...30V DC 2 A max./port 10 A max. total	5 (16.4)	898D-P54PT-B5
				10 (32.8)	898D-P54PT-B10
	8			5 (16.4)	898D-P58PT-B5
				10 (32.8)	898D-P58PT-B10
Pico	4		10...30V DC 2 A max./port 6 A max. total	5 (16.4)	898P-P34PT-B5
	8				898P-P38PT-B5

Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

www.rockwellautomation.com/sales-partners/overview.page



Connection Systems

Terminal Blocks



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Wiring Systems



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Signal Interface



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Safety Connection Systems



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Network Media



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Terminal Chambers & IDC Connectors 871A, 889D, 889P

- 4-pin micro or 3-pin pico connector
- Male and female versions
- Supports cable O.D. 4...8 mm



Product Selection

Screw Terminal

Description	Type	Connector Style	Jacket Cable Diameter [mm (in.)]	Wire Rating	Cat. No.
DC Micro	Female	4-pin straight	4.0...6.0 (0.16...0.24)	250V, 4 A	871A-TS4-D
			6.0...8.0 (0.24...0.32)		871A-TS4-D1
			4.0...6.0 (0.16...0.24)		871A-TS4-DM
			6.0...8.0 (0.24...0.32)		871A-TS4-DM1

IDC Connector

Description	Type	Connector Style	Jacket Cable Diameter [mm (in.)]	Wire Rating	Cat. No.
DC Micro	Female	4-pin straight	4.0...5.1 (0.16...0.20)	32V, 4 A	889D-F4DC-H
	Male				889D-M4DC-H
Pico	Female	3-pin straight	4.0...5.1 (0.16...0.20)	32V, 3 A	889P-F3DC-H
	Male				889P-M3DC-H



Connection Systems



DC Micro & AC Micro Receptacles 888D & 888R

- Male and female versions
- 1/2 inch NPT threads
- 22 AWG conductors
- Rugged anodized aluminum body

Product Selection

DC Micro Style

Type	Wire Color	Wire Rating	Length [m (ft)]	Panel Mount Thread Size	Cat. No.
4-pin female	1 Brown 2 White 3 Blue 4 Black	22 AWG 250V 4 A	0.3 (1)	1/2 in.-14 NPT	888D-F4AC1-0M3
4-pin male					888D-M4AC1-0M3
5-pin female	1 Brown 2 White 3 Blue 4 Black 5 Grey				888D-F5AC1-0M3
5-pin female					888D-M5AC1-0M3

AC Micro Style

Connector Style	Wire Color	Wire Rating	Length [m (ft)]	Panel Mount Thread Size	Cat. No.
3-pin female	1 Green (GND) 2 Red/Black Tr. 3 Red/White Tr.	22 AWG 250V 4 A	0.3 (1)	1/2 in.-14 NPT	888R-F3AC1-1F
3-pin male					888R-M3AC1-1F
4-pin female	1 Red/Black Tr. 2 Red/White Tr. 3 Red 4 Green (GND)	22 AWG 300V 3 A			888R-F4AC1-1F
4-pin male					888R-M4AC1-1F

Connection Systems

Terminal
Blocks



4-2...4-29

Wiring
Systems



4-30...4-31

Signal
Interface



4-32...4-35



4-36...4-45

Safety
Connection Systems



4-46...4-49

Network
Media



4-50...4-57



Mini & Pico Receptacles 888N & 888P

- Male and female versions
- Heavy-duty 16 AWG conductors (mini)
- 24 AWG conductors (pico)
- Black epoxy-coated aluminum body (mini)
- Rugged nickel-plated brass body (pico)



Product Selection

Mini Style (US Color Code)

Connector Style	Wire Color	Wire Rating	Length [m (ft)]	Panel Mount Thread Size	Cat. No.
3-pin female	1 Green 2 Black 3 White	16 AWG 600V 13 A	0.3 (1)	1/2 in.-14 NPT	888N-F3AF1-1F
3-pin male					888N-M3AF1-1F
4-pin female	1 Black 2 White 3 Red 4 Green	16 AWG 600V 10 A			888N-F4AF1-1F
4-pin male					888N-M4AF1-1F
5-pin female	1 White 2 Red 3 Green 4 Orange 5 Black	16 AWG 600V 8 A			888N-F5AF1-1F
5-pin male					888N-M5AF1-1F

Pico Style

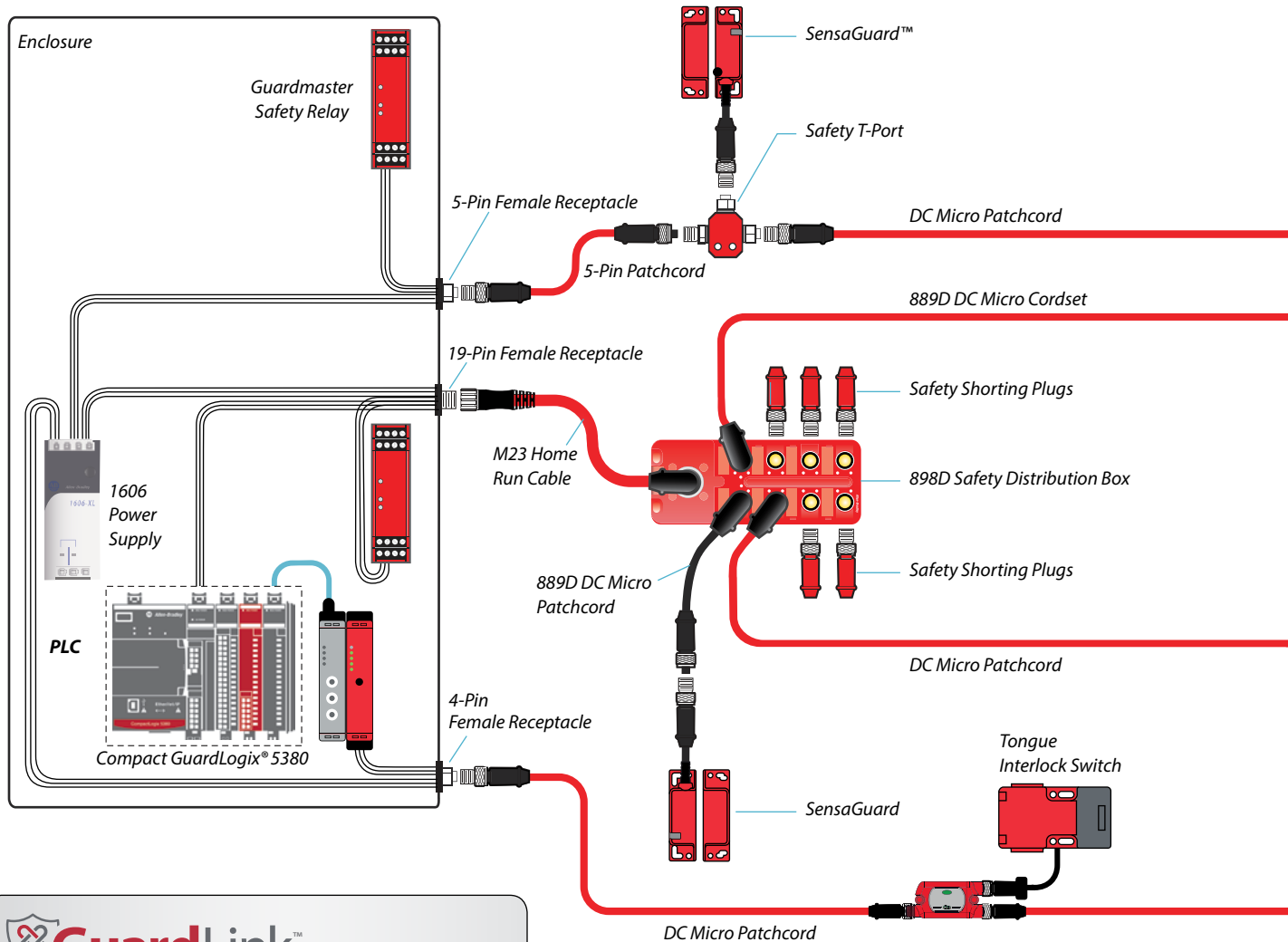
Connector Style	Wire Color	Wire Rating	Length [m (ft)]	Panel Mount Thread Size	Cat. No.
3-pin female	1 Brown 3 Blue 4 Black	24 AWG 60V AC/75V DC 4 A	0.3 (1)	M8 x 0.5	888P-F3AB4-0M3
3-pin male					888P-M3AB4-0M3
4-pin female	1 Brown 2 White 3 Blue 4 Black				888P-F4AB4-0M3
4-pin male					888P-M4AB4-0M3



Safety Connection Systems

Safety Connectivity

Allen-Bradley safety connection systems offer a complete wiring solution dedicated to machine safety.



 **GuardLink™**

GuardLink is a safety-based communications protocol that links safety to The Connected Enterprise. Allen-Bradley® Guardmaster® smart safety devices featuring GuardLink technology deliver information, advanced functionality and flexibility, while enhancing safety and increasing efficiency machine- and plant-wide.







<http://ab.rockwellautomation.com/Safety>

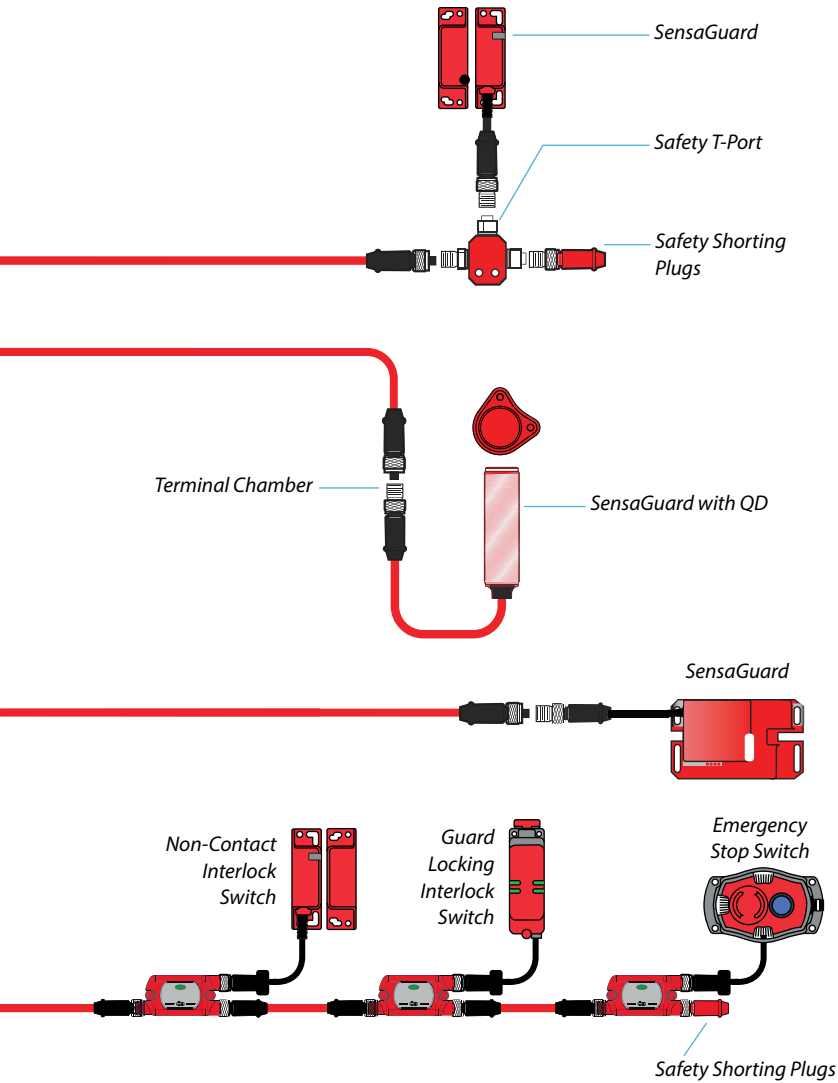
Application

Safety Connectivity is suited for compact machines with a limited number of safety components using safety relays for monitoring.

* Product selection for red patchcords can be found on page 4-38.

Safety Connection Systems

Terminal Blocks	Wiring Systems	Signal Interface	Connection Systems	Safety Connection Systems	Network Media
					
4-2...4-29	4-30...4-31	4-32...4-35	4-36...4-45	4-46...4-49	4-50...4-57



Allen-Bradley Guardmaster safety connection systems are complete quick-disconnect wiring solutions dedicated to machine safety.

Components

- Safety-wired GuardLink Enabled Taps
- Safety-wired distribution boxes
- Safety-wired shorting plugs
- Patchcords
- Receptacles

Connector Options

- DC Micro (M12)
- M23

Flexible and reliable connections for safety

- Interlock switches
- Safety limit switches
- Cable pull switches
- Guard locking switches
- SensaGuard
- E-Stops
- Safety relays
- Safety mats

Not Suitable For

- Pressure-sensitive safety edges

Notes

- Designed to simplify the installation of safety devices
- Reduced installation costs, simplified expansion and troubleshooting, increased modularity
- Single- or dual-channel options with or without enunciation
- Enunciation systems allow direct feedback on individual systems in the system and provide an auxiliary contact as input for tower lights, audible alarms, PLC input cards, etc.
- Shorting plugs must be installed in all unused distribution box ports for the system to operate



Safety Connection Systems



Safety Distribution Boxes 898D & 898R

- Prewired for compatibility with safety dual-channel and three-channel switches
- For use in Cat 2, 3, or 4 systems per EN 954-1 and up to SIL3 per EN 13849-1
- Enunciation models identify open contacts via LEDs on box and discrete wire in home-run connection

Product Selection – Safety Wired Distribution Box

Dual-Channel

Safety Switch Configuration	Enunciation	Connection Type	No. of Ports	Home Run Connection	Cat. No.
2 N.C.	No	4-pin DC micro	4	DC micro pigtail, 200 mm (7.87 in.)	898D-44LT-DM4
					898D-48LT-DM4
1 N.C. & 1 N.O. for Enunciation	Yes	4-pin DC micro	8	Cable, 5 m (16.4 ft) Cable, 10 m (32.8 ft)	898D-P48JT-A5
					898D-P48JT-A10
2 N.C. & 1 N.O. for Enunciation	Yes	6-pin AC micro	8	Cable, 5 m (16.4 ft) Cable, 10 m (32.8 ft)	898R-P68MT-A5
					898R-P68MT-A10
2 OSSD ¹	Yes	8-pin DC micro	4	M23, 19-pin	898D-P84RT-M19
			8		898D-P88RT-M19

¹ SensaGuard compatible.



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

* Product selection for red patchcords can be found on page 4-38.

Safety Connection Systems

Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45



4-46...4-49

Network Media



4-50...4-57



Safety Wired T-Port & Shorting Plug 898D & 898R

Safety Wired T-Port

- T-Port/splitter designed for use with dual-channel safety devices with four-pin DC micro connector
- For use in Cat 2 or 3 systems per EN 954-1
- SensaGuard™ units may be wired in series maintaining a Cat 4/SIL3 rating

Safety Wired Shorting Plug

- Shorting plug designed for use with safety-wired distribution boxes
- Ratcheting coupling nut on four-pin models for vibration resistance



Product Selection – Safety Wired T-Port

DC Micro Style (Dual-Channel, No Enunciation)

Configuration	Female QD (2 Ports)	Male QD (1 Port)	Cat. No.
2 N.C.	4-pin DC micro	4-pin DC micro	898D-43LY-D4
1 N.O. & 1 N.C.			898D-43KY-D4
For use with SensaGuard switches only		8-pin DC micro	898D-438Y-D8

Product Selection – Safety Wired Shorting Plug

DC & AC Micro Style

Safety Switch Configuration	Male QD	Coupling Nut Material	Cat. No.
2 N.C.	4-pin DC micro	Epoxy-coated zinc	898D-41LU-DM
1 N.O. & 1 N.C.			898D-41KU-DM
2 N.C. & 1 N.O.	6-pin DC micro	Nickel-plated brass	898R-61MU-RM
For use with SensaGuard compatible T-Ports only	4-pin DC micro		898D-418U-DM
2 OSSD	8-pin DC micro		898D-81RU-DM
2 OSSD with 24V DC connected to Aux. input			898D-81RU-DM2

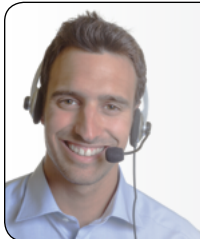
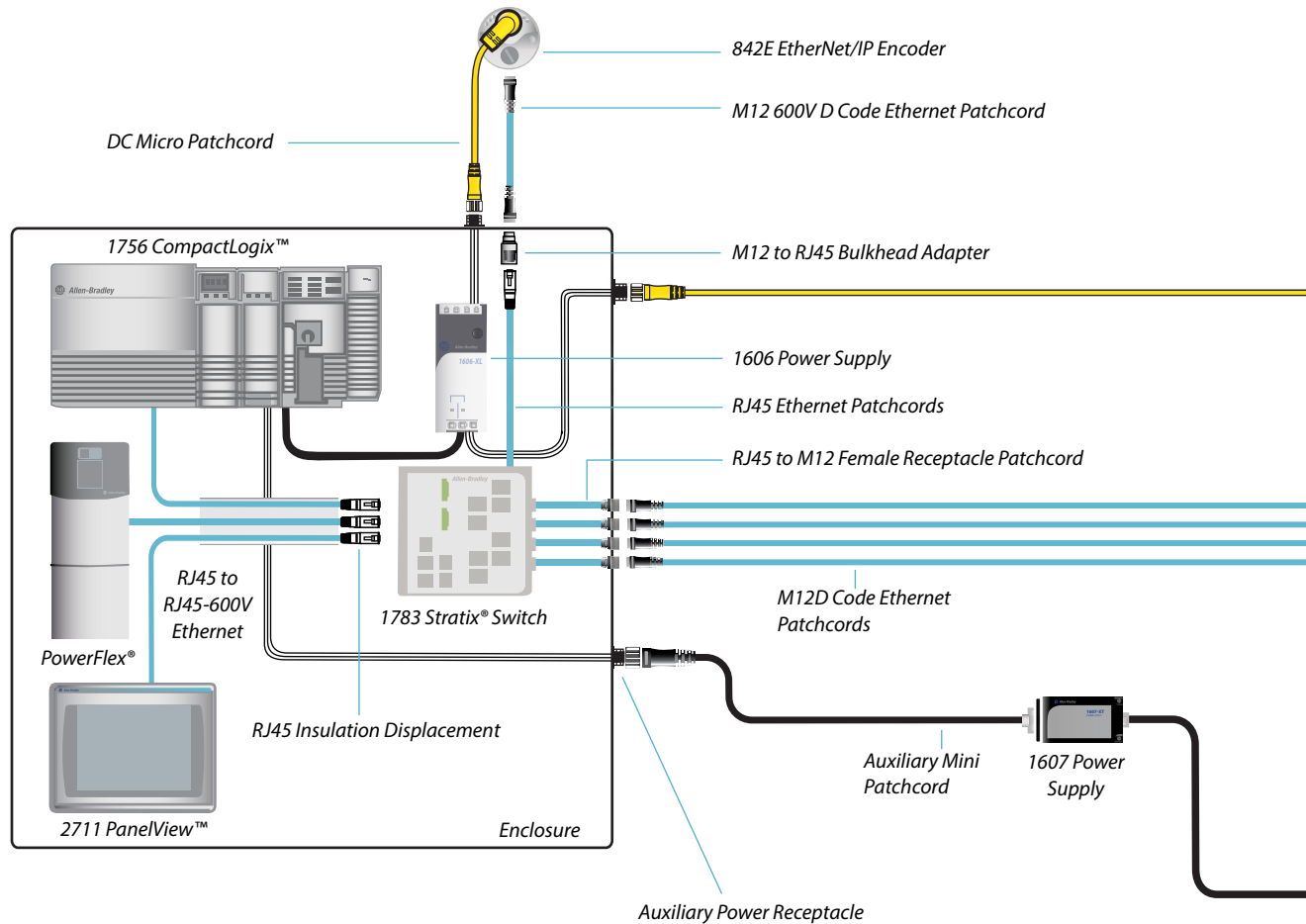
* Product selection for red patchcords can be found on page 4-38.



Network Media

Industrial Ethernet Connectivity

We offer a complete portfolio of industrial-grade Ethernet physical media specifically designed for use in harsh environments.



Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

www.rockwellautomation.com/sales-partners/overview.page

Application

Ethernet Network Connectivity is ideal for highly distributed machines that require extensive diagnostics at the PLC.

Network Media

Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

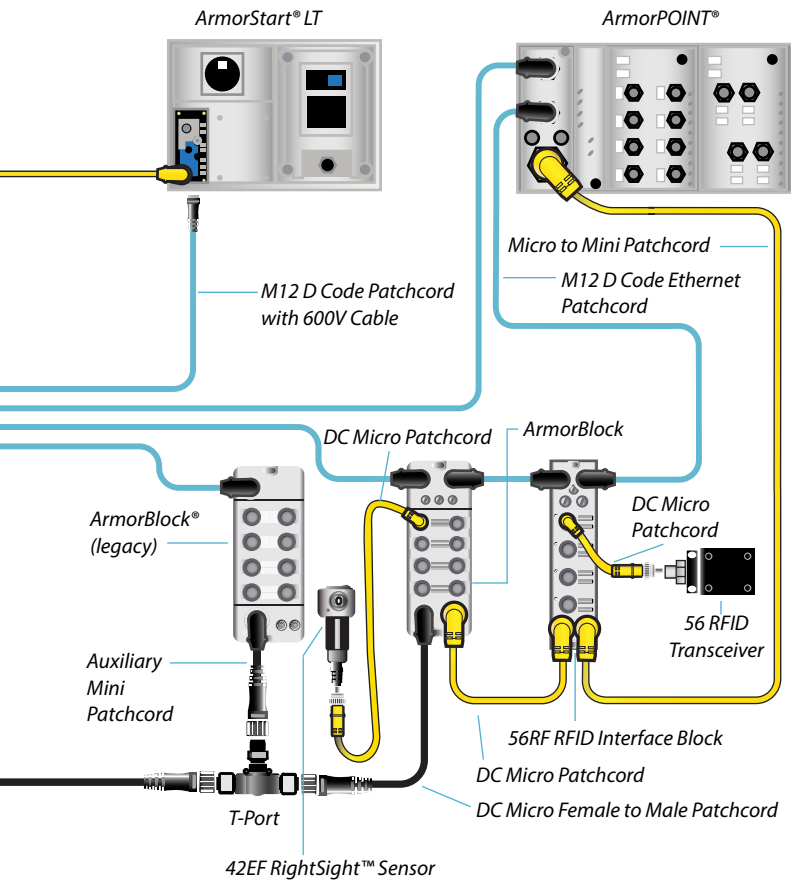
Safety Connection Systems



4-46...4-49



4-50...4-57



Allen-Bradley® Ethernet media components combine specially-designed cable with rugged connector construction to preserve network integrity and performance.

Components

- Cordsets and patchcords
- Receptacles/outlets
- Bulkhead adapters
- Raw cable spools
- Field-attachable connectors

Connector Options

- RJ45 (IP20) • M12 D-Coded (IP67)

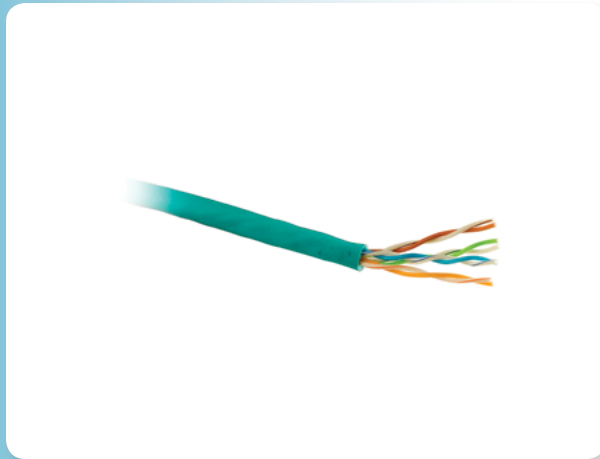
Two- or four-pair shielded and unshielded cable options in multiple cable jackets:

- Two-pair for 10/100 BaseT and On-Machine applications
- Four-pair for backbone and uplink ports or any areas requiring data rates greater than 100 BaseT Interlock switches
- PVC Cable – General purpose applications
- PUR Cable – High flex, Halogen-free
- TPE Cable – High flex applications
- Plenum Cable – Air handling applications
- 600V PVC – Use in cable trays with up to 600V rated cables

Notes

- Allen-Bradley Ethernet media is designed to ODVA EtherNet/IP™ standards for enhanced performance in industrial applications
- The 600V rated cable has a 600V AWM rating as well as PLTC (Power Limited Tray Cable) – NEC Type PLTC Listed, which is approved for cable tray use in Class 1, Division 2, hazardous areas and nonhazardous areas, cable trays, raceways, conduit and supported by messenger wires
- Transition from inside the cabinet to on-machine can be accomplished with an RJ45-to-M12 bulkhead adapter or an RJ45-to-M12 female panel mount patchcord. Both solutions provide a sealed solution mounted on to the cabinet and enables as easy transition from IP20 to IP67
- High flex cables rated to 10 million flexing cables





Ethernet Media Cable Spools 1585

- Four- and eight-conductor styles
- 24 AWG conductors, Cat 5e
- Twisted pairs maintain signal balance through cable to provide high noise immunity without need for shield
- Designed to ODVA EtherNet/IP™ specifications and ISO IEC 24702, IEC 61918
- Suitable in noise environments M3 I3 C3 E3
- Robotic cables are flex rated, rated to 10 million cycles

Product Selection

Cable Spools

Cable Type	No. of Conductors	Nominal Outer Diameter	Jacket Color	Color Code	Cable Rating	Cat. No. ¹
Unshielded riser PVC	8 (four pair)	5.84 mm (0.23 in.)	Teal	White/Orange, Orange, White/Green, Blue, White/Blue, Green, White/Brown, Brown	UL CMR; cUL CMG; Standard TIA 568-B	1585-C8PB-S100
Unshielded robotic TPE	4 (two pair)	5.6 mm (0.22 in.)	Teal	White/Orange, White/Green, Orange, Green	Weld splatter, sunlight, and oil resistant; UL CM, CMX; cUL CM; Standard TIA 568-B, high flex rated	1585-C4TB-S100
	8 (four pair)	5.84 mm (0.23 in.)	Teal	White/Orange, Orange, White/Green, Blue, White/Blue, Green, White/Brown, Brown	Weld splatter, sunlight and oil resistant; UL CM, CMX; cUL CM; Standard TIA 568-B, high flex rated	1585-C8TB-S100
Foil and braided shield robotic PUR	8 (four pair)	6.2 ± 12 mm (0.244 in.)	Teal	–	C(ETL)US TYPE CMX; TIA 568-B, Flex rated, Halogen-Free	1585-C8UB-S100
Foil and braided shield robotic PUR	4 (two pair)	–	Teal	–	C(ETL)US TYPE CMX; TIA 568-B, Flex rated, Halogen-Free	1585-C4UB-S100
Foil shield 600V PVC	8 (four pair)	8.13 ± 0.38 mm (0.32 in.)	Teal	–	(UL) CMX, CMR; c(UL) CMG; (UL) PLTC or AWM 257080 °C 600V; TIA-568-B	1585-C8HB-S100

¹ Replace **S100** with **S300** (300 m) or **S600** (600 m) for additional cable lengths.

Network Media

Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

Safety Connection Systems



4-46...4-49



4-50...4-57



Ethernet M12 D Code Cordsets & Patchcords 1585D

- Industrial-grade overmolded IP67 cable
- Flex-rated to 10 million cycles
- Single-ended cordsets can be custom terminated with one of several field-attachable connectors
- Designed to ODVA EtherNet/IP specifications and ISO IEC 24702, IEC 61918
- Twisted pairs provide high noise immunity
- Suitable for noise environments M3 I3 C3 E3
- Cat 5e



Product Selection

M12 D Code Cordsets

Cable Style	First End Connector	Second End Connector	Cat. No. ¹
TPE, high flex, unshielded	Male M12 D-code, straight	Flying leads	1585D-M4TB-2
PUR, foil and braided shield, high flex, halogen free			1585D-M4UB-2
PVC, 600V rated, foil shield			1585D-M4HB-2

M12 D Code Patchcords

Cable Style	First End Connector	Second End Connector	Cat. No. ¹
TPE, high flex, unshielded	Male M12 D-code, straight	Male M12 D-code, straight	1585D-M4TBDM-2
	Male M12 D-code, right angle	Male M12 D-code, right angle	1585D-E4TBDE-2
	Male M12 D-code, straight	Male M12 D-code, right angle	1585D-M4TBDE-2
	Male M12 D-code, straight	Female M12 D-code, straight	1585D-M4TBDF-2
PUR, foil and braided shield, high flex, halogen free	Male M12 D-code, straight	Male M12 D-code, straight	1585D-M4UBDM-2
	Male M12 D-code, right angle	Male M12 D-code, right angle	1585D-E4UBDE-2
	Male M12 D-code, straight	Male M12 D-code, right angle	1585D-M4UBDE-2
	Male M12 D-code, straight	Female M12 D-code, straight	1585D-M4UBDF-2
PVC, 600V rated, foil shield	Male M12 D-code, straight	Male M12 D-code, straight	1585D-M4HBDM-2
	Male M12 D-code, right angle	Male M12 D-code, right angle	1585D-E4HBDE-2
	Male M12 D-code, straight	Male M12 D-code, right angle	1585D-M4HBDE-2
	Male M12 D-code, straight	Female M12 D-code, straight	1585D-M4HBDF-2
TPE, high flex, unshielded	Male M12 D-code, straight	RJ45, straight	1585D-M4TBJM-2
PUR, foil and braided shield, high flex, halogen free			1585D-M4UBJM-2
PVC, 600V rated, foil shield			1585D-M4HBJM-2

¹ Replace **2** (2 m) with **1** (1 m), **5** (5 m), or **10** (10 m) for additional standard cable lengths. Other standard and build-to-order lengths are available. Contact your local Rockwell Automation sales office or Allen-Bradley distributor for details.





Ethernet RJ45 Cordsets & Patchcords 1585J

- PVC riser and flex-rated TPE and PUR cables for various applications
- Rugged strain relief and hitch mechanism to maintain network integrity
- Suitable environments M3 I3 C3 E3
- Unshielded, #24 AWG
- Flex rated to 10 million cycles
- Cat 5e

Product Selection

RJ45 Cordsets

No. of Conductors	Jacket Material	Shielding	Cat. No. ¹
4	Teal high-flex TPE	Unshielded twisted pair	1585J-M4TB-2
8	Teal high-flex TPE		1585J-M8TB-2
8	Teal riser PVC		1585J-M8PB-2
8	Teal riser PVC	Foil and braided shield	1585J-M8CB-2
4	Teal high-flex PUR		1585J-M4UB-2
8	Teal high-flex PUR		1585J-M8UB-2
8	Teal 600V PVC	Foil shield	1585J-M8HB-2

RJ45 Patchcords

No. of Conductors	Jacket Material	Cable Type	Cable Rating	Cat. No. ¹
4	Teal high-flex, TPE	Unshielded twisted pair	Weld splatter, sun light and oil resistant; UL CMG, CMX; cUL CMG; Standard TIA 568-B, flex rated	1585J-M4TBJM-2
8	Teal high-flex, TPE			1585J-M8TBJM-2
8	Teal riser, PVC		UL CMR; cUL CMG; Standard TIA 568-B	1585J-M8PBJM-2
4	Teal high-flex, PUR	Braid over foil shield	C(ETL)US TYPE CMX; TIA 568-B, flex-rated, halogen-free	1585J-M4UBJM-2
8	Teal riser, PVC		UL CMR; CUR CMG, TIA B	1585J-M8CBJM-2
8	Teal high-flex, PUR		C(ETL)US TYPE CMX; TIA 568-B, flex-rated, halogen-free	1585J-M8UBJM-2
	Teal 600V, PVC	Foil shield	(UL) CMX, CMR; c(UL) CMG; (UL) PLTC or AWM 2570 80 °C 600V; TIA-568-B	1585J-M8HBJM-2

¹ Replace **2** (2 m) with **1** (1 m), **5** (5 m), or **10** (10 m) for additional standard cable lengths. Other standard and build-to-order lengths are available. Contact your local Rockwell Automation sales office or Allen-Bradley distributor for details.

Network Media

Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

Safety Connection Systems



4-46...4-49



4-50...4-57

Ethernet Accessories 1585D, 1585A, & 1585J

- Field-installable accessories for easy cabling modification
- For use with raw cable or single-ended cordsets
- M12 and RJ45 styles
- M12 to RJ45 adapter for bulkhead installation



Product Selection

M12 Insulation Displacement Connector

No. of Pins	Connector Material	Cable Diameter [mm (in.)]	Wire Size	Assembly Rating	Connector Style	Cat. No.
4	Polyamide small body unshielded	4.0...5.1 (0.16...0.20)	#26...22 AWG	32V, 4 A	Straight male	1585D-M4DC-H
	Zinc die-cast large body shielded	5.5...7.2 (0.22...0.28)	#24...22 AWG		Straight female	1585D-F4DC-SH
					Straight male	1585D-M4DC-SH

Field Attachable RJ45 Connectors

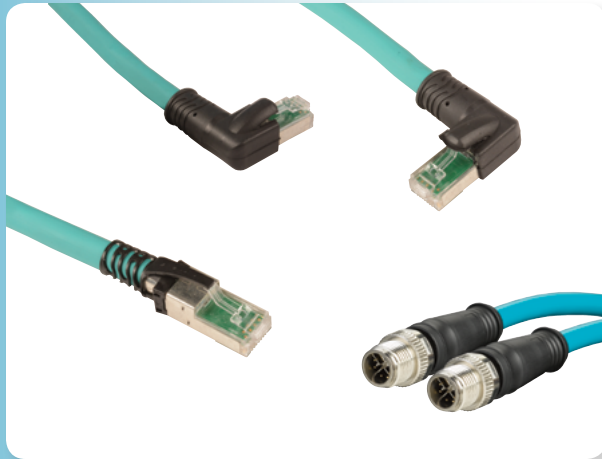
Description	Material	Insulation Material	Contact Material	Channel Bandwidth	Cat. No.
RJ45 insulation displacement connector (IDC)	Diecast zinc	Plastic	Gold-plated copper alloy	Cat 6	1585J-M8CC-H

4-pin, M12 Receptacle & M12 to RJ45 Adapter

Description	Mounting	Assembly Rating	Cat. No.
Female M12 receptacle to RJ45 female adapter right angle	PG 9 panel mount threads	32V, 4 A	1585A-DD4JD



Network Media

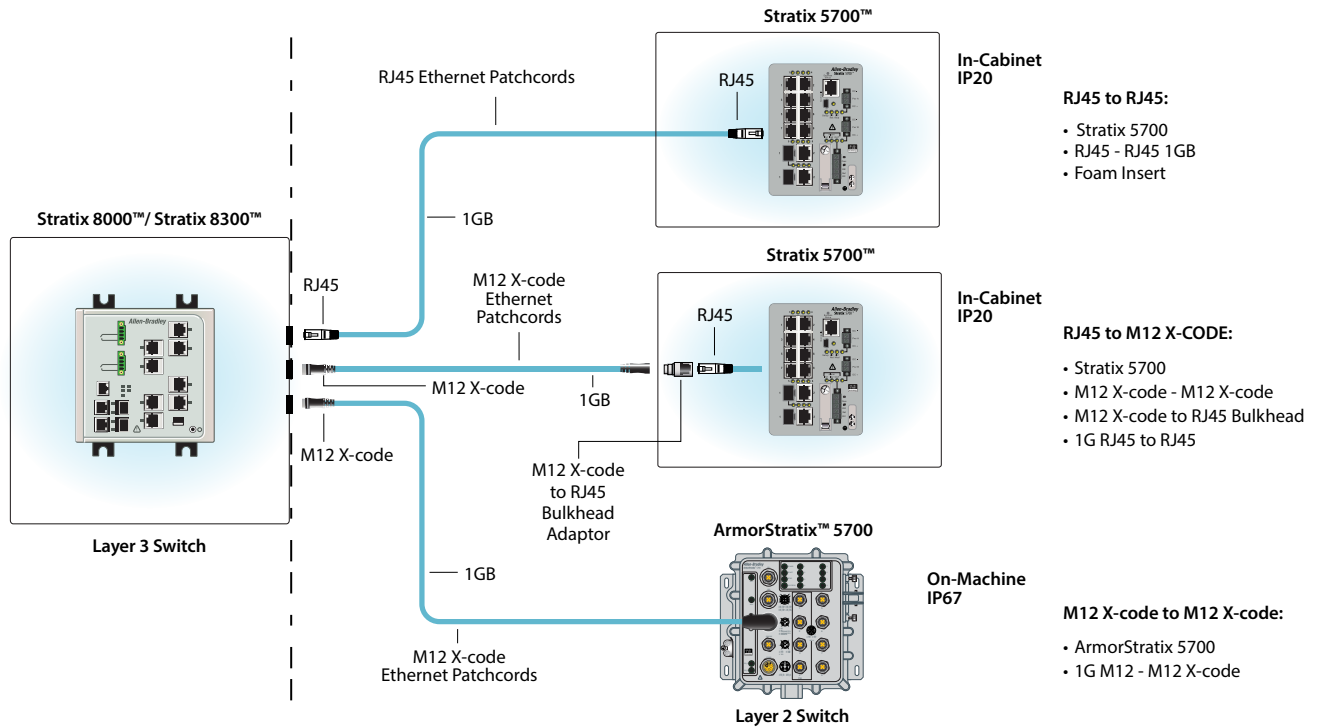


Gigabit Ethernet Connectivity 1585D/1585J

- Ethernet speeds of 1 Gigabit per second
- 360 degree shield for optimal signal performance without system noise interference
- Cat 6, UL Listed. Conforms to ISO IEC 11801, ANSI/TIA-1005, TIA-568-C.2.
- Flex-rated TPE cables for various applications.
- M12 feature X-code key alignment and are IP67 and M3 I3 C3 E3 rated
- RJ45 features ideal 1p20 industrial applications and M1 I1 C2 E2

Innovative Connectivity for Demanding High-speed Data Transfer in Industrial Applications

Our Ethernet media connects with Allen-Bradley Stratix™ Ethernet switches, programmable controllers, PanelView™ graphic terminals and drives.



Terminal Blocks



4-2...4-29

Wiring Systems



4-30...4-31

Signal Interface



4-32...4-35

Connection Systems



4-36...4-45

Safety Connection Systems



4-46...4-49

Network Media



4-50...4-57



Product Selection

RJ45 Gigabit Cordset

Shielding	Connector Style	Cable Type	Cable Length	Cat. No. ¹
Foil and braided shield	Straight male	8-conductor, teal high-flex TPE	2 m (6.56 ft)	1585J-M8TG-2
Foil and braided shield	Right angle male	8-conductor, teal high-flex TPE	2 m (6.56 ft)	1585J-E8TG-2

RJ45 Gigabit Patchcords

Shielding	Connector Style	Cable Type	Cable Length	Cat. No. ¹
Foil and braided shield	RJ45 straight male	8-conductor (4 pair), teal high-flex TPE	2 m (6.56 ft)	1585J-M8TGM-2
Foil and braided shield	RJ45 straight male to right angle male	8-conductor (4 pair), teal high-flex TPE	2 m (6.56 ft)	1585J-M8TGE-2
Foil and braided shield	RJ45 right angle male to right angle male	8-conductor (4 pair), teal high-flex TPE	2 m (6.56 ft)	1585J-E8TGE-2

¹ Replace **2** (6.56 ft) with **5** (16.4 ft) or **10** m (32.8 ft) for additional standard cable lengths.

M12 X-code to M12 X-code Patchcords

Shielding	Connector Style	Cable Type	Cable Length	Cat. No. ¹
Foil and braided shield	Straight male	Shielded teal PUR, 4 twisted pairs, 26 AWG, Industrial Cat 6, UL Listed, sun light and oil resistant	1 m (3.28 ft)	1585D-M8UGDM-1

M12 X-code to RJ45 Patchcord

Shielding	Connector Style	Cable Type	Cable Length	Cat. No. ²
Foil and braided shield	Straight male	Shielded teal PUR, 4 twisted pairs, 26 AWG, Industrial Cat 6, UL Listed, sun light and oil resistant	1 m (3.28 ft)	1585D-M8UGJM-1

² Replace **1** with **2** m (6.56 ft), **3** m (9.84 ft), **4** m (13.1 ft), **5** m (16.4 ft), **10** m (32.8 ft), **15** m (49.5 ft), **20** m (65.6 ft), **30** m (98.42 ft), or **40** m (131.23 ft) for additional standard cable lengths.

Accessories

Description	Cat. No.
Female M12 X-code receptacle to RJ45 female adaptor right angle	1585A-DD8JD



Additional Connectivity Products



DeviceNet Media

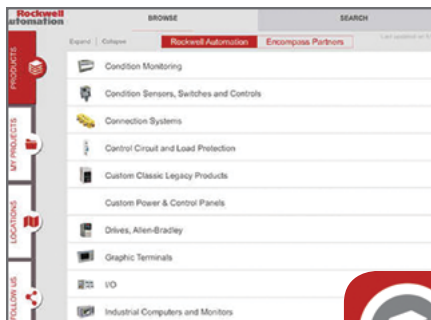
Used as the backbone for your DeviceNet network, our media includes multiple trunk and drop cable solutions to best suit your topology.

- Choose from traditional round media or time-saving KwikLink™ flat media
- Options for IP20 and IP67 applications
- Available in bulk spools or pre-molded cordsets or patchcords
- DeviceNet media tools help simplify your network installation and diagnostics

NEMA and Process Terminal Blocks 1492, 1492JP

The 1492 family of NEMA terminal blocks offer easy wiring with standard size screwdrivers, easy visual verification of proper wire position and easy marking.

1492-JP process terminal blocks are designed specifically for process marshalling applications to save 45% panel space and improve the performance of signal routing and distribution.









Product Catalog iPad App

Configure and select from thousands of industrial automation products to help meet your application requirements.

Now available in the iTunes App Store, the Rockwell Automation Product Catalog iPad app allows you the convenience to browse or search our comprehensive product offering from your iPad.



Terminal Blocks	Wiring Systems	Signal Interface	Connection Systems	Safety Connection Systems	Network Media
					
4-2...4-29	4-30...4-31	4-32...4-35	4-36...4-45	4-46...4-49	4-50...4-57



GuardLink Technology..... 5-2

Presence Sensing Safety Devices

GuardShield 450LB POC Type 4 Safety Light Curtain..... 5-4

GuardShield 450LE POC Type 4 Safety Light Curtain 5-6

GuardShield 440L POC Type 4 Safety Light Curtain..... 5-8

Micro 400 POC Type 4 Safety Light Curtain 445L 5-10

GuardShield PAC Type 4 & Safe 4/Micro 400 Safety Light Curtain 440L & 445L 5-12

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GuardLink Technology

GuardLink™ Technology

GuardLink is a safety-based communications protocol that links safety to The Connected Enterprise. Allen-Bradley® Guardmaster® smart safety devices featuring GuardLink technology deliver information, advanced functionality and flexibility, while enhancing safety and increasing efficiency machine- and plant-wide. GuardLink enabled devices offer advanced features and diagnostics that can only be accessed through a GuardLink connection tap.



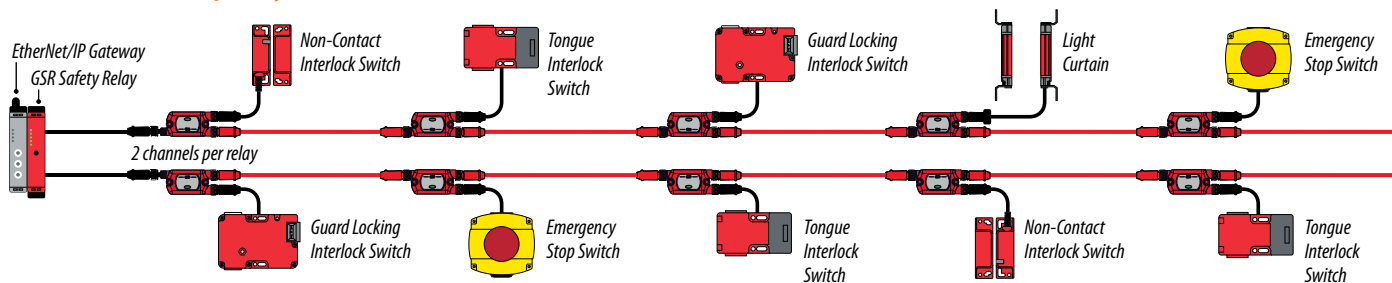
GuardLink provides access to diagnostic data when the safety function occurs

- No configuration is required, with wiring achieved through the use of multi-core cabling with M12 connectors
- A maximum of 32 safety input devices can be connected in series over 1000 m
- The Smart Taps allow safety input devices with either electro mechanical or solid state safety outputs to be connected to a GuardLink system
- Remote and fault reset of safety input devices can be achieved
- Certified for applications up to and including PLe Cat 4 ISO 13849-1 and SIL cl3 IEC 62061

Why choose GuardLink?

Series connection of safety input devices is common practice in safety related control systems. However when the system trips, fault finding is difficult, due to the lack of diagnostic information. Providing diagnostics historically meant connecting auxiliary contacts from each safety input device, to the PLC, increasing costs due to the need for additional input cards, and increased installation time to hard wire each auxiliary contact to the allocated input. GuardLink provides both safety information, and diagnostics through the same cable, with the diagnostics available via EtherNet/IP, reducing installation time for the safety system, and the cost and time to install the solution.

GuardLink Example System



Presence Sensing Devices	Interlock Switches	Access Control	Safety Relays	Emergency Stop Devices	Safety Limit Switches
					
5-4...5-19	5-20...5-35	5-36...5-37	5-38...5-43	5-44...5-45	5-46...5-47



GuardLink Enabled Connection Taps

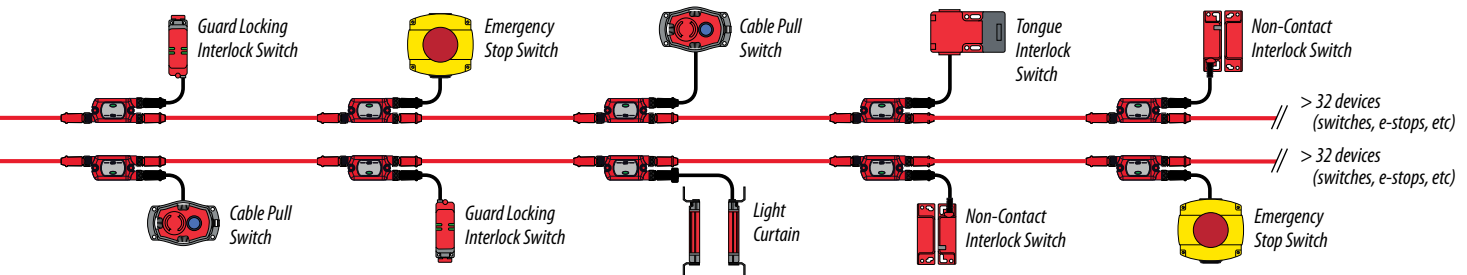
- Acts as the adaptor for safety input devices to connect to GuardLink
- Provides device location and status to GuardLink GSR Relay (DG) technology
- Two bright indicators for device and link communication status
- Compact 40 mm housing fits on standard aluminum profiles
- TÜV Approved PLe, SIL 3, Cat 4 Rated
- IP65/IP67 environmental rating

Supported Guardmaster Safety Relays

- Supports implementations of two safety circuits – GuardLink technology – Electromechanical Safety Switch (EMSS) or Output Safety Switching Device (OSSD) devices
- Local controls to select and configure the safety related function
 - Function selection
 - Single input with optional time delay
 - Dual input with optional time delay
 - Dual input with time delay on 1 input
 - Device reset
- Configurable multipurpose terminals
- Safety input, safety output, safety and standard signals
- Relay outputs to switch higher loads
- Connectivity to network interface via optical link
- Support of Single Wire Safety (SWS) to cascade multiple safety relays
- Add-on profile for Studio 5000® Logix Designer software provides access to relay and GuardLink device data

Product Selection

	Description	Catalog Number
Safety Relay, Ethernet Gateway and cable to the first GuardLink enabled tap	Ethernet Gateway	440R-ENETR
	Guardmaster Safety Relay Dual GuardLink Master	440R-DG2R2T
	Replace * in order number with 2, 5, 10, 15, 20 or 30 for required cable length in Meters	889D-F4NE-*
GuardLink enabled taps and cables to connect between the taps	5-pin GuardLink Enabled Tap for use with 5-pin Electronic Safety Input devices	440S-SF5D
	8-pin GuardLink Enabled Tap for use with 8-pin Electronic Safety Input devices	440S-SF8D
	5-pin GuardLink Enabled Tap for use with 5-pin Electromechanical Safety devices	440S-MF5D
	8-pin GuardLink Enabled Tap for use with 8-pin Electromechanical Safety devices (available September 2018)	440S-MF8D
	Replace ** in order number with 0M3, 0M6, 1, 2, 5, 10, 15, 20 or 30 for cable length in Meters (0M3=300mm, 0M6=600mm)	889D-F4NEDM-**
Connection cables from the GuardLink enabled taps to the input devices	Replace *** in order number with 0M3, 0M6, 1, 2, 5 or 10 for cable length in Meters (0M3=300mm, 0M6=600mm)	889D-F5NCDM-***
	Replace *** in order number with 0M3, 0M6, 1, 2, 5 or 10 for cable length in Meters (0M3=300mm, 0M6=600mm)	889D-F8NBDM-***
Accessories	Terminator for last GuardLink Enabled Tap	898D-418U-DM2
	GuardLink Enabled Tap Mounting Bracket - QTY 1	440S-GLTAPBRK1
	GuardLink Enabled Tap Mounting Bracket - QTY 5	440S-GLTAPBRK5



For more information on our complete family of presence sensing safety device products, please visit:
<http://ab.rockwellautomation.com/Safety>



Presence Sensing Safety Devices

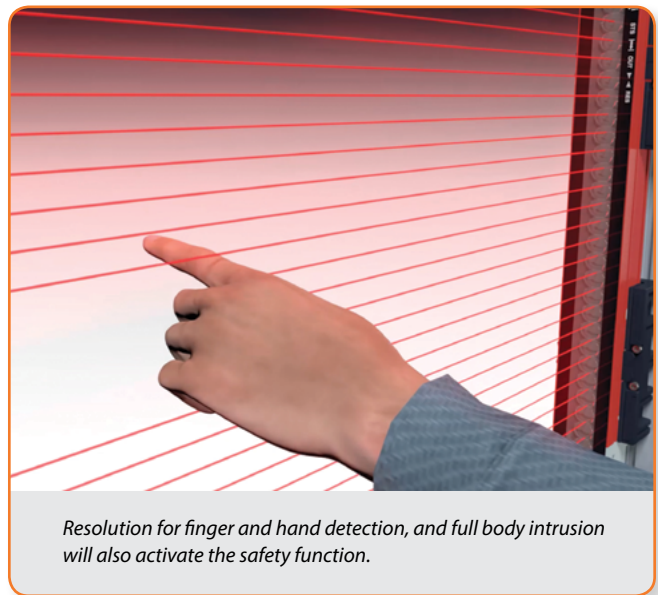
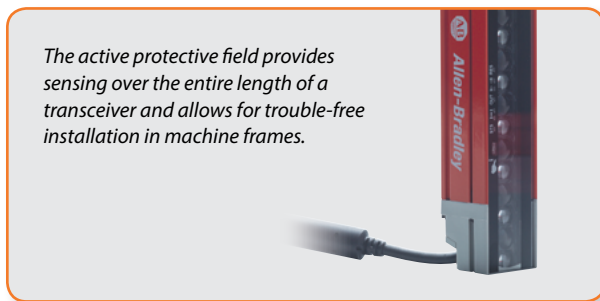
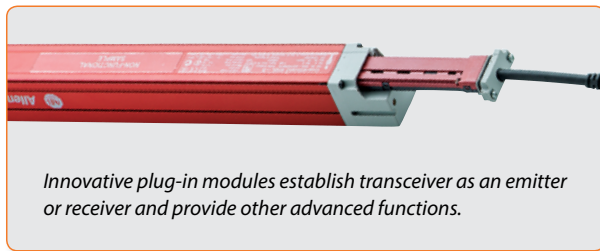


GuardShield™ POC Type 4 Safety Light Curtain 450L-B

- Point of Operation Control (POC) for finger or hand protection
- Innovative plug-in modules (available separately) for application flexibility and reduced inventory costs
- Protection heights 150...1950 mm (5.9...76.7 in.) in increments of 150 mm (0.5 ft)
- Compact design 30 mm x 30 mm (1.18 in. x 1.18 in.)
- TÜV certified Ple, Type 4 IEC 61496-1/-2, SILcl3 per EN ISO 13849-1, IEC 62061

Overview

The GuardShield 450L-B Safety Light Curtain system features a patented technology which allows each transceiver to be used as a transmitter or receiver via an innovative plug-in module. The functionality of a pair of 450L-B safety light curtains can be selected by inserting a plug-in module into the bottom of each transceiver. This advanced technology greatly reduces stock and provides a flexible, cost-effective safety solution.



Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

Light Curtain System: Order two identical transceivers/catalog numbers

Description	Catalog Number ¹
Transceiver with finger resolution. 14 mm (0.55 in.) resolution. Top and bottom mounting kit included ²	450L-B4FNxxxxYD
Transceiver with hand resolution. 30 mm (1.18 in.) resolution. Top and bottom mounting kit included ²	450L-B4HNxxxxYD

- ¹ xxxx = 0150 ... 1950 mm (0.5 ... 6.4 ft) in increments of 150 mm (0.5 ft).
For example: "450L-B4FN**0900**YD" indicates an order for 900 mm finger detection light curtain system.
- ² Optional side mounting bracket kit is available below.

Plug-in Modules: Order one transmitter and one receiver plug-in with the desired functionality for one system – *or* – Order two universal plug-ins for one system. Each universal plug-in can be used as a transmitter or a receiver.

Description	Catalog Number
Transmitter plug-in, M12 5-pin	450L-APT-PW-5
Receiver plug-in, M12 5-pin, On/Off	450L-APR-ON-5
Transmitter plug-in, M12 8-pin ³	450L-APT-PW-8
Receiver plug-in, M12 8-pin, reset mode, EDM, scanning range	450L-APR-ED-8
Universal plug-in, M12 8-pin, reset mode, EDM, scanning range ⁴	450L-APU-UN-8

- ³ The 8-pin transmitter plug-in option allows two 8-pin cordsets to be used in one system.
- ⁴ Order two universal plug-ins for one system. Each universal plug-in can be used as a transmitter or a receiver.

Specifications

Standards	Type 4 (IEC 61496), PLc Cat 4 (ISO 13849-1), SIL cl3 (IEC 62061)
Certifications	UL Listed, TUV Certified, KC and CE Marked for all applicable directives
Power Supply	24V DC ±15%
Safety Output	2 OSSDs (max. 0.5 A)
Enclosure Rating	IP65
Cross Section	30 x 30 mm (1.19 x 1.19 in.)
Scanning Range	Resolution 14 mm (0.56 in.): 0.5 ... 4 m (1.64 ... 13.12 ft) Resolution 30 mm (1.19 in.): 0.9 ... 7.0 m (2.95 ... 22.97 ft)

Required Accessories

Description	Catalog Number
M12 5-pin cable	889D-F5BC-⊗
M12 8-pin cable	889D-F8AB-⊗

- ⊗ The catalog number as listed is incomplete. Replace the ⊗ with **2** (6.6 ft), **5** (16.4 ft), **10** (32.8 ft), **15** (49.2 ft), **20** (65.6 ft), or **30** (98.4 ft) for available lengths in meters.

Optional Accessories

Description	Catalog Number
Optical interface tool (required if using Connected Components Workbench software for diagnostic information)	450L-AD-OID
Weld shield kit ¹	450L-AW-xxxx
Laser alignment tool	440L-ALAT
Mounting bracket for laser alignment tool 440L-ALAT	450L-ALAT-C
Side mounting bracket kit	450L-AM-SM

- ¹ xxxx = 0150 ... 1950 mm (0.5 ... 6.4 ft) in increments of 150 mm (0.5 ft).



Presence Sensing Safety Devices

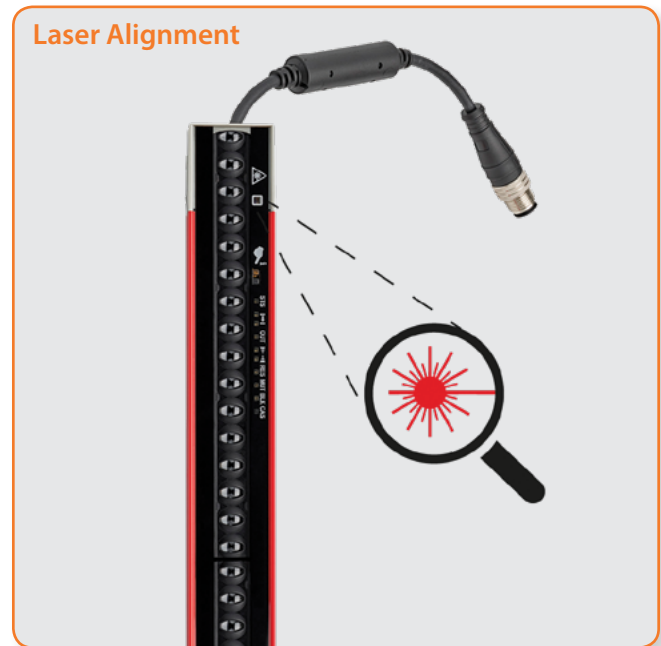


GuardShield™ POC Type 4 Safety Light Curtain 450L-E

- Point of Operation Control (POC) for finger or hand protection
- Innovative plug-in modules (available separately) enables functionality for muting, blanking and cascading
- Protection heights 150...1950 mm (5.9...76.7 in.) in increments of 150 mm (0.5 ft)
- Integrated laser alignment system helps provide quick and more reliable installation
- TÜV certified Ple, Type 4 IEC 61496-1/-2, SILcl3 per EN ISO 13849-1, IEC 62061

Overview

The GuardShield 450L-E Safety Light Curtain system is the enhanced version of the GuardShield 450L-B Safety Light Curtain system. It offers a larger operating range and each stick has a integrated laser alignment feature which allows a quick and more reliable installation. Functionalities like blanking, muting or cascading can be integrated. This advanced modular technology greatly reduces stock and helps provide a flexible, cost-effective safety solution.



Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

Light Curtain System: Order two identical transceivers/catalog numbers

Description	Catalog Number ¹
Transceiver with finger resolution. 14 mm (0.55 in.) resolution. Top and bottom mounting kit included ²	450L-E4FLxxxxYD
Transceiver with hand resolution. 30 mm (1.18 in.) resolution. Top and bottom mounting kit included ²	450L-E4HLxxxxYD

¹ xxxx = 0150 ... 1950 mm (0.5 ... 6.4 ft) in increments of 150 mm (0.5 ft).

For example: "450L-E4FL0900YD" indicates an order for 900 mm finger detection light curtain transceiver stick.

² Optional side mounting bracket kit is available below.

Plug-in Modules: Order one transmitter and one receiver plug-in with the desired functionality for one system – **or** – Order two universal plug-ins for one system. Each universal plug-in can be used as a transmitter or a receiver.

Description	Catalog Number
Transmitter plug-in, M12 5-pin	450L-APT-PW-5
Receiver plug-in, M12 5-pin, On/Off	450L-APR-ON-5
Transmitter plug-in, M12 8-pin ³	450L-APT-PW-8
Receiver plug-in, M12 8-pin, reset mode, EDM, scanning range	450L-APR-ED-8
Receiver plug-in, M12 5-pin, blanking	450L-APR-BL-5
Receiver plug-in, M12 8-pin, muting, blanking, reset mode, EDM, scanning range	450L-APR-MU-8
Cascading plug-in, M12 8-pin, serial connection of light curtain sticks	450L-APC-IO-8
Universal plug-in, M12 8-pin, reset mode, EDM, scanning range ⁴	450L-APU-UN-8

³ The 8-pin transmitter plug-in option allows two 8-pin cordsets to be used in one system.

⁴ Order two universal plug-ins for one system. Each universal plug-in can be used as a transmitter or a receiver.

Specifications

Standards	Type 4 (IEC 61496), PLe Cat 4 (ISO 13849-1), SIL cl3 (IEC 62061)
Certifications	UL Listed, TUV Certified, KC and CE Marked for all applicable directives
Power Supply	24V DC ±15%
Safety Output	2 OSSDs (max. 0.5 A)
Enclosure Rating	IP65
Cross Section	30 x 30 mm (1.19 x 1.19 in.)
Scanning Range	Resolution 14 mm (0.56 in.): 0.5 ... 9 m (1.64 ... 29.53 ft) Resolution 30 mm (1.19 in.): 0.9 ... 16.2 m (2.95 ... 53.15 ft)

Required Accessories

Description	Catalog Number
M12 5-pin cable	889D-F5BC-⊗
M12 8-pin cable	889D-F8AB-⊗

⊗ The catalog number as listed is incomplete. Replace the ⊗ with **2** (6.6 ft), **5** (16.4 ft), **10** (32.8 ft), **15** (49.2 ft), **20** (65.6 ft), or **30** (98.4 ft) for available lengths in meters.

Optional Accessories

Description	Catalog Number
Optical interface tool (required if using Connected Components Workbench software for diagnostic information)	450L-AD-0ID
Weld shield kit ¹	450L-AW-xxxx
Laser alignment tool	440L-ALAT
Mounting bracket for laser alignment tool 440L-ALAT	450L-ALAT-C
Side mounting bracket kit	450L-AM-SM
Termination plug, M12 8-pin for cascading plug-in	898D-81CU-DM

¹ xxxx = 0150 ... 1950 mm (0.5 ... 6.4 ft) in increments of 150 mm (0.5 ft).

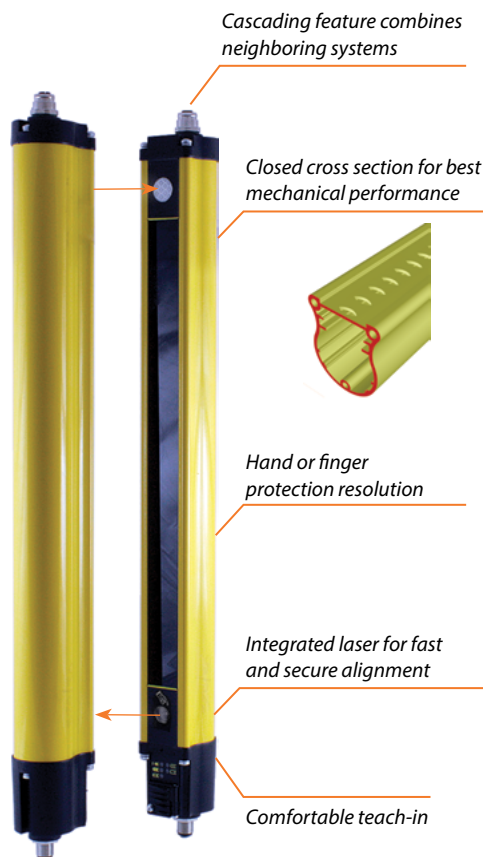


Presence Sensing Safety Devices



GuardShield™ POC Type 4 Safety Light Curtain 440L

- Point of Operation Control (POC) for finger or hand protection
- Heavy-duty IP65 housing
- Wide operating range 0.3...16 m (0.98...52.49 ft)
- Dip switch selectable functions: blanking (including teach-in), beam coding, EDM (External Device Monitoring), and start mode
- Available options: cascading, integrated laser alignment, ArmorBlock® Guard I/O™ connectivity



A Robust Solution for Finger and Hand Detection

GuardShield safety light curtains offer an extraordinary robustness against high-mechanical impacts. The unique profile design is a perfect solution for heavy duty applications. An integrated laser feature allows for easy set up and a comfortable control of the alignment. With these features this product helps to provide the highest reliability.



Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection GuardShield POC Type 4

Description	Cat. No. ¹	
	Finger Resolution (14 mm)	Hand Resolution (30 mm)
GuardShield Type 4	440L-P4JxxxxYD	440L-P4KxxxxYD
GuardShield Type 4 with laser	440L-P4JLxxxxYD ²	440L-P4KLxxxxYD ²
GuardShield Type 4 cascading	440L-C4JxxxxYD ³	440L-C4KxxxxYD ³
GuardShield Type 4 cascading with laser	440L-C4JLxxxxYD ²	440L-C4KLxxxxYD ²
GuardShield Type 4 Teach-in	440L-S4JxxxxYR	440L-S4KxxxxYR
GuardShield Type 4 Armor with laser	440L-P4JLxxxxYA ²	440L-P4KLxxxxYA ²

- ¹ Models are available in protective heights from 160...1760 mm (6.3...69.3 in.) in 160 mm increments. To order, replace the **xxxx** in the catalog number with the protective height in mm. For example, to order 160 mm height, replace the **xxxx** with **0160** (440L-P4K**0160**YD), or for 1760 mm height, replace **xxxx** with **1760** (440L-P4K**1760**YD).
- ² Models are available in protective heights from 320...1600 mm (12.6...63 in.) in 160 mm (6.3 in.) increments.
- ³ Models are available in protective heights from 320...1760 mm (6.3...69.3 in.).

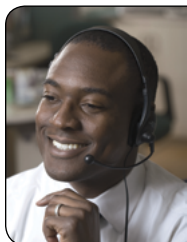
Specifications

Standards	Type 4 (IEC 61496), PLe Cat 4 (ISO 13849-1), SIL c3 (IEC 62061)
Certifications	UL Listed, TÜV Certified, and CE Marked for all applicable directives
Power Supply	24V DC ±20%
Safety Output	2 OSSDs (max. 0.5 A)
Enclosure Rating	IP65
Cross Section	40 x 50 mm (1.57 x 1.96 in.)
Scanning Range	Finger: 0.3...7 m (0.98...22.9 ft) Hand: 0.3...16 m (0.98...52 ft)

Required Cordsets & Accessories

Description	Cat. No.
4-pin straight transmitter cable	889D-F4AC-2 ⁴
8-pin straight receiver cable	889D-F8AB-2 ⁴
Vertical shock mounting kit	440L-AF6120
Horizontal shock mount kit	440L-AF6121
Weld Shield	440L-AGWSxxxx ¹
IP67 washdown enclosure kit (limited offering)	440L-AGSTxxxx ¹
Mirror 75 mm (2.95 in.)	440L-AM075yyyy ⁵
Mirror 125 mm (4.92 in.)	440L-AM125yyyy ⁵
Muting box	445L-AMUTBOX1

- ¹ Models are available in protective heights from 160...1760 mm (6.3...69.3 in.) in 160 mm increments. To order, replace the **xxxx** in the catalog number with the protective height in mm. For example, to order 160 mm height, replace the **xxxx** with **0160** (440L-P4K**0160**YD), or for 1760 mm height, replace **xxxx** with **1760** (440L-P4K**1760**YD).
 - ⁴ Replace the **2** with **5, 10, 15, 20, or 30** for available lengths in meters.
 - ⁵ **yyyy** = mirror length in mm
- Note:** For additional information, see Safety Connection Systems (page 4-46).



Need Help?

The Rockwell Automation Support Center is your 24/7 support for the answers you need now.

www.rockwellautomation.com/support/overview.page



Presence Sensing Safety Devices

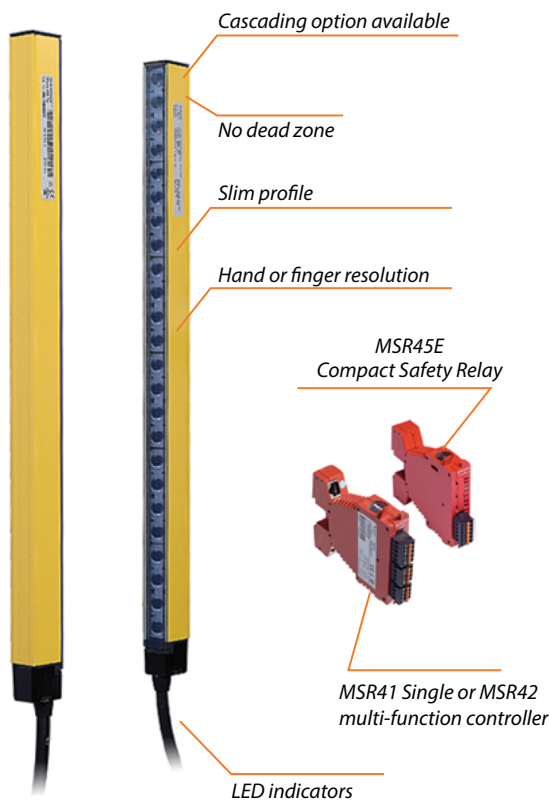


Micro 400 POC Type 4 Safety Light Curtain 445L

- Point of Operation Control (POC) for finger or hand protection
- Slim housing
- Economical three-box system
- Requires MSR41 or MSR42 controller
- Light duty (IP54)
- No dead zone
- TÜV Certified

A Slim-profile Solution for Point of Operation Control

Micro 400 are Type 4 safety light curtains with an extremely small profile of 15 x 20 mm (0.59 x 0.78 in.) and are available with both finger and hand resolution. They are designed to be built into the machine and not on the machine. This product must be used in combination with an MSR41 or MSR42 controller. The MSR42 controller is multi-functional and allows for additional functions like blanking, override, and muting.



Typical Application



Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

Micro 400 POC Type 4

Description	Cat. No. ¹	
	Finger Resolution (14 mm)	Hand Resolution (30 mm)
Micro 400	445L-P4CxxxxFP	445L-P4ExxxxFP
Micro 400 cascaded	445L-C4CxxxxFP ²	445L-C4ExxxxFP ²
Micro 400 IP69K	445L-P4CxxxxKP ²	—

¹ Models are available in protective heights from 50...1200 mm (2.0...47.2 in.) in 50 mm increments. To order, replace the **xxxx** in the catalog number with the protective height in mm. For example, to order 600 mm height, replace the **xxxx** with **0600** (445L-P4C**0600**FP), or for 1200 mm height, replace **xxxx** with **1200** (445L-P4C**1200**FP).

² Not all protective heights.

Specifications

Standards	Type 4 (IEC 61496-1, -2), PLe Cat 4 (ISO 13849-1), SIL c3 (IEC 62061)
Certifications	UL Listed, TÜV Certified, and CE Marked for all applicable directives
Enclosure Rating	IP54
Cross Section	15 x 20 mm (0.59 x 0.79 in.)
Scanning Range	Finger: 0...5 m (0...16.4 ft) Hand: 0...5 m (0...16.4 ft)
Power Supply	24V DC ±20%
Safety Output	2 OSSDs (max. 0.4 A each)

Required Cordsets & Accessories

Description	Cat. No.
Transmitter/receiver connection cable	445L-AC8RJ1 ³
Transmitter/receiver patchcord cable	445L-AC8PC1 ⁴
Flat mount kit	445L-AF6145
Adjustable flat mounting kit	445L-AF6149
MSR41 controller	440R-P221AGS
MSR42 controller	440R-P226AGS-NNR
MSR45E relay (2 N.O.)	440R-P4NANS
Ribbon cable for one MSR45E	440R-ACABL1
Muting box	445L-AMUTBOX1

³ Replace the **1** with **2**, **3**, **5**, or **8** for other available meter lengths.

⁴ Replace the **1** with **3** or **5** for other available meter lengths.



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

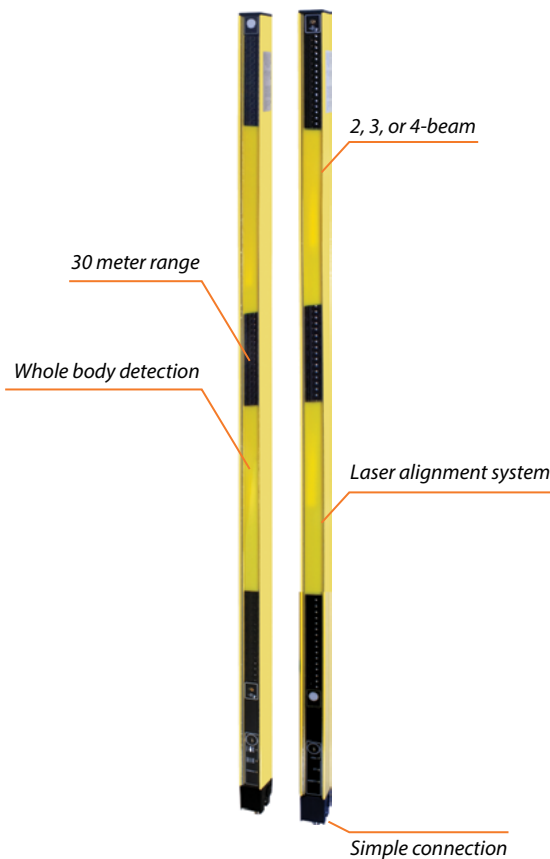


Presence Sensing Safety Devices



GuardShield™ PAC Type 4 & Safe 4/Micro 400 Safety Light Curtain 440L & 445L

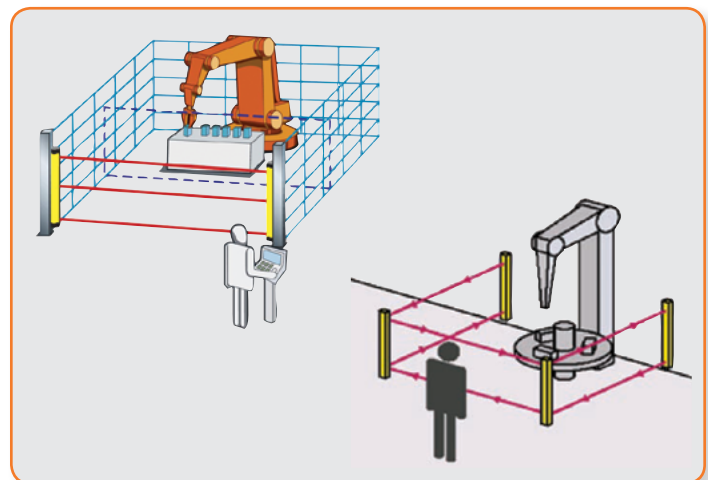
- Perimeter Access Control (PAC) for whole body detection around machines
- Two-, three-, and four-beam solution
- Integrated laser alignment tool
- Long operating range
- cULus Listed and TÜV Certified



Whole-body Detection for Machine Perimeter Safeguarding

Based on the individual safety light curtain platforms and perimeter access control (PAC), these safety light curtains are used for whole-body detection. They are typically positioned around an area or in front of a machine process entry or exit area. Multi-sided access control is attained through the use of corner mirrors. The integrated laser alignment tool makes the set up with mirrors most efficient.

Typical Application



Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

GuardShield PAC Type 4 & Safe 4/Micro 400

	Description	Cat. No.		
		2-Beam	3-Beam	4-Beam
GuardShield Type 4	PAC	440L-P4A2500YD	440L-P4A3400YD	–
	PAC with Laser	440L-P4AL2500YD	440L-P4AL3400YD	–
	PAC ArmorBlock® with Laser	440L-P4AL3400YA	440L-P4AL3400YA	–
Safe 4	PAC (short working range)	445L-103002-0048	445L-103002-0003	445L-103002-0007
	PAC (long working range)	445L-P4S2500YD	445L-P4S3400YD	445L-P4S4120YD
Micro 400	PAC	445L-110492-0002	445L-110492-0004	445L-110492-0006

Specifications

	GuardShield Type 4 PAC	Safe 4 PAC	Micro 400 PAC
Profile Cross Section	40 x 50 (1.57 x 1.97 in.)	30 x 40 (1.18 x 1.57 in.)	15 x 20 (0.59 x 0.79 in.)
Working Range	0.3...16 m (0.98...52.5 ft)	0...18 m (0...59.05 ft) 5...30 m (16.4...98.4 ft)	0...5 m (0...16.4 ft)
Enclosure Type Rating	IP65	IP65	IP54
Integrated Laser Alignment	Optional	Standard	–
5-pin ArmorBlock	Optional	Standard	–
Integrated Controller	Yes	Yes	MSR41/MSR42
Beam Coding	Yes	No	No
EDM	Yes	No	Yes
Configuration	Dip switch	No	MSR42 wiring or software
Safety	Type 4 (IEC 61496-1, -2); PLe Cat 4 (ISO 13849-1); SIL cl3 (IEC 62061)		
Aux. Output (Non-safety)	1 PNP, 0.5 A max.	No	2 PNP, 0.2 A max.
Operating Temperature [C (F)]	-10...+55° (14...131°)	0...55° (32...131°)	0...55° (32...131°)

Required Cordsets & Accessories

GuardShield Type 4

Description	Cat. No.
4-pin straight transmitter cable	889D-F4AC-2 ²
8-pin straight receiver cable	889D-F8AB-2 ²
Vertical shock mounting kit	440L-AF6120
Horizontal shock mount kit	440L-AF6121
Weld Shield	440L-AGWSxxxx ¹
IP67 washdown enclosure kit (limited offering)	440L-AGSTxxxx ¹
Muting box	445L-AMUTBOX1

Safe 4

Description	Cat. No.
Transmitter/receiver cable: 5-pin straight	889D-F5AC-2 ²
Transmitter/receiver cable: 5-pin straight, shielded	889D-F5EC-2 ²
180° adjustable mounting kit	445L-AF6141
Shock mount kit	445L-AF6142
Muting box	445L-AMUTBOX1
Mounting stand	440L-AMSTD
Mirror 75 mm (2.95 in.)	440L-AM075yyyy ³
Mirror 125 mm (4.92 in.)	440L-AM125yyyy ³

Micro 400

Description	Cat. No.
Transmitter/receiver cordset	445L-AC8RJ1 ⁴
Transmitter/receiver patchcord	445L-AC8PC1 ⁵
180° adjustable mounting kit	445L-AF6143
Flat mount kit	445L-AF6145
Adjustable flat mounting kit	445L-AF6149
MSR41 controller	440R-P221AGS
MSR42 controller	440R-P226AGS-NNR
MSR45 relay (2 N.O.)	440R-P4NANS
Muting box	445L-AMUTBOX1

¹ Replace **xxxx** for protective height.

² Replace the **2** with **5, 10, 15, 20,** or **30** for other available lengths in meters.

³ **yyyy** = mirror length

⁴ Replace the **1** with **2, 3, 5,** or **8** for other available meter lengths.

⁵ Replace the **1** with **3** or **5** for other available meter lengths.

Note: For additional information, see Safety Connection Systems (page 4-46).



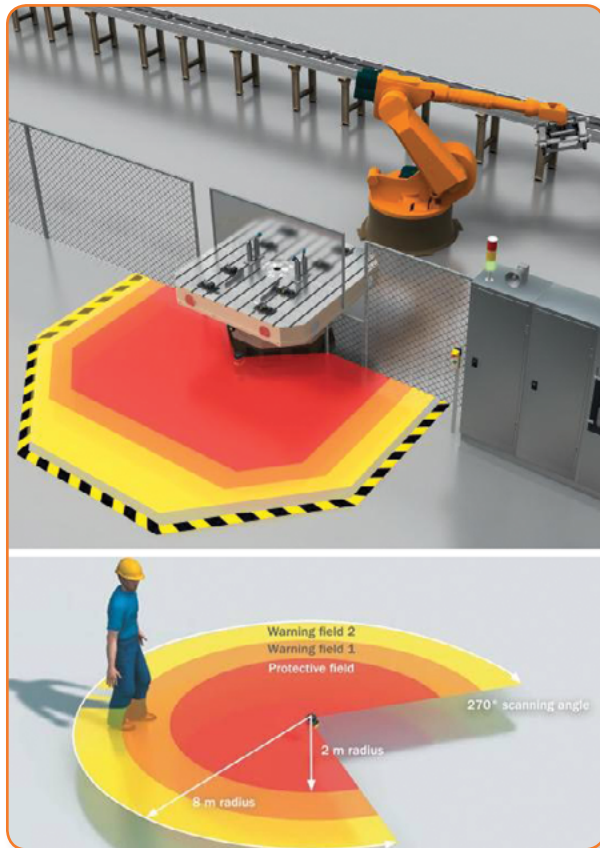
Presence Sensing Safety Devices



SafeZone™ Safety Scanners 442L

- Single-zone, multi-zone, and mini versions
- Selectable resolutions of 30, 40, 50, 70, and 150 mm
- Horizontal or vertical mounting
- Stationary or mobile applications
- Class 1 laser (eye safe)
- Rugged IP65 housings
- Easy-to-use configuration wizard
- Seven-segment diagnostic display, rotatable by 180°

SafeZone Mini

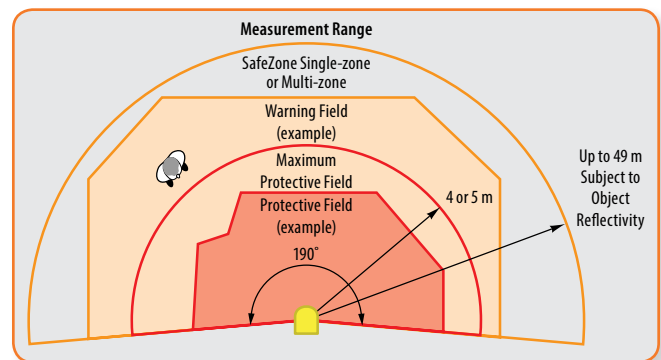


A Flexible, Easy-to-Use Machine Safeguarding Solution

SafeZone safety laser scanners are Type 3 optoelectronic devices that use reflection of emitted infrared laser light to sense a person or object within a user-defined area. The Class 1 (eye safe) infrared laser scans a 190° or 270° angular area to create a two-dimensional detection field. Light reflected off an object or person in the field is processed by the SafeZone, which sends a stop signal to the machine.

SafeZone single-zone scanners feature one user-configured sensing field, while multi-zone versions provide four switchable, configurable field sets (warning and safety).

SafeZone Single-zone and Multi-zone



Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47

Product Selection

SafeZone Safety Scanners

Model	Application Specific Resolutions	Safety Outputs	Auxiliary Outputs	Angular Scanning Range	Safety Field Range	Cat. No.
SafeZone Mini, 2 m	30, 40, 50 and 70 mm	2 PNP	2 (configurable)	270°	2 m	442L-SFZNMN
SafeZone Mini, 3 m	30, 40, 50, 70 and 150 mm	2 PNP	2 (configurable)	270°	3 m	442L-SFZNMN3
SafeZone Single-zone	30, 40, 50, 70 and 150 mm	2 PNP	1	190°	4 m	442L-SFZNSZ
SafeZone Multi-zone	30, 40, 50, 70 and 150 mm	2 PNP	1	190°	5 m	442L-SFZNMZ

Specifications

Standards	IEC 61496-3, UL 61496, IEC 61508
Safety Classification	Type 3 ISO 61496-1; SIL 2 IEC 61508, SIL cl2 62061; PLd ISO 13849-1
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives, Type 3 AOPDDR per IEC 61496, SIL 2 per IEC 61508
Power Supply	24V DC ±20%/30%
Power Consumption	55 W with max. output load, 19 W without output load

Required Cable & Cordsets

Single-zone or Multi-zone Scanner

Description	Cat. No.
Prewired I/O connector cable, 10 m	442L-CSFZNMZ-10
Prewired I/O connector cable, 20 m	442L-CSFZNMZ-20

Mini Scanner

Description	Cat. No.
M12 shielded 8 conductor cable cordset 2.5 m, required for SFZNMN	442L-ACABL2
M12 shielded 8 conductor cable cordset 10 m, required for SFZNMN	442L-ACABL10
USB programming cable, 2 m or 10 m, required to program device	442L-ACUSB-2

Single-zone, Multi-zone, and Mini Scanner

Description	Cat. No.
USB programming cable, 2 m or 10 m, required to program device	442L-ACUSB-2

Mounting Brackets

Single-zone or Multi-zone Scanner

Description	Cat. No.
Mounting kit 1: mounting bracket for direct mounting at the rear on wall or machine. No adjustment.	442L-AMBSFZNMZ1
Mounting kit 2: bracket only in conjunction with mounting kit 1. Mounting at the rear on wall or machine. Longitudinal and cross-wise adjustment possible.	442L-AMBSFZNMZ2
Mounting kit 3: bracket only in conjunction with mounting kit 1 and 2. Mounting at the rear or below the wall, floor or machine. Longitudinal and cross-wise adjustment possible.	442L-AMBSFZNMZ3

Mini Scanner

Description	Cat. No.
Mounting bracket 1 for direct mounting	442L-AMBSZMN1
Mounting bracket 2 for optical cover protection	442L-AMBSZMN2
Mounting bracket 3 longitudinal and cross wise adjustment possible	442L-AMBSZMN3 ¹
Mounting bracket 4 back plane mounting with kits 2 and 3	442L-AMBSZMN4 ²

¹ Requires bracket 1 or 2

² Required bracket 1 or 2 and 3

Accessories

Description	Cat. No.
Single-zone/Multi-zone scanner replacement front window	442L-SFZNMZW
Mini scanner replacement cover	442L-SZMWNW



Presence Sensing Safety Devices



SC300 Safety Sensor 442L

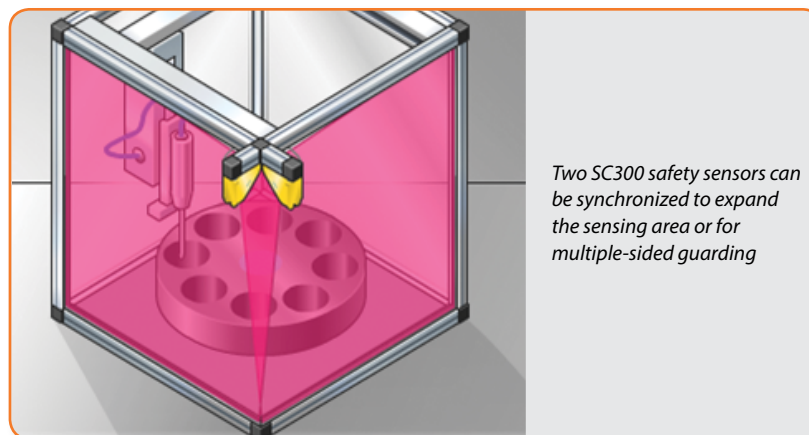
- Compact hand detection system
- 110° field of view
- Automatic alignment
- No programming software required
- Horizontal or vertical mounting
- Integrated EDM, Restart/Reset and Teach-in
- IP54 industrial-grade housing



Cost-effective, Vision-based Machine Guarding

The Allen-Bradley® Guardmaster SC300 is a compact hand detection safety sensor system, which operates based on image processing technology. The SC300 compares a two-dimensional image against a passive pattern, i.e., the background. Detection is based on an object of a certain resolution blocking the sensor's view of the pattern.

This Type 3 vision-based protective device is designed for use in certain machine-guarding applications where reflective tape can be attached to a square or rectangular frame to define the detection boundaries.



Two SC300 safety sensors can be synchronized to expand the sensing area or for multiple-sided guarding

Presence Sensing Devices



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Interlock Switches



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-44...5-45

Emergency Stop Devices

Safety Limit Switches



5-46...5-47



Product Selection


SC300 Safety Sensor

Description	Cat. No.
Guardmaster SC300 safety sensor	442L-SAFCAM1

Specifications

Standards	EN 61496-1, EN 61508, EN ISO 13849-1
Safety Classification	Cat 3 ISO 13849-1; Type 3 IEC 61496-1; SIL 2 IEC 61508, SIL cl2 IEC 62061; PLd ISO 13849-1
Certifications	cULus Listed, TÜV Certified, CE Marked for all applicable directives
Power Supply	24V DC \pm 20%
Power Consumption	4 W (24V no load), 19 W (max. output load)
Safety Outputs	2 OSSD. 0.25 A, short-circuit protected, cross fault monitored
Resolution	24 and 30 mm (based on tape kit used)
Operating Range	2.12 m (6.94 ft) max.
Sensing Area	Up to 1.5 x 1.5 m (4.92 x 4.92 ft) ¹

¹ It is possible to synchronize two SC300 safety sensors to increase the maximum monitored area to 1.5 x 3.0 m (4.92 x 9.84 ft).



Safety

Our innovative safety products and solutions improve the functional operation of your machinery while helping to increase personnel safety, efficiency and productivity.

<http://ab.rockwellautomation.com/Safety>

Required Accessories

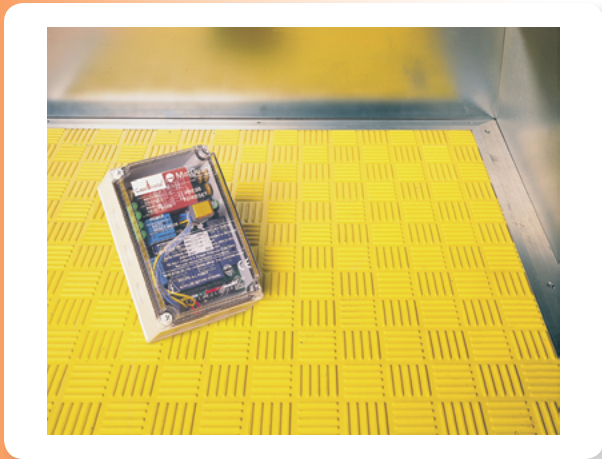
Description	Cat. No.
Reflective tape kit, 2 pcs of 1.5 m strips, 24 mm resolution with test rod	442L-ACAM24MMKIT
Reflective tape kit, 2 pcs of 1.5 m strips, 30 mm resolution with test rod	442L-ACAM30MMKIT

Accessories

Description	Cat. No.
Mounting brackets (2 brackets per kit includes 2 - M6 stainless steel socket head screws)	442L-ACAMBRK1
Teach-in stylus (1 pc supplied with each SC300)	442L-ACAMTS
Test rod 24 mm resolution (1 pc supplied with each 24 mm tape kit)	442L-ATRD24MM
Test rod 30 mm resolution (1 pc supplied with each 30 mm tape kit)	442L-ATRD30MM



Presence Sensing Safety Devices

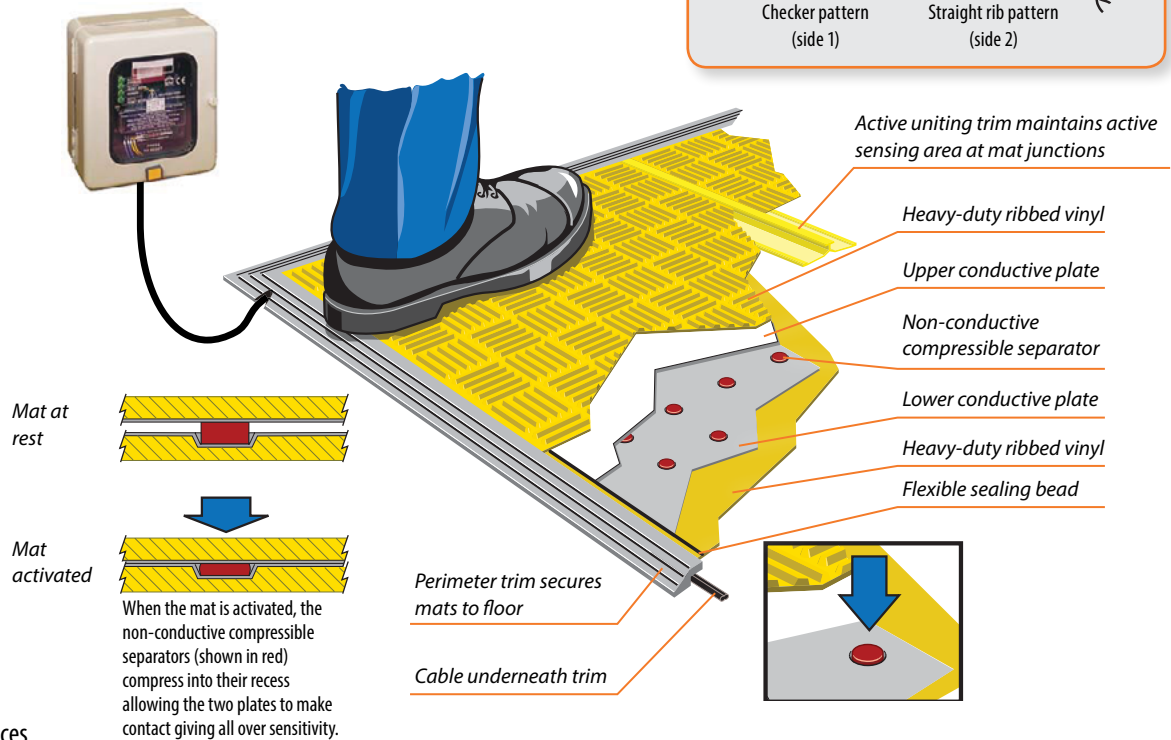
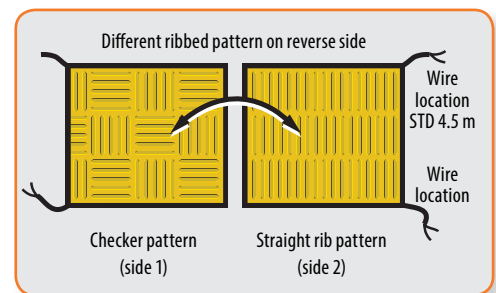


Safety Mat System 440F

- Pressure-sensitive protective device per ISO 13856 for machine safeguarding
- Hardened steel plate construction
- No dead spots
- Four-wire system to detect opens and shorts
- Withstands 4500 psi static pressure
- IP67 rated
- PLd per ISO 13849 when used with a suitable safety control

Anatomy of a Safety Mat System

When integrated to a suitable safety mat controller, it detects a presence on the mat, a short circuit, or an open circuit. Under each of these conditions, the safety control issues a stop command. Multiple mats can be combined into one safety mat system with the use of joining trim.



Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

Safety Mats

Mat Size [mm (in.)]	Cat. No.	
	Standard Perimeter Trim Kit	Safety Mat
500 x 500 (19.7 x 19.7)	440F-T1010	440F-M1010BYNN
500 x 1500 (19.7 x 59.1)	440F-T1030	440F-M1030BYNN
750 x 1500 (29.5 x 59.1)	440F-T1530	440F-M1530BYNN
1000 x 1000 (39.4 x 39.4)	440F-T2020	440F-M2020BYNN
1000 x 1250 (39.4 x 49.2)	440F-T2025	440F-M2025BYNN
1000 x 1500 (39.4 x 59.1)	440F-T2030	440F-M2030BYNN
1000 x 1800 (39.4 x 70.9)	440F-T1836	440F-M2036BYNN

Mat Control

Description	Cat. No.
MSR safety relay	440R-C23139
GSR SI (single input) safety relay	440R-S12R2
Multi-mat control	440F-C28011
440C-CR30 configurable safety relay	440C-CR30-22BBB

Specifications

Standards	ISO 13856, ISO 13849-1
Safety Classification	Mat(s), connection cabling, and suitable mat safety control can achieve PLd per ISO 13849
Functional Safety Data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Power Supply	24V DC, -20% +10%, provided by the control unit
Mechanical Life	10,000,000 operations

Required Cordsets & Accessories

Description	Cat. No.	
	4-Pin	5-Pin
Cordset	889D-F4AC-2 ¹	889D-F5AC-2 ¹
Patchcord	889D-F4ACDM-1 ²	889D-F5ACDM-1 ²
Distribution Box	898D-4 ³ LT-DM4	–
Shorting Plug	898D-41LU-DM	–
T-Port	898D-43LY-D4	–
Trim		
Standard perimeter trim (aluminum)	440F-T3210	
Aluminum external corner standard perimeter trim	440F-T3310	
Aluminum internal corner standard perimeter trim	440F-T3012	
Aluminum perimeter trim with cable channel	440F-T3013	

¹ Replace the **2** with **5** or **10** for available lengths in meters.

² Replace the **1** with **0M3**, **5**, or **10** for other available lengths in meters.

³ Replace with **4** or **8** for number of ports available.

Note: For additional information, see Safety Connection Systems (page 4-46).



Looking for More?

This catalog highlights only our most essential components; for a complete product selection, visit us at:

<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>



Interlock Switches



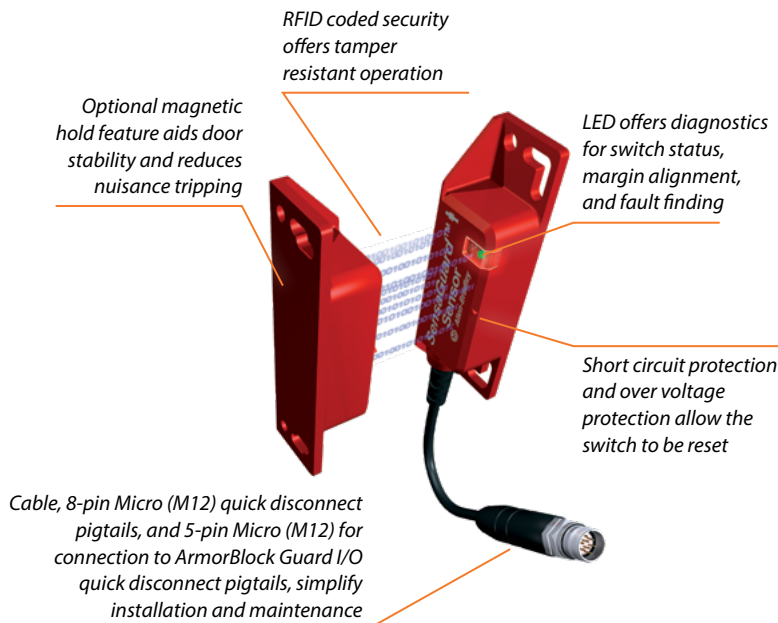
SensaGuard™ Non-Contact Switches 440N

- PLe Cat 4 per ISO 13849-1 (safety performance is maintained when connected in series)
- Type 4 interlocking device per ISO 14119 with low or high coded RFID actuators
- Standard, magnetic hold, and integrated latch versions
- IP69K washdown rating

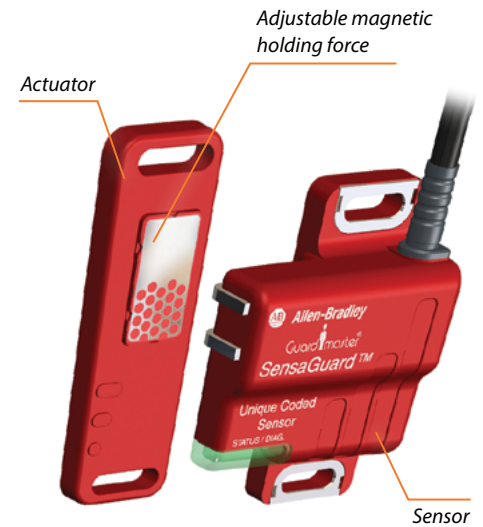
Non-contact Machine Safeguarding with RFID Technology

Featuring RFID technology for coding, inductive technology for sensing and combining a large sensing range with optimal operation and a generous tolerance to misalignment, SensaGuard switches offer a cost-effective solution that is ideally suited to a wide range of safety applications and is intended for use with all types of guard doors.

Rectangular Flat Pack Version



Integrated Latch Version



Interlock Switches

Presence Sensing Devices



5-4...5-19



5-20...5-35

Access Control



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Safety Relays



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Emergency Stop Devices



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Safety Limit Switches



5-46...5-47

Product Selection

SensaGuard Non-Contact Switches

Type	Assured Sensing Distance	Margin Indication	Magnetic Hold	Actuator Code Type	Cat. No.		
					Cable		Connector
					3 m	10 m	6 inch Pigtail, 8-pin Micro (M12) ¹
18 mm plastic barrel/18 mm actuator	On: 15 mm (0.59 in.) Off: 25 mm (0.98 in.)	–	–	Standard	440N-Z21S16A	440N-Z21S16B	440N-Z21S16H
				Unique	440N-Z21U16A	440N-Z21U16B	440N-Z21U16H
18 mm plastic barrel/30 mm actuator	On: 25 mm (0.98 in.) Off: 35 mm (1.38 in.)	–	–	Standard	440N-Z21S26A	440N-Z21S26B	440N-Z21S26H
				Unique	440N-Z21U26A	440N-Z21U26B	440N-Z21U26H
18 mm stainless steel barrel/18 mm actuator	On: 10 mm (0.39 in.) Off: 20 mm (0.79 in.)	–	–	Standard	440N-Z21S17A	440N-Z21S17B	440N-Z21S17H
				Unique	440N-Z21U17A	440N-Z21U17B	440N-Z21U17H
Plastic rectangular/ rectangular actuator	On: 15 mm (0.59 in.) Off: 35 mm (1.38 in.)	–	–	Standard	440N-Z21SS2A	440N-Z21SS2B	440N-Z21SS2H
				Unique	440N-Z21US2A	440N-Z21US2B	440N-Z21US2H
		Yes	–	Standard	440N-Z21SS2AN	440N-Z21SS2BN	440N-Z21SS2HN
				Unique	440N-Z21US2AN	440N-Z21US2BN	440N-Z21US2HN
		Yes	Yes (9 N)	Standard	440N-Z21SS2AN9	440N-Z21SS2BN9	440N-Z21SS2HN9
				Unique	440N-Z21US2AN9	440N-Z21US2BN9	440N-Z21US2HN9
Plastic housing with integrated latch	On: Contact/latched Off: 35 mm (1.38 in.)	–	Adjustable 20...60 N	Standard	440N-Z21SS3PA	440N-Z21SS3PB	440N-Z21SS3PH
				Unique	440N-Z21SU3PA	440N-Z21SU3PB	440N-Z21SU3PH

¹ For 5-pin Micro (M12) connector for connection to ArmorBlock Guard I/O, replace the **H** in the catalog letter with **J**.

Specifications

Standards	ISO 14119, IEC 60947-5-3, IEC 61508, EN ISO 13849-1
Safety Classification	Type 4 Interlocking Device per ISO 14119 (Unique/ High and Standard/ Low Coding), PLe Cat 4 per ISO 13849-1
Functional Safety Data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed (UL 508), TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page

Required Cordsets & Accessories

Description	Cat. No.
Cordset	889D-F8AB- ²
Patchcord	889D-F8ABDM- ³
Safety wired T-port	898D-438Y-D8
Safety wired shorting plug	898D-418U-DM

² Replace symbol with **2**, **5**, or **10** for standard cable lengths in meters.

³ Replace symbol with **1**, **2**, **3**, **5**, or **10** for standard lengths in meters.

Note: For 5-pin Micro (M12) connector use 889D-F5ACDM-2.

Note: For additional information, see Safety Connection Systems (page 4-46).



Interlock Switches



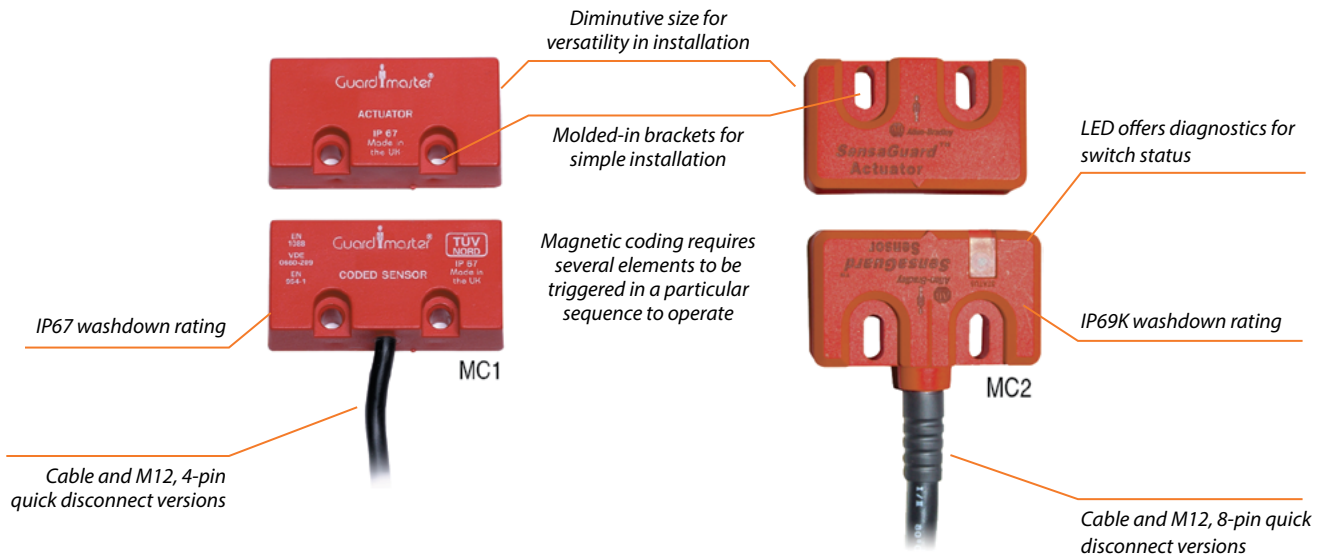
Magnetically Coded Non-Contact Switches 440N

- Non-contact actuation
- Magnetic coded sensing
- Small size
- Molded-in mounting brackets
- High tolerance to misalignment
- Type 4 interlocking device per ISO 14119 with low coded actuators

Small Size, High Integrity

With the increasing speed and complexity of applications, a simple magnetic switch may be insufficient to meet the increased risks. The Magnetically Coded MC1 and MC2 non-contact switches incorporate several magnetically sensitive elements, which must be triggered in a particular sequence to operate correctly.

The sensor with its molded-in brackets and diminutive size, is extremely versatile and simple to install.



Interlock Switches

Presence Sensing Devices



5-4...5-19



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

Magnetically Coded Non-Contact Switches

Type	Operating Voltage/ Input Current	Safety Outputs	Auxiliary Outputs	Status Indicator	Connection	Cat. No.
MC1	–	2 N.C. REEDS	–	No	4-pin micro (M12)	440N-Z2NRS1C
					3 m cable	440N-Z2NRS1A
					10 m cable	440N-Z2NRS1B
MC2	24V DC, +10%/15%/ 50 mA max.	2 N.C. Solid- State Relays	1 x PNP, 0.2 A max.; Status: OFF (0V DC)	Yes	8-pin micro (M12)	440N-Z21W1PH
					3 m cable	440N-Z21W1PA
					10 m cable	440N-Z21W1PB

Specifications

Standards	ISO 14119, IEC 60947-5-3, ISO 13849-1 when used with approved safety control
Safety Classification	Type 4 Interlocking Device with low coding per ISO 14119
Functional Safety Data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	CULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page

Required Cordsets & Accessories

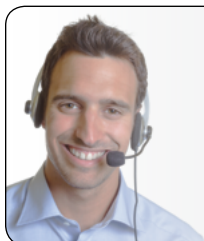
Description	Cat. No.	
Cordset	889D-F4AC ¹	889D-F8AB ¹
Patchcord	889D-F4ACDM ²	889D-F8ABDM ²
Distribution box	898D-4 ³ LT-DM4	–
Shorting plug	898D-41LU-DM	–
T-port	898D-43LY-D4	–

¹ Replace symbol with **2**, **5**, or **10** for standard cable lengths in meters.

² Replace symbol with **1**, **2**, **3**, **5**, or **10** for standard lengths in meters.

³ Replace with **4** or **8** for number of ports available.

Note: For additional information, see Safety Connection Systems (page 4-46).



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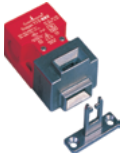




Interlock Switches



Tongue Interlock Switches 440K

- A full range of guard interlocking switches
- Holding forces up to 40 N
- Multiple actuator options
- Conduit or quick disconnect models
- Optional GD2 heavy duty stainless steel style heads for increased robustness
- Type 2 interlocking devices per ISO 14119 with low coded tongue-shaped actuators

A Complete Range of Guard Interlocking Solutions

	Trojan™ T15	Trojan T5 & T6 ¹	Elf™	Cadet™	MT-GD2
Description					
Dimensions [H x W x D]	75 x 31 x 52 mm (2.95 x 1.22 x 2.05 in.)	95 x 32 x 52 mm (3.74 x 1.26 x 2.05 in.)	75 x 25 x 29 mm (2.95 x 0.98 x 1.14 in.)	90.5 x 31 x 30.4 mm (3.56 x 1.22 x 1.2 in.)	116.5 x 38 x 40 mm (4.59 x 1.5 x 1.57 in.)
Break Contact Force	30 N	T5: 12 N typical, max. 30 N T6: 20 N	6 N	15 N	12, 32, 40 N
Safety/Aux. Contacts	2 N.C. 1 N.C./1 N.O.	T5: 2 N.C./1 N.O. T6: 3 N.C./1 N.O. T6: 2 N.C./2 N.O.	2 N.C. 1 N.C./1 N.O.	3 N.C. 2 N.C./1 N.O.	3 N.C./1 N.O. 2 N.C./2 N.O.
Material	Plastic w/plastic or metal head (GD2)	Plastic w/plastic or metal head (GD2)	Plastic w/optional metal alignment guide	Plastic w/optional metal alignment guide	Metal
Actuator Options	Standard & fully flexible	Standard, semi-flexible, & fully flexible	Flat, 90°, & semi-flexible	Flat, 90°, & semi-flexible	Standard, fully flexible, & extended flat

¹ Four-contact models are available (Trojan 6).

Interlock Switches

Presence Sensing Devices



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5-20...5-35

Access Control



5-36...5-37

Safety Relays



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Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

Trojan T15 & Trojan 5 Standard Plastic Switches

Type	Contact		Contact Action ²	Actuator Type	Cat. No.		
	Safety	Auxiliary			M20 Conduit		Connector Micro (M12) ³
					M20	1/2 in. NPT Adaptor	
Trojan T15 standard	2 N.C.	–	–	Standard	440K-T11303	440K-T11267	440K-T11307
				Fully flexible	440K-T11395	440K-T11273	440K-T11384
	1 N.C.	1 N.O.	BBM	Standard	440K-T11305	440K-T11268	440K-T11386
				Fully flexible	440K-T11396	440K-T11276	440K-T11387
Trojan T15 GD2 (metal head)	2 N.C.	–	–	GD2 Standard	440K-T11463	440K-T11288	440K-T11389
				Fully flexible	440K-T11397	440K-T11287	440K-T11390
	1 N.C.	1 N.O.	BBM	GD2 Standard	440K-T11398	440K-T11284	440K-T11392
				Fully flexible	440K-T11399	440K-T11283	440K-T11393
Trojan 5 standard	2 N.C.	1 N.O.	BBM	Standard	440K-T11090	440K-T11202	440K-T11205
				Semi-flexible	440K-T11110	440K-T11203	440K-T11206
				Fully flexible	440K-T11467	440K-T11204	440K-T11207
Trojan 5 GD2 (metal head)	2 N.C.	1 N.O.	BBM	GD2 standard	440K-T11336	440K-T11211	440K-T11366
				Semi-flexible	440K-T11337	440K-T11212	440K-T11367
				Fully flexible	440K-T11338	440K-T11213	440K-T11368
Trojan 5 30 N			BBM	Standard	440K-T11333	440K-T91024	440K-T11492

² Make Before Break (MBB) contact versions are also available.

³ Trojan T15 uses a 4-pin connector and Trojan 5 uses a 6-pin connector.

Specifications

Standards	ISO 14119, IEC 60947-5-1
Safety Classification	Type 2 Interlocking Device per ISO 14119
Functional Safety Data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Outputs	
Thermal Current/ _{I_{th}}	10 A
Switching Current @ Voltage	3 mA @ 18V DC, min.
Operating Characteristics	
Operating Radius	175 mm (6.89 in.) [60 mm (2.36 in.) with flexible actuator, min.]
Mechanical Life	1,000,000 operations

Required Cordsets & Accessories

Description	Cat. No.
GD2 standard actuator	440G-A27011
T5 standard actuator	440K-A11095
GD2 flat actuator	440K-A11112
T15 standard actuator	440K-A11238
Fully flexible actuator	440K-A27010
4-pin micro (M12) QD cordset	889D-F4AC- ⁴
4-pin micro (M12) QD patchcord	889D-F4ACDM- ⁵
6-pin micro (M12) QD cordset	889R-F6ECA- ⁴
6-pin micro (M12) QD patchcord	889R-F6ECRM- ⁵

⁴ Use **2, 5, or 10** for standard cable lengths in meters.

⁵ Use **1, 2, 3, 5, or 10** for standard cable lengths in meters.

Note: For additional information, see Safety Connection Systems (page 4-46).

For more information on our complete family of interlock switch products, please visit:
<http://ab.rockwellautomation.com/Safety>



Interlock Switches

Product Selection

Elf Miniature Plastic Switches

Contact			Actuator Type	Cat. No.		
				M16 Conduit		Connector
Safety	Auxiliary	Action		M16	1/2 in. NPT Adaptor	4-pin Micro (M12)
1 N.C.	1 N.O.	BBM	90°	440K-E33040	440K-E33030	440K-E33025
			Semi-flexible	440K-E33034	440K-E33031	440K-E33075
2 N.C.	-	-	90°	440K-E33041	440K-E33045	440K-E33024
			Semi-flexible	-	440K-E33046	440K-E33078

Cadet 3 Compact Plastic Switches

Contact			Actuator Type	Cat. No.		
				M16 Conduit		Connector
Safety	Auxiliary	Action		M16	1/2 in. NPT Adaptor	6-pin Micro (M12)
3 N.C.	-	-	90°	440K-C21097	440K-C21057	440K-C21091
			Semi-flexible	-	440K-C21062	440K-C21092
2 N.C.	1 N.O.	BBM	90°	440K-C21061	440K-C21058	440K-C21067
			Semi-flexible	-	440K-C21074	440K-C21088

Specifications

Standards	ISO 14119
Safety Classification	Type 2 Interlocking Device per ISO 14119
Functional Safety Data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Outputs	
Thermal Current/_{th}	5 A (10 A if A600)
Switching Current @ Voltage	3 mA @ 18V DC, min.
Operating Characteristics	
Operating Radius	150 mm (5.90 in.) [60 mm (2.36 in.) with semi-flexible actuator, min.]
Mechanical Life	1,000,000 operations

Required Cordsets & Accessories

Description	Cat. No.
4-pin micro (M12) QD cordset	889D-F4AC ⁻¹
6-pin micro (M12) QD cordset	889R-F6ECA ⁻¹
4-pin micro (M12) QD patchcord	889D-F4ACDM ⁻²
6-pin micro (M12) QD patchcord	889R-F6ECRM ⁻²
Flat actuator ³	440K-A21014
90° actuator ³	440K-A21006
Metal alignment guide with semi-flexible actuator	440K-A21030

¹ Use **2, 5, or 10** for standard cable lengths in meters.

² Use **1, 2, 3, 5, or 10** for standard cable lengths in meters.

³ Not to be used with metal alignment guide.

Note: For additional information, see Safety Connection Systems (page 4-46).

Interlock Switches

<p>Presence Sensing Devices</p>  <p>5-4...5-19</p>	 <p>5-20...5-35</p>	<p>Access Control</p>  <p>5-36...5-37</p>	<p>Safety Relays</p>  <p>5-38...5-43</p>	<p>Emergency Stop Devices</p>  <p>5-44...5-45</p>	<p>Safety Limit Switches</p>  <p>5-46...5-47</p>
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Product Selection

MT-GD2 Metal Body Switches

Type	Contact		Contact Action ¹	Actuator Type	Cat. No.		
	Safety	Auxiliary			M20 Conduit		Connector
					M20	1/2 in. NPT Adaptor	12-pin (M23)
MT-GD2	3 N.C.	1 N.O.	BBM	GD2 standard	440K-MT55074	440K-MT55022	440K-MT55095
				Fully flexible	440K-MT55075	440K-MT55029	440K-MT55096
	2 N.C.	2 N.O.		GD2 standard	440K-MT55076	440K-MT55026	440K-MT55098
				Fully flexible	440K-MT55077	440K-MT55087	440K-MT55099
MT-GD2 latch release	3 N.C.	1 N.O.		GD2 standard	440K-MT55078	440K-MT55041	440K-MT55070
				Fully flexible	440K-MT55079	440K-MT55045	440K-MT55103
	2 N.C.	2 N.O.		GD2 standard	440K-MT55080	440K-MT55050	440K-MT55104
				Fully flexible	440K-MT55081	440K-MT55051	440K-MT55052

¹ Make Before Break (MBB) and snap acting contact versions are also available.

Specifications

Standards	ISO 14119, ISO 13849-1, IEC 60947-5-1
Safety Classification	Type 2 interlocking device per ISO 14119
Functional Safety Data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Outputs	
Thermal Current/_{th}	10 A
Switching Current @ Voltage	3 mA @ 18V DC, min.
Operating Characteristics	
Break Contact Force	12 N (1.35 lbf), min.
Operating Radius	150 mm (5.90 in.) [60 mm (2.36 in.) with GD2 kit, min.]
Mechanical Life	1,000,000 operations

Required Cordsets & Accessories

Description	Cat. No.
12-pin (M23) QD cordset	889M-FX9AE ⁻²
GD2 standard actuator	440G-A27011
GD2 flat actuator	440K-A11112
Fully flexible actuator	440K-A27010

² Use **2**, **5**, or **10** for standard cable lengths in meters.

Note: For additional information, see Safety Connection Systems (page 4-46).



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

For more information on our complete family of interlock switch products, please visit:
<http://ab.rockwellautomation.com/Safety>

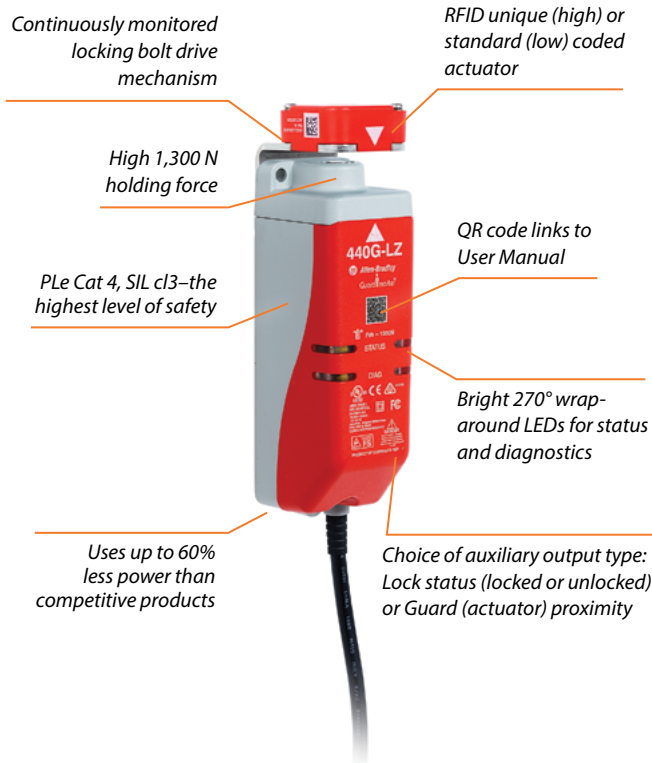


Interlock Switches



Guard Locking Switches 440G-LZ

- PLe Cat 4, SIL cl3 – the highest level of safety for guard position and lock monitoring
- Solid-state OSSD outputs
- RFID unique (high) or standard (low) coded actuators
- High holding force for partial body access applications
- Power-to-release and power-to-lock versions
- IP69K and hygienic design
- Type 4 interlocking device with guard locking per ISO 14119 with low or high coded RFID actuators
- Auxiliary output versions: lock status or guard proximity



Interlock Switches

The Highest Level of Safety

The Allen-Bradley Guardmaster 440G-LZ is a guard locking switch designed for partial body access guards. Combining microprocessor technology with an RFID coded actuator, the 440G-LZ features a locking bolt drive mechanism that will only lock when the correct actuator is detected. The locking bolt is continuously monitored for correct insertion within the actuator. This extra functionality allows the 440G-LZ to be certified PLe Cat 4, SIL cl3 – the highest level of safety for guard position and lock monitoring – and it can be connected directly or in series with other PLe Cat 4 or SIL cl3 rated safety devices.



Presence Sensing Devices



5-4...5-19



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

440G-LZ Guard Locking Switches

Locking Type	Actuator Type	Cat. No. ¹			
		Connector Type			
		3 m Lead	10 m Lead	6-in. Pigtail with M12 5-pin QD	6-in. Pigtail with M12 8-pin QD
Power-to-release	Standard (low level to EN/ISO 14119:2013)	440G-LZS21S⊗RA	440G-LZS21S⊗RB	440G-LZS21SJRJ	440G-LZS21S⊗RH
	Unique (high level to EN/ISO 14119:2013)	440G-LZS21U⊗RA	440G-LZS21U⊗RB	440G-LZS21UJRJ	440G-LZS21U⊗RH
Power-to-lock	Standard (low level to EN/ISO 14119:2013)	440G-LZS21S⊗LA	440G-LZS21S⊗LB	440G-LZS21SJLJ	440G-LZS21S⊗LH
	Unique (high level to EN/ISO 14119:2013)	440G-LZS21U⊗LA	440G-LZS21U⊗LB	440G-LZS21UJLJ	440G-LZS21U⊗LH

¹ To select auxiliary output type, replace ⊗ in front of last two letters in catalog number with **P** for lock status or **T** for guard proximity. Example: 440G-TZS21UTRH.



Connected Components
Simpler, faster, cost-effective machine building.
www.rockwellautomation.com/go/cc

Specifications

Standards	ISO 14119, IEC 60947-5-3, ISO 13849-1, IEC 62061
Safety Classification	Type 4 Interlocking Device with Guard Locking per ISO 14119 with low (standard) and high (unique) coding per ISO 14119 PLe Cat 4 per ISO 13849-1 and SIL cl3 per IEC 62061
Functional Safety	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Power Supply	24V DC +10%/-15% Class 2 SELV
Holding Force Fzh (ISO 14119:2013)	1,300 N
Safety Outputs	2 x PNP, 0.2 A max., Status: ON (+24V DC)
Auxiliary Outputs	1 x PNP, 0.2 A max., Status: OFF (0V DC)
Enclosure Type Rating	NEMA 3, 4X, 12, 13, IP66, IP67, IP69K

Required Cordset & Accessories

Description	Cat. No.
8-pin micro (M12) QD cordset	889D-F8AB- ²
Standard power-to-release actuator	440G-LZASPR
Unique power-to-release actuator	440G-LZAUPR
Standard power-to-lock actuator	440G-LZASPL
Unique power-to-lock actuator	440G-LZAUPL
Actuator mounting bracket	440G-LZAM1
Switch body mounting bracket	440G-LZAM2

² Use **2**, **5**, or **10** for standard cable lengths in meters.

Note: For additional information, see Safety Connection Systems (page 4-46).



Interlock Switches

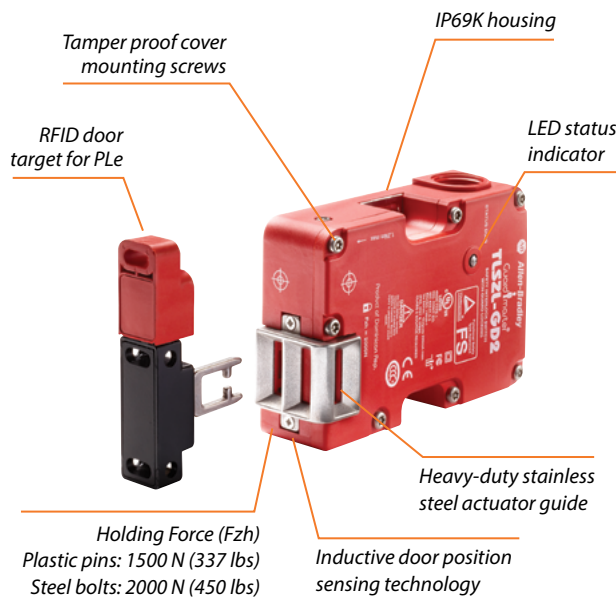


TLS-Z GD2 Guard Locking Switches 440G

- Type 4 Interlocking Devices with guard locking
- Meets PLe, Cat 4 per ISO 13849-1, the highest level of safety
- RFID high level coded actuator
- Solid-state series connectable OSSD outputs
- High holding force (Fzh)
- Power-to-release and power-to-lock versions
- Auxiliary output versions: lock status or guard proximity

Guard Locking Plus RFID Technology for Full-body Access

The TLS-Z GD2 Guard Locking Switch is an interlock switch that has a uniquely coded RFID door sensor with inductive door position sensing technology. This switch can detect if an actuator key breaks or becomes separated from its door mounted position. Built with the same solid-state technology as the SensaGuard, this switch supports the highest level of safety – Performance Level “e”, Cat 4 per ISO 13849-1 for the guard position and lock monitoring.



Interlock Switches

Presence Sensing Devices



5-4...5-19



5-20...5-35

Access Control



5-36...5-37

Safety Relays



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Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

TLS-Z GD2 Guard Locking Switches

Type	Outputs		Voltage	Connector	Cat. No. ¹
	Safety (OSSD)	Auxiliary			
Power-to-release	2 x PNP, 0.2 A max., Status: ON (+24V DC)	1 x PNP, 0.2 A max., Status: OFF (0V DC)	24V DC	8-pin micro (M12)	440G-TZS21U⊗RH
Power-to-lock					440G-TZS21U⊗LH

¹ To select auxiliary output type, replace ⊗ in front of last two letters in catalog number with **P** for lock status or **T** for guard proximity. Example: 440G-TZS21UTRH.

Specifications

Standards	ISO 14119, IEC 60947-5-3, ISO 13849-1
Safety Classification	Type 4 Interlocking Device with Guard Locking per ISO 14119 with high (unique) coding per ISO 14119 PLe Cat 4 per ISO 13849-1
Functional Safety	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Power Supply	24V DC +10%/-15% Class 2
Holding Force Fzh (ISO 14119)	Plastic pins: 1500 N (337 lbs) Steel bolts: 2000 N (450 lbs)
Safety Outputs	2 x PNP, 0.2 A max., Status: ON (+24V DC)
Auxiliary Outputs	1 x PNP, 0.2 A max., Status: OFF (0V DC)
Enclosure Type Rating	NEMA 3, 4X, 12, 13, IP66, IP67, IP69K

Required Cordset & Accessories

Description	Cat. No.
8-pin micro (M12) QD cordset	889D-F8AB- ¹
Spare RFID door target	440G-ATZA
Fully flexible actuator	440G-A27143
Cover for TLS-1 with external override key	440G-A27371
Cover for TLS-1 with override key attached	440G-A27373
Emergency override key	440G-A36026
Flexible release – 1 m (3.28 ft) cable	440G-A27356
Flexible release – 3 m (9.84 ft) cable	440G-A27357
Dust cover	440K-A17183

¹ Use **2**, **5**, or **10** for standard cable lengths in meters.

Note: For additional information, see Safety Connection Systems (page 4-46).

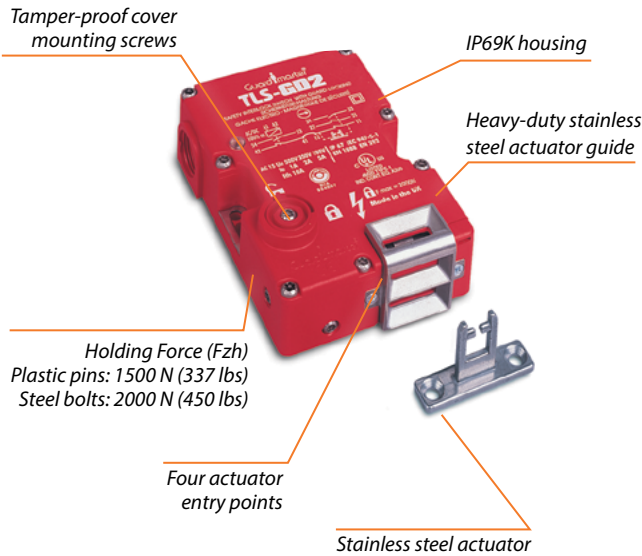


Interlock Switches



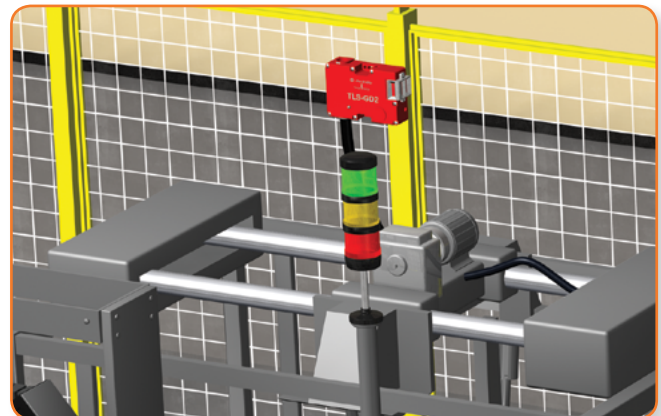
TLS-GD2 Guard Locking Switches 440G

- Type 2 Interlocking Devices with guard locking and low coded (tongue-shaped) actuators per ISO 14119
- Plastic enclosure with stainless steel actuator guide
- High holding force (Fzh)
- Power-to-release and power-to-lock versions
- Four actuator entry points
- Escape release versions
- Quick disconnect versions
- Large range of accessories



For Demanding Full-body Access Applications

The TLS-GD2 is for demanding full-body access guard locking applications where “zero volt” connectivity is needed. A stainless steel actuator guide is fitted to protect the unit from actuator damage due to poor guard alignment or guard wear. The TLS-GD2 is available in two versions: TLS-3 GD2 is power-to-release while the TLS-2 is power-to-lock. Each product has five sets of contacts of various forms. Four actuator entry points are possible; two manual release points. Optional key release and escape release versions are available. An ingress rating of IP69K makes TLS-GD2 suitable for washdown applications.



Interlock Switches

Presence Sensing Devices



5-4...5-19



5-20...5-35

Access Control



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

TLS-GD2 Guard Locking Switches

Type	Contacts		Solenoid		Actuator Type	Cat. No.			
						Conduit		Connector	
	Safety	Auxiliary	Contacts	Voltage		M20	1/2 in. NPT Adaptor	12-pin M23	8-pin Micro (M12) ¹
TLS-2 GD2 power-to-lock	2 N.C.	1 N.O.	1 N.C. & 1 N.O.	24V AC/DC	–	440G-T27127	–	440G-T27239	440G-T2NBBPH-1L
					GD2 standard	440G-T27255	440G-T27175	440G-T27240	–
					Fully flex	440G-T27256	440G-T27177	440G-T27241	–
				110V AC/DC	–	440G-T27132	–	–	–
					GD2 standard	440G-T27257	440G-T27178	–	–
					Fully flex	440G-T27258	440G-T27180	–	–
230V AC/DC	–	440G-T27129	–	–	–				
TLS-3 GD2 power-to-release	2 N.C.	1 N.O.	2 N.C.	24V AC/DC	–	440G-T27134	–	440G-T27245	440G-T2NBBPH-2R
					GD2 standard	440G-T27259	440G-T27181	440G-T27246	–
					Fully flex	440G-T27260	440G-T27183	440G-T27247	–
				110V AC/DC	–	440G-T27138	–	–	–
					GD2 standard	440G-T27261	440G-T27184	–	–
					Fully flex	440G-T27262	440G-T27186	–	–
230V AC/DC	–	440G-T27136	–	–	–				
TLS-3 GD2 power-to-release with escape release	2 N.C.	1 N.O.	2 N.C.	24V AC/DC	–	440G-T21BNPM-2B	440G-T21BNPT-2B	440G-T21BNPL-2B	440G-T2NBNPH-2B
					GD2 standard	440G-T21BGPM-2B	440G-T21BGPT-2B	440G-T21BGPL-2B	–
				110V AC/DC	–	440G-T21BNPM-5B	440G-T21BNPT-5B	–	–
					GD2 standard	440G-T21BGPM-5B	440G-T21BGPT-5B	–	–

¹ With an 8-pin micro connector, not all contacts are connected.

Specifications

Standards	ISO 14119, IEC 60947-5-1
Safety Classification	Type 2 Interlocking Device with Guard Locking and low coding (tongue) per ISO 14119
Functional Safety Data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Outputs	
Thermal Current/_{I_{th}}	10 A
Switching Current @ Voltage	3 mA @ 18V DC
Operating Characteristics	
Break Contact Force	20 N (4.5 lbf), min.
Operating Radius	160 mm (6.3 in.) [80 mm (3.15 in.) with flexible actuator], min.
Mechanical Life	1,000,000 operations

Required Cordsets & Accessories

Description	Cat. No.
8-pin micro (M12) QD cordset	889D-F8AB ²
12-pin M23 QD cordset	889M-F12AH ²
8-pin micro (M12) QD patchcord	889D-F8ABDM ³
12-pin M23 QD patchcord	889M-F12AHMU ⁴
GD2 standard actuator	440G-A27011
Fully flexible actuator	440G-A27143
Cover for TLS-3 external override key	440G-A27372
Cover for TLS-3 with override key attached	440G-A27374
Flexible release—1 m (3.28 ft) cable	440G-A27356
Flexible release—3 m (9.84 ft) cable	440G-A27357
Sliding bolt actuator	440K-AMDS
Mounting plates	440K-AMDSMPB

² Use **2, 5, or 10** for standard cable lengths in meters.

³ Use **1, 2, 3, 5, or 10** for standard cable lengths in meters.

⁴ Use **0M3, 0M6, 1, 2, or 3** for standard cable lengths in meters.

Note: For additional information, see Safety Connection Systems (page 4-46).

For more information on our complete family of interlock switch products, please visit:
<http://ab.rockwellautomation.com/Safety>



Interlock Switches



Trapped Key Switches 440T

- Interlocking for pre-determined sequence of events
- All stainless interlocking and coded parts
- Weather cap as standard
- Standard red color-coded key and ID tags
- A complete range of isolators, gate (guard) interlocks, key exchange units and specialty devices
- Type 2 Interlocking Devices per ISO 14119 (Interlocking part of Trapped Key Systems)
- PLd, Cat 3 per ISO 13849

Trapped Key Interlocks – Why Use Them?

Based upon the premise that a key cannot be in two places at once, trapped key interlock systems can be configured to provide that a predetermined sequence of events takes place or that hazards have been reduced before operators can become exposed to them.

A trapped key interlock system is mechanical and is therefore widely used in applications including those where the location of plant, environment, or explosive atmospheres make the use of electrical interlock systems unsuitable or expensive to install. In addition, unique coding can be provided, leading to a greater degree of security and tamper-resistance.

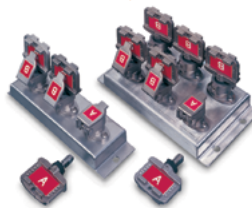
In order to derive the full benefits from a trapped key interlocking system its components must be totally practical, easily maintainable, and readily available. The unique key and code barrel of Prosafe® gives the ability for even complicated interlocking systems and spare parts to be ordered from our worldwide network of distributors fast – which is a first for trapped key interlocks.

Isolators



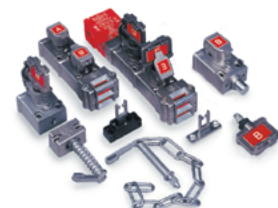
Designed to isolate the machine's power and ensure the power remains off while the key is being used in another part of the interlocking system.

Exchange Units



Used in an interlocking sequence to link other devices.

Interlocks



Ideal for interlocking guard doors, cams and valves.

To see our complete Prosafe solution (from access and chain switches to miniature valve switches, switchgear adaptors and more):

Go to ab.rockwellautomation.com/Safety

Interlock Switches

Presence Sensing Devices



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5-20...5-35

Access Control



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Safety Relays



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Emergency Stop Devices



5-44...5-45

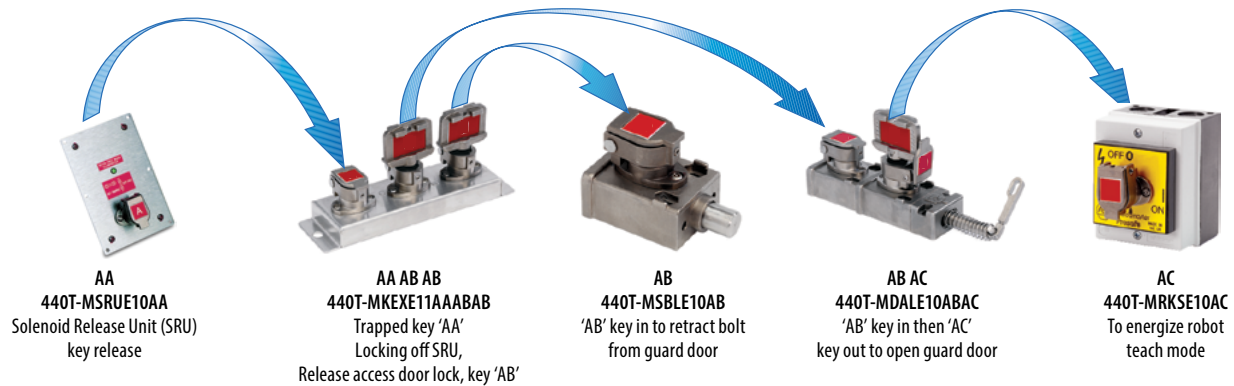
Safety Limit Switches



5-46...5-47

Design Suggestions for an Interlocking System

Plant and Machinery Interlocking

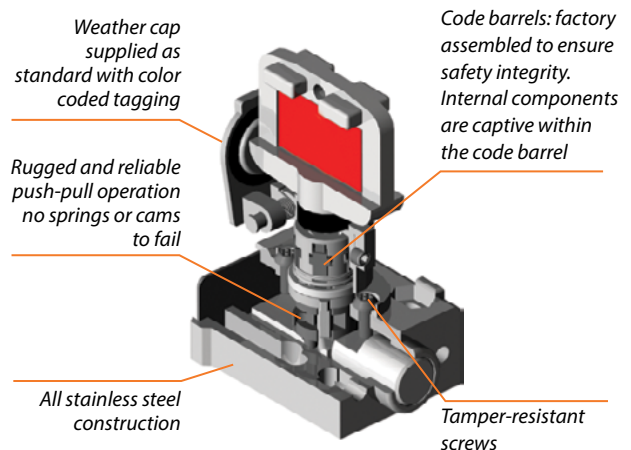


Sequence of Operation

1. The Solenoid Release Unit (SRU) is used for electrical isolation of machinery to improve safe access. It consists of a rotary power switch and a solenoid. The trapped key can be removed once an external signal is given to its internal solenoid locking mechanism. An indicator light on the solenoid release unit indicates when the trapped key "AA" key can be removed. Insert the "AA" key into the Key Exchange Unit (KEX) and turn it 90°.
2. Turn one of the "AB" keys 90° and remove it from the KEX. This traps the "AA" key in the KEX and prevents the restarting of the machine.
3. Insert the "AB" key into the Single-key Bolt Lock (SBL) and turn it 90° to gain partial body access to the machine.
4. Turn the second "AB" key 90° and remove it from the KEX. Removal of this key also traps the "AA" key in the KEX and prevents the restarting of the machine.
5. Turn the second "AB" key 90° and remove it from the KEX. Removal of this key also traps the "AA" key in the KEX and prevents the restarting of the machine.
6. Insert the "AB" key into the Dual-key Access Lock (DAL) and turn it 90°.
7. Turn the "AC" key 90° and remove the "AC" key. Rotate the access handle to allow full body entry into the hazard zone.
8. Take the "AC" key into the hazard zone, insert it into the rotary key switch (RKSE) and turn it 90° to send a signal to the machine control system, to allow the machine to operate in a slow or teach mode.
9. Reverse the process to return the machine to full operational mode.

Specifications

Standards	ISO 14119, DGVV GS-ET-31, ISO 13849-1
Safety Classification	Type 3 Interlocking Device per ISO 14119 PLd, Category 3 per ISO 13849-1
Functional Safety	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page



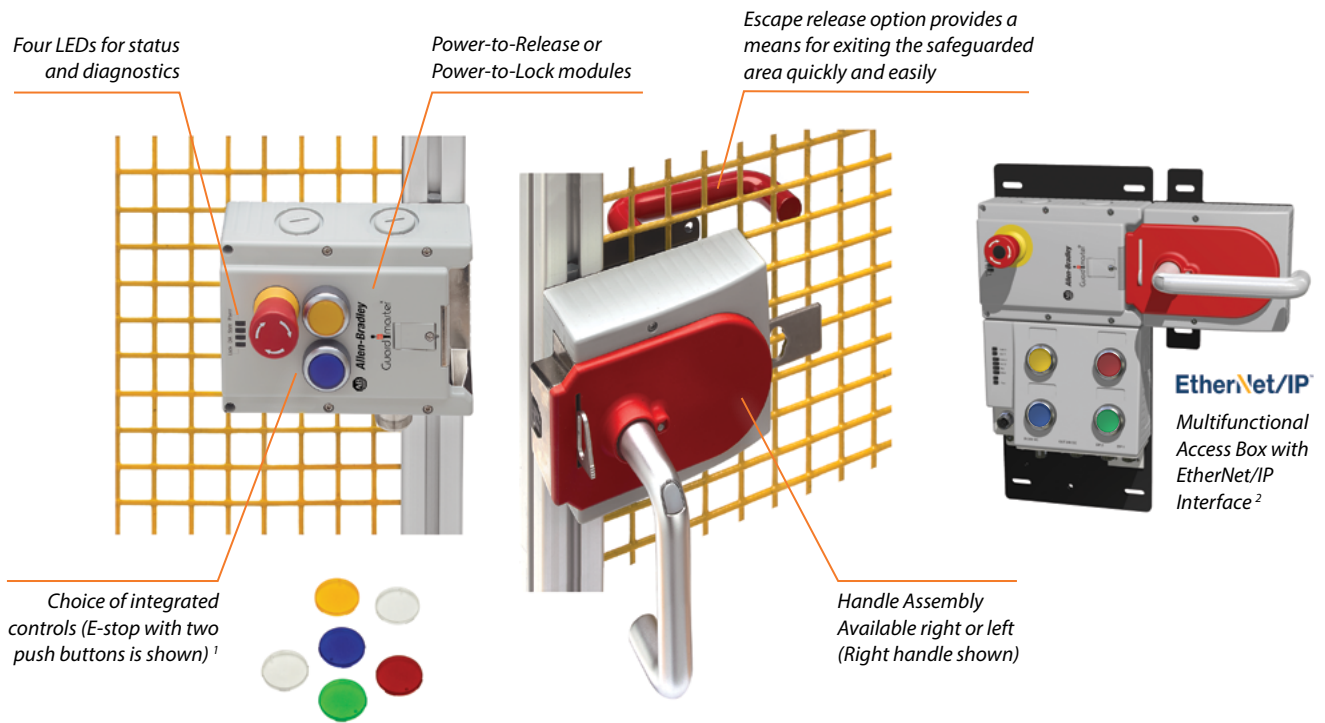
Access Control



Multifunctional Access Box 442G

- High holding force (Fzh) 2000 N per ISO 14119
- Power-to-Release or Power-to-Lock modules
- Diagnostic outputs for door position, bolt position, and lock status are available to the control system
- Standard models can be operated as a standalone device or in series with other devices, maintaining a PLe Cat 4 safety rating to ISO 13849-1
- Ethernet models enable easy integration in a networked automation control system using Studio 5000 Logix Designer

The Guardmaster® 442G Multifunctional Access Box, is an integrated access control and guard locking device which provides a complete safeguarding solution for full body access applications.



¹ Units with push buttons are supplied with a kit of colored caps, including one each of blue, green, red and yellow, and two white.
² Shown with required mounting plate.

Access Control

Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35



5-36...5-37

Safety Relays



5-38...5-43

Emergency Stop Devices



5-44...5-45


Safety Limit Switches



5-46...5-47

Product Selection

Step 1: Select Handle Assembly

Description		Cat. No.
Right handle		442G-MABH-R
Left handle		442G-MABH-L
Handle assembly mounting plate ¹		442G-MABAMPH

¹ Handle assembly mounting plate is required for Ethernet versions, optional for standard.

Step 2: Lock Module (Standard or Ethernet)

Standard Lock Module		
Lock Type	Connector	Catalog Number
Power-to-release	M23 (19-pin)	442G-MABR-U⊗M-◆
	M20 cable entry	442G-MABR-UT-◆
Power-to-lock	M23 (19-pin)	442G-MABL-U⊗M-◆
	M20 cable entry	442G-MABL-UT-◆
Ethernet Lock Module		
Lock Type	Description	Catalog Number
Power-to-release	Two push buttons ²	442G-MABRB-U⊗-P49
Power-to-lock		442G-MABLB-U⊗-P49
Power-to-release	E-stop, two push buttons ²	442G-MABRB-U⊗-E0P49
Power-to-lock		442G-MABLB-U⊗-E0P49
Power-to-release	E-stop, four push buttons, enabling switch connector ²	442G-MABRB-U⊗-E0JP4679
Power-to-lock		442G-MABLB-U⊗-E0JP4679

² Covers with push buttons are supplied with a colored lens kit, including one each of blue, green, red and yellow, and two white.

⊗ Replace ⊗ with **R** for use with right handle or **L** for use with left handle.

◆ Replace the ◆ with the code for the selected cover controls.
Example: 442G-MABR-UT-**C01**

Specifications







Standards	Interlocking Device: ISO 14119, IEC 60947-5-3, ISO 13849-1 EStop: ISO 13850, IEC 60947-5-1, IEC 60947-5-5
Safety Classification of Interlocking Device Functions	Type 4 Interlocking Device with Guard Locking per ISO 14119 with high (unique) coding per ISO 14119 PLe Cat 4 per ISO 13849-1
Functional Safety	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TUV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Power Supply	Class 2 PELV 24V DC +10/-15% required
Holding Force Fzh (ISO 14119)	2000 N (450 lbs)
Safety Outputs	Semiconductor outputs, PNP
Enclosure Type Rating	IP65

Accessories

Description	Cat. No.
Escape release assembly w/standard actuation shaft (115 mm)	442G-MABE1
Escape release mounting plate	442G-MABAMPE
Escape release shaft (250 mm)	442G-MABASHFT
Lock module mounting plate	442G-MABAMPL
19-pin M23 2 m cordset ³	889M-F19RM-2

³ For additional cordset lengths, please visit our online product directory.

Cover Controls

Description		Cat. No.
Blank cover		C00
One illuminated push button ²		C01
Two illuminated push buttons ²		C02
E-stop with two illuminated push buttons ²		C03
E-stop with three illuminated push buttons ²		C04
E-stop only		C05

² Covers with push buttons are supplied with a colored lens kit, including one each of blue, green, red and yellow, and two white.

Note: If you selected right handle assembly and want a power-to-release lock module with a (19-pin) M23 connector and two illuminated push buttons, you would order 442G-MABR-URM-C02.



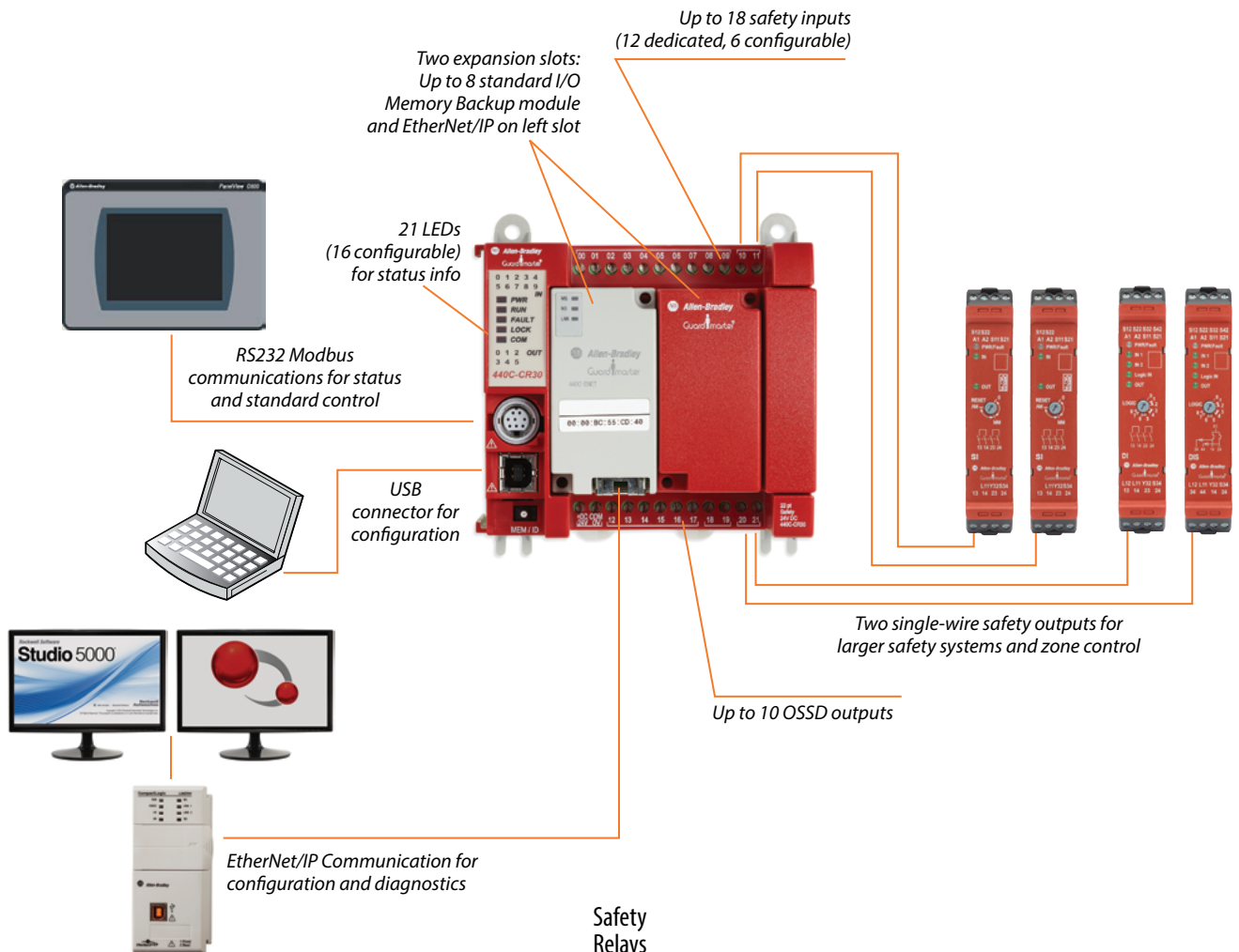
Safety Relays

Safety



Software-Configurable Relay 440C

- Monitoring and Configuration from Studio 5000 Logix Designer® or Connected Components Workbench software
- PLe Cat 4 per EN ISO 13849-1 & SIL cl3 per IEC 62061
- Predefined function blocks
- AND, OR, NAND, NOR, XOR Logic functions
- 22-point embedded safety I/O
- Expandable via two Micro800® Plug-in I/O Modules
- Expandable with EtherNet/IP™ plug-in
- Embedded communication via USB programming port and non-isolated RS-232 serial port
- Two single-wire safety input/output points



Safety Relays

Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35

Access Control



5-36...5-37



5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



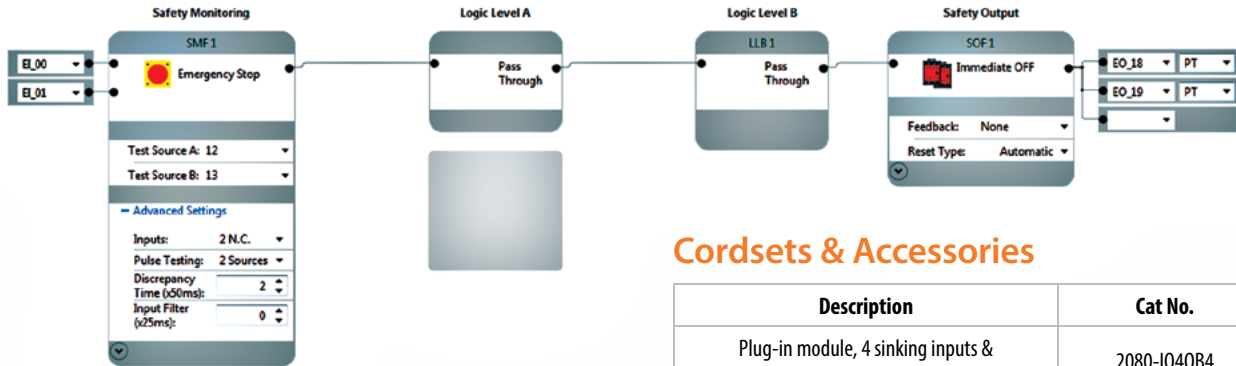
5-46...5-47

Product Selection

Software Configurable Relay

Relay Type	No. of Inputs	Type of Inputs	No. of Outputs	Cat No.
Software Configurable	Up to 18	1 N.C., 2 N.C., 3 N.C., 10 SSD, 20 SSD, 30 SSD, Mat, 2-hand control	Up to 10	440C-CR30-22BBB

Configuration with Connected Components Workbench



Cordsets & Accessories

Description	Cat No.
Plug-in module, 4 sinking inputs & 4 sourcing outputs	2080-IQ4OB4
Power supply, 120/240V AC	2080-PS120-240VAC
4-pt digital input, 12/24V DC, sink/source, IEC3	2080-IQ4
4-pt digital output, 12/24V DC, source	2080-OB4
4-pt relay output, individually isolated, 2 A	2080-OW4I
Memory backup and restore plug-in module	2080-MEMBAK-RTC
EtherNet/IP plug-in module	440C-ENET
Communication Cables	
8-pin mini DIN to 8-pin mini DIN 0.5 m (1.5 ft)	1761-CBL-AM00
8-pin mini DIN to 8-pin mini DIN 2 m (6.5 ft) cable	1761-CBL-HM02
8-pin mini DIN to 9-pin D shell 0.5 m (1.5 ft) cable	1761-CBL-AP00
8-pin mini DIN to 9-pin D shell 2 m (6.5 ft) cable	1761-CBL-PM02
Straight male RJ45 to straight male RJ45 ethernet patchcord, 8-conductor (4 pair), Cat 5e, TPE, 2m length	1585J-M8TBJM-2
Right angle male RJ45 to straight male RJ45 ethernet patchcord, 8-conductor (4 pair), Cat 5e, TPE, 2m length	1585J-M8TBJM-2
Left angle male RJ45 to straight male RJ45 ethernet patchcord, 8-conductor (4 pair), Cat 5e, TPE, 2m length	1585J-M8TBJM-2

Specifications

Safety Rating	Up to SIL cl3 Cat 4 per IEC 61508 and PLE per ISO 13849-1
Number of I/O	22 (plus 16 additional on plug-in modules)
Operating Temperature [C (F)]	-5...+55 ° (23...131 °)
Operating Voltage	20.4...26.4V DC UL Class 1, Div 2, PELV/SELV
Power Consumption	5.28 W
Output Current	0.5 A continuous, 1 A surge per point
Response Times	Safety inputs <45 ms Safety mats < 70 ms Single-wire safety output <60 ms
Dimensions	90 x 100 x 80 mm (3.54 x 3.94 x 3.15 in.)



Looking for More?

This catalog highlights only our most essential components; for a complete product selection, visit us at:

<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>



Safety Relays

Safety

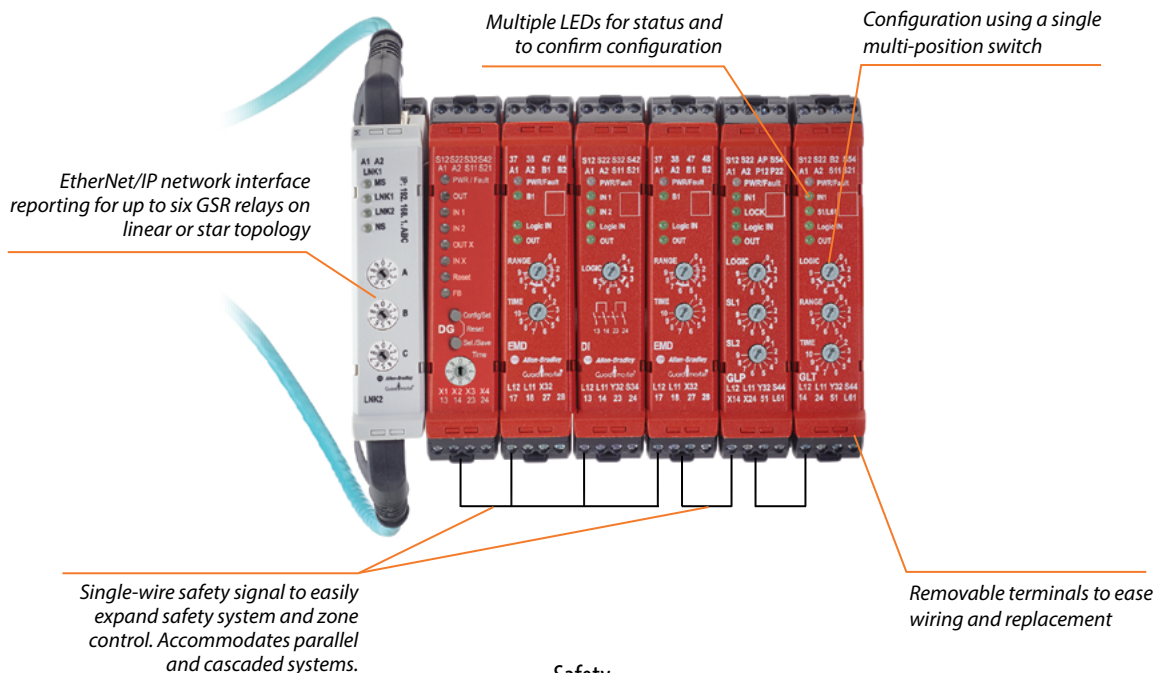


Guardmaster Safety Relays (GSR Family) 440R

- A broad range of safety functions
- Simple logic, reset, and timing configurations
- Single-wire safety relay connection
- Universal inputs
- Compact 22.5 mm housings
- Optional EtherNet/IP network interface

Guardmaster Safety Relays

The Allen-Bradley Guardmaster Safety Relays include units capable of monitoring a broad range of safety devices in a variety of applications. These units can achieve most of the functions safety systems require, helping simplify purchasing and parts management. The family is designed to meet new functional safety standards, such as EN ISO 13849-1 or IEC/EN 62061 and offers key functions to simply installations and system complexity.



Safety Relays

Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35

Access Control



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Emergency Stop Devices



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Safety Limit Switches



5-46...5-47

Product Selection

Guardmaster Safety Relays

Relay Type	No. of Inputs	Inputs	Immediate Safety Outputs	Delayed Safety Outputs	Time Delay	Immediate Auxiliary Outputs	Power Supply	Cat No.
Dual GuardLink (DG)	2 dual-channel and 1 SWS	1 N.C., 2 N.C., OSSD, GuardLink	SWS	2 N.O.	0 ms...30 s	up to 1 S.S.	24V DC	440R-DG2R2T
Dual Input (DI)		1 N.C., 2 N.C., OSSD, safety mat	2 N.O.	–	–	1 S.S.		440R-D22R2
Dual Input Solid-State Output (DIS)			2 S.S.					440R-D22S2
Single Input (SI)	1 dual-channel	1 N.C., 2 N.C., OSSD, safety mat	2 N.O.	–	–	1 S.S.	24V DC	440R-S12R2
Compatible Input (CI)		–	3 N.O.					440R-S13R2
Guard Locking Proximity (GLP)	1 dual channel, 2 PNP and 1 SWS	2 N.C., OSSD	2 S.S.	–	–	1 S.S.	24V DC	440R-GL2S2P
Guard Locking with Time Delay (GLT)	1 dual-channel and 1 SWS	2 N.C. or OSSD	2 S.S.	2 S.S.	100 ms...30 min	1 S.S.	24V DC	440R-GL2S2T
Expansion Module (EM)	1 single-wire safety	–	4 N.O.	–	–	1 S.S.	24V DC	440R-EM4R2
Expansion Module Time Delayed (EMD)			DI/SI: 2 N.O. CI: 3 N.O. DIS: 2 PNP (14, 24); 2 decoupled (34, 44) EM: 4 N.O. EMD: 4 N.O. delayed DIS/GLP: 2 PNP safety, 2 PNP lock	4 N.O.	100 ms...300 s on or off delay 100 ms...20 s jog			440R-EM4R2D
Ethernet Module							24V DC	440R-ENETR

Specifications

Standards	IEC 60204-1, ISO 13849-1, IEC 61508
Safety Classification	DI/DIS/CI/SI/EM/EMD/GLT: Suitable up to PLe and Cat 4 per ISO 13849-1, SIL cl3 per IEC 61508/ IEC 62061:2006 depending on architecture and application characteristics GLP: Suitable up to PLd and Cat 3 per ISO 13849-1, SIL cl2 per IEC 61508:2010/IEC 62061 depending on architecture and application characteristics
Certifications	cULus Listed, TÜV Certified, China RoHs, CCCs, SMark and CE Marked for all applicable directives
Enclosure Type Rating/ Terminal Protection	IP40 (NEMA 1)/IP20
Operating Temperature [C (F)]	-5...+55 ° (23...131 °)
Mounting	35 mm DIN Rail
Conductor Size, Max.	0.2...4 mm ² (24...12 AWG)

Required Cordsets & Accessories

Description	Cat No.
Straight male RJ45 to straight male RJ45 ethernet patchcord, 8-conductor (4 pair), Cat 5e, TPE, 2 m length ¹	1585J-M8TBJM-2
Right angle male RJ45 to straight male RJ45 ethernet patchcord, 8-conductor (4 pair), Cat 5e, TPE, 2 m length ²	1585J-E8TBJM-2
Left angle male RJ45 to straight male RJ45 ethernet patchcord, 8-conductor (4 pair), Cat 5e, TPE, 2 m length ³	1585J-L8TBJM-2
GSR Replacement Screw Terminal kit, 4 pcs	440R-ATP4
GSR Replacement Spring Clamp Terminal kit, 4 pcs	440R-ATSC4

¹ All Ethernet media cables are available in 0.1 m increments up to 80 m.

² Recommended for RJ45 connection located at the top of the Guardmaster EtherNet/IP network interface.

³ Recommended for RJ45 connection located at the bottom of the Guardmaster EtherNet/IP network interface.



Safety Relays



Single and Specialty Function Safety Relays (MSR Family) 440R

- Single function and specialty relays
- Broad range of input types
- Multiple output configurations
- Electromechanical or solid-state
- Compact housings
- Fixed or removable terminals
- Safe speed control (MSR57)

A Full Line of Single and Specialty Function Relays

The Allen-Bradley Guardmaster single function and specialty safety relays support a wide variety of input devices and output configurations. Ideal for relatively small safety applications and single zone control, these relays are compact packages with removable terminals. They are also available in electromechanical versions, or solid-state models for applications involving high cycle rates. Applications include safe speed control (MSR57) and safety control circuits involving light curtains, laser scanners, safety mats, interlock switches, guard locking interlocks, two-hand controls, safety edges, enabling devices, and E-stop push buttons.



Interface directly and monitor safety control relays, valves, contactors, drives, and motion systems.

The MSR57 is ideal for small- to medium-sized safety related control systems dedicated to specific applications.

Safety Relays

Presence Sensing Devices



5-4...5-19

Interlock Switches



5-20...5-35

Access Control



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5-38...5-43

Emergency Stop Devices



5-44...5-45

Safety Limit Switches



5-46...5-47



Product Selection

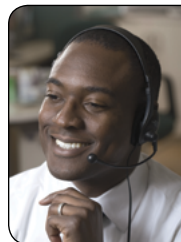
Single and Specialty Function Safety Relays

Model	Safety Inputs	Safety Inputs		Safety Outputs		Current ¹ @ 24V DC	Delay Time	Terminals	Reset	Power	Cat No.	
		Immed.	Delayed	Immed.	Delayed							
MSR126	1 N.C., light curtain	2 N.O.	–	–	–	6 A	–	Removable	Auto./man.	24V AC/DC	440R-N23117	
MSR126.1	2 N.C.							Fixed	Mon. man.		440R-N23123	
MSR127	1 N.C., 2 N.C., light curtain	3 N.O.	–	1 N.C.	–	5 A	–	Removable	Auto./man.	24V AC/DC	440R-N23114	
								Spring			440R-N23132	
								Fixed			440R-N23126	
								Removable	Mon. man.	115V DC	440R-N23131	
								Fixed		24V AC/DC	440R-N23135	
								MSR132 (expansion)	1 N.C., 2 N.C.	4 N.O.	–	2 N.C.
							Fixed	440R-E23097				
MSR138	1 N.C., 2 N.C. light curtain	2 N.O.	3 N.O.	–	–	6 A	0.15...3 s 0.5...10 s 1.5...30 s 0.15...3 s 0.5...10 s 1.5...30 s	Removable	Auto./mon. man.	24V AC/DC	440R-M23143	
MSR138.1			2 N.O.								1 N.C.	440R-M23147
												440R-M23151
												440R-M23084
												440R-M23088
												440R-M23092
MSR57 Speed Monitoring	5 x 1 N.C., 2 N.C., light curtain 1 N.O. & 1 N.C.	6 N.O.	–	4 N.O.	–	–	–	Removable	Automatic/ monitored manual	24V DC	440R-S845AER-NNL	
MSR125 Two-Hand Control	1 N.C. & 1 N.O.	2 N.O.	–	–	–	4 A	–	–	Auto./man.	24V AC/DC	440R-D23171	

¹ DC-13 inductive load current switching at maximum of 6 ops/min. MSR127 440R-N23132 has AC-15 inductive load current switching of 5 A @ 259V AC.

Specifications

Standards	EN ISO 13849-1, IEC/EN 60204-1, IEC 60947-5-1, ANSI B11.19, AS 4024.1
Safety Classification	Cat 4 per ISO 13849-1, SIL cl3 per IEC 62061, PLe per ISO 13849-1
Certifications	cULus Listed, c-Tick, and CE Marked for all applicable directives
Enclosure Type Rating/ Terminal Protection	IP40, IP20, DIN 0470
Operating Temperature [C (F)]	-5...+55 ° (23...131 °)
Mounting	35 mm DIN Rail
Conductor Size, Max.	0.2...4 mm ² (24...12 AWG)



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For more information on our complete family of safety relay products, please visit:
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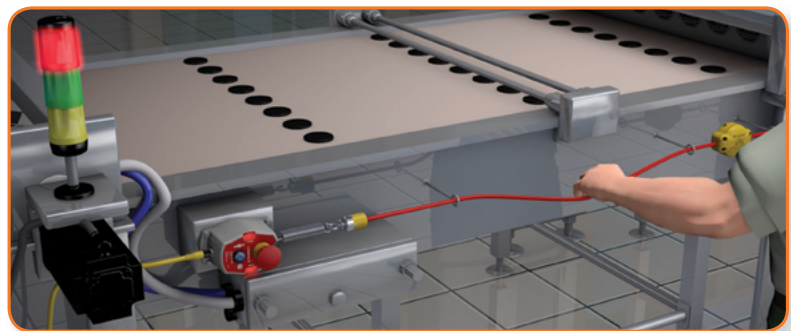
Emergency Stop Devices



Lifeline™ Cable Pull Switches 440E

- Up to 125 m cable span
- Universal mounting and operation
- Lid mounted emergency stop button
- Switch latches when cable is pulled or cable is slack
- Cable status indicator on switch lid
- Lifeline Rope Tensioner System (LRTS) speeds installation

The patented Lifeline 5 Cable Pull Switch is a microprocessor-based solution that brings advanced features and diagnostics that help enhance safety while improving productivity. The Lifeline 5 offers features and functions that simplify setup and allow for more efficient maintenance and troubleshooting, making it the most advanced switch on the market today.



The Lifeline Rope Tensioner System (LRTS) is a unique cable (rope) tensioning system which enables quicker installation of cable actuated systems.

Selection Guide

The patented Lifeline 5 cable pull switch rounds out the family offering that already includes the Lifeline 3 and Lifeline 4.

	Lifeline 5	Stainless Steel Lifeline 4	Lifeline 4	Lifeline 3
Material	Stainless Steel or Die Cast Aluminum	Stainless Steel 316	Painted Aluminum alloy	Painted Zinc alloy
Reset	Yes	Yes	Yes	Yes
E-Stop	Yes	Yes	Yes	No
Cable Span	100 m (328 ft)	75 m (246 ft)	75 m (246 ft) 125 m (410 ft) extended model	30 m (98 ft)

Emergency Stop Devices

Presence Sensing Devices



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Interlock Switches



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Access Control



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Safety Relays



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Safety Limit Switches



5-46...5-47



Product Selection

Lifeline

Model	Cable Span	Safety Outputs	Auxiliary Outputs	Cat. No.				
				M20	1/2 in. NPT	5-pin Micro (M12) ²	8-pin Micro (M12) ³	
Lifeline 5	≤100 m	2 OSSDs	1 Aux	—	—	440E-LL5N5	—	
		2 OSSD Outputs w/ 2 OSSD Inputs	1 Aux, 1 Tension	—	—	—	440E-LL55N8	
Lifeline 5 with e-stop		2 OSSDs	1 Aux	—	—	440E-LL55E5	—	
		2 OSSD Outputs w/ 2 OSSD Inputs	1 Aux, 1 Tension	—	—	—	440E-LL55E8	
Lifeline 5 stainless steel ¹		2 OSSDs	1 Aux	—	—	440E-LL55S5	—	
		2 OSSD Outputs w/ 2 OSSD Inputs	1 Aux, 1 Tension	—	—	—	440E-LL55S8	
Lifeline 4		≤75 m	2 N.C.	2 N.O.	440E-L13137	440E-L13133	440E-L2NNNYS	440E-L21BNYH
			3 N.C.	1 N.O.	440E-L13042	440E-L13043	—	—
	75...125 m	2 N.C.	2 N.O.	440E-L13153	440E-L13155	—	440E-L21BTYH	
		3 N.C.	1 N.O.	440E-L13150	440E-L13152	—	—	
Lifeline 4 stainless steel ¹	≤75 m	2 N.C.	2 N.O.	440E-L22BNSMNH	440E-L22BNSR	—	—	
Lifeline 3	≤30 m	2 N.C.	2 N.O.	440E-D13118	440E-D13120	440E-D2NNNYS	440E-D21BNYH	
		3 N.C.	1 N.O.	440E-D13112	440E-D13114	—	—	

¹ A dedicated stainless steel installation kit must be used with the stainless steel Lifeline instead of the LRTS.

² For standard 5-pin connection, recommended cordset is 889D-F5AC-2; for connection to ArmorBlock Guard I/O, recommended cordset is 889D-F4ACDM-2.

³ For 8-pin connection, recommended cordset is 889D-F8AB-2.

Specifications

Standards	All Lifeline models: IEC 60947-5-5, ISO 13850, IEC 60947-5-1 Emergency stop device in accordance with ISO 13850 Lifeline 5 only: Ple, Cat 4 according to EN ISO 13849-1 SIL CL3 per IEC 62061 and IEC 61508
Functional Safety	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Environmental	
Enclosure Type Rating	IP66 (Lifeline 4, Lifeline 5), IP67 (Lifeline 3), IP69K (Lifeline 4 Stainless, Lifeline 5 Stainless)
Operating Temperature [C (F)]	-25...+80° (-13...176°) Lifeline 3, 4 -20...+75° C (-4...167° F) Lifeline 5

Installation Kits⁴

Description	Length	Cat. No.
LRTS installation kit	5 m (16.4)	440E-A13079
	10 m (32.8 ft)	440E-A13080
	20 m (65.6 ft)	440E-A13082
	30 m (98.4 ft)	440E-A13083
	50 m (164 ft)	440E-A13084
	75 m (246 ft)	440E-A13085
Stainless steel installation kit	5 m (16.4 ft)	440E-A13194
	10 m (32.8 ft)	440E-A13195
	15 m (49.2 ft)	440E-A13196
	20 m (65.6 ft)	440E-A13197
	30 m (98.4 ft)	440E-A12198
	50 m (164 ft)	440E-A13199
	75 m (246 ft)	440E-A13200

⁴ 1 x length of cable (rope), 2 x grippers, 1 x tensioner and quantity of eyebolts.



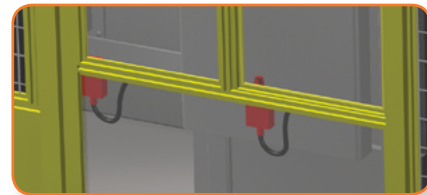
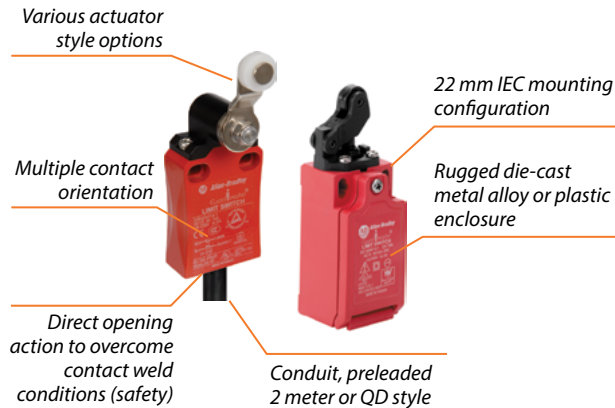
Safety Limit Switches



22 mm Metal and Plastic, 30 mm Metal, and 15 mm Plastic 440P

- Lever and plunger type actuator styles
- Direct opening contacts
- Type 1 interlocking device per ISO 14119
- Replaceable actuators

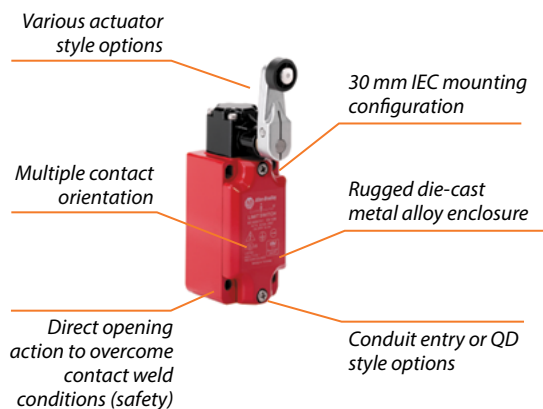
22 mm Metal and Plastic



A Full Line of IEC Safety Switches

The 440P limit switch family offers a full range of international-style solutions for both safety and standard sensing applications. Available in four different body styles – 30 mm metal, 22 mm metal and plastic, and 15 mm plastic – with a broad selection of operator types, circuit arrangements and connection options, the 440P is ideal for a wide variety of applications. These include material handling, packaging, elevators, escalators, scissor lifts, industrial trucks and tractors, cranes and hoists, overhead door as well as general safety guarding applications.

30 mm Metal



Safety Limit Switches

Presence Sensing Devices



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Interlock Switches



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Access Control



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Safety Relays



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Emergency Stop Devices



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Product Selection

22 mm Metal and Plastic, 30 mm Metal, and 15 mm Plastic

Description		Safety Contacts	Auxiliary Contacts	Contact Type	1/2 in. NPT Conduit	M20 Conduit	Quick Disconnect
30 mm metal	Metal roller plunger	1 N.C.	1 N.O.	Snap acting	440P-MRPS11E	440P-MRPS11B	440P-MRPS11N5
		2 N.C.	2 N.O.	BBM	440P-MRPB22E	440P-MRPB22B	440P-MRPB22M9
	Short lever, plastic roller	1 N.C.	1 N.O.	Snap acting	440P-MSLS11E	440P-MSLS11B	440P-MSLS11N5
		2 N.C.	2 N.O.	BBM	440P-MSLB22E	440P-MSLB22B	440P-MSLB22M9
	Short lever, metal roller	1 N.C.	1 N.O.	Snap acting	440P-MMHS11E	440P-MMHS11B	440P-MMHS11N5
		2 N.C.	2 N.O.	BBM	440P-MMHB22E	440P-MMHB22B	440P-MMHB22M9
Adjustable lever	1 N.C.	1 N.O.	Snap acting	440P-MALS11E	440P-MALS11B	440P-MALS11N5	
	2 N.C.	2 N.O.	BBM	440P-MALB22E	440P-MALB22B	440P-MALB22M9	
22 mm plastic	Plastic roller plunger	1 N.C.	1 N.O.	Snap acting	440P-CRPS11E	440P-CRPS11B	440P-CRPS11D4
		2 N.C.	1 N.O.	BBM	440P-CRPB12E	440P-CRPB12B	440P-CRPB12R6
	Adjustable lever	1 N.C.	1 N.O.	Snap acting	440P-CALS11E	440P-CALS11B	440P-CALS11D4
		2 N.C.	1 N.O.	BBM	440P-CALB12E	440P-CALB12B	440P-CALB12R6
	Short lever, plastic roller	1 N.C.	1 N.O.	Snap acting	440P-CSLS11E	440P-CSLS11B	440P-CSLS11D4
		2 N.C.	1 N.O.	BBM	440P-CSLB12E	440P-CSLB12B	440P-CSLB12R6

Description	Safety Contacts	Auxiliary Contacts	Contact Type	Cat. No.			
				2 m Bottom Cable	2 m Side Cable	Quick-Disconnect	
22 mm metal	Metal roller plunger	1 N.C.	1 N.O.	Snap acting	440P-ARPS11C	440P-ARPS11CS	440P-ARPS11D5
	Dome plunger	1 N.C.	1 N.O.	Snap acting	440P-ADPS11C	440P-ADPS11CS	440P-ADPS11D5

Description	Description	Safety Contacts	Auxiliary Contacts	Contact Type	Cat No.
15mm plastic	Roller plunger	1 N.C.	1 N.O.	Snap acting	440P-M18001
	Cross roller Plunger	1 N.C.	1 N.O.	Snap acting	440P-M18002

Specifications

Standards	ISO 14119, IEC 60947-5-1
Functional Safety	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	cULus Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Outputs	
Thermal Current	10 A
Switching Current @ Voltage	25 mA @ 5V DC, min.
Operating Characteristics	
Actuation Frequency, Max.	6000 operations per hr.
Mechanical Life	10 million operations

Required Cordsets & Accessories

Description	Cat. No.
4-pin DC micro (M12), 2 m	889D-F4AC-2
6-pin AC micro (M12), 2 m	889R-F6ECA-2
5-pin mini, 2 m	889N-F5AE-6F
12-pin, 9-wire, 2 m	889M-FX9AE-2

Note: For additional information, see Safety Connection Systems (page 4-46).

For more information on our complete family of safety limit switch products, please visit:
<http://ab.rockwellautomation.com/Safety>



Additional Safety Products



Atlas 5 Guard Locking Switches 440G

The Atlas™ 5 guard locking switch is a tongue-operated guard locking interlock switch that has the highest holding force in our portfolio.

- High Fzh (holding force): 3850 N (865 lbs)
- Mechanical lock
- Heavy-duty die-cast alloy housing
- Patented self-aligning head
- Type 2 Interlocking Device with Guard Locking and low coding per ISO 14119

440G-MT Guard Locking Solenoid Switches 440G

The 440G-MT solenoid switch locks a machine guard closed and may only be opened when a signal is applied to the internal solenoid which releases the lock mechanism.

- High Fzh (holding force): 1500 N (337 lb)
- Mechanical lock (power-to-release)
- Heavy-duty die-cast alloy housing
- Diagnostic version available
- Type 2 Interlocking Device with Guard Locking and low coding per ISO 14119



Enabling Switches 440J

The 440J is a three position enabling switch that can be used to reduce risks when working inside a machine guard, e.g., set-up, maintenance, or troubleshooting.

- Three position enabling switch
- Lightweight and easy-to-use
- Optional jog and e-stop functions
- M20 conduit

Presence Sensing Devices



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Interlock Switches



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Access Control



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Safety Relays



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Emergency Stop Devices



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Safety Limit Switches



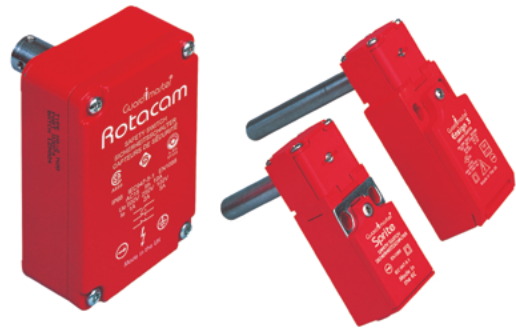
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Hinge Interlock Switches 440H

Our 440H family of hinge-actuated safety-interlock switches is designed to fit at the hinge point of machine guards. The actuation shaft is connected to the existing hinge pin and switch operation is based on the opening/closing of the guard.

- Multiple models for light- to medium-weight guard doors
- Degree of operation can be customized with adjustable cam
- Compact and heavy-duty versions
- EX and pneumatic versions available (Rotacam™ only)
- Type 1 Interlocking Device per ISO 14119



Safedge 440F

Safedge™ pressure-sensitive safety edges are mounted to a moving piece of machinery such as the bottom of a powered garage door to prevent personnel from bodily injury. Light pressure from any direction through 90° on the rubber profile will trip the system.

- Conductive rubber technology
- Various profiles and cushion factors
- Up to 50 m lengths
- Aluminum, plastic, or zinc-coated steel mounting rails

Safety Programmable Controllers

Our safety controller solutions provide open and integrated control that will help to ensure machine safety and protect your current control investments.

- 1756 GuardLogix® safety controllers and integrated safety systems
- 1768 Compact GuardLogix
- 1752 SmartGuard™ 600
- 1753 GuardPLC™ Controllers



Additional Safety Products



Safety Input/Output (I/O) Modules

Our Guard I/O safety products provide all the advantages of traditional distributed I/O for safety systems.

- 1734 POINT Guard I/O Modules
- 1732DS ArmorBlock Guard Safety I/O Blocks
- 1753 GuardPLC Safety I/O Blocks
- 1791DS and 1791ES CompactBlock™ Guard I/O Modules

Safety Motor Control

Our Safety Motor Control products help reduce the risks associated with the operation and maintenance of electrical equipment.

- CENTERLINE® ArcShield™ arc-resistant controller
- 280/281 ArmorStart® distributed motor controllers
- CENTERLINE 2500 and 2100 Motor Control Centers (MCCs) with ArcShield
- 100S/104S IEC safety contactors and 700S safety control relays



Safety Drives and Motion Control

Many of our Allen-Bradley PowerFlex® AC drives and Kinetix® servo drives offer certified safety options to help provide integral, cost-effective and certified protection.

- Safe Torque-Off and/or Safe Speed Monitor options for:
 - PowerFlex 525, 753, and 755 AC drives
 - Kinetix 300, 6000, 6200, 6500, and 7000

Presence Sensing Devices



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Interlock Switches



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Access Control



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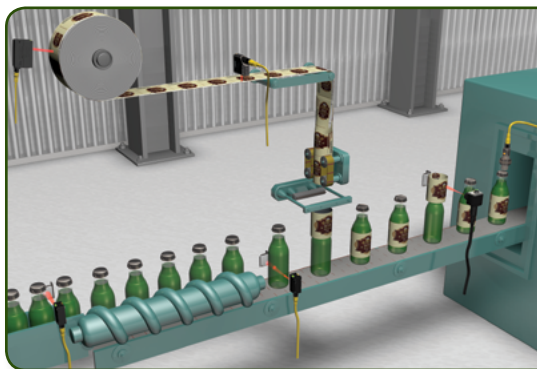
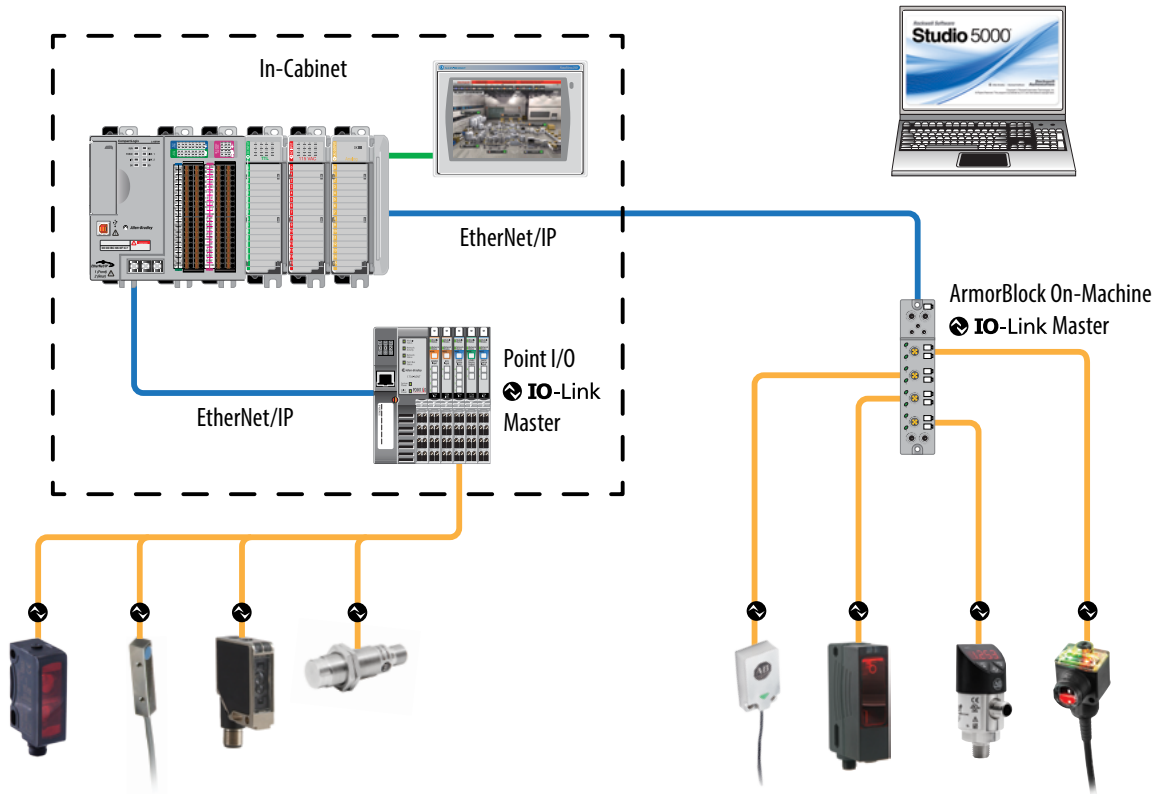
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Additional Sensor Products..... 6-110

Smart Sensors

Our Integrated Smart Sensor Solution

When it comes to linking end point devices on the plant floor to The Connected Enterprise, Rockwell Automation offers a wide range of smart sensors that deliver information, advanced functionality and flexibility while increasing efficiency machine- and plant-wide. These Allen-Bradley® sensors use IO-Link technology for visibility of field devices through your Integrated Architecture.



What is IO-Link?

IO-Link is a worldwide open-standard peer-to-peer serial communication protocol (IEC 61131-9) that allows sensors and actuators to easily integrate into The Connected Enterprise. Through IO-Link you can access all sensor configuration parameters, process data and diagnostics. So you can go beyond detecting products on your machine – now you can MONITOR your machine's health as it runs. Plus, IO-Link simplifies setup and commissioning while offering enhanced flexibility for current – and future – processes.

IO-Link



Photoelectric Sensors



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Proximity Sensors



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IO-Link Enabled Products

IO-Link Masters

- Enable connection of up to eight devices (IO-Link enabled or standard I/O)
- POINT I/O™ master for in-cabinet (IP20)
- ArmorBlock™ version for on-machine (IP67) applications
- Timestamp functionality in ArmorBlock model provides visibility to sensor data for better quality metrics



Photoelectric Sensors

- Notify system when lens is dirty
- Parameter changes supported through controller during line/tool changes for flexible manufacturing (e.g. set points)
- Indication of sensor signal strength for monitoring machine wear and tear
- Locking options are available to lock local settings when operating in IO-Link mode, and therefore any user changes will not change the settings of the sensor

Proximity Sensors

- Sensor diagnostics minimize downtime by indicating when the sensor requires maintenance or replacement
- Unique product serial numbers help ensure that sensors are installed in the proper locations during commissioning
- Multiple teach modes (Standard, Precision and Dynamic) allow the sensors to be set up quickly and easily to best suit the application



Pressure and Temperature Sensors

- Margin status helps optimize sensor installation for best performance
- On-delay/off-delay timing and event counter can be set directly in the sensor
- The internal temperature of the sensor is continuously measured and can be used for diagnostic or preventative maintenance



Look for this symbol for IO-Link enabled Smart Sensors

RFID



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For more information on our complete family of IO-Link products, please visit: <https://ab.rockwellautomation.com/IO>



Photoelectric Sensors

Sensor Selection

Photoelectric Sensors operate by sensing a change in the amount of light that is either reflected or blocked by an object to be detected (target). The change of light could be the result of the presence or absence of the target or as the result in the change of the size, shape, reflectivity or color of a target.

These sensors can be used in applications to detect targets at distances over 300 m.

To successfully apply a photoelectric sensor the following requirements must be clearly understood:

For Your Selection Keep in Mind...

Margin: defined as the measurement of the amount of light from the light source detected by the receiver, expressed as a multiple of the minimum amount of light level required to switch the sensor output.

A margin of 2X is reached when the light level received is twice the minimum required to switch the output.

For minimizing maintenance the sensor should be operated at a margin greater than 2X. Detection in dirty environments (or of a low reflectivity target) requires sensors with higher margin.


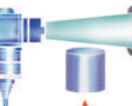
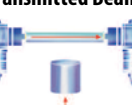
Light Operate Output (LO): output is ON (energized) when the receiver can see sufficient light from the light source.

Dark Operate Output (DO): output is ON (energized) when the receiver cannot see light from the light source.

Application Considerations

Target	Environmental	Electrical	Installation
Detection Range	Temperature	Supply Voltage	Mounting Space
Object	• High	• DC or AC	Cable Connections
• Shape	• Low	Output Type	• 2 m cable
• Size	Conditions	• PNP, NPN	• Micro M12 QD
• Opacity	• Wet or dry	• SPDT relay, MOSFET	• Pico M8 QD
• Reflectivity	• Clean or dirty	Response Time	Shock/Vibration
• Speed	• Humidity	Analog Outputs	Interference
	Chemical Substances	Communications	• Electrical Noise
	High-pressure Washdown		• Sunlight

Standard Sensing Modes

	Advantages	Precautions
 <p>Diffuse</p>	<ul style="list-style-type: none"> • Ideal for short-range applications • No reflector required • Easy installation/alignment 	<ul style="list-style-type: none"> • Sensing range depends on target's characteristics (color, reflectivity, etc.) • Highly reflective backgrounds may false trigger the sensor • Relatively short sensing distance
 <p>Retroreflective</p>	<ul style="list-style-type: none"> • Moderate sensing distances • Easy to align • Requires mounting and wiring of only one emitter/receiver unit 	<ul style="list-style-type: none"> • Shorter sensing distances than transmitted beam • May detect reflections from shiny objects (see polarized retroreflective) • Reflector required
 <p>Transmitted Beam</p>	<ul style="list-style-type: none"> • High margin for contaminated environments • Longer sensing ranges than other technologies • Most reliable sensing mode for highly reflective objects 	<ul style="list-style-type: none"> • Requires proper alignment • Not recommended for clear object sensing • Space required to mount and wire separate emitter and receiver

Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



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Encoders











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Condition Sensing



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General Purpose Solutions

		Sensing Range												
		100 mm	200 mm	400 mm	600 mm	800 mm	1 m	2 m	4 m	6 m	8 m	10 m	20 m	> 30 m
42JS VisiSight 	<ul style="list-style-type: none"> Industry standard small rectangular (20 mm L x 14 mm W x 33 mm H) enclosure Visible red LED on all models for ease of alignment Complementary LO and DO IP67 enclosure 	<ul style="list-style-type: none"> Diffuse (250 mm, 800 mm) Background Suppression (55 mm, 130 mm) Polarized Retroreflective (3.5 m) Transmitted Beam (10 m) 												
42JT VisiSight 	<ul style="list-style-type: none"> Industry standard small rectangular (20 mm L x 12 mm W x 34 mm H) enclosure Push button teach for easy set up Visible red LED or Laser (Class 1) on all models for ease of alignment Auto Detection continuously monitors and configures the output automatically to PNP or NPN LO or DO configurable on every model IP69K enclosure rating suitable for harsh duty environments 	<ul style="list-style-type: none"> Diffuse (250 mm, 800 mm) Adjustable Background Suppression (120 mm, 200 mm, 400 mm) Polarized Retroreflective (6 m, 13 m) Transmitted Beam (13 m, 18 m) Clear Object Detection (2 m) Color Mark (12 mm) 												
Series 9000 	<ul style="list-style-type: none"> Universal 30 mm base and thru-hole mounting High-pressure washdown (IP69K and 1200 PSI) enclosure Standard ON/OFF, timing and diagnostics output models Dual (PNP and NPN) with LO or DO selection DC and AC/DC relay output 	<ul style="list-style-type: none"> Diffuse (1.5 m, 3 m, 4.2 m) Retroreflective (9.1 m) Polarized Retroreflective (4.9 m) Transmitted Beam (61 m, 152 m) Fiber Optic (Max: Diffuse 175 mm, Transmitted Beam 400 mm) 												
RightSight 	<ul style="list-style-type: none"> Universal 18 mm base, nose and thru-hole mounting High-pressure washdown (IP69K and 1200 PSI) enclosure Fixed, teachable and adjustable sensitivity Dual (PNP and NPN) outputs or complementary (LO and DO) models DC and AC/DC solid state outputs 	<ul style="list-style-type: none"> Diffuse (500 mm, 700 mm) Background Suppression (50 mm, 100 mm) Retroreflective (4.5 m) Polarized Retroreflective (3 m) Transmitted Beam (4 m, 8 m, 20 m) Fiber Optic (Max: Diffuse 275 mm, Transmitted beam 1.5 m) Sharp Cutoff Diffuse (130 mm) Fixed Focus Diffuse (43 mm) 												
42KD 	<ul style="list-style-type: none"> Our smallest rectangular photoelectric sensor Ranges up to 3 m IP67 enclosure rating Auto PNP/NPN Push button teach Through-hole or dovetail clamp mounting Visible red 	<ul style="list-style-type: none"> Fixed Background Suppression (15 mm, 30 mm, 50 mm) Adjustable Background Suppression (70 mm) Polarized Retroreflective (1.6 m) 												
42CA 	<ul style="list-style-type: none"> Industry standard 18 mm enclosure Plastic housing suitable for corrosive environments Complementary LO and DO Fast response time (0.5 ms) models IP67 enclosure 	<ul style="list-style-type: none"> Diffuse (100 mm, 400 mm, 1 m) Background Suppression (50 mm, 100 mm) Retroreflective (4.8 m, 7.2 m) Polarized Retroreflective (3.8 m) Transmitted Beam (16 m) 												
42CS 	<ul style="list-style-type: none"> Robust 316L housing material Smooth barrel version minimizes build up and allows for easy clean up (also available in threaded version) IP69K enclosure rating and ECOLAB certification make this ideal for harsh duty environments Industry standard 18 mm barrel diameter Extended temperature operating range Ferromagnetic teach provides adjustability without compromising integrity Two teach modes: standard and precision 	<ul style="list-style-type: none"> Diffuse (800 mm) Adjustable Background Suppression (100 mm) Polarized Retroreflective (4 m) Transmitted Beam (20 m) Clear Object Detection (1 m) 												
42CM 	<ul style="list-style-type: none"> Industry standard 18 mm enclosure Metal housing suitable for heavy duty environments Complementary LO and DO IP67 enclosure 	<ul style="list-style-type: none"> Diffuse (100 mm, 400 mm) Background Suppression (50 mm, 100 mm) Retroreflective (4 m) Polarized Retroreflective (3 m) Transmitted Beam (20 m) 												

RFID



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For more information on our complete family of photoelectric products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors

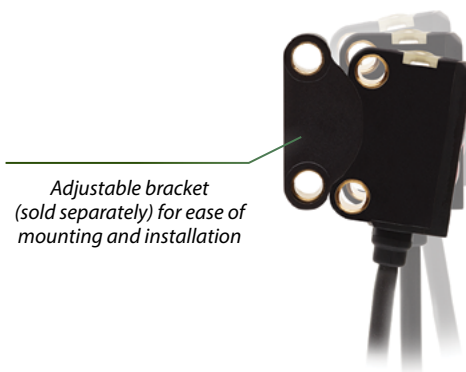
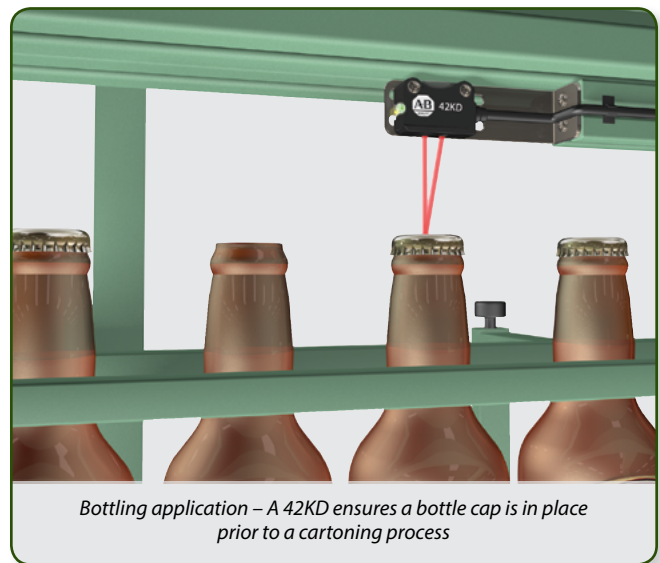


Miniature 42KD

- Our smallest rectangular photoelectric sensor
- Ranges up to 3 m (9.74 ft)
- IP67 enclosure rating
- Auto PNP/NPN
- Push button teach
- Through-hole or dovetail clamp mounting
- Visible red

Our Smallest Photoelectric Sensor Package

The 42KD sensors, designed for applications with limited mounting space, offer the performance of much larger sensors in a compact housing. This family of LED and laser sensors is the most complete family of miniature sensors on the market. Additionally, these sensors offer easy commissioning via push button teach or through a control wire. The background suppression versions provide reliable object detection independent of the target size, shape, or color.



Photoelectric Sensors

IO-Link



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Proximity Sensors



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Limit Switches



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Encoders



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Condition Sensing



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Product Selection

Miniature

Sensing Mode	Light Source	Sensing Distance	Sensitivity Adjustment	Output Configuration	Response Time	Cat. No. ¹
Polarized retroreflective	Visible red	0.1...1.6 m (0.33...5.25 ft)	Teach button	Teachable light or dark operate, auto PNP or NPN	0.5 ms	42KD-P2LAT1-Y4
Background suppression	Visible red	1...15 mm (0.04...0.59 in.)	None	Selectable light or dark operate by remote teach, auto PNP or NPN	0.5 ms	42KD-B2LAR1-Y4
		1...30 mm (0.04...0.59 in.)				42KD-B2LAR2-Y4
		1...50 mm (0.04...1.18 in.)				42KD-B2LAR3-Y4
		5...70 mm (0.2...2.75 in.)	Teach button	Teachable light or dark operate, auto PNP or NPN		42KD-B2LAT1-Y4

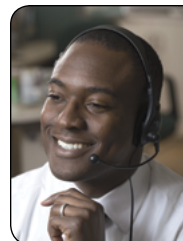
¹ The -Y4 suffix describes a 4-pin Pico (M8) QD connector on a 150 mm (6 in.) pigtail.

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-20...+50 ° (-4...+122 °)
Operating Voltage	10...30V DC, 30 mA
Protection Type	Reverse polarity, short circuit
Output Current	50 mA
Housing Material	PUR
Lens Material	PMMA
Cover Material	PMMA

Required Cordsets and Accessories

Description	Cat. No.
DC Pico (M8) QD cordset, straight, 4-pin, 2 m (6.6 ft)	889P-F4AB-2
DC Pico (M8) QD cordset, right angle, 4-pin, 2 m (6.6 ft)	889P-R4AB-2
Reflector, Micro cube, 51 x 61 mm (2 x 2.5 in.)	92-118
42KD Swivel mounting bracket	42KD-BKT1



Need Help?

The Rockwell Automation Support Center is your 24/7 support for the answers you need now.

www.rockwellautomation.com/support/overview.page

RFID



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For more information on our complete family of photoelectric products, please visit: <http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors



VisiSight™ 42JS and 42JT

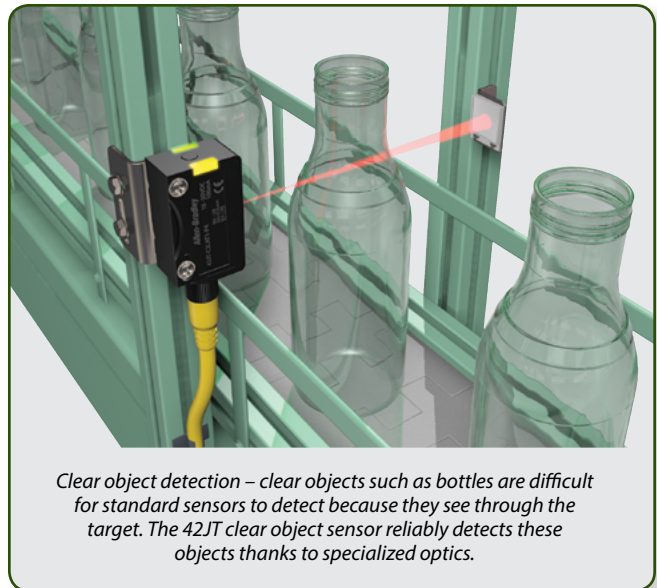
- Industry standard 25.4 mm (1.0 in.) mounting
- Ranges up to 13 m (42.65 ft)
- IP69K and 1200 psi washdown rating (with ECOLAB) for 42JT
- Auto PNP/NPN (42JT only)
- Push button teach (42JT only)
- IO-Link enabled (42JT only)



A Compact General-purpose Solution

The 42JS and 42JT VisiSight sensors offer a small rectangular package with visible light beam for ease of alignment and 25.4 mm industry standard mounting hole spacing.

The 42JS is a basic, cost-effective model ideal for general purpose applications. The 42JT is an advanced line that features push button teach and a unique "Auto PNP/NPN" output that simplifies installation and reduces the number of models to be stocked by 50%.



Photoelectric Sensors

<p>IO-Link</p> <p>6-2...6-3</p>	<p>6-4...6-45</p>	<p>Proximity Sensors</p> <p>6-46...6-75</p>	<p>Ultrasonic Sensors</p> <p>6-76...6-79</p>	<p>Limit Switches</p> <p>6-80...6-93</p>	<p>Encoders</p> <p>6-94...6-99</p>	<p>Condition Sensing</p> <p>6-100...6-107</p>
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Product Selection

VisiSight

Sensing Mode	Sensing Distance	Sensitivity Adjustment	Light Source	Output Function	Cat. No. ¹	
Polarized retroreflective	0.025...3.5 m (0.08...11.5 ft)	None	Visible red	Complementary L.O./D.O., PNP	42JS-P2MPB1-F4	
		Adjustment knob			42JS-P2MPA2-F4	
Diffuse	0.1...6 m (0.33...19.7 ft)	Teach button	Visible red	Teachable L.O./D.O., Auto PNP/NPN	42JT-P2LAT1-F4	
		Adjustment knob			42JS-D2MPA2-F4	
Background suppression	3...250 mm (0.12...9.84 in.)	Teach button	Visible red	Teachable L.O./D.O., Auto PNP/NPN	42JS-D2MPA1-F4	
		Adjustment knob			42JT-D2LAT1-F4	
Background suppression	2...130 mm (0.07...5.12 in.)	None	Visible red	Complementary L.O./D.O., PNP	42JS-B2MPB2-F4	
					Teach button	42JS-B2MPB1-F4
		Teach button				Teachable L.O./D.O., Auto PNP/NPN
					42JT-B2LAT2-F4	
Clear object detection	2 m (6.6 ft)	Teach button	Visible red	Teachable L.O./D.O., PNP or NPN (push/pull)	42JT-C2LAT1-F4	
Color mark	12 mm (0.47 in.) ±2.5 mm	Teach button	White LED	Teachable L.O./D.O., PNP or NPN (push/pull)	42JT-F5LET1-F4	
Transmitted beam emitter	10 m (32.8 ft)	None	Infrared	NA	42JS-E1EZB1-F4	
Transmitted beam receiver		Adjustment knob		Complementary L.O./D.O., PNP	42JS-R9MPA2-F4	
Transmitted beam emitter	10 m (32.8 ft)	None	Visible red	NA	42JS-E2EZB1-F4	
Transmitted beam receiver		Adjustment knob		Complementary L.O./D.O., PNP	42JS-R9MPA1-F4	
Transmitted beam emitter	13 m (42.65 ft)	None	Visible red	NA	42JT-E2EZB1-F4	
Transmitted beam receiver		Teach button		Teachable L.O./D.O., Auto PNP/NPN	42JT-R9LAT1-F4	

¹ The -F4 suffix describes a 4-pin DC Micro (M12) QD connector on a 150 mm (6 in.) pigtail.

IO-Link enabled.

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	42JS: IP67; 42JT: IP67 and IP69K
Operating Temperature [C (F)]	-20...+60 ° (-4...+140 °)
Operating Voltage	10...30V DC (25 mA for 42JS, 30 mA for 42JT)
Protection Type	False pulse, reverse polarity, overload, short-circuit
Load Current, Max.	100 mA max.
Housing Material	ABS
Lens Material	PMMA
Cover Material	PMMA

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
Mounting bracket, stainless steel, l-shaped for 42JT and 42JS	60-BJS-L1
Mounting bracket, stainless steel, l-shaped for 42JT and 42JS VisiSight	60-BJT-L2
Mounting bracket, plastic, swivel/tilt for 42JS and 42JT VisiSight	60-2619
Protective mounting bracket, stainless steel, u-shaped for 42JT and 42JS	60-BJT-U1
18 mm snap-on adaptor (42JS Only)	60-AJS-18
Reflector, corner cube, 76 mm (3 in.) diameter	92-124
Reflector, corner cube, 84 mm (3.3 in.) diameter	92-125
Reflector, Micro cube, 51 x 61 mm (2 x 2.5 in.) for laser and clear object models	92-118
Ethernet/IP Point I/O	1734-AENTR
Point I/O IO-Link Master Module	1734-4IOL
ArmorBlock IO-Link Master	1732E-8IOLM12R

RFID



6-108...6-109

For more information on our complete family of photoelectric products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors



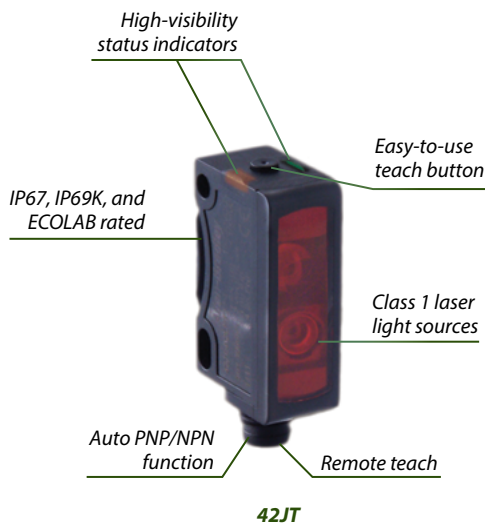
VisiSight Laser 42JT

- Class 1 eye safe visible laser for small object detection
- Industry standard 25.4 mm (1.0 in.) mounting
- Ranges up to 18 m (59.05 ft)
- IP69K (with ECOLAB)
- Auto PNP/NPN
- Push button teach



Our Compact, Easy-to-use Laser-based Solution

Laser sensors are ideal for small object detection or in applications requiring a narrow field of view. In most cases, laser sensors offer better operating margin and/or longer sensing distances than their LED-based counterparts. The 42JT VisiSight family offers a wide range of sensing modes and a teach push button that simplifies sensitivity adjustment and offers light vs. dark operate output selection. The unique “Auto PNP/NPN” output continuously monitors how the load is connected and automatically configures the output for proper operation and output LED to indicate correct output status. Not only do these features make the 42JT VisiSight easy to apply in challenging packaging and assembly applications, but they help optimize your supply chain by reducing the number of models to be stocked by 50%.



Bottling inspection – When the single 42JT LaserSight mounted on the side of the conveyor senses the bottle carton, it triggers the three standard VisiSights above to check for missing bottles.

Photoelectric Sensors

IO-Link



6-2...6-3



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99






Condition Sensing




6-100...6-107

Product Selection

VisiSight Laser

Sensing Mode	Sensing Distance	Sensitivity Adjustment	Light Source	Output Function	Cat. No. ¹
Background suppression	4...120 mm (0.16...4.72 in.)	Teach button	Class 1 laser	Teachable L.O./D.O., Auto PNP/NPN	42JT-B8LAT1-F4 
Diffuse	5...250 mm (0.20...9.84 in.)				42JT-D8LAT1-F4 
Polarized retroreflective	0.1...13 m (0.33...42.7 ft)				42JT-P8LAT1-F4 
Transmitted beam emitter	18 m (59.05 ft)	None		NA (emitter)	42JT-E8EZB1-F4 
Transmitted beam receiver		Teach button		Teachable L.O./D.O., Auto PNP/NPN	42JT-R8LAT1-F4 

¹ The -F4 suffix describes a 4-pin DC Micro (M12) integral QD connector.

 IO-Link enabled.

Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

www.rockwellautomation.com/sales-partners/overview.page



Specifications

Certifications	cULUS Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP67 and IP69K
Operating Temperature [C (F)]	-20...+60 ° (-4...+140 °)
Operating Voltage	10...30V DC, 30mA
Protection Type	False pulse, reverse polarity, overload, short circuit
Load Current	100 mA max.
Housing Material	ABS
Lens Material	PMMA
Cover Material	PMMA

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
Mounting bracket, stainless steel, L-shaped for 42JT and 42JS	60-BJS-L1
Mounting bracket, stainless steel, L-shaped for 42JT and 42JS	60-BJT-L2
Mounting bracket, plastic, swivel/tilt for 42JT	60-2619
Protective mounting bracket, stainless steel, U-shaped for 42JT and 42JS	60-BJT-U1
Reflector, Micro cube, 51 x 61 mm (2 x 2.5 in.)	92-118
Reflector, Micro cube, 20 x 32 mm (0.79 x 1.26 in.) with mounting tabs	92-134
Ethernet/IP Point I/O	1724-AENTR
Point I/O IO-Link Master Module	1734-4IOL
ArmorBlock IO-Link Master	1732E-8IOLM12R

RFID



6-108...6-109

For more information on our complete family of photoelectric products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors



RightSight™ 42EF

- Universal 18 mm mounting
- Ranges up to 20 m (65.6 ft)
- IP69K and 1200 psi washdown rating
- Non-adjustable, adjustable and teach models
- 360° visible LED indicators
- ECOLAB on cable models
- IO-Link enabled (select models)



The Industry Standard for Durability and Performance

Many applications can be solved with a smaller sensor, but don't be fooled – this durable and rugged sensor has become the standard in many material handling applications. The polarized retroreflective has a maximum sensing range of 3 m (9.8 ft). It also requires much less space for mounting.



Material handling application – A retroreflective RightSight detecting packages on a conveyor line.

Photoelectric Sensors

IO-Link



6-2...6-3



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

RightSight

Sensing Mode	Operating Voltage	Light Source	Sensing Distance	Sensitivity Adjustment	Output Function	Cat. No. ¹		
Retroreflective	10.8...30V DC	Visible red	25 mm...4.5 m (1 in...14.7 ft)	None	D.O., NPN & PNP	42EF-U2KBB-F4		
	21.6...264V AC/DC				D.O., N-MOSFET	42EF-U2SCB-G4		
Polarized retroreflective	10.8...30V DC		25 mm...3 m (1 in...9.8 ft)		L.O. & D.O., PNP	42EF-P2MPB-F4		
	21.6...264V AC/DC				D.O., N-MOSFET	42EF-P2SCB-G4		
Diffuse	10.8...30V DC	Infrared	3...500 mm (0.12...20 in.)	Single-turn knob	L.O. & D.O., PNP	42EF-D1MPAK-F4		
			3...500 mm (0.12...20 in.)	Single-turn knob	L.O. & D.O., PNP	42EF-D2MPAK-F4		
			3...700 mm (0.12...27.6 in.)	Teach button	L.O., NPN & PNP	42EF-D1JBCK-F4		
21.6...264V AC/DC	3...500 mm (0.12...20 in.)		Single-turn knob	L.O., N-MOSFET	42EF-D1RCAK-G4			
	10.8...30V DC			3...130 mm (0.12...5 in.)	L.O. & D.O., PNP	42EF-S1MPA-F4		
21.6...264V AC/DC			L.O., N-MOSFET		42EF-S1RCA-G4			
Background suppression	10.8...30V DC		None	3...50 mm (0.12...2 in.)	None	L.O. & D.O., PNP	42EF-B1MPBC-F4	
				3...100 mm (0.12...3.9 in.)		L.O., N-MOSFET	42EF-B1MPBE-F4	
				21.6...264V AC/DC		3...50 mm (0.12...2 in.)	L.O., N-MOSFET	42EF-B1RCBC-G4
						3...100 mm (0.12...3.9 in.)	L.O., N-MOSFET	42EF-B1RCBE-G4
Clear object detection	10.8...30V DC		Visible red	0.025...1 m (0.08...3.3 ft)	Single-turn knob	D.O., NPN & PNP	42EF-C2KBA-F4	
	21.6...264V AC/DC					D.O., N-MOSFET	42EF-C2SCA-G4	
Transmitted beam emitter	10.8...30V DC	Infrared	20 m (65.6 ft)	None	NA	42EF-E2EZB-F4		
	21.6...264V AC/DC				NA	42EF-E1EQZB-G4		
Transmitted beam receiver	10.8...30V DC	Visible red			None	L.O. & D.O., PNP	42EF-R2MPB-F4	
	21.6...264V AC/DC					D.O., N-MOSFET	42EF-R9SCB-G4	
Large aperture fiber optic	10.8...30V DC	Infrared	Depends on glass fiber optic cable selected on 6-44	Single-turn knob	L.O. & D.O., PNP	42EF-G1MPA-F4		
	21.6...264V AC/DC				L.O. N-MOSFET	42EF-G1RCA-G4		

¹ The **-F4** suffix describes a 4-pin DC Micro (M12) QD connector on a 150 mm (6 in.) pigtail. The **-G4** suffix describes a 4-pin AC Micro (M12) QD connector on a 150 mm pigtail. IO-Link enabled.

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 4X, 6P, IP67(IEC 529); 1200 psi (8270 kPa) washdown, IP69K
Operating Temperature [C (F)]	-25...+55 ° (-13...+131 °) ≥132V AC/DC -25...+70 ° (-13...+158 °) ≤132V AC/DC
Protection Type	False pulse, reverse polarity, overload, and short-circuit
Output Current	100 mA
Response time	DC models: 1 ms (4 ms for transmitted beam models); AC models: 8.3 ms (16.6 ms for transmitted beam)
Housing Material	Mindel®
Lens Material	Acrylic
Cover Material	Udel®

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
AC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.6 ft)	889R-F4AEA-2
Mounting bracket, plastic, swivel/tilt	60-2649
Reflector, round, 76 mm (3 in.) diameter	92-39
Reflector, round, 32 mm (1.25 in.) diameter	92-47
Ethernet/IP Point I/O	1724-AENTR
Point I/O IO-Link Master Module	1734-4IOL
ArmorBlock IO-Link Master	1732E-8IOLM12R

RFID



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<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors



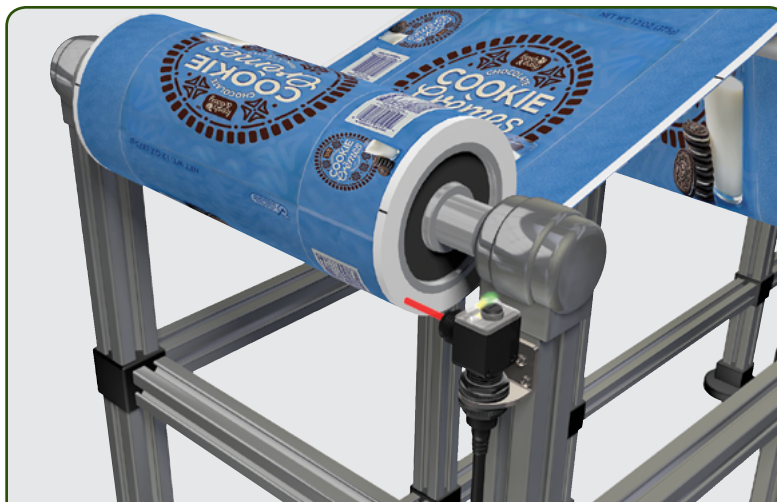
RightSight LaserSight™ 42EF

- Class 1 eye safe visible laser for small object detection
- Universal 18 mm mounting
- Ranges up to 40 m (131.2 ft)
- IP69K rated enclosure for diffuse and transmitted beam
- IP54 for polarized retroreflective
- Non-adjustable, adjustable, and teach models
- 360° visible LED indicators

Ideal for Small Object Detection

Laser sensors are ideal for small object detection or in applications requiring a narrow field of view. In most cases, laser sensors offer better operating margin and/or longer sensing distances than their LED-based counterparts.

The 42EF RightSight LaserSight uses eye-safe Class 1 visible laser light and features the same mounting options as other products in the RightSight product line. Class 1 lasers require no additional safety or protective training or equipment and are safe for general purpose use.



Roll detection – A 42EF RightSight LaserSight monitors a roll of film to indicate low film level.

Photoelectric Sensors

IO-Link



6-2...6-3



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107

Product Selection

RightSight LaserSight

Sensing Mode	Light Source	Sensing Distance	Sensitivity Adjustment	Output Function	Cat. No.
Polarized retroreflective	Class 1 laser	0.05...15 m (0.16...49.2 ft)	Teach button	D.O., NPN & PNP	42EF-P8KBC-F4
Diffuse	Class 1 laser	3...300 mm (0.1...11.8 in.)	Single-turn knob	L.O., NPN & PNP	42EF-D8JBA-F4
			Teach button		42EF-D8JBC-F4



Connected Components

Simpler, faster, cost-effective machine building.

rockwellautomation.com/global/capabilities/industrial-automation-control/

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	IP54 (polarized retroreflective only), All others: IP69K rated
Operating Temperature [C (F)]	-10...+40 ° (14...+104 °)
Operating Voltage	22...26V DC, 30 mA, max.
Protection Type	False pulse, reverse polarity, overload, short-circuit
Output Current	100 mA
Response Time	1 ms (4 ms for transmitted beam models)
Housing Material	Mindel®
Lens Material	Acrylic
Cover Material	Udel®

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
Mounting bracket, plastic, swivel/tilt	60-2649
Microcube reflector	92-118

RFID



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For more information on our complete family of photoelectric products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors



Series 9000™ 42G

- Our longest range offering – up to 61 m (200 ft)
- Full-featured
- IP69K and ECOLAB
- ClearSight™ 9000 clear object detection models
- Standard, timing, and teach models available
- Fiber optic capability

Full-size and Full-featured

Series 9000 general purpose sensors offer many features that help keep you up and running, even in harsh environments. With nearly 300 configurations to choose from – including multiple supply-voltage ranges, output options and connection choices – Series 9000 sensors provide the versatility needed to easily interface with programmable controllers and other electrical loads.



Material handling – Photoelectric sensors like this Series 9000 are used at every stage of the packaging process to confirm container presence and position.

Photoelectric Sensors

IO-Link



6-2...6-3



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

Series 9000

Sensing Mode	Supply Voltage	Light Source	Sensing Distance	Output Function	Cat. No.
Polarized retroreflective	10...30V DC, 30 mA	Visible red	0.050...4.9 m (0.16...16 ft)	Selectable L.O. or D.O., NPN and PNP	42GRU-9200-QD
	70...264V AC/DC			Selectable L.O. or D.O., SPDT EM Relay	42GRU-9202-QD
	40...264V AC, 15 mA			Selectable L.O. or D.O., Solid-state isolated N.O.	42GRU-9203-QD
Diffuse	10...30V DC, 30 mA	Infrared	0.050...1.5 m (0.16...5 ft)	Selectable L.O. or D.O., NPN and PNP	42GLP-9000-QD
	70...264V DC 60...264V AC, 15 mA			Selectable L.O. or D.O., SPDT EM Relay	42GRP-9002-QD
	40...264V AC, 15 mA			Selectable L.O. or D.O., Solid-state isolated N.O.	42GRP-9003-QD
Clear object detection	10...30V DC, 30 mA	Visible red	0.050...1.2 m (0.16...4 ft)	Selectable L.O. or D.O., NPN and PNP	42GRC-9200-QD
	70...264V AC/DC			Selectable L.O. or D.O., SPDT EM Relay	42GRC-9202-QD
	45...264V AC, 15 mA			Selectable L.O. or D.O., Solid-state isolated N.O.	42GRC-9203-QD
Transmitted beam emitter	10...264V AC/DC, 15 mA	Infrared	0.025...61 m (0.83...200 ft)	NA	42GRL-9000-QD
Transmitted beam receiver	10...30V DC, 30 mA			Selectable L.O. or D.O., NPN and PNP	42GRR-9000-QD
	40...264V AC, 10 mA			Selectable L.O. or D.O., Solid-state isolated N.O.	42GRR-9003-QD
Large aperture fiber optic	10...30V DC, 30 mA	Infrared	Depends on fiber optic cable selected on 6-44	Selectable L.O. or D.O., NPN and PNP	42GRF-9000-QD
	70...264V AC/DC, 15 mA			Selectable L.O. or D.O., SPDT EM Relay	42GRF-9002-QD
	40...264V AC, 15 mA			Selectable L.O. or D.O., Solid-state isolated N.O.	42GRF-9003-QD

Specifications

Certifications	UL Listed, CSA Approved, and CE Marked for all applicable directives
Enclosure Type Rating	IP69K, IP67 with 1200 psi; NEMA 3, 4X, 6P, 12, 13; ECOLAB rated
Operating Temperature [C (F)]	-34...+70 ° (-29...+158 °)
Operating Voltage	10...30V DC, 40...264V AC/DC (see product selection table)
Protection Type	False pulse, reverse polarity, overload, short-circuit
Load Current	250 mA @ 30V DC (all models except 42GLP & 42GSP), 2 A @ 132V AC, 1 A @ 264 V AC (SPDT models)
Housing Material	Thermoplastic polyester resin
Lens Material	Acrylic
Cover Material	Neoprene

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
AC Micro (M12) QD cordset, 4-pin, 2 m (6.6 ft)	889N-F4AF-6F
Mounting bracket, plastic, swivel/tilt	60-2439
Mounting bracket, heavy duty impact	60-2702
Reflector, round, 76 mm (3 in.) diameter	92-39
Reflector, round, 32 mm (1.25 in.) diameter	92-47
Extended range lens assembly	60-2661
Extended range lens assembly	60-2559
Fiber optic cable lens extender	60-2738

RFID



6-108...6-109

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<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors

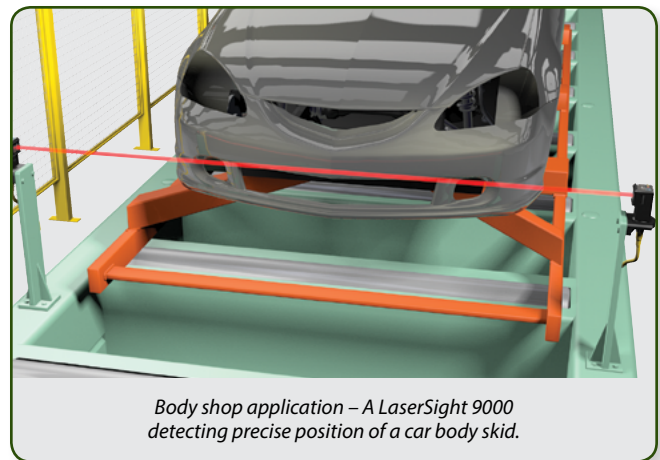
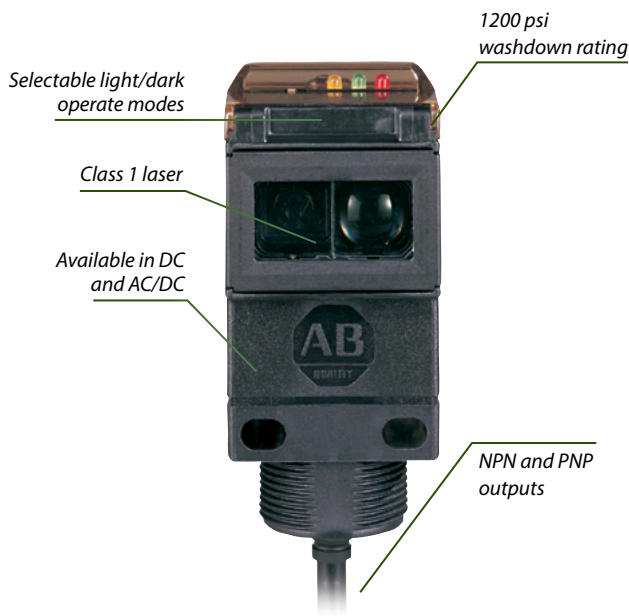


Series 9000 LaserSight 42G








- Class 1 eye safe visible laser for small object detection
- Ranges up to 304.8 m (1000 ft)
- Harsh duty
- IP69K and 1200 psi washdown rating with ECOLAB
- Relay output models

Precision with Maximum Range

The 42GR LaserSight 9000 sensors are ideal for tough sensing applications that require a longer range, when the environment is dusty or dirty, or when the object to be sensed is small. The Class 1 laser source provides a visible red beam for easy alignment even at these distances. Use this sensor when your application calls for precision and maximum sensing range.



Photoelectric Sensors

<p>IO-Link</p>  <p>6-2...6-3</p>	 <p>6-4...6-45</p>	<p>Proximity Sensors</p>  <p>6-46...6-75</p>	<p>Ultrasonic Sensors</p>  <p>6-76...6-79</p>	<p>Limit Switches</p>  <p>6-80...6-93</p>	<p>Encoders</p>  <p>6-94...6-99</p>	<p>Condition Sensing</p>  <p>6-100...6-107</p>
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Product Selection

Series 9000 LaserSight

Sensing Mode	Sensing Distance	Operating Voltage	Light Source	Output Configuration	Cat. No. ¹
Polarized retroreflective	0.3 ... 40 m (1 ... 130 ft)	10 ... 30V DC, 45 mA	Class 1 laser	Selectable L.O. or D.O., NPN and PNP	42GRU-92L0-QD
		110 ... 132V AC, 70 mA		Selectable L.O. or D.O., SPDT EM Relay	42GRU-92L2-QD
Diffuse	800 mm (31.5 in.)	10 ... 30V DC, 45 mA		Selectable L.O. or D.O., NPN and PNP	42GRP-92L0-QD
		110 ... 132V AC, 70 mA		Selectable L.O. or D.O., SPDT EM Relay	42GRP-92L2-QD

¹ The **-QD** suffix describes a 4-pin DC Micro (M12) integral QD for DC models, a 5-pin mini QD for SPDT EM relay models.



Looking for More?

This catalog highlights only our most essential components; for a complete product selection, visit us at:

<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>

Specifications

Certifications	UL Listed, CSA Approved, and CE Marked for all applicable directives
Enclosure Type Rating	IP69K, IP67 with 1200 psi; NEMA 3, 4X, 6P, 12, 13; ECOLAB rated
Operating Temperature [C (F)]	-10 ... +50 ° (-14 ... +122 °)
Operating Voltage	10 ... 30V DC, 40 ... 264V AC/DC (see product selection table)
Protection Type	False pulse, reverse polarity, overload, short-circuit
Load Current	250 mA @ 30V DC (all models except 42GLP & 42GSP), 2 A @ 132V AC, 1 A @ 264 V AC (SPDT models)
Housing Material	Thermoplastic polyester resin
Lens Material	Acrylic
Cover Material	Neoprene

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
Mini QD cordset, 4-pin, 1.8 m (6 ft)	889N-F4AF-6F
Mini QD cordset, 5-pin, 1.8 m (6 ft)	889N-F5AF-6F
Mounting bracket, plastic, swivel/tilt	60-2439
Mounting bracket, heavy duty impact	60-2702
Reflector, round, 76 mm (3 in.) diameter	92-39
Reflector, round, 32 mm (1.25 in.) diameter	92-47
Extended range lens assembly	60-2661
Extended range lens assembly	60-2559
Fiber optic cable lens extender	60-2738

RFID



6-108...6-109

For more information on our complete family of photoelectric products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors

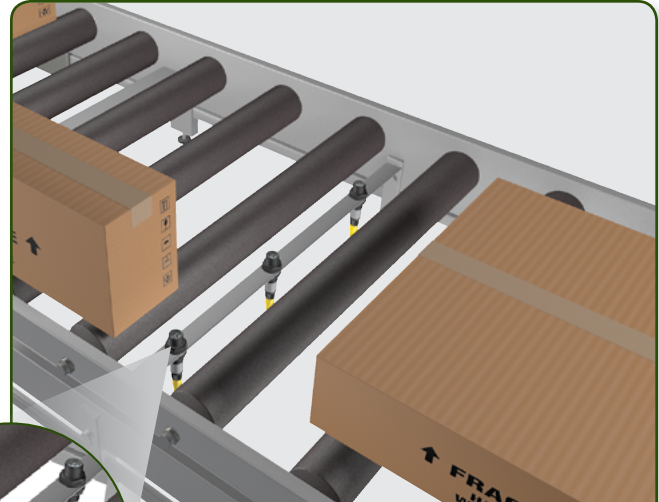
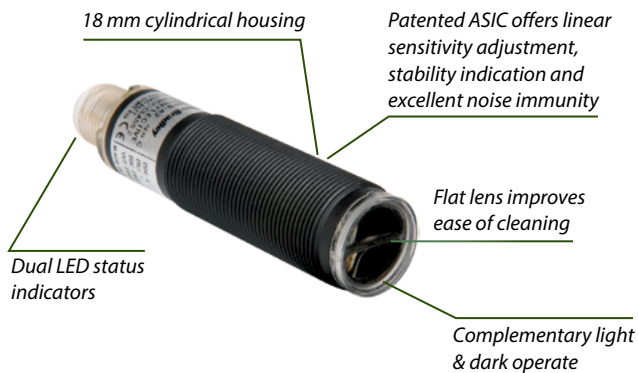


18 mm Plastic Cylindrical 42CA

- 18 mm plastic cylindrical
- Ranges up to 16 m (52.5 ft)
- Extended range high-speed models
- IP67 rating
- Linear sensitivity adjustment
- Stability indication
- Dual LED indicators

A Cost-effective General-purpose Solution

The 42CA 18 mm plastic cylindrical general-purpose sensors are ideal for light to medium duty industrial applications. Five possible sensing modes allow the 42CA to be used in a variety of complex applications. These sensors offer a highly linear sensitivity adjustment, stability indication and excellent noise immunity; making them easy to apply and maintain.



Material handling – Three 42CA sensors detecting boxes of varying sizes from below and in any position across the conveyor width.

Photoelectric Sensors

IO-Link



6-2...6-3



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

18 mm Plastic Cylindrical

Sensing Mode	Light Source	Sensing Distance	Sensitivity Adjustment	Output Configuration	Response Time	Cat. No. ¹
Retroreflective	Visible red	0.002...4.8 m (0.0...15.7 ft)	None	Complementary L.O. & D.O., PNP	1 ms	42CA-U2MPB-D4
		0.002...7.2 m (0.0...23.6 ft)	Single-turn potentiometer		0.5 ms	42CA-U2MPA-D4
Polarized retroreflective	Visible red	0.002...3.8 m (0.0...12.5 ft)	None		1 ms	42CA-P2MPB-D4
Standard diffuse	Infrared	0...100 mm (0...3.9 in.)	Single-turn potentiometer		1 ms	42CA-D1MPAE-D4
		0...400 mm (0...15.7 in.)				42CA-D1MPAJ-D4
		0...1 m (0...3.28 ft)				42CA-D1MPAL-D4
Background suppression	Visible red	50 mm (2 in.)	None	Selectable L.O. or D.O., PNP	0.5 ms	42CA-B2LPBC-D4
		100 mm (3.9 in.)			42CA-B2LPBE-D4	
Transmitted beam emitter	Infrared	0.003...16 m (0.01...52.5 ft)		NA	NA	42CA-E1EZB1-D4
Transmitted beam receiver				Single-turn potentiometer	Complementary L.O. & D.O., PNP	1 ms

¹ The -D4 suffix describes a 4-pin DC Micro (M12) QD connector.

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	10...30V DC, 30 mA
Protection Type	Reverse polarity, overload, short-circuit
Load Current	100 mA
Housing Material	PBT
Lens Material	PMMA

Required Cordsets and Accessories

Description	Cat. No.
DC Micro QD cordset, straight, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
DC Micro QD cordset, right angle, 4-pin, 2 m (6.6 ft)	889D-R4AC-2
Mounting bracket, snap-clamp	871A-SCBP18
Mounting bracket, right angle	60-2657
Mounting bracket, swivel/tilt	60-2649
Mounting bracket, straight	60-2656
Spare corner cube reflector (76 mm (3 in.) diameter with mounting hole)	92-39
Spare corner cube reflector (32 mm (1.3 in.) diameter with mounting hole)	92-47

RFID



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For more information on our complete family of photoelectric products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors



18 mm Metal Cylindrical 42CM

- Heavy duty 18 mm metal housing
- Ranges up to 20 m (65.6 ft)
- IP67 rating
- Sensitivity adjustment (diffuse models only)

General-purpose Sensing in a Rugged Metal Housing

The 42CM 18 mm Metal Cylindrical General-purpose Sensors are intended for heavy-duty industrial applications requiring an industry standard 18 mm cylindrical housing. Five possible modes of sensing allow the 42CM to be used in a variety of complex applications. Outputs are short-circuit protected to provide continuous operation even under unexpected conditions.



Feeder bowl application – A 42CM monitors bowl level to prevent component runoff. This background suppression model ignores reflections from the bowl to accurately detect the components only.

Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



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Encoders



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Condition Sensing



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Product Selection

18 mm Metal Cylindrical

Sensing Mode	Light Source	Sensing Distance	Sensitivity Adjustment	Output Configuration	Response Time	Cat. No. ¹
Retroreflective	Infrared	0.003...4 m (0.0...13.2 ft)	None	Complementary L.O. & D.O., PNP	4 ms	42CM-U1MPB-D4
Polarized retroreflective		0.003...3 m (0...9.9 ft)				42CM-P2MPB-D4
Standard diffuse	Visible red	0...100 mm (0...3.9 in.)	Potentiometer		2 ms	42CM-D2MPAE-D4
		0...400 mm (0...15.7 in.)				42CM-D1MPAL-D4
Background suppression		50 mm (2 in.)	None	Selectable L.O. or D.O., PNP	0.5 ms	42CM-B2LPBC-D4
		100 mm (3.9 in.)				42CM-B2LPBE-D4
Transmitted beam emitter	Infrared	3...20 m (0...65.6 ft)	None	NA	NA	42CM-E1EZB-D4
Transmitted beam receiver	Infrared or visible red			Complementary L.O. & D.O., PNP	2 ms	42CM-R1MPB-D4

¹ The **-D4** suffix describes a 4-pin DC Micro (M12) QD connector.



Need Help?

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Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	10...30V DC, 30 mA
Protection Type	Reverse polarity, overload, short-circuit
Load Current	100 mA
Housing Material	Nickel-plated brass
Lens Material	PMMA/PC

Required Cordsets and Accessories

Description	Cat. No.
DC Micro QD cordset, straight, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
DC Micro QD cordset, right angle, 4-pin, 2 m (6.6 ft)	889D-R4AC-2
Mounting bracket, snap-clamp	871A-SCBP18
Mounting bracket, right angle	60-2657
Mounting bracket, swivel/tilt	60-2649
Mounting bracket, straight	60-2656
Spare corner cube reflector (76 mm (3 in.) diameter with mounting hole)	92-39
Spare corner cube reflector (32 mm (1.3 in.) diameter with mounting hole)	92-47

RFID



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For more information on our complete family of photoelectric products, please visit:
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Photoelectric Sensors

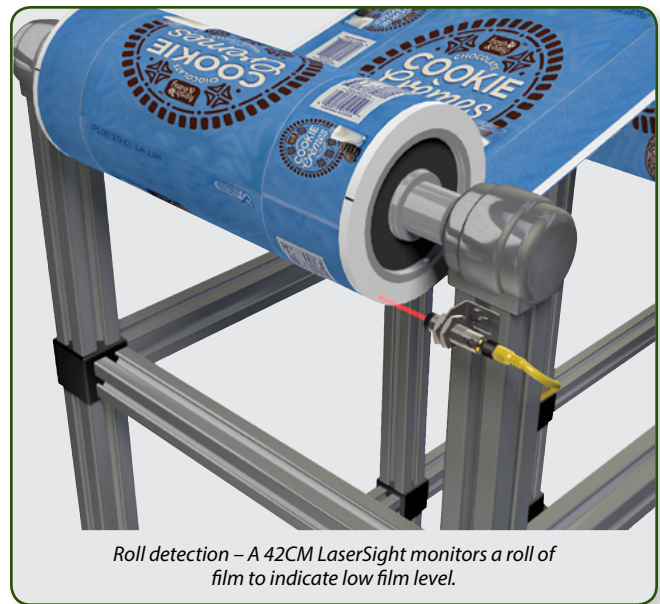
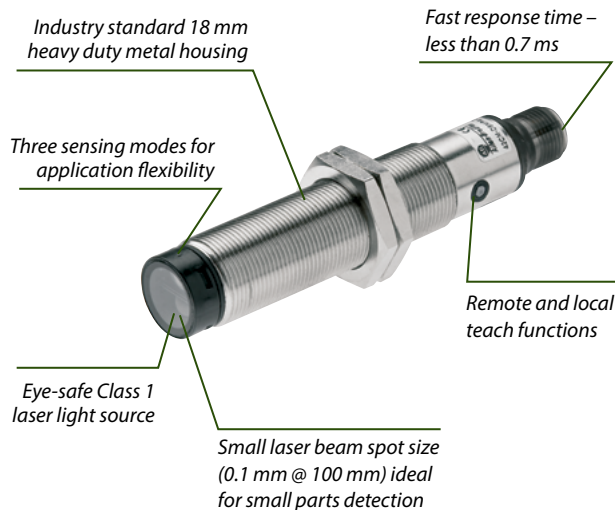


LaserSight 18 mm Metal Cylindrical 42CM

- Class 1 eye safe visible laser for small object detection
- Heavy duty 18 mm metal housing
- Ranges up to 50 m (164 ft)
- Small 0.1 mm spot size
- IP67 rating

Rugged, Laser-based Sensing

The 42CM 18 mm LaserSight photoelectric laser sensors combine an eye-safe Class 1 visible laser light source and an industry standard cylindrical housing. They are ideal for tough sensing applications that require a longer range, where the environment is dusty, dirty, or when the object to be sensed is small.



Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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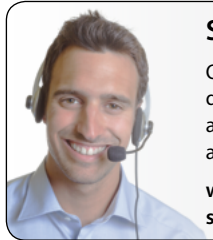


Product Selection

LaserSight 18 mm Metal Cylindrical

Sensing Mode	Light Source	Sensing Distance	Sensitivity Adjustment	Output Configuration	Response Time	Cat. No. ¹
Polarized retroreflective	Class 1 laser	0.003...30 m (0...78 ft)	None	Complementary L.O. and D.O., PNP	0.7 ms	42CM-P8MPB-D4
Diffuse		3...300 mm (0...11.8 in.)	Teach button			42CM-D8MPA-D4
Transmitted beam emitter		3...50 m (0...164 ft)	Potentiometer	NA	NA	42CM-E8EZB-D4
Transmitted beam receiver				Complementary L.O. and D.O., PNP	0.5 ms	42CM-R8MPB-D4

¹ The -D4 suffix describes a 4-pin DC Micro (M12) QD connector.



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www.rockwellautomation.com/sales-partners/overview.page

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-10...+55 ° (14...131 °)
Operating Voltage	10...30V DC, 25 mA
Protection Type	Reverse polarity, overload, short-circuit
Load Current	100 mA
Housing Material	Nickel-plated brass
Lens Material	Glass

Required Cordsets and Accessories

Description	Cat. No.
DC Micro QD cordset, straight, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
DC Micro QD cordset, right angle, 4-pin, 2 m (6.6 ft)	889D-R4AC-2
Mounting bracket, snap-clamp	871A-SCBP18
Mounting bracket, right angle	60-2657
Mounting bracket, swivel/tilt	60-2649
Mounting bracket, straight	60-2656
Rectangular reflector, 51 x 51 mm (2 x 2 in.)	92-118

RFID



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For more information on our complete family of photoelectric products, please visit: <http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors

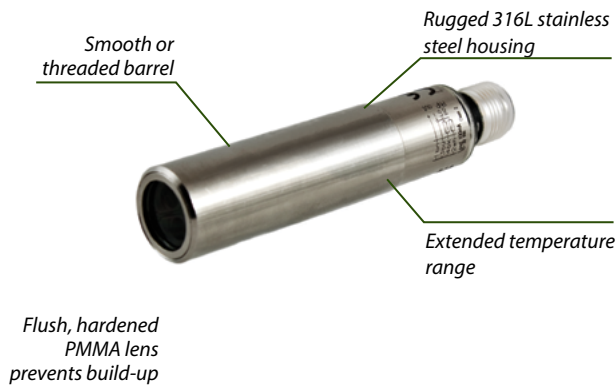


18 mm Stainless Steel Cylindrical 42CS

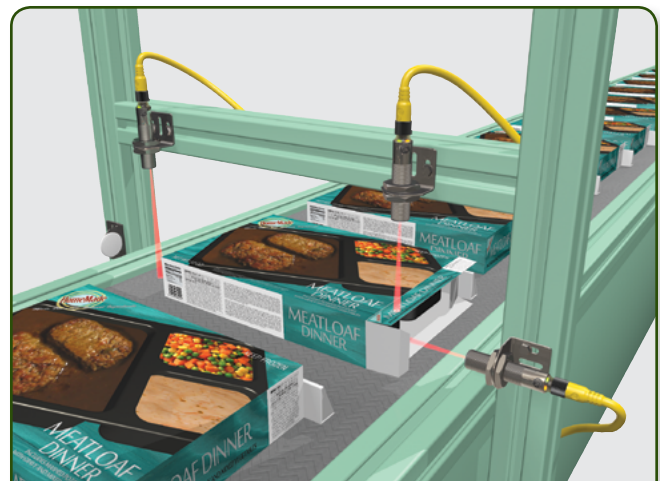
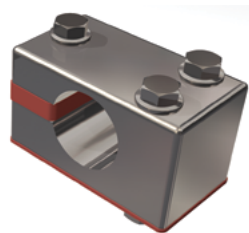
- Stainless steel 18 mm cylindrical
- Smooth barrel design
- Ranges up to 20 m (65.6 ft)
- IP69K, ECOLAB, and Johnson Diversey rated
- Extended temperature operating range
- Ferromagnetic teach

The Ideal Solution for Food and Beverage Applications

The 42CS stainless steel cylindrical sensors are ideal for food, beverage, and pharmaceutical applications. The smooth, clean design minimizes the collection and accumulation of undesired particles allowing for a fast and easy clean up. An innovative teach feature also simplifies setup – just place a ferromagnetic metal object on a section of the sensor housing to initiate the teach process.



Optional block mounting bracket for smooth barrel housing (Cat. No. 60-BCS-18B)



Flap detection – When the single 42CS mounted on the side of the conveyor senses a food package, it triggers the two sensors above to check for open box flaps, ensuring all packages are sealed.

Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



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Encoders



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Condition Sensing



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Product Selection

18 mm Stainless Steel Cylindrical

Sensing Mode	Light Source	Sensing Distance	Sensitivity Adjustment	Output Configuration	Response Time	Cat. No. ¹	
Polarized retroreflective	Visible red	4 m (13.1 ft)	None	Complementary L.O./D.O., PNP	1 ms	42CSS-P2MPB1-D4	
Standard diffuse		100 mm (3.9 in.)	Ferromagnetic teach			42CSS-D2MPA1-D4	
	Infrared	400 mm (15.8 in.)				42CSS-D1MPA2-D4	
800 mm (31.5 in.)		42CSS-D1MPA3-D4					
Background suppression	Visible red	60...100 mm (2.4...3.9 in.)			None	1.25 ms	42CSS-B2MPA1-D4
Clear object detection		1 m (3.2 ft)				1 ms	42CSS-C2MPA1-D4
Transmitted beam emitter	Infrared	0...20 m (0...65.6 ft)		None	NA	NA	42CSS-E1EZB1-D4
Transmitted beam receiver			Complementary L.O./D.O., PNP		2 ms	42CSS-R9MPB1-D4	

¹ The prefix **42CSS** denotes smooth barrel. For threaded models, replace the **42CSS** with **42CST** (e.g., **42CST-P2MPB1-D4**). The **-D4** suffix describes a 4-pin DC Micro (M12) QD connector.



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP69K, ECOLAB, and Johnson Diversey rated
Operating Temperature [C (F)]	-25...+85 ° (-13...+185 °)
Operating Voltage	10...30V DC @ 35 mA max.
Protection Type	Reverse polarity, transient noise, short-circuit
Load Current	100 mA
Housing Material	316 stainless steel
Lens Material	PMMA

Required Cordsets and Accessories

Description	Cat. No.
DC Micro QD cordset, straight, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
DC Micro (M12) QD patchcord	889D-F4ACDM-2
Block mounting bracket for smooth barrel housing	60-BCS-18B
Straight mounting bracket for threaded models	60-2656
Right angle mounting bracket for threaded models	60-2657
Spare corner cube reflector (32 mm (1.26 in.) diameter with mounting hole)	92-47

RFID



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Photoelectric Sensors

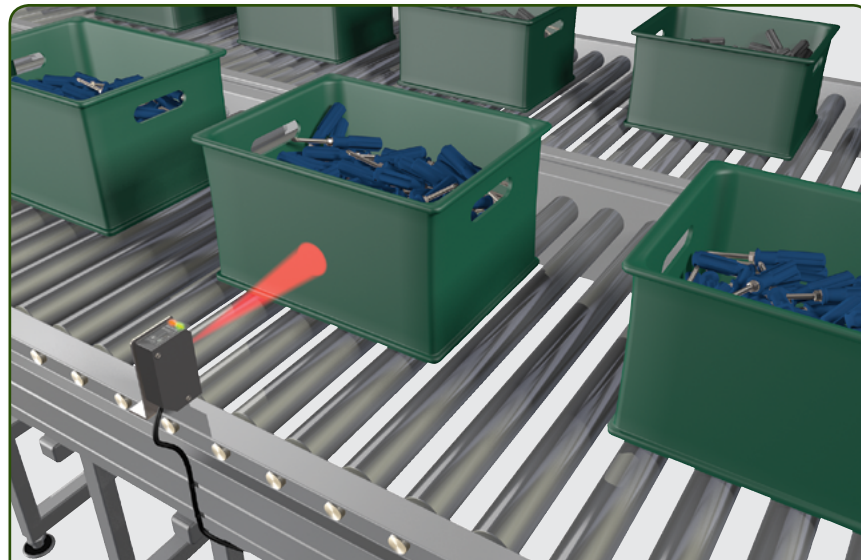


Long-Range Background Suppression 42BT and 42BC

- Adjustable 1 m and 2 m range background suppression
- Slim flat pack housing design
- Infrared LED or red LED
- Selectable L.O. and D.O.
- Dual (PNP and NPN) outputs
- AC/DC relay output models (42BC)

Sensing the Target While Ignoring the Background

Background suppression sensors are designed for applications requiring the sensor to see a target very close to a reflective background. Background suppression is particularly effective when the target and background have similar reflectivities or when dark targets are to be sensed against a lighter, more reflective background. These long range models offer high background suppression performance at sensing ranges up to 2 m (6.6 ft).



Side-by-side conveyors – A 42BT background suppression sensor detects bins on the near conveyor while ignoring bins on the second.

Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



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Condition Sensing




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Product Selection

Long-Range Background Suppression

Sensing Mode	Light Source	Sensing Distance [mm (in.)]	Sensitivity Adjustment	Output Configuration	Response Time	Cat. No.
Background suppression	Visible red	100...1000 (3.94...39.4)	5-turn potentiometer	Selectable L.O./D.O., NPN & PNP	2 ms	42BT-B2LBSL-F4
		100...2000 (3.94...78.7)				42BT-B1LBSN-F4
	Infrared	200...1000 (7.87...39.4)	Adjustment knob	Selectable L.O./D.O., SPST N.O Relay	20 ms	42BC-B1LBAL-T4
				Selectable L.O./D.O., NPN & PNP		42BC-B1CRAL-T4
		200...2000 (7.87...78.7)		Selectable L.O./D.O., NPN & PNP	30 ms	42BC-B1LBAN-T4
				Selectable L.O./D.O., SPST N.O Relay		42BC-B1CRAN-T4



Connected Components
 Simpler, faster, cost-effective machine building.
rockwellautomation.com/global/capabilities/industrial-automation-control/

Specifications

Certifications	42BT	cULus Listed and CE certified for all applicable directives
	42BC	UL Listed and CSA certified
Enclosure Type Rating	42BT	IP66
	42BC	IP65
Operating Temperature [C (F)]	42BT	-25...+55 ° (-13...+131 °)
	42BC	
Operating Voltage	42BT	12...24V DC
	42BC	12...24V DC, 24...240V AC/DC
Protection Type	42BT	Short circuit
	42BC	Short circuit, reverse polarity, overload
Load Current	42BT	100 mA
	42BC	100 mA, 3A (AC/DC)
Housing Material	42BT	Polyarilate
	42BC	Polycarbonate and acrylic
Lens Material	42BT	Polyarilate
	42BC	

Required Cordsets and Accessories

Description	Cat. No.
DC Micro QD cordset, straight, stainless steel, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
DC Micro (M12) QD receptacle	888D-M4AC1-0M3
Vertical mounting bracket for 42BT	61-6738
Horizontal mounting bracket for 42BT	61-6739
Mounting bracket	60-2637
Replacement cover	60-2669
Mini QD receptacle	60-2668

RFID


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Photoelectric Sensors



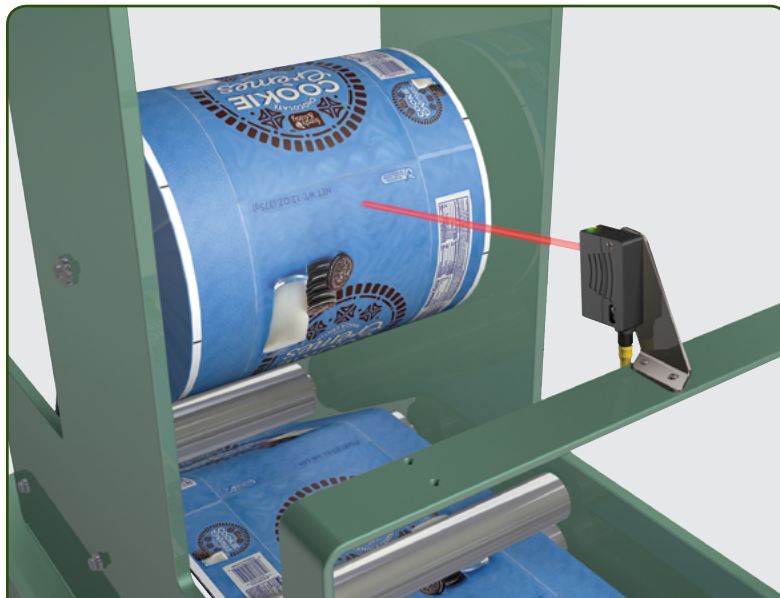
Laser Measurement 45LMS

- Long-range, high performance laser measurement
- Time of Flight (ToF) technology
- Ranges up to 50 m (164.04 ft)
- Eye Safe Class 1 or Class 2 laser (by model)
- One discrete and one analog (4...20 mA) output
- Push button setup of switch points or analog scaling



Solve Difficult Measurement Applications

The 45LMS is a great solution for long range detection/measurement in difficult applications that exceed the capabilities of standard diffuse or background suppression photoelectric sensors. Available in three ranges, this sensor uses the Time of Flight (ToF) principle and has a relatively small beam spot, even from a distance of 50 m (164 ft).



Roll diameter – A 45LMS sensor measures the diameter of a web roll for speed control and runout prevention.

Typical applications include:

- Distance measurement
- Verifying material position
- Stack level
- Roll diameter or thickness measurement
- Fixture positioning
- Error-proofing inspection
- Level monitoring
- Crane crash protection

Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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Product Selection

Laser Measurement

Sensing Mode	Light Source	Sensing Distance	Spot Size	Cat. No.
Diffuse	Class 1 laser	0.2...8 m (0.66...26.25 ft)	< 10 mm (0.39 in.) at 8 m (26 ft) and 20 °C (68 °F)	45LMS-D8LGC1-D4
	Class 2 laser	0.2...15 m (0.66...49.21 ft)	< 15 mm (0.59 in.) at 15 m (49 ft) and 20 °C (68 °F)	45LMS-D8LGC2-D4
Retroreflective	Class 1 laser	0.2...50 m (0.66...164.04 ft)	< 50 mm (2 in.) at 50 m (164 ft) and 20 °C (68 °F)	45LMS-U8LGC3-D4

IO-Link enabled.



Looking for More?

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<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>

Specifications

Certifications	UL Listed, cULus Listed, and CE Marked for all applicable directives
Enclosure Type Rating	IP65
Operating Temperature [C (F)]	-30...+50 ° (-22...+122 °)
Operating Voltage	10...30V DC, (18...30V DC in IO-Link mode)
Protection Type	Short circuit, reverse polarity (for discrete output); Short circuit, overload protected (for analog output)
Load Current	100 mA max.
Housing Material	Plastic ABS
Lens Material	Plastic pane

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) straight QD cordset, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
DC Micro (M12) right angle cordset, 4-pin, 2 m (6.6 ft)	889D-R4AC-2
Mounting bracket	45LMS-BKT1
Mounting bracket (L shape)	45LMS-BKT2
Weld slag cover	45LMS-BKT3
Point I/O IO-Link Master Module	1734-4IOL
ArmorBlock IO-Link Master	1732E-8IOLM12R

RFID



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Photoelectric Sensors



Color Registration/Contrast 45CRM

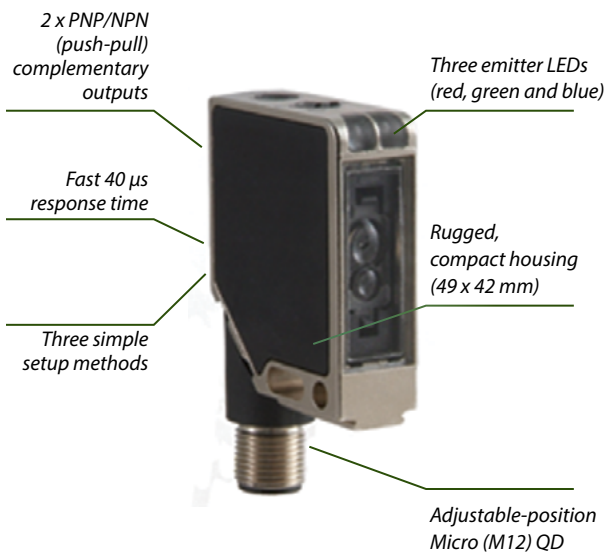
- High-speed color registration sensing
- 40 μ s response time
- Rotatable M12 connector
- Rotary switch setup
- 2 x PNP/NPN (push-pull) complementary outputs
- Compact size (49 x 42 x 15 mm (1.93 x 1.65 x 0.59 in.))
- IP67 rating



Reliable, High-speed Registration Sensing

The 45CRM high-speed contrast sensor uses red, green, and blue emitter LEDs to reliably discern between registration marks and the background of a web.

With its rugged, compact housing, quick response time and ease-of-use, the 45CRM is an ideal solution for a wide range of applications in a variety of industries including packaging, material handling, food and beverage, and printing.



Photoelectric Sensors

IO-Link



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Condition Sensing



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Product Selection

Color Registration/Contrast

Sensing Mode ¹	Sensing Distance [mm (in.)]	Spot Size [mm (in.)]	Sensitivity Adjustment	Output Configuration	Response Time	Light Source	Cat. No.
Parallel beam	11 ± 2 (0.43...0.08)	1 x 3 (0.04 x 0.12)	Rotary switch	L.O./D.O., 2 x PNP/NPN (push-pull) complementary outputs	40 μs	3 LEDs (red, green, blue)	45CRM-4LHT1-D4
Perpendicular beam							45CRM-4LHT2-D4

¹ Beam orientation is relative to the long axis of the sensor body and should match the orientation of the registration mark being detected.

IO-Link enabled.



Need Help?

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www.rockwellautomation.com/support/overview.page

Specifications

Certifications	UL Listed, cULus Listed, and CE Marked for all applicable directives
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-20...+60 ° (-4...+140 °)
Operating Voltage	10...30V DC (18...30V DC when operating in IO-Link mode)
Protection Type	Short circuit, reverse polarity, overload
Load Current	100 mA
Housing Material	Die-cast zinc, nickel-plated
Lens Material	PMMA plastic, clear

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) straight QD cordset, 4-pin, 2 m (6.6 ft)	889D-F4AC-2
Mounting bracket	45CRM-BRK1-ADAPT
Point I/O IO-Link Master Module	1734-4IOL
ArmorBlock IO-Link Master	1732E-8IOLM12R

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Photoelectric Sensors

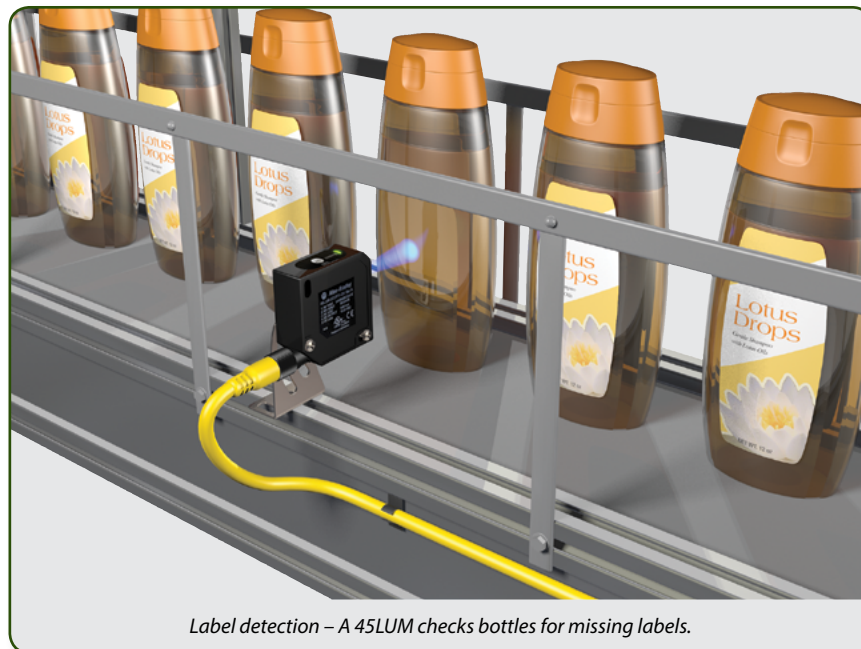


Luminescence 45LUM

- Detects luminescent/fluorescent particles
- 5...50 mm (0.2...2 in.) sensing range
- Teach button setup
- External teach capability
- Rotatable M12 connector
- IP67 rating

Detect What Is Invisible to the Human Eye

The 45LUM luminescence sensor provides a solution for detection of substances which are invisible to the human eye. This sensor detects luminophores or fluorescence, which are emitted from the object being detected. The sensor converts the UV light into a visible light, which is then received by the luminescence sensor. This sensor can detect particles such as glue, clear labels, oils, greases, paint, detergents, and chalks.



Photoelectric Sensors

IO-Link



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Product Selection

Luminescence

Sensing Mode	Light Source	Sensing Distance	Spot Size	Cat. No.
Diffuse	Ultraviolet LED	5...50 mm (0.2...2 in.)	3 mm (0.12 in.) at 18 mm (0.71 in.) distance	45LUM-D7JPT1-D5

Sales Offices and Distributors

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www.rockwellautomation.com/sales-partners/overview.page



Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-10...+55 ° (+14...+131 °)
Operating Voltage	12...28V DC
Protection Type	Class 2, short circuit and reverse polarity
Supply Current	≤ 40 mA (no load)
Housing Material	ABS
Lens Material	Glass

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) straight QD cordset, 5-pin, 2 m (6.6 ft)	889D-F5AC-2
DC Micro (M12) straight QD cordset, 5-pin, 2 m (6.6 ft)	889D-R5AC-2
Mounting bracket	45BPD-BKT1
Protective mounting bracket	45BPD-BKT2

RFID



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For more information on our complete family of photoelectric products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>

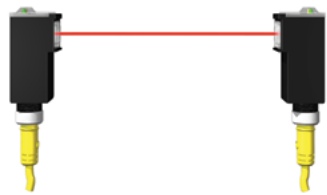


Photoelectric Sensors



Measuring and Discrete Light Arrays 45MLA and 45DLA

- Detect oddly shaped or non-uniform objects
- Detect targets with gaps or spaces
- Large sensing area
- Discrete (45DLA) and measurement (45MLA) models
- Slim housing profiles
- Sensing range:
 - 45MLA: 4 m
 - 45DLA: 1.5 m or 8 m, selectable via wiring



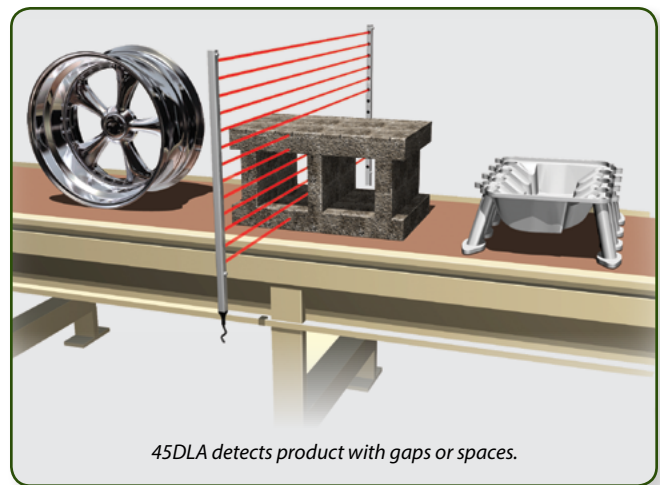
Traditional photoelectric transmitted beam sensor – single sensing beam



Light array sensor – multiple sensing beams

Light Array Concept

Traditional photoelectric transmitted beam sensors detect in a single line from the emitter to the receiver. Light array sensors combine multiple emitter or receiver elements into a single housing to create a sensing field instead of a single sensing beam. Therefore, light arrays are capable of detecting targets over a wider area. This makes them ideal for detecting oddly shaped parts, products with gaps or spaces, or inconsistently positioned targets, at a fraction of the cost of using multiple sensor pairs.



45DLA detects product with gaps or spaces.

Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



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Encoders



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Condition Sensing



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Product Selection – Measuring and Discrete Light Arrays

45MLA Measuring Light Arrays

No. of Beams	Housing Height [mm (in.)]	Sensing Height ¹ [mm (in.)]	Beam Spacing [mm (in.)]	Cat. No.
30	320 (12.6)	300 (11.8)	10 (0.39)	45MLA-AT0300P10
60	630 (24.4)	600 (23.6)	10 (0.39)	45MLA-AT0600P10
90	920 (36.2)	900 (35.4)	10 (0.39)	45MLA-AT0900P10
120	1220 (48)	1200 (47.2)	10 (0.39)	45MLA-AT1200P10
36	920 (36.2)	900 (35.4)	25 (0.98)	45MLA-AT0900P25
48	1220 (48)	1200 (47.2)	25 (0.98)	45MLA-AT1200P25

¹ Sensing heights up to 3 m and ATEX certification available upon request.

45MLA Controllers

Description	Cat. No.
45MLA controller – I/O	45MLA-CTRL
45MLA controller – RS-485	45MLA-CTRL-485
45MLA controller – analog	45MLA-CTRL-ALG
45MLA controller – basic	45MLA-CTRL-BSC
45MLA controller – CAN	45MLA-CTRL-CAN

45DLA Discrete Array

Housing Height [mm (in.)]	Sensing Height [mm (in.)]	Response Time	Sensing Distance [m (ft.)]	Resolution [mm (in.)]	Output	Cat. No.
266 (10.5)	118 (4.65)	25 ms	0.2...8 (0.7...26.2)	30 (1.2)	NPN/PNP	45DLA-1LEB1T-F4
354 (13.9)	206 (8.11)	45 ms	0.2...8 (0.7...26.2)	30 (1.2)	NPN/PNP	45DLA-1LEB2T-F4
530 (20.9)	382 (15.04)	85 ms	0.2...8 (0.7...26.2)	30 (1.2)	NPN/PNP	45DLA-1LEB4T-F4
706 (27.8)	558 (21.97)	125 ms	0.2...8 (0.7...26.2)	30 (1.2)	NPN/PNP	45DLA-1LEB6T-F4
882 (34.7)	734 (28.9)	165 ms	0.2...8 (0.7...26.2)	30 (1.2)	NPN/PNP	45DLA-1LEB8T-F4

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	45MLA and 45DLA: IP54
Operating Temperature [C (F)]	45MLA: 0...+55° (32...131°) 45DLA: -20...+65° (-4...+149°)
Operating Voltage	45MLA: 204...27.6V DC 45DLA: 14...30V DC
Protection Type	Short circuit, reverse polarity, overload
Load Current	100 mA
Housing Material	Aluminum
Lens Material	Polycarbonate

Required Cordsets and Accessories

Description	Cat. No.
Flash mounting kit (two pieces/set)	445L-AF6145
Adjustable 180° bracket kit (two per kit) supplied with each pair. Two kits required per pair	445L-AF6143
180° adjustable flat bracket (two per kit). Two kits required per pair	445L-AF6149
Cable-light array to controller, 3 m patchcord, PVC jacket	445L-AC8RJ3
Cable-light array to controller, 5 m patchcord, M12 to RJ45	445L-AC8RJ5
Cable-light array to controller, 8 m patchcord, PVC jacket	445L-AC8RJ8
Cascadeable array extension patchcord, 1 m (3.28 ft) patchcord (optional)	445L-AC8PC1
Cascadeable array extension patchcord, 3 m (9.8 ft) patchcord (optional)	445L-AC8PC3
DC Micro QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
DC Micro QD cordset, straight, 4-pin, 0.3 m (1 ft)	889D-F4AC-5

RFID



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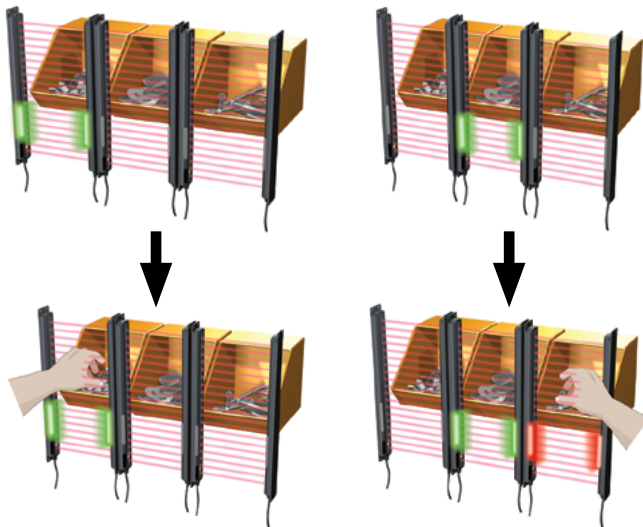


Photoelectric Sensors



Area and Bin Picking Arrays 45AST and 45PVA

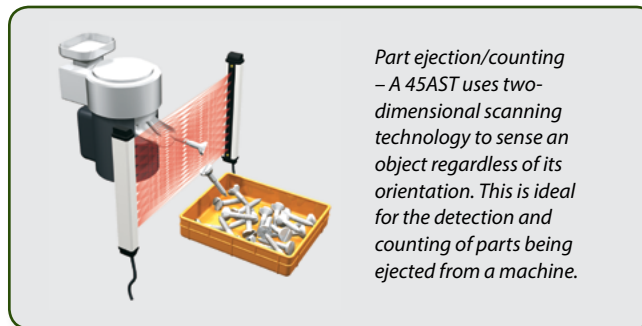
- Specialty light arrays
- Small parts detection (45AST)
- “Pick-to-light” bin picking verification (45PVA)
- Large detection area



45PVA Parts Verification Array

The 45PVA parts verification array is a special purpose light array for bin picking applications. By mounting the sensors on parts bins and wiring them into a controller programmed with the necessary logic, a virtually error-free bin-picking process can be achieved.

- Bin picking sensors – “pick-to-light” with automatic feedback
- Green “job light” indicates proper bin
- Red “warning indicator” automatically indicates incorrect bin pick
- Reduce risk of missing components or incorrect assembly



*Part ejection/counting
– A 45AST uses two-dimensional scanning technology to sense an object regardless of its orientation. This is ideal for the detection and counting of parts being ejected from a machine.*

Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



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Condition Sensing



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Product Selection

45AST Area and Bin Picking Arrays

Housing Height [mm (in.)]	Sensing Height [mm (in.)]	Response Time	Sensing Distance [m (ft.)]	Resolution [mm (in.)]	Output	Cat. No.
100 (3.9)	50 (2)	4 ms	0.5...2 (1.6...6.5)	15 (0.59)	PNP	45AST-1JPB1-F4
150 (5.9)	100 (3.9)	8 ms	0.15...0.8 (0.5...2.6)	11 (0.43)	PNP	45AST-1JPB2-F4
150 (5.9)	100 (3.9)	8 ms	0.5...2.5 (1.6...8.2)	13 (0.51)	PNP	45AST-1JPB3-F4
200 (7.9)	150 (5.9)	8 ms	0.15...0.8 (0.5...2.6)	17 (0.66)	PNP	45AST-1JPB4-F4

45PVA Parts Verification Arrays

Housing Height [mm (in.)]	Sensing Height [mm (in.)]	Response Time (ms)	Sensing Distance [m (ft.)]	Sensing Mode	Cat. No.
140 (5.5)	100 (3.9)	35 (L.O.), 25 (D.O.)	2 (6.5)	Transmitted beam pair	45PVA-1LEB1-F4
265 (10.4)	225 (8.9)	68 (L.O.), 42 (D.O.)	2 (6.5)	Transmitted beam pair	45PVA-1LEB2-F4
340 (13.4)	300 (11.8)	70 (L.O.), 42 (D.O.)	2 (6.5)	Transmitted beam pair	45PVA-1LEB3-F4
415 (16.3)	375 (14.7)	94 (L.O.), 58 (D.O.)	2 (6.5)	Transmitted beam pair	45PVA-1LEB4-F4
140 (5.5)	100 (3.9)	120	Retro: 2 (6.5); diffuse 0.4 (1.3)	Retroreflective/diffuse	45PVA-2LEA1-F4
265 (10.4)	225 (8.9)	120	Retro: 2 (6.5); diffuse 0.4 (1.3)	Retroreflective/diffuse	45PVA-2LEA2-F4



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	45AST: IP67 45PVA: NEMA 12, IP62
Operating Temperature [C (F)]	45AST: -5...+55 ° (23...131 °) 45PVA: 0...50 ° (32...122 °) for transmitted beam, -10...+50 ° (14...122 °)
Operating Voltage	45AST & 45PVA: 12...24V DC
Protection Type	45AST: Short circuit protection, reverse polarity, false pulse, overload; 45PVA: short circuit protection
Load Current	45AST: 100 mA, max. 45PVA: 50 mA, max.
Housing Material	Aluminum
Lens Material	45AST: Acrylic 45PVA: Polycarbonate

Required Cordsets and Accessories

Description	Cat. No.
DC Micro QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
DC Micro QD cordset, straight, 4-pin, 0.3 m (1 ft)	889D-F4AC-5
Mounting bracket used for parts verification array 45PVA	60-2773
Mounting bracket used for parts verification array 45PVA	60-2779
Mounting bracket used for parts verification array 45PVA	60-2772
Protective mounting bracket for 45PVA-1LEB1-F4	60-2775-1
Protective mounting bracket for 45PVA-1LEB2-F4	60-2776-1
Protective mounting bracket for 45PVA-1LEB3-F4	60-2777-1
Protective mounting bracket for 45PVA-1LEB4-F4	60-2778-1
Protective mounting bracket for 45PVA-2LEA1-F4	60-2785-1
Replacement reflective tape roll	92-100

RFID



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<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Photoelectric Sensors



Optical Fork 45LSP

- Detects objects as small as 0.2 mm (0.008 in.)
- Highly visible status indication on both sides
- Through-hole, threaded hole, or dovetail mounting
- Gap size up to 120 mm (4.7 in.)
- Remote teach and teach button lock (4-pin models)
- No alignment required
- IP67 rated

Alignment-free Small Part Detection

By eliminating the alignment and adjustment issues associated with other transmitted beam sensing solutions, optical fork sensors are the most easy-to-apply and cost-effective method for small part detection and counting in a wide range of industries.



The range of gap sizes and flexible mounting options make the 45LSP a viable solution for a broad range of applications. In addition to small object detection, these include, but are not limited to, edge detection, parts counting, gear tooth detection, and dimension verification.



Web alignment application – Two 45LSP fork sensors monitor horizontal film position on both sides of the roll. If the film drifts in either direction the sensor's light beam will be interrupted, causing the machine's dancer arm to correct the film position.

Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



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Encoders



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Condition Sensing




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Product Selection Optical Fork

Sensing Mode	Light Source	Sensing Gap [mm (in.)]	Sensitivity Adjustment	Output Configuration	Response Time	Cat. No. ¹
Transmitted beam fork	Visible red	30 (1.2)	Teach button	Selectable L.O./D.O., PNP	250 μs	45LSP-2LPA1-P3
			Teach button + remote teach			45LSP-2LPA1-P4
		50 (2)	Push button			45LSP-2LPA2-P3
			Teach button + remote teach			45LSP-2LPA2-P4
		80 (3.2)	Push button			45LSP-2LPA3-P3
			Teach button + remote teach			45LSP-2LPA3-P4
		120 (4.7)	Push button			45LSP-2LPA4-P3
			Teach button + remote teach			45LSP-2LPA4-P4

¹ The -P3 suffix describes a 3-pin Pico (M8) integral QD and the -P4 suffix describes a 4-pin Pico (M8) integral QD.



Connected Components
Simpler, faster, cost-effective machine building.
rockwellautomation.com/global/capabilities/industrial-automation-control/

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-20...+60 ° (-4...+140 °)
Operating Voltage	10...30V DC
Protection Type	Short circuit, reverse polarity
Load Current	100 mA, max.
Housing Material	Polycarbonate

Required Cordsets and Accessories

Description	Cat. No.
DC Pico QD cordset, straight, 3-pin, 2 m (6.5 ft)	889P-F3AB-2
DC Pico QD cordset, straight, 4-pin, 2 m (6.5 ft)	889P-F4AB-2
Dovetail mounting bracket	44B-BKT

RFID

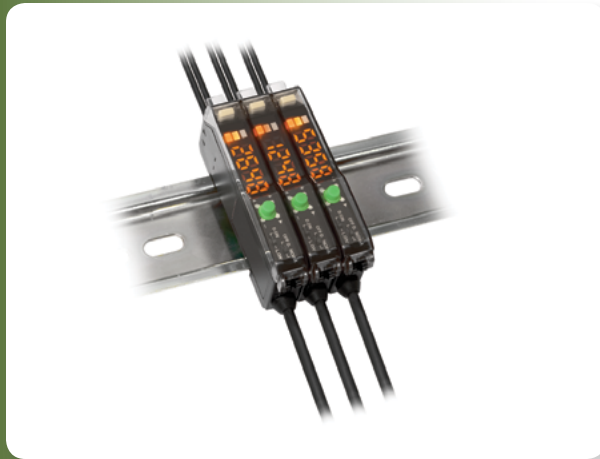


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Photoelectric Sensors



Fiber Optic 45FPL

- Long range (2x standard models)
- Large back-lit display
- High-speed and long-range modes
- DIN Rail or side mounting
- Push button static or dynamic teach
- Use with fiber optic cables up to 2.2 mm (0.09 in.) in diameter

Sensing for Space-critical Applications

Ideal for sensing small objects, fiber optic cables can be mounted in locations that would otherwise be inaccessible to photoelectric sensors. Other characteristics/advantages of fiber optic sensors include:

- Some glass fiber optic tips have the ability to withstand high temperatures [up to 482 °C (900 °F)]
- Withstand extreme shock and vibration
- Often have the fastest response times
- Immunity to electrical interference (EMI, RFI)



Small part detection – The 45FPL fiber optic ensures continuous flow of small parts exiting from a feeder bowl.

Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



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Condition Sensing



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Product Selection

45FPL Fiber Optic

Sensing Mode	Sensing Distance	Light Source	Sensitivity Adjustment	Output Configuration	Response Time	Cat. No. ¹
Small aperture fiber optic	Depends on fiber optic cable selected on 6-44	Visible red	Push button	Selectable L.O./D.O., NPN, 25 mA	Long range: 1.8 ms and High speed: 0.19 ms	45FPL-2LGE-Y3
				Selectable L.O./D.O., PNP, 32 mA		45FPL-2LHE-Y3

¹ The suffix -Y3 describes a 3-pin Pico (M8) QD on a 150 mm (6 in.) pigtail.



Looking for More?

This catalog highlights only our most essential components; for a complete product selection, visit us at:

<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP40
Operating Temperature [C (F)]	-25...+55 ° (-13...+131 °)
Operating Voltage	12...24V DC ± 10%
Protection Type	Short-circuit, reverse polarity, surge absorption (overload)
Load Current	100 mA
Housing Material	Polycarbonate
Lens Material	Depends on fiber optic cable selected

Required Cordsets and Accessories

Description	Cat. No.
DC Pico QD cordset, straight, 3-pin, 2 m (6.5 ft)	889P-F3AB-2
Fiber optic cables	Refer to page 6-45
Mounting assembly (included)	60-2638

RFID

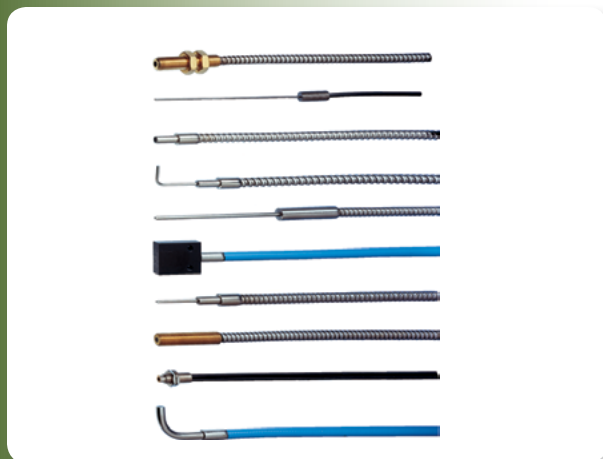


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Photoelectric Sensors



Fiber Optic Cables

Plastic

- Best used with visible light sources
- High flex applications
- Cost effective

Glass

- Suitable for visible or infrared light source
- High temperature applications
- Chemically resistant

Product Selection – Fiber Optic Cables

Fiber Optic Cables for Use with These Large Aperture Sensors:

- Series 9000 42GxF-900x
- RightSight 42EF-G1xA

Description	Sensing Tip Material	Fiber Bundle Diameter [mm (in.)]	Sheathing Material	Nominal Sensing Ref. [mm (in.)]	Cat No.
Bifurcated Cables for Large Aperture Sensors [4.6 mm/0.187 in.]¹					
Threaded 5/16 in. straight tip	Brass	–	PVC	120 (4.75)	43GR-TBB25ML
Threaded 5/16 in. straight tip	Brass	–	Stainless steel	120 (4.75)	43GR-TBB25SL
Right angle tip with 5/16 in. x 24 thread	Stainless steel	–	PVC	120 (4.75)	43GR-TMS25ML
Right angle tip with 5/16 in. x 24 thread	Brass/Stainless steel	–	Stainless steel	120 (4.75)	43GR-TMC25SL
Ferrule (smooth) right angle tip	Stainless steel	–	PVC	120 (4.75)	43GR-FIS25ML
Ferrule (smooth) right angle tip	Stainless steel	–	Stainless steel	120 (4.75)	43GR-FIS25SL
Transmitted Beam Cables for Large Aperture Sensors [4.6 mm/0.187 in.]²					
Threaded 5/16 in. straight tip	Brass	–	PVC	508 (20)	43GT-TBB25ML
Threaded 5/16 in. straight tip	Brass	–	Stainless steel	508 (20)	43GT-TBB25SL
Threaded 5/16 in. with right angle tip	Brass	–	PVC	508 (20)	43GT-TQS25ML
Threaded 5/16 in. with right angle tip	Brass	–	Stainless steel	508 (20)	43GT-TQS25SL
Right angle tip with 5/16 in. x 24 thread	Stainless steel	–	PVC	508 (20)	43GT-TMS25ML
Right angle tip with 5/16 in. x 24 thread	Brass/Stainless steel	–	Stainless steel	508 (20)	43GT-TMC25SL
Ferrule (smooth) right angle tip	Stainless steel	–	PVC	508 (20)	43GT-FIS25ML
Ferrule (smooth) right angle tip	Stainless steel	–	Stainless steel	508 (20)	43GT-FIS25SL

Photoelectric Sensors

IO-Link



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



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Encoders



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Condition Sensing



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Product Selection – Fiber Optic Cables

Glass Fiber Optic Cables for Use with These Small Aperture Sensors:

- 45FPL-xxxx
- Series 9000 42G*F-910x

Glass Fiber Optic Cables

Sensing Tip Description	Sensing Tip Material	Fiber Bundle Diameter [mm (in.)]	Sheathing Material	Nominal Sensing Ref. [mm (in.)]	Cat. No.
Bifurcated Cables for Small Aperture Sensors [2.2 mm/0.09 in.]¹					
Threaded M6 x 1 straight tip	Brass	2.2 (0.09)	Stainless steel	63 (2.5)	43GR-TAB20SS
Transmitted Beam Cables for Small Aperture Sensors [2.2 mm/0.09 in.]²					
Threaded M6 x 1 straight tip	Brass	1.6 (0.062)	Stainless steel	215 (8.5)	43GT-TAB15SS
Right angle tip with M6 x 0.75 mm thread	Stainless steel	1.2 (0.046)	Stainless steel	203 (8.0)	43GT-TIS10SS
Threaded M4 x 0.7 mm with right angle tip	Stainless steel	1.2 (0.046)	Stainless steel	203 (8.0)	43GT-TDS10SS

Note: The standard length for glass fiber optic cables is 0.91 m (36 in.) from tip to tip.

Plastic Fiber Optic Cables for Use with These Small Aperture Sensors:

- 45FPL-xxxx
- Series 9000 42G*F-910x

Plastic Fiber Optic Cables

Sensing Tip Description	Sensing Tip Material	Fiber Bundle Diameter [mm (in.)]	Sheathing Material	Nom. Sen. Ref. [mm (in.)]	Cat. No.
Bifurcated Cables for Small Aperture Sensors [2.2 mm/0.09 in.]¹					
Threaded M6 x 0.75 mm straight tip	Stainless steel	2 x 1 (0.04)	Polyethylene	40 (1.6)	43PR-NES57ZS
Threaded M6 x 0.75 mm with 90 mm (3.5 in.) bendable probe	Stainless steel	2 x 1 (0.04)	Polyethylene	40 (1.6)	43PR-PIS57ZS
Fork TB tip with 11.9 mm (0.27 in.) gap	Plastic	1 (0.04)	Polyethylene	12 (0.5)	43PR-UAA56MS
Transmitted Beam Cables for Small Aperture Sensors [2.2 mm/0.09 in.]³					
Threaded M4 x 0.70 mm straight tip	Stainless steel	1.5 (0.06)	Polyethylene	230 (9.0)	43PT-NAS58FS
Threaded M5 x 0.8 mm tip with side-view	Stainless steel	1 (0.04)	Polyethylene	230 (9.0)	43PT-SAS56FS
Ferrule (smooth) straight 3 mm tip	Stainless steel	1 (0.04)	Polyethylene	230 (9.0)	43PT-CBS56FS

Note: The standard length for plastic fiber optic cables is 2 m (6.5 ft) from tip to tip. Cables can be cut to shorter lengths.

¹ Bifurcated cables can be used for diffuse or retroreflective applications.
² Two glass transmitted beam fiber optic cables are required for each sensor.
³ Plastic transmitted beam fiber optic cables are shipped in pairs.

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For more information on our complete family of photoelectric products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>






Proximity Sensors

Sensor Selection

Inductive proximity sensors provide non-contact detection of metal objects across relatively short distances (up to 2.5 inches or 65 mm). Sensor size, along with whether the sensor has shielded (flush-mountable) or unshielded (non flush-mountable) construction, dictates sensing range. Other factors/functions to consider include output and connection type, environmental protection rating, power requirements and proximity to electrical fields (i.e. weld field immunity).

Allen-Bradley® inductive proximity sensors set the standard for ruggedness, reliability and application flexibility. We offer one of the industry's widest sensor offerings serving the full spectrum of your needs, from light-duty packaging applications to the punishing environments on automotive welding equipment or the harsh washdowns in food processing plants. Below is a quick selection guide for our most popular products – to see our complete line of sensors, go to <http://ab.rockwellautomation.com>.

Inductive Sensors

	Application	Housing Diameter/Dimensions (mm)	Sensing Range Shielded (mm)	Sensing Range Unshielded (mm)	Enclosure Ratings	2-wire DC	3-wire DC	4-wire DC	2-wire AC	2-wire AC/DC
872 WorldProx 	General Purpose	6.5	2 & 3	3	IP67	✓	✓	✓	✓	✓
		8	2 & 3	3, 4, 6						
		12	3, 4, 6	4, 8, 10						
		18	5, 8, 12	8, 12, 20						
		30	10, 15, 22	15, 20, 40						
871TM 	Harsh Duty/Welding	8	3	6	All units IP67 & 1200 psi wash down rated (Selected units meet IP69K)	✓	✓		✓	✓
		12	2 & 6	4 & 10						
		18	5 & 10	8 & 20						
		30	10 & 20	15 & 40						
871TS 	Food & Beverage	12	4	4 & 8	IP67, IP68 & IP69K		✓			
		18	8	8 & 12						

Proximity Sensors

IO-Link



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Photoelectric Sensors



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Ultrasonic Sensors



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Limit Switches



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Condition Sensing



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Inductive Sensors

	Application	Housing Diameter/Dimensions (mm)	Sensing Range Shielded (mm)	Sensing Range Unshielded (mm)	Enclosure Ratings	2-wire DC	3-wire DC	4-wire DC	2-wire AC	2-wire AC/DC
871Z 	Welding	12	2	4	IP67		✓			✓
		18	5	8						
		30	10	15						
871ZT 	Welding	12	3	8	IP67		✓			
		18	5	12						
		30	10	20						
871 VersaCube 	Material Handling & Welding	40 x 40	20	40	All units IP67 & 1200 psi wash down rated (Selected units meet IP69K)			✓		✓
		40 x 40 WFI	15 & 20	25 & 40						
871F Flat Pack 	Material Handling & Welding	80 x 80	50	65	All units IP67 & 1200 psi wash down rated (Selected units meet IP69K)		✓			✓
		80 x 80 WFI	40	50						
871C Miniature Tubular 	Automated Assembly & Robotics	3 smooth barrel	0.6 & 1	NA	IP67					
		4 smooth barrel	0.6 & 1	NA			✓			
		4	0.8 & 1.5	NA						
		5	1 & 1.5	NA						
871FM Miniature Rectangular 	Automated Assembly, Robotics & Welding (Select Products)	5 x 5	0.8 & 1.5	NA	IP67		✓			
		8 x 8	2	3						
		26 x 16 x 11	2	NA						
		20 x 32 x 8	NA	7	IP67 or IP69K			✓		
		30 x 52 x 14	NA	10						

RFID



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For more information on our complete family of inductive proximity products, please visit: <http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Proximity Sensors



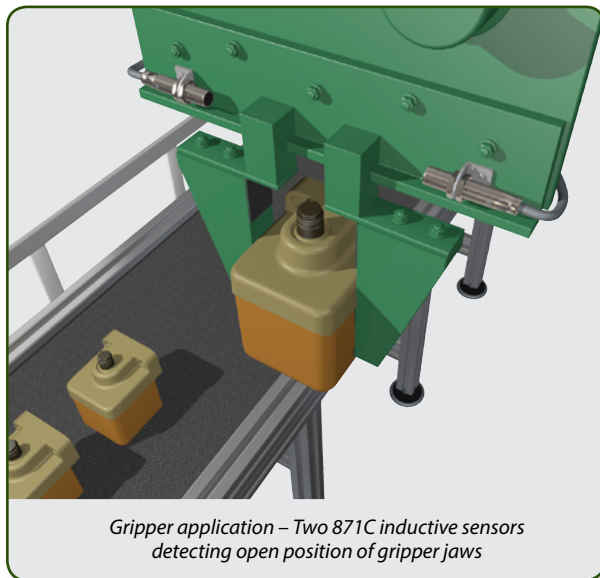
Miniature 871C

- Miniature housings for space-critical applications
- Extended sensing range
- Stainless steel housing
- Quick disconnect and cable options
- Fully integrated electronics

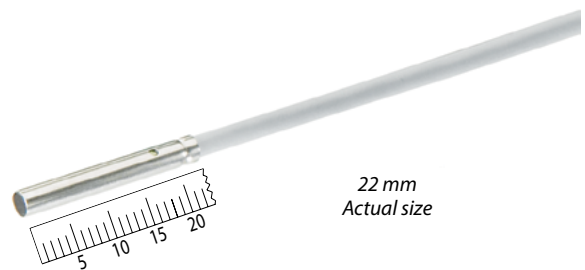


Miniature Sensors for Industrial Automation

Our miniature inductive sensors were designed to meet the needs of today's compact machines. With limited space on these machines, mounting space for sensors is limited. Allen-Bradley 871C sensors were developed to meet this design requirement while providing superior performance, including longer sensing range. Longer sensing ranges allow our sensors to be mounted further away from the target reducing the risk of mechanical contact.



These small-barrel sensors are designed for space-critical applications where standard size sensors simply won't fit.



Proximity Sensors

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107

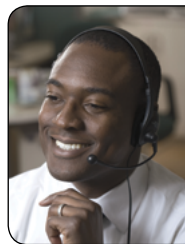


Product Selection

3-wire DC

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency [Hz]	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type	Cat. No.
3 mm, smooth	1 (0.04)	Yes	N.O., PNP	3000	22 (0.87)	-	2 m cable	871C-MM1NP3-E2
4 mm, threaded						6 in. Pico QD pigtail	871C-MM1NP3-AP3	
	4 mm, smooth					19 (0.74)	2 m cable	871C-M1NP4-E2
5 mm, threaded						1.5 (0.06)	6 in. Pico QD pigtail	871C-M1NP4-AP3
	25 (0.98)				-		2 m cable	871C-MM2NP4-E2
					38 (1.50)		Pico QD	871C-MM2NP4-P3
	25 (0.98)				20 (0.79)		2 m cable	871C-M2NP5-E2
38 (1.50)					23 (0.90)	Pico QD	871C-M2NP5-P3	

IO-Link enabled.



Need Help?

The Rockwell Automation Support Center is your 24/7 support for the answers you need now.

www.rockwellautomation.com/support/overview.page

Specifications

Certifications	UL Listed and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 4, 12, 13; IP67 (cable only), IP65 (QD only) (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	10...30V DC
Protection Type	False pulse, transient noise, reverse polarity, short circuit
Load Current	3 mm smooth and 4 mm threaded barrel: ≤100 mA 4 mm smooth and 5 mm threaded barrel: ≤200 mA
Housing Material	Stainless steel barrel, polyester face

Required Cordsets and Accessories

Description	Cat. No.
DC Pico QD cordset, straight, 3-pin, 2 m (6.5 ft)	889P-F3AB-2
Clamp style bracket, 4 mm (0.16 in.)	871-BP4
Clamp style bracket, 5 mm (0.2 in.)	871-BP5
Point I/O IO-Link Master Module	1734-4IOL
ArmorBlock IO-Link Master	1732E-8IOLM12R

RFID



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For more information on our complete family of inductive proximity products, please visit: <http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Proximity Sensors



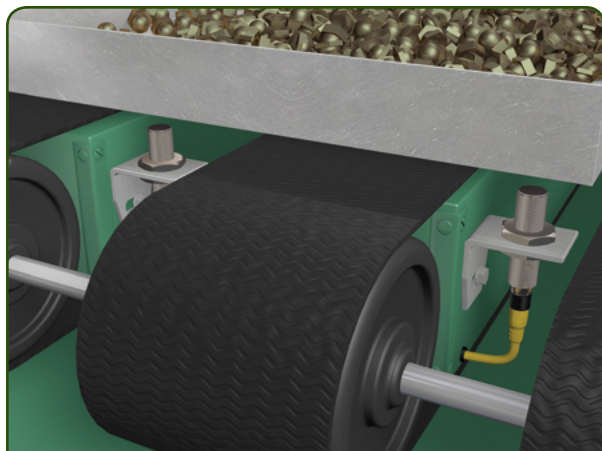
WorldProx™ 872C

- General purpose
- Wide range of options
- Standard, extended and long range
- Extended range and long range models offer up to three times standard sensing range
- Multiple connection styles

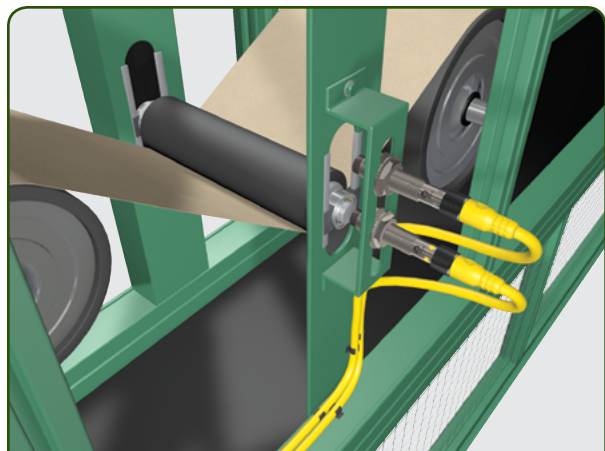
An Extended Range, General Purpose Solution

The most common cause of sensor failure is contact with the intended target. Sensors with longer range can be used to eliminate/limit contact with the target, thus reducing the cost associated with replacing damaged sensors (due to the cost of the sensor, maintenance time, and lost production).

Additionally, increased sensing range allows machine manufacturers to use smaller sensors and save space on the machine or to locate the sensors in previously inaccessible areas.



Conveyor application – Two 872CWorldProx sensors detecting presence of a part bin on a conveyor belt



Paper tension – A pair of WorldProx sensors detecting the tension roller position for speed control

Proximity Sensors

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



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Encoders



6-94...6-99

Condition Sensing



6-100...6-107

Product Selection

3-Wire DC Standard Barrel

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency [Hz]	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type ¹	Cat. No.	
6.5 mm, smooth	3 (0.12)	Yes	N.O./PNP	1,000	66.0 (2.59)	–	Micro QD	872C-M3NP7-D4	
8 mm	2 (0.08)	Yes		2500	500	55 (2.17)		30 (1.18)	872C-D2NP8-D4 ^{2,3}
	3 (0.12)	No				60 (3.62)			872C-D3NP8-D4 ^{2,3}
	3 (0.12)	Yes				55 (2.17)			872C-M3NP8-D4 ^{2,3}
	4 (0.16)	No				60 (3.62)			872C-N4NP8-D4 ^{2,3}
	6 (0.23)	No				66.0 (2.59)			40.0 (1.57)
12 mm	3 (0.12)	Yes		1300	800	64.3 (2.53)		38.1 (1.50)	872C-D3NP12-D4
	4 (0.16)	No				72.4 (2.85)			872C-D4NP12-D4
	4 (0.16)	Yes		1000	70 (2.76)	872C-M4NP12-D4			
	8 (0.31)	No				800			60.0 (2.36)
	6 (0.23)	Yes		400	60.0 (2.36)	872C-M6NP12-D4			
	10 (0.39)	No							872C-N10NP12-D4
18 mm	5 (0.2)	Yes		1500	500	65.5 (2.58)		38.1 (1.50)	872C-D5NP18-D4
	8 (0.31)	No				75.5 (2.97)			872C-D8NP18-D4
	8 (0.31)	Yes		1000	75.5 (2.97)	872C-M8NP18-D4			
	12 (0.47)	No				500			65.5 (2.58)
	12 (0.47)	Yes		200	63.5 (2.5)	32.0 (1.25)			872C-M12NP18-D4
	20 (0.79)	No							872C-N20NP18-D4
30 mm	10 (0.39)	Yes		1000	100	64.3 (2.53)		48.3 (1.90)	872C-D10NP30-D4
	15 (0.59)	No				76.5 (3.01)			42.5 (1.67)
	15 (0.59)	Yes		1000	76.5 (3.01)	42.5 (1.67)			872C-M15NP30-D4
	20 (0.79)	No							200
	22 (0.86)	Yes		100	73.5 (2.89)	42.0 (1.65)			872C-M22NP30-D4
	40 (1.57)	No							872C-N40NP30-D4

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP67 (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	10...30V DC
Protection Type	False pulse on power, transient noise, reverse polarity, short circuit, overload
Load Current	≤ 200 mA
Housing Material	Nickel-plated brass barrel, plastic face (PBT)

¹ For additional connection types, please visit our online product directory.

² Operating Voltage: 5...30 VDC

³ Load Current: ≤ 100 mA

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
Right angle mounting bracket	871A-BRN ⁴
Snap clamp mounting bracket	871A-SCP8 ⁵

⁴ Add **8**, **12**, **18**, or **30** to the end of the catalog number for sensor barrel diameter in mm.

⁵ Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

RFID



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<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Proximity Sensors

Product Selection

3-Wire DC Short Barrel

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency [Hz]	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type ¹	Cat. No.
8 mm	2 (0.08)	Yes	N.O./PNP	2500	45.2 (1.78)	20.1 (0.79)	Micro QD	872C-DH2NP8-D4 ^{2,3}
	3 (0.12)	No			50 (1.97)			872C-DH3NP8-D4 ^{2,3}
	3 (0.12)	Yes			45.2 (1.78)			872C-MH3NP8-D4 ^{2,3}
	4 (0.16)	No			50 (1.97)			872C-NH4NP8-D4 ^{2,3}
12 mm	3 (0.12)	Yes		1300	48.3 (1.90)	27.4 (1.08)		872C-DH3NP12-D4
	4 (0.16)	No			56.3 (2.22)			872C-DH4NP12-D4
	4 (0.16)	Yes			48.3 (1.90)			872C-MH4NP12-D4
	8 (0.32)	No			56.3 (2.22)			872C-NH8NP12-D4
18 mm	5 (0.20)	Yes		1500	49.5 (1.95)	26.4 (1.04)		872C-DH5NP18-D4
	8 (0.31)	No			59.5 (2.34)			872C-DH8NP18-D4
	8 (0.32)	Yes			49.5 (1.95)			872C-MH8NP18-D4
	12 (0.47)	No			59.5 (2.34)			872C-NH12NP18-D4
30 mm	15 (0.59)	No		1000	63.2 (2.49)	29.2 (1.15)		872C-DH15NP30-D4
	15 (0.59)	Yes			50.8 (2.00)	31.8 (1.25)		872C-MH15NP30-D4
	20 (0.79)	No			63.2 (2.49)	29.2 (1.15)		872C-NH20NP30-D4

¹ For additional connection types, please visit our online product directory.

² Operating Voltage: 5...30 VDC

³ Load Current: ≤ 100 mA

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6P, 12, 13, IP67 (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	10...30V DC
Protection Type	False pulse on power, transient noise, reverse polarity, short circuit, overload
Load Current	≤ 200 mA
Housing Material	Nickel-plated brass barrel, plastic face (PBT)

Required Cordsets and Accessories

Description	Cat. No.
DC Micro QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
Right angle mounting bracket	871A-BRN ⁴
Snap clamp mounting bracket	871A-SCPB ⁵

⁴ Add **8**, **12**, **18**, or **30** to the end of the catalog number for sensor barrel diameter in mm.

⁵ Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

Proximity Sensors

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

2-Wire DC

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency [Hz]	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type ¹	Cat. No.
12 mm	3 (0.12)	Y	N.O.	2000	65.0 (2.56)	38.1 (1.50)	Micro QD	872C-D3NE12-D4
	4 (0.16)	N			72.4 (2.85)			872C-D4NE12-D4
18 mm	5 (0.20)	Y		1000	65.0 (2.56)			46.7 (1.84)
	8 (0.31)	N			76.5 (3.01)	872C-D8NE18-D4		
30 mm	10 (0.39)	Y		500	65.0 (2.56)	46.7 (1.84)		872C-D10NE30-D4
	15 (0.59)	N			76.5 (3.01)			872C-D15NE30-D4

¹ For additional connection types, please visit our online product directory.

Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

www.rockwellautomation.com/sales-partners/overview.page



Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6P, 12, 13, IP67 (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	10...30V DC
Protection Type	False pulse on power, transient noise, reverse polarity, overload
Load Current	≤100 mA
Housing Material	Nickel-plated brass barrel, plastic face (PBT)

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
Right angle mounting bracket	871A-BRN ²
Snap clamp mounting bracket	871A-SCPB ³

² Add **8**, **12**, **18**, or **30** to the end of the catalog number for sensor barrel diameter in mm.

³ Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

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Proximity Sensors

Product Selection

2-Wire AC

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency (Hz)	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type ¹	Cat. No.
12 mm	2 (0.08)	Y	N.O.	15	75.0 (2.95)	45.0 (1.77)	Micro QD	872C-A2N12-R3
	4 (0.16)			20				872C-F4N12-R3
	4 (0.16)	N		15		40.0 (1.57)		872C-A4N12-R3
	8 (0.31)			20				872C-G8N12-R3
18 mm	5 (0.20)	Y		15	80.0 (3.15)	60.0 (2.36)		872C-A5N18-R3
	8 (0.31)			20				872C-F8N18-R3
	10 (0.39)	N		15		52.0 (2.05)		872C-A10N18-R3
	12 (0.47)			20				872C-G12N18-R3
30 mm	10 (0.39)	Y	15	80.0 (3.15)	50.0 (1.96)	872C-A10N30-R3		
	15 (0.59)		20			872C-F15N30-R3		
	15 (0.59)	N	15		38.0 (1.50)	872C-A15N30-R3		
	30 (1.18)		20			872C-G30N30-R3		

¹ For additional connection types, please visit our online product directory.

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6P, 12, 13, IP67 (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	20...250V AC
Protection Type	False pulse on power, transient noise
Load Current	≤300 mA
Housing Material	Nickel-plated brass barrel, plastic face (PBT)

Required Cordsets and Accessories

Description	Cat. No.
AC Micro (M12) QD cordset, straight, 3-pin, 2 m (6.5 ft)	889R-F3ECA-2
Right angle mounting bracket	871A-BRN ²
Snap clamp mounting bracket	871A-SCPB ³

² Add **12**, **18**, or **30** to the end of the catalog number for sensor barrel diameter in mm.

³ Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

Proximity Sensors

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

2-Wire AC/DC

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency (Hz)	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type ¹	Cat. No.
12 mm	2 (0.08)	Y	N.O.	30	75.0 (2.95)	45.0 (1.77)	Micro QD	872C-J2N12-R3
	4 (0.16)	N				40.0 (1.57)		872C-K4N12-R3
18 mm	5 (0.20)	Y			80.0 (3.15)	60.0 (2.36)		872C-J5N18-R3
	8 (0.31)	N				52.0 (2.05)		872C-K8N18-R3
30 mm	10 (0.39)	Y			80.0 (3.15)	50.0 (1.96)		872C-J10N30-R3
	15 (0.59)	N				38.0 (1.50)		872C-K15N30-R3

¹ For additional connection types, please visit our online product directory.



Product Selection Tools
 Available online or for download, our tools help you access info while in the office or on the go.
www.rockwellautomation.com/support/selection.page

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6P, 12, 13, IP67 (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	20...250V AC/DC
Protection Type	False pulse on power, transient noise, short circuit, overload
Load Current	≤300 mA for 12 mm units, and ≤350 mA for 18 and 30 mm units
Housing Material	Nickel-plated brass barrel, plastic face (PBT)

Required Cordsets and Accessories

Description	Cat. No.
AC Micro (M12) QD cordset, straight, 3-pin, 2 m (6.5 ft)	889R-F3ECA-2
Right angle mounting bracket	871A-BRN ²
Snap clamp mounting bracket	871A-SCPB ³

² Add **12**, **18**, or **30** to the end of the catalog number for sensor barrel diameter in mm.

³ Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

RFID



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Proximity Sensors



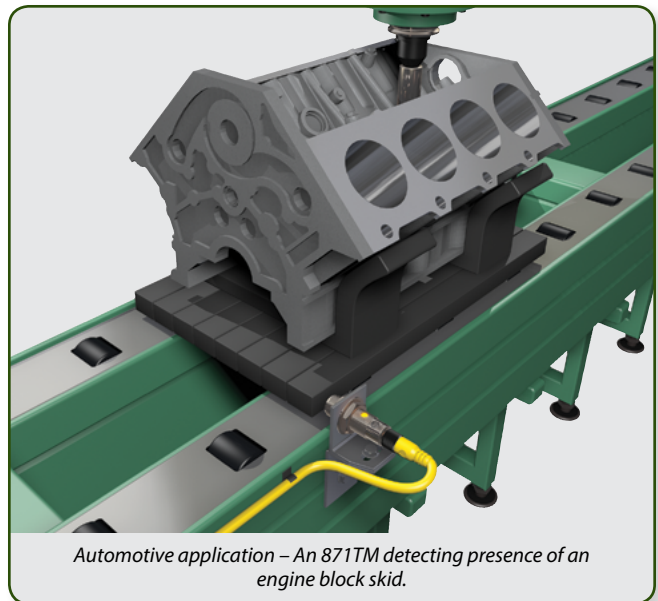
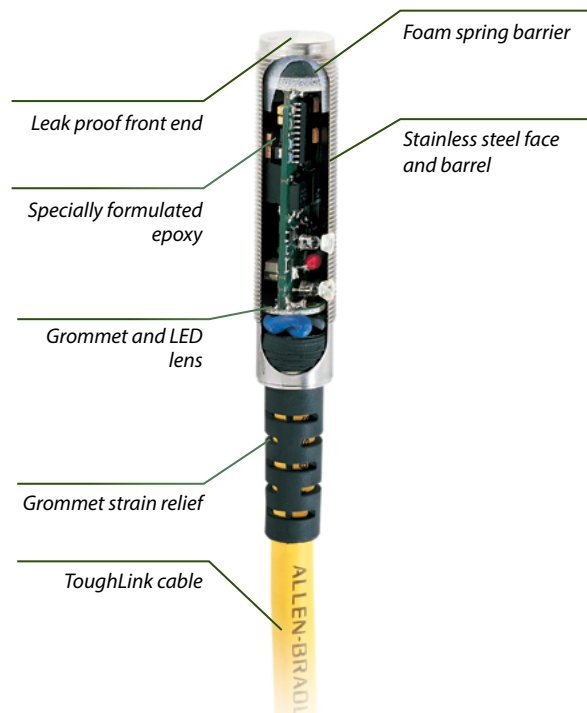
Stainless Steel – Weld Field Immune 871TM

- Heavy duty stainless steel face and barrel
- IP69K and 1200 psi washdown rated
- Chemical and abrasion resistant
- Long range models offer equal sensing distance for all metals
- Long range weld field immune up to 40mT (select models)
- IO-Link enabled (select models)



For Your Toughest Applications

The 871TM stainless steel sensors are ideal for harsh or extremely demanding environments. These sensors resist impact, abrasion and corrosion – to keep things moving where ordinary sensors grind to a halt. This line features full mechanical seals at all barrel openings and full epoxy encapsulation for optimal performance in the toughest environments.



Welding Applications
 Select weld field immune models are ideal for welding environments and other applications where strong magnetic fields are present.

Proximity Sensors

IO-Link	Photoelectric Sensors		Ultrasonic Sensors	Limit Switches	Encoders	Condition Sensing
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Product Selection

3-Wire DC (weld field immune select models)

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Weld Field Immune	Output Configuration	Switching Frequency [Hz]	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type	Cat. No.
8 mm	3 (0.12)	Yes	No	N.O./PNP	700	66 (2.59)	46 (1.81)	Micro QD	871TM-M3NP8-D4
	3 (0.12)	Yes	Yes		400	60 (2.36)	45 (1.77)	Pico QD	871TM-MW3NP8-P3
	6 (0.23)	No	No		700	66 (2.59)	42 (1.65)	Micro QD	871TM-N6NP8-D4
12 mm	2 (0.08)	Yes	No		75	61 (2.40)	26.4 (1.04)		871TM-DH2NP12-D4
	6 (0.23)		Yes		400	60 (2.36)	41 (1.61)		871TM-M6NP12-D4
	6 (0.23)	No	Yes		400	60 (2.36)	41 (1.61)		871TM-MW6NP12-D4
	4 (0.16)		No		70	61 (2.40)	28 (1.10)		871TM-DH4NP12-D4
18 mm	10 (0.39)	Yes	No		400	60 (2.36)	36 (1.42)		871TM-N10NP12-D4
	10 (0.39)		Yes		60	65 (2.55)	41.7 (1.64)		871TM-DH5NP18-D4
	10 (0.39)		No		200	63.5(2.5)	42.5 (1.67)		871TM-M10NP18-D4
	8 (0.31)	No	No		40	65 (2.55)	41.7 (1.64)		871TM-DH8NP18-D4
	20 (0.79)		200		63.5 (2.5)	35.5 (1.40)	871TM-N20NP18-D4		
30 mm	10 (0.39)	Yes	No		40	66.3 (2.61)	41.9 (1.65)	871TM-DH10NP30-D4	
	20 (0.79)				80	63.5 (2.5)	42.5 (1.67)	871TM-M20NP30-D4	
	15 (0.59)	No			30	66.3 (2.61)	39.4 (1.55)	871TM-DH15NP30-D4	
	40 (1.57)				80	63.5 (2.5)	35.5 (1.40)	871TM-N40NP30-D4	

IO-Link enabled.

Specifications

Certifications	CE Marked for all applicable directives (standard range models also UL Listed and CSA Certified), long range also cULus Listed)
Enclosure Type Rating	NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13; IP67 (IEC 529) all models; 1200 psi (8270 kPa) washdown; standard range Micro connector versions are also rated IP69K (IEC 529) except for 8 mm versions
Operating Temperature [C (F)]	Operating Temperature Range: 871TM-DH -25 to 70 °C (-13 to 158 °F) 871TM-M and 871TM-N -25 to 85 °C (-13 to 185 °F)
Operating Voltage	10...30V DC
Protection Type	False pulse, transient noise, reverse polarity, short-circuit (trigger at 340 mA typical), overload
Load Current	≤200 mA
Leakage Current, Max.	≤10 mA on standard range models, ≤0.1 mA on extended range models
Housing Material	Stainless steel face and barrel

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
DC Pico QD cordset, straight, 3-pin, 2 m (6.5 ft)	889P-F3AB-2
Right angle mounting bracket	871A-BRN ¹
Snap clamp mounting bracket	871A-SCPB ²
Point I/O IO-Link Master Module	1734-4IOL
ArmorBlock IO-Link Master	1732E-8IOLM12R

¹ Add **8**, **12**, **18**, or **30** to the end of the catalog number for sensor barrel diameter in mm.

² Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

RFID



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For more information on our complete family of inductive proximity products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Presence-Sensing>



Proximity Sensors

Product Selection

2-Wire DC

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency (Hz)	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type	Cat. No.
12 mm	2 (0.08)	Y	N.O.	75	61.0 (2.40)	26.4 (1.04)	Micro QD	871TM-DH2NE12-D4
	4 (0.16)	N				19.6 (0.77)		871TM-DH4NE12-D4
18 mm	5 (0.20)	Y		60	65.0 (2.56)	41.7 (1.64)		871TM-DH5NE18-D4
	8 (0.31)	N						871TM-DH8NE18-D4
30 mm	10 (0.39)	Y		40	66.3 (2.61)	41.9 (1.65)		871TM-DH10NE30-D4
	15 (0.59)	N				39.4 (1.55)		871TM-DH15NE30-D4



Looking for More?

This catalog highlights only our most essential components; for a complete product selection, visit us at:

<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13; IP67 (IEC 529) all models; 1200 psi (8270 kPa) washdown; ToughLink™ and Micro connector versions are also rated IP69K (IEC 529)
Operating Temperature [C (F)]	-25...+70° (-13...+158°)
Operating Voltage	10...30V DC
Protection Type	False pulse on power, transient noise, reverse polarity, short-circuit, overload
Load Current	≤ 25 mA
Housing Material	Stainless steel face and barrel

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
Right angle mounting bracket	871A-BRN ¹
Snap clamp mounting bracket	871A-SCPB ²

¹ Add **12**, **18**, or **30** to the end of the catalog number for sensor barrel diameter in mm.

² Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

Proximity Sensors

IO-Link



6-2...6-3

Photoelectric Sensors



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Ultrasonic Sensors



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Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107

Product Selection

2-Wire AC/DC

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency [Hz]	Housing Length [mm (in.)]	Threaded Length [mm (in.)]	Cat. No.
12 mm	3 (0.12)	Yes	N.O.	35	83.4 (3.28)	38.4 (1.51)	871TM-B3N12-R3
	4 (0.16)	No		20		31.5 (1.24)	871TM-B4N12-R3
18 mm	5 (0.20)	Yes		20	84.3 (3.32)	60 (2.36)	871TM-B5N18-R3
	8 (0.31)	No		15		48.2 (1.90)	871TM-B8N18-R3
30 mm	10 (0.39)	Yes		15	85.7 (3.37)	61.3 (2.41)	871TM-B10N30-R3
	15 (0.59)	No		12		46.1 (1.81)	871TM-B15N30-R3

PLC Interfacer Models

Barrel Diameter [mm]	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency [Hz]	Housing Length [mm (in.)]	Threaded Length [mm (in.)]	Cat. No.
12 mm	2 (0.08)	Yes	N.O.	75	61 (2.40)	26.4 (1.04)	871TM-BH2N12-R3
	4 (0.16)	No		35		19.6 (0.77)	871TM-BH4N12-R3
18 mm	5 (0.20)	Yes		65	65 (2.56)	41.7 (1.64)	871TM-BH5N18-R3
	8 (0.31)	No		30		41.7 (1.64)	871TM-BH8N18-R3
30 mm	10 (0.39)	Yes		45	66.3 (2.61)	41.9 (1.65)	871TM-BH10N30-R3
	15 (0.59)	No		20		66.3 (2.61)	39.4 (1.55)

Note: PLC Interfacer Models feature low leakage current for improved compatibility with PLC inputs.

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13; IP67 (IEC 529) all models; 1200 psi (8270 kPa) washdown; ToughLink and Micro connector versions are also rated IP69K (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	20...250V AC/DC
Protection Type	False pulse, transient noise, short-circuit, overload
Load Current	12 mm models: 5...200 mA; 18 & 30 mm models: 5...250 mA; PLC Interfacer models: 2...25 mA
Leakage Current, Max.	≤1.9 mA @ 120V AC (PLC Interfacer models: ≤0.9 mA @ 24V DC, ≤1.7 mA @ 20...120V AC, ≤2.5 mA @ 121...250V AC)
Housing Material	Stainless steel face and barrel

Required Cordsets and Accessories

Description	Cat. No.
AC Micro (M12) QD cordset, straight, 3-pin, 2 m (6.5 ft)	889R-F3ECA-2
Right angle mounting bracket	871A-BRN ¹
Snap clamp mounting bracket	871A-SCPB ²

¹ Add **12**, **18**, or **30** to the end of the catalog number for sensor barrel diameter in mm.

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Proximity Sensors

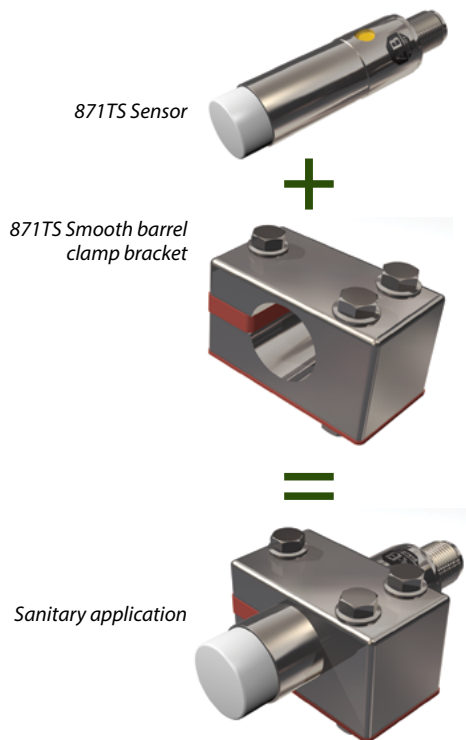


Food and Beverage 871TS

- Corrosion-resistant stainless steel housing with FDA Certified PPS sensing face
- IP67, IP68, and IP69K enclosure ratings
- Extended sensing range
- Extended temperature rating
- ECOLAB and Johnson Diversey Certified
- Smooth barrel models for sanitary applications (18 mm models)
- Laser etched product markings

Sensors for the Food & Beverage Industry

The Allen-Bradley 871TS food and beverage inductive proximity sensors are designed to address the most demanding applications in the food and beverage industry. These sensors withstand high pressure and high temperature washdown, while offering superior resistance to corrosion and damage caused by harsh cleansing agents.



Proximity Sensors

IO-Link



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Photoelectric Sensors



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Ultrasonic Sensors



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Limit Switches



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Encoders



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Condition Sensing



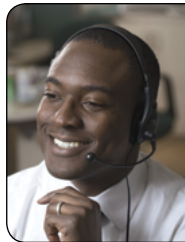
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Product Selection

4-Wire DC

Barrel Diameter	Barrel Type	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency (Hz)	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type	Cat. No.
12 mm	Threaded	4 (0.16)	Y	N.O. and N.C., PNP	2000	65.0 (2.56)	38.1 (1.50)	Micro QD	871TS-M4BP12-D4
		8 (0.31)	N				32.5 (1.28)		871TS-N8BP12-D4
18 mm	Threaded	8 (0.31)	Y		63.0 (2.48)	1500	34.5 (1.36)		871TS-M8BP18-D4
		12 (0.47)	N				26.5 (1.04)		871TS-N12BP18-D4
	Smooth	8 (0.31)	Y		63.0 (2.48)		–		871TS-MM8BP18-D4
		12 (0.47)	N				871TS-NM12BP18-D4		



Need Help?

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www.rockwellautomation.com/support/overview.page

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives; ECOLAB and Johnson and Diversey Certified
Enclosure Type Rating	IP67, IP68, and IP69K (IEC 529)
Operating Temperature [C (F)]	-40...+80 ° (-40...+176 °)
Operating Voltage	10...30V DC
Protection Type	False pulse on power, transient noise, reverse polarity, short-circuit, overload
Load Current	≤200 mA
Housing Material	Stainless steel 316L barrel and PPS sensing face (FDA Certified)

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
Right angle mounting bracket	871A-BRN ¹
Snap clamp mounting bracket	871A-SCP ²
Smooth barrel clamp bracket, stainless steel, 18 mm	60-BCS-18B

¹ Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

² Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

RFID



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Proximity Sensors

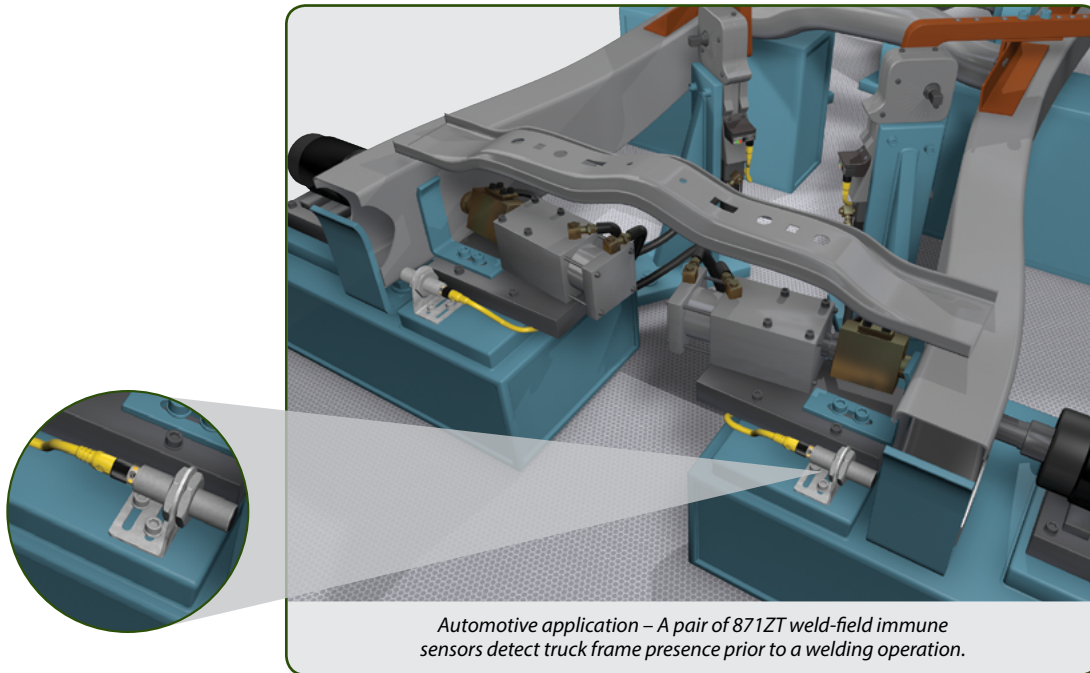


Weld Field Immune with Equal Sensing 871ZT

- Equal sensing distance for all metals
- Weld-field immune
- Weld-slag resistant PTFE-coated brass barrel and face
- Extended sensing range
- IP67, IP69K, and 1200 psi washdown rated
- 360° visible LED status indicator

The Full-featured Line for Welding Applications

The 871ZT inductive proximity sensors are equal sensing models – they sense all metals at nearly the same distance. Plus, these special weld-field immune models are ideal for welding environments and other applications where large magnetic fields are present.



Automotive application – A pair of 871ZT weld-field immune sensors detect truck frame presence prior to a welding operation.

Proximity Sensors

IO-Link



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Photoelectric Sensors



6-4...6-45



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Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

3-Wire DC

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency [Hz]	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type	Cat. No.
12 mm	3 (0.12)	Yes	N.O., PNP	2000	65.0 (2.56)	50.0 (1.97)	Micro QD	871ZT-MB3NP12-D4
	8 (0.31)	No				40.0 (1.58)		871ZT-NB8NP12-D4
18 mm	5 (0.20)	Yes		2500		50.0 (1.97)		871ZT-MB5NP18-D4
	12 (0.47)	No				40.0 (1.58)		871ZT-NB12NP18-D4
30 mm	10 (0.39)	Yes		600		50.5 (1.99)		871ZT-MB10NP30-D4
	20 (0.79)	No				1000		37.5 (1.48)



Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

www.rockwellautomation.com/sales-partners/overview.page

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13; IP67 (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	10...30V DC
Protection Type	False pulse, transient noise, reverse polarity, short-circuit (trigger at 340 mA typical), overload
Load Current	≤200 mA
Leakage Current, Max.	≤0.08 mA
Housing Material	PTFE-coated brass barrel and PTFE face

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) ToughWeld™ QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4WE-2
Right angle mounting bracket	871A-BRN ¹
Snap clamp mounting bracket	871A-SCPB ²

¹ Add **12**, **18**, or **30** to the end of the catalog number for sensor barrel diameter in mm.
² Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

RFID



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Proximity Sensors

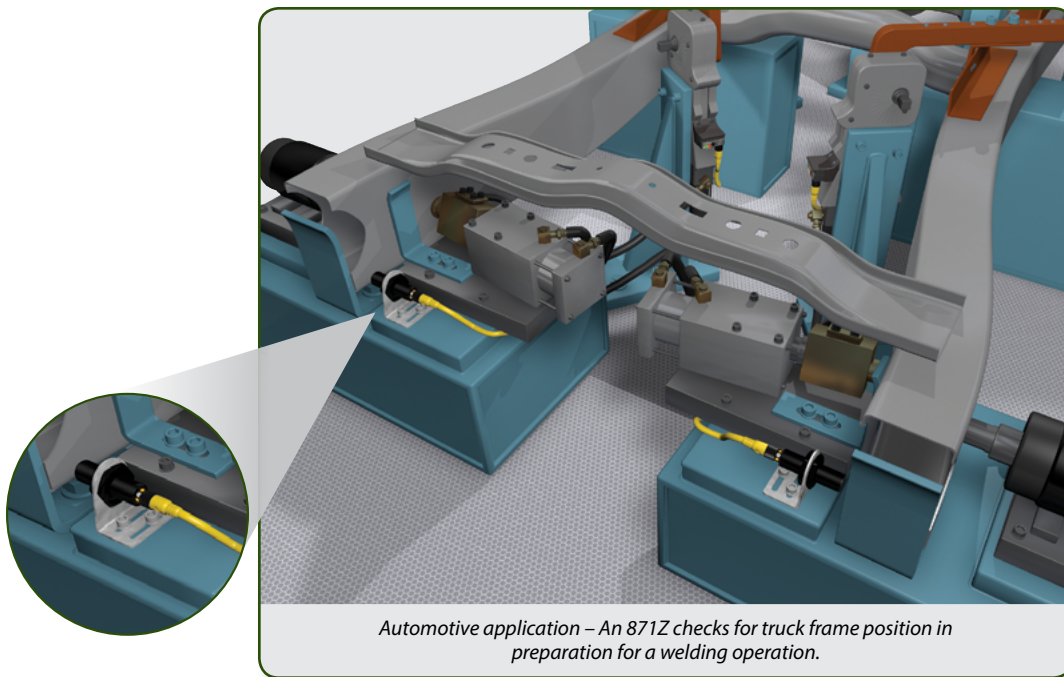


Weld Field Immune 871Z

- Weld-field immune
- PTFE-coated brass barrel
- High-heat and weld slag resistant face
- Three-wire DC or two-wire AC/DC models

Tough Sensors for Automotive Applications

The 871Z inductive proximity sensors are special weld-field immune models ideal for welding environments and other applications where large magnetic fields are present.



Proximity Sensors

IO-Link



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Photoelectric
Sensors



6-4...6-45



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Ultrasonic
Sensors



6-76...6-79

Limit
Switches



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Encoders



6-94...6-99

Condition
Sensing



6-100...6-107

Product Selection

3-Wire DC

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency [Hz]	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type	Cat. No.
12 mm	2 (0.08)	Yes	N.O., PNP	15	70.0 (2.76)	50.0 (1.97)	Micro QD	871Z-DW2NP12-D4
18 mm	5 (0.20)				80.0 (3.15)	60.0 (2.36)		871Z-DW5NP18-D4
30 mm	10 (0.39)				80.0 (3.15)	60.0 (2.36)		871Z-DW10NP30-D4

2-Wire AC/DC

Barrel Diameter	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency (Hz)	Housing Length [mm (in.)]	Thread Length [mm (in.)]	Connection Type	Cat. No.
12 mm	2 (0.07)	Y	N.O.	30	90.1 (3.55)	46.7 (1.85)	Micro QD (1/2-20 UNF-2 A)	871Z-BW2N12-R3
	4 (0.15)	N				39.7 (1.56)		871Z-BW4N12-R3
18 mm	5 (0.19)	Y			83.5 (3.29)	61.6 (2.43)		871Z-BW5N18-R3
30 mm	10 (0.39)	Y			86.0 (3.38)	64.3 (2.53)		871Z-BW10N30-R3

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 4, 12, 13; IP67 (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	10...30V DC, 20...250V AC/DC
Protection Type	False pulse on power, transient noise, short-circuit, overload
Load Current	200 mA DC, 5...200 mA for 12 mm AC/DC, 5...250 mA for 18 and 30 mm AC/DC
Housing Material	PTFE-coated brass

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) ToughWeld QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4WE-2
AC Micro (M12) ToughWeld QD cordset, straight, 3-pin, 2 m (6.5 ft)	889R-F3WEA-2
Right angle mounting bracket	871A-BRN ¹
Snap clamp mounting bracket	871A-SCPB ²

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Proximity Sensors



Miniature Rectangular 871FM

- Space-critical applications
- Equal sensing distance for all metals (select models)
- Cable, Micro QD, Pico QD, and Pico QD on 6-inch pigtail
- Stainless steel, chrome-plated brass and plastic housings
- IP67 or IP69K rated
- Factor-1/equal sensing auto detect NPN or PNP on power-up for 871FM Metal Flat Pack



Smaller Sensors for Your Hard-to-reach Applications

There are some applications that can't be solved with an industry standard-sized proximity sensor. Whether the application you're trying to solve is part of the semiconductor industry, or you're an OEM who manufactures machines which generate miniature parts, these sensors are able to go where traditional proximity sensor sizes cannot. These IO-Link enabled miniature inductive proximity sensors are ideal for applications where limited space – not sensing distance – is the driving factor.

5 mm x 22 mm x 5 mm (W x L x H)
(actual size)



20 mm x 32 mm x 8 mm (W x L x H)
(actual size)



30 mm x 52 mm x 14 mm
(W x L x H) (actual size)



Weld Slag Resistance



871FM Miniature Rectangular sensors can be applied where traditional tubular proximity sensors cannot, whether you're trying to sense small parts, space is at a premium, or both.

Proximity Sensors

IO-Link



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Photoelectric Sensors



6-4...6-45



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Ultrasonic Sensors



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Limit Switches



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Encoders



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Condition Sensing



6-100...6-107

Product Selection

3-Wire DC

Dimensions w x h x d [mm (in.)]	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency (Hz)	Weld Immune	Connector Type	Cat. No.	
5 x 22 x 5 (0.19 x 0.86 x 0.19)	0.8 (0.03)	Y	N.O., PNP	5,000	–	2 m cable	871FM-M1NP5-E2	
	1.5 (0.05)	Y		3,000	–		871FM-M2NP5-E2	
5 x 25 x 5 (0.20 x 0.98 x 0.20)	0.8 (0.03)	Y		5,000	–	Pico QD with 6" pigtail	871FM-M1NP5-AP3	
5 x 25 x 5 (0.20 x 0.98 x 0.20)	1.5 (0.05)	Y		3,000	–	Pico QD with 6" pigtail	871FM-M2NP5-AP3	
8 x 35 x 8 (0.31 x 1.37 x 0.31)	2 (0.07)	Y		3,000	–	2 m cable	871FM-M2NP8-E2	
	3 (0.11)	N		1,000	–		871FM-N3NP8-E2	
8 x 50 x 8 (0.31 x 1.97 x 0.31)	2 (0.07)	Y		3,000	–	Pico QD	871FM-M2NP8-P3	
28 x 16 x 11 (1.10 x 0.62 x 0.43)	2 (0.07)	Y		600	–	Pico QD	871FM-D2NP11-P3	
20 x 8 x 32 (0.78 x 0.31 x 1.25)	7 (0.27)	Y		Complementary N.O./N.C., auto detect NPN or PNP on power-up	≤200	No	PVC Pigtail, DC Micro QD, 4-pin	871FM-M7BA20-FD02
					≤200	No	PVC Cable, 2m	871FM-M7BA20-E2
			≤50		Yes - ToughCoat Finish™ weld slag coating	PVC Pigtail, DC Micro QD, 4-pin, Weld tube cable protection	871FM-MV7BA20-FD02X	
≤200	No	PVC Pigtail, DC Micro QD, 4-pin	871FM-M10BA30-FD02					
≤200	No	PVC Cable, 2m	871FM-M10BA30-E2					
≤50	Yes - ToughCoat Finish weld slag coating	PVC Pigtail, DC Micro QD, 4-pin, Weld tube cable protection	871FM-MV10BA30-FD02X					
≤200	No	PVC Pigtail, DC Pico QD, 4-Pin	871FM-M7BA20-FP02					
≤50	Yes - ToughCoat Finish weld slag coating	PVC Pigtail, DC Pico QD, 4-Pin	871FM-MV7BA20-FP02X					
≤200	No	PVC Pigtail, DC Pico QD, 4-Pin	871FM-M10BA30-FP02					
≤50	Yes - ToughCoat Finish weld slag coating	PVC Pigtail, DC Pico QD, 4-Pin	871FM-MV10BA30-FP02X					

IO-Link enabled.

Specifications

Certifications	CE Marked for all applicable directives
Enclosure Type Rating	IP67 (IEC 529)
Operating Temperature [C (F)]	-25...+70 °C (-13...+158 °F)
Operating Voltage	10...30V DC
Protection Type	False pulse on power, transient noise, reverse polarity, short circuit, overload
Load Current	≤50mA at 12V, ≤100mA for 20 x 8 x 32, 30 x 14 x 52 and ≤200 mA for all others
Housing Material	5 x 22 x 5 and 8 x 35 x 8 chrome-plated brass with plastic face; 20 x 8 x 32 and 30 x 14 x 52 all stainless steel; plastic for all other products

Required Cordsets and Accessories

Description	Cat. No.
DC Pico (M8) QD cordset, straight, 3-pin, 2 m (6.5 ft), PVC	889P-F3AB-2
DC Pico (M8) QD cordset, straight, 4-pin, 2 m (6.5 ft), PVC	889P-F4AB-2
Point I/O IO-Link Master Module	1734-4IOL
AarmorBlock IO-Link Master	1732E-8IOLM12R
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft), PVC	889D-F4AB-2
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft), CPE	889D-F4WE-2
DC Pico (M8) QD cordset, straight, 4-pin, 2 m (6.5 ft), TPE	889P-F4HB-2

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Proximity Sensors



VersaCube™ Equal Sensing 871P

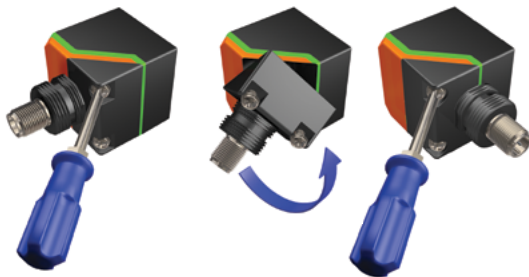
- Weld-field immune with optional ToughCoat Finish™
- Factor-1/equal sensing for all metals
- Five-position sensing face
- Enhanced-visibility status LEDs
- Optional heavy duty model with metal base
- Unique jam nut and L-bracket mounting option

Equal Sensing, Versatility, and Durability

These 4-wire DC sensors integrate standard and specialty features into a 40 mm rectangular housing suited for general purpose and welding applications. For the most demanding welding applications, the 871P VersaCube can be ordered with ToughCoat Finish (our patented weld-slag resistant coating).

Changing the Sensing Head Position

To switch the sensing head between top and side sensing positions, follow these steps:

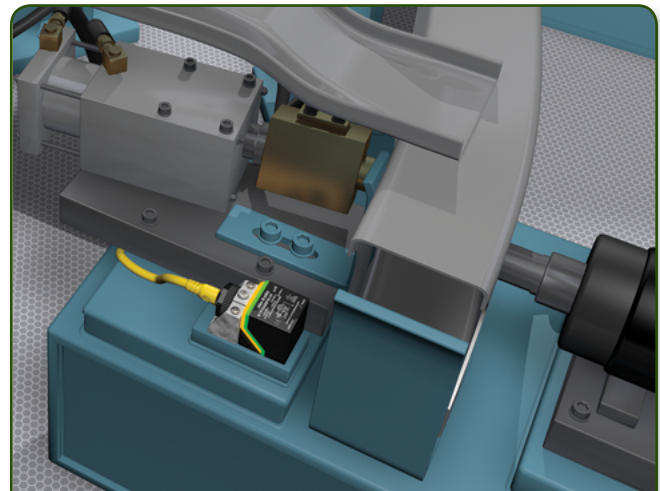


Mounting



Standard Zinc Mounting Bracket

Optional Stainless Steel Mounting L-Bracket



Automotive application – A VersaCube detecting the presence of a truck frame prior to initiating a weld.

Proximity Sensors

IO-Link



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Photoelectric Sensors



6-4...6-45



6-46...6-75

Ultrasonic Sensors



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Limit Switches



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Encoders



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Condition Sensing



6-100...6-107



Product Selection

4-Wire DC ¹

Dimensions w x h x d [mm (in.)]	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency (Hz)	Weld Field Immune	Connector Type	Cat. No.						
40 x 68.2 x 40 (1.57 x 2.68 x 1.57)	20 (0.79)	Y	N.O. and N.C., PNP	40	Y	Micro QD	871P-D20BP40-D4						
	40 (1.57)	N			Yes - ToughCoat Finish™ weld slag coating		871P-D40BP40-D4						
	20 (0.79)	Y					871P-DV20BP40-D4						
	40 (1.57)	N			871P-DV40BP40-D4								
40 x 68.2 x 40 (1.57 x 2.68 x 1.57)	20 (0.79)	Y			N.O. and N.C., PNP		40	Y	Micro QD	871P-D20BP40-D4			
	40 (1.57)	N						Yes - ToughCoat Finish™ weld slag coating		871P-D40BP40-D4			
	20 (0.79)	Y								871P-DV20BP40-D4			
	40 (1.57)	N						871P-DV40BP40-D4					
40 x 68.2 x 40 (1.57 x 2.68 x 1.57)	20 (0.79)	Y						N.O. and N.C., PNP		40	Y	Micro QD	871P-DP20BP40-D4
	40 (1.57)	N									Yes - ToughCoat Finish™ weld slag coating		871P-DP40BP40-D4
	20 (0.79)	Y											871P-DPV20BP40-D4
	40 (1.57)	N									871P-DPV40BP40-D4		

¹ All units ship with a standard zinc mounting bracket.

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6, 12, 13; IP67, IP68, and IP69K (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	10...30V DC
Protection Type	False pulse on power, transient noise, short-circuit, overload, reverse polarity
Load Current	≤200 mA from 25...50 °C (77...122 °F) ≤100 mA from 50...70 °C (122...158 °F)
Housing Material	PBT housing, acrylic lens covers and zinc base

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD ToughWeld cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4WE-2
Standard zinc mounting bracket	871A-PBR
Stainless steel L-bracket (with 22 mm plastic mounting nut)	871A-BRS59
22 mm plastic mounting nut	871T-N9

RFID

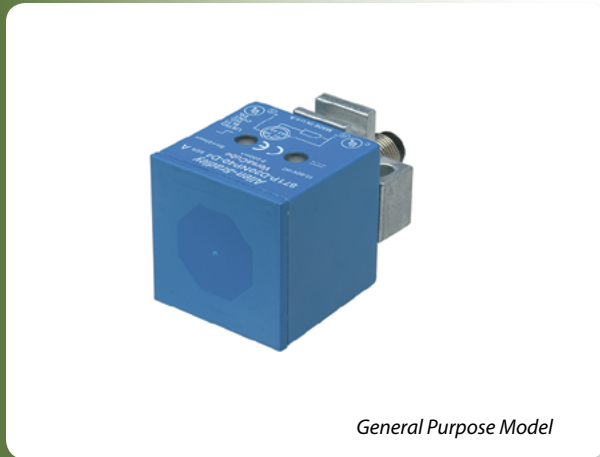


6-108...6-109

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Proximity Sensors



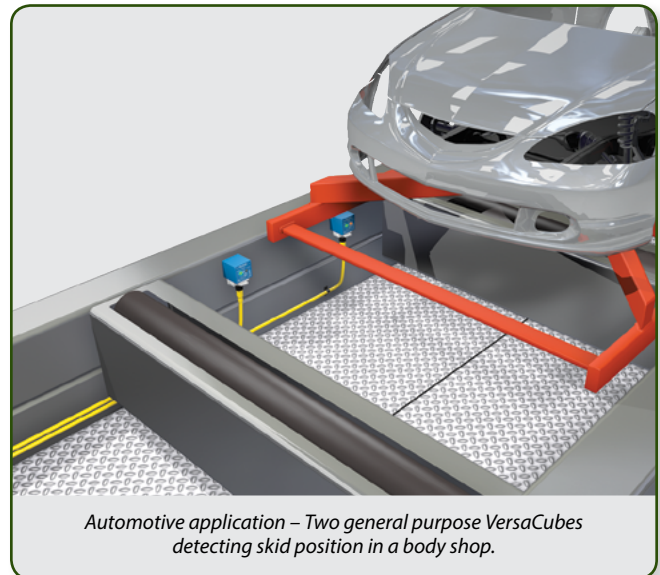
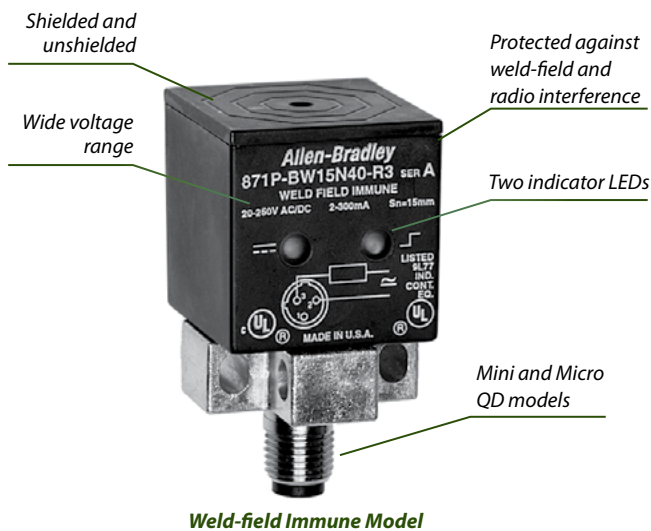
General Purpose Model

VersaCube™ General Purpose 871P

- General purpose and weld-field immune versions
- Weld-slag resistant PEEK housing (WFI models)
- One-piece housing and mounting bracket
- Five-position sensing face

Long Range General-purpose Sensing

The VersaCube package is ideal for applications that require long-range sensing in a compact sensor. Their size is approximately half that of a NEMA style limit switch. In fact, the mounting holes on the VersaCube base align with the standard NEMA limit switch mounting holes allowing for an easy and convenient retrofit.



Proximity Sensors

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

2-Wire AC/DC

Dimensions w x h x d [mm (in.)]	Weld Field Immune	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency (Hz)	Connector Type	Cat. No.
40 x 68.7 x 40 (1.57 x 2.70 x 1.57)	N	20 (0.79)	Y	N.O.	30	Micro QD (1/2-20 UNF-2A)	871P-B20N40-R3
		40 (1.57)	N		20		871P-B40N40-R3
	Y	15 (0.59)	Y		30		871P-BW15N40-R3
		25 (0.98)	N		20		871P-BW25N40-R3



Looking for More?
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Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6, 6P, 12, 13; IP67 and IP69K (IEC 529)
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Operating Voltage	20...250V AC/DC
Protection Type	False pulse on power, transient noise, short-circuit, overload
Load Current	100 mA for standard versions and 300 mA for WFI versions
Housing Material	Plastic body and zinc base

Required Cordsets and Accessories

Description	Cat. No.
AC Micro (M12) QD cordset, straight, 3-pin, 2 m (6.5 ft)	889R-F3ECA-2
Mounting kit ¹	871A-PKIT
Limit Switch style mounting kit (w/22 mm plastic mounting nut)	871A-PKITLS
PTFE cover – short	871A-KCT40-F
PTFE cover – long	871A-KCT40-T

¹ Each mounting kit includes a ground lug, a ground screw, and an optional adaptor for competitive retrofits.

RFID



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Proximity Sensors

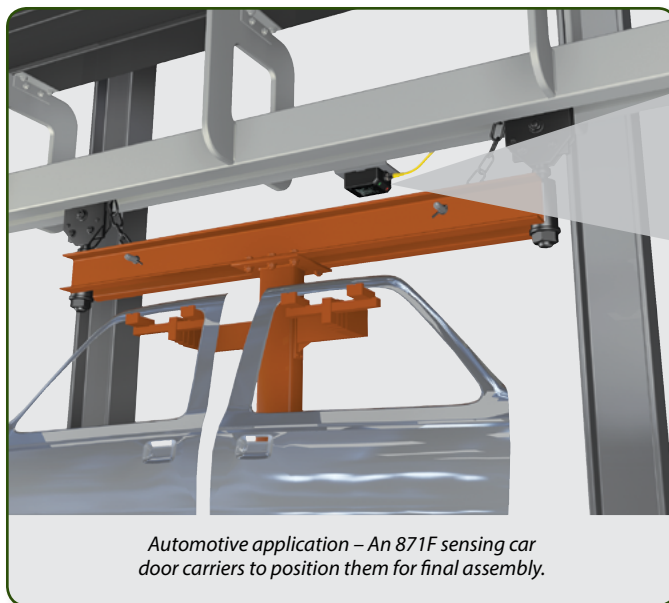


Flat Pack 871F

- General purpose and weld-field immune versions
- Sensing ranges up to 65 mm (2.55 in.)
- Through-hole or DIN Rail mounting
- Complementary N.O. and N.C. outputs

Maximum Sensing Range

The 871F is ideal for applications that require long sensing range – up to 65 mm (2.56 in.). This sensor is often used in material handling and welding applications.



Automotive application – An 871F sensing car door carriers to position them for final assembly.

Mounting Requirements

Shielded units must be fully embedded in mild steel to achieve maximum sensing distance.



Proximity Sensors

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107

Product Selection

4-Wire DC

Dimensions w x h x d [mm (in.)]	Weld Field Immune	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency (Hz)	Connector Type	Cat. No.
83 x 94 x 40 (3.26 x 3.70 x 1.57)	N	50 (1.96)	Y	N.O. and N.C., PNP	100	Micro QD	871F-P50BP80-D4
		65 (2.55)	N				871F-N65BP80-D4
	Y	40 (1.57)	Y		15		871F-PW40BP80-D4
		50 (1.96)	N				871F-NW50BP80-D4

2-Wire AC/DC

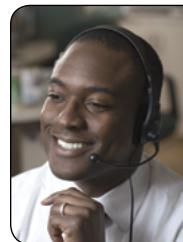
Dimensions w x h x d [mm (in.)]	Weld Field Immune	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency (Hz)	Connector Type	Cat. No.
83 x 94 x 40 (3.26 x 3.70 x 1.57)	N	50 (1.96)	Y	N.O.	10	Micro QD (1/2-20 UNF-2A)	871F-R50N80-R3
		65 (2.55)	N				871F-K65N80-R3
	Y	40 (1.57)	Y				871F-JW40N80-R3
		50 (1.96)	N				871F-KW50N80-R3

Specifications

Certifications	UL Listed, cUL Certified, and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 2, 3, 4, 6, 6P, 12, 13; IP67 and IP69K (IEC 529)
Operating Temperature [C (F)]	-25...+70 °C (-13...+158 °F)
Operating Voltage	10...30V DC or 20...250V AC/DC
Protection Type	False pulse on power, transient noise, short circuit, overload, reverse polarity
Load Current	DC models: ≤200 mA AC models: ≤100 mA
Housing Material	PBT

Required Cordsets

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
AC Micro (M12) QD cordset, straight, 3-pin, 2 m (6.5 ft)	889R-F3ECA-2



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Proximity Sensors

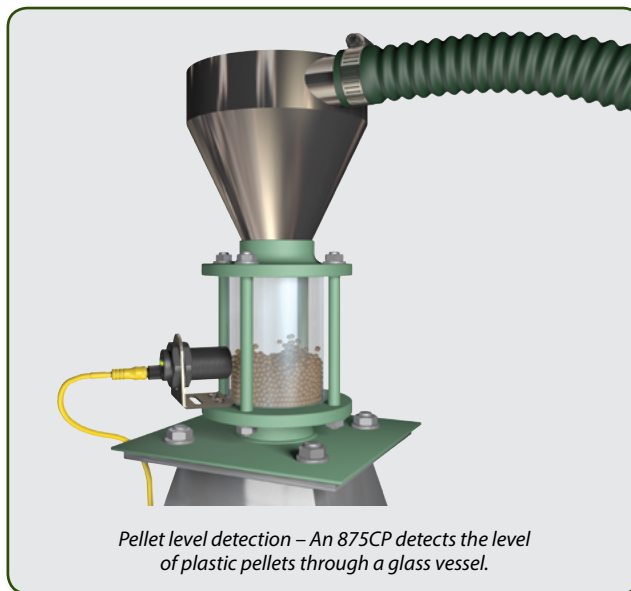


Capacitive 875C and 875CP

- Metal, nonmetal solid, and liquid sensing
- Adjustable sensing distance
- Ni-plated brass (875C) or plastic (875CP) housings
- NEMA 12 and IP67 (IEC 529) enclosure
- Cable or quick-disconnect styles

Reliably Detect a Variety of Materials

Unlike inductive proximity sensors, the 875C and 875CP capacitive sensors can detect non-metal solids and liquids in addition to standard metal targets. They can even sense the presence of some targets through certain other materials, making them an ideal choice in those applications where the inductive proximity and photoelectric sensors cannot be used.



Proximity Sensors

IO-Link	Photoelectric Sensors	Proximity Sensors	Ultrasonic Sensors	Limit Switches	Encoders	Condition Sensing
6-2...6-3	6-4...6-45	6-46...6-75	6-76...6-79	6-80...6-93	6-94...6-99	6-100...6-107



Product Selection

3-Wire DC

Barrel Diameter	Housing Material	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Connection Type	Cat. No. ¹
12 mm	Ni-plated brass	2.5 (0.09)	Yes	N.O./PNP	2 m cable	875C-M2NP12-A2
18 mm	Ni-plated brass	1...5 (0.04...0.20)	Yes		2 m cable	875C-M5NP18-A2
					3-pin Pico QD	875C-M5NP18-P3
	Plastic	2...8 (0.08...0.31)	No		2 m cable	875CP-N8NP18-A2
					3-pin Pico QD	875CP-N8NP18-P3
30 mm	Ni-plated brass	2...10 (0.08...0.39)	Yes		2 m cable	875C-M10NP30-A2
					4-pin Micro QD	875C-M10NP30-D4
	Plastic	5...20 (0.2...0.79)	No		2 m cable	875CP-N20NP30-A2
					4-pin Micro QD	875CP-N20NP30-D4
34 mm	Plastic	7...30 (0.28...1.18)	No		2 m cable	875CP-NM30NP34-A2
					4-pin Micro QD	875CP-NM30NP34-D4

¹ The **-A2** suffix describes a 2 m cable; **-P3** suffix describes a Pico (M8) QD connector; and **-D4** suffix describes a Micro (M12) QD connector.

Specifications

Certifications	CE Marked for all applicable directives
Enclosure Type Rating	875C: NEMA 1, 3, 4, 6, 13 and IP67; 875CP: NEMA 12, IP67
Operating Temperature [C (F)]	-25...+75 ° (-13...+167 °)
Operating Voltage	10...48V DC
Protection Type	Transient noise, reverse polarity, short circuit, overload
Load Current	300 mA
Switching Frequency	100 Hz
Housing Material	Nickel-plated brass (875C) or plastic (875CP)

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
DC Pico (M8) QD cordset, straight, 3-pin, 2 m (6.5 ft)	889P-F3AB-2
Right angle mounting bracket	871A-BRN ²
Snap clamp mounting bracket	871A-SCPB ³
Sight glass mounting bracket	871A-BGD ²
Threaded sensor well (acetal resin)	871A-WTD ⁴
Threaded sensor well (PTFE)	871A-WTT ⁴
Bolt-on sensor well (30 mm only)	871A-WSPE30

² Add **12**, **18**, or **30** to the end of the catalog number for sensor barrel diameter in mm.

³ Add **12** or **18** to the end of the catalog number for sensor barrel diameter in mm.

⁴ Add **12**, **18**, **30**, or **34** to the end of the catalog number for sensor barrel diameter in mm.

RFID



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Ultrasonic Sensors

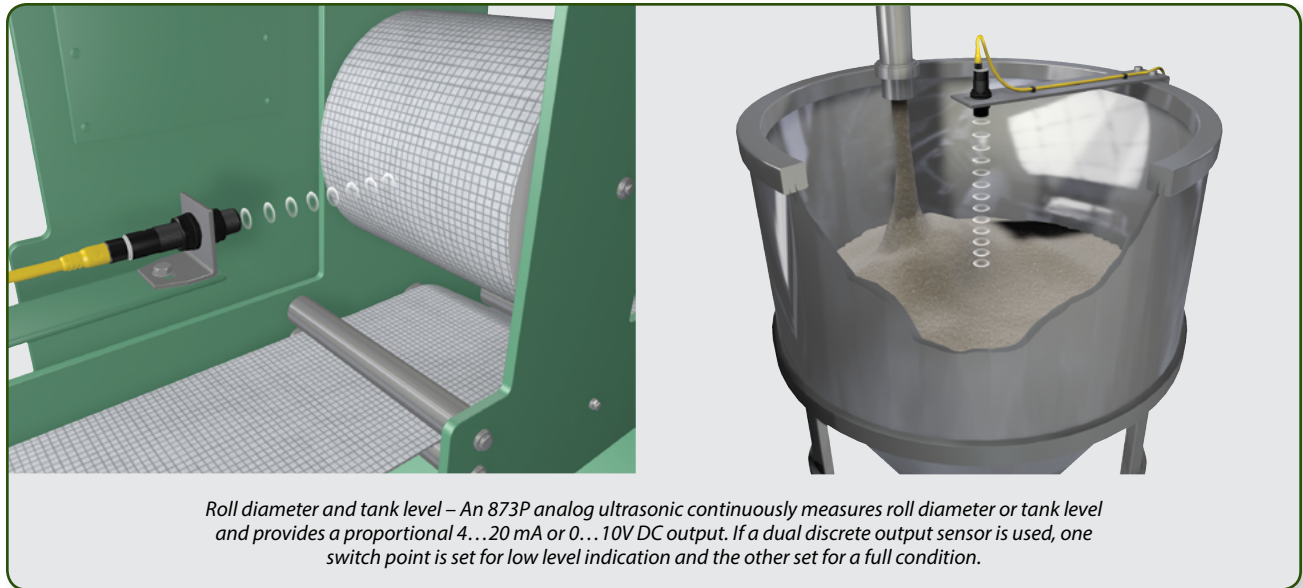


18, 30 and 38.8 mm Plastic Discrete and Analog 873P

- Detect clear, shiny or non-reflective objects
- Sensing range up to 6 m (19.6 ft)
- Push button programming
- Discrete output models (single set-point or window mode)
- Scalable analog output models
- Wide range of operating voltages
- Synchronization on select models to prevent crosstalk
- Four output modes

A Sound Solution

The 873P ultrasonic sensors use reflected sound waves to detect targets – such as clear, shiny, or non-reflective objects – that can be challenging for other sensing technologies. The 873P sensors offer a wide range of operating voltages, simple push-button setup and a synchronization feature to reduce cross-talk between adjacent sensors.



Roll diameter and tank level – An 873P analog ultrasonic continuously measures roll diameter or tank level and provides a proportional 4...20 mA or 0...10V DC output. If a dual discrete output sensor is used, one switch point is set for low level indication and the other set for a full condition.

Ultrasonic Sensors

IO-Link	Photoelectric Sensors	Proximity Sensors	Ultrasonic Sensors	Limit Switches	Encoders	Condition Sensing
6-2...6-3	6-4...6-45	6-46...6-75	6-76...6-79	6-80...6-93	6-94...6-99	6-100...6-107

Product Selection

18 and 30 mm Plastic Discrete and Analog

Sensing Distance [mm (in.)] ¹	Beam Angle	Operating Voltage	Switching Frequency [Hz]	Output Type	Resolution	Response Time	Transducer Frequency	Operating Temperature [C (F)]	Cat. No. ^{2,3}
Single Discrete									
100...900 (3.93...35.43)	±7°	15...30V DC	4 Hz	(1) PNP	2 mm	125 ms	300 kHz	-20...+60 ° (-4...140 °)	873P-D18P1-900-D4
200...2200 (7.87...86.61)			1 Hz		3 mm	500 ms	200 kHz		873P-D18P1-2200-D4
350...6000 mm (13.8...236.2 in.)	15° ±2°	12...30V DC	1 Hz		6 mm	500 ms	75 kHz	-20...+70 ° (-4...+158 °)	873P-D30P1-6000-D4
Analog									
100...900 (3.93...35.43)	±7°	15...30V DC	N/A	4...20 mA	2 mm	500 ms	300 kHz	-20...+60 ° (-4...140 °)	873P-D18AI-900-D4
200...2500 (7.87...98.42)	14 ±1°	12...30V DC				600 ms	150 kHz	-20...+70 ° (-4...158 °)	873P-D30AI-2500-D4
350...6000 mm (13.8...236.2 in.)	15° ±2°	12...30V DC			6 mm	600 ms	75 kHz	-20...+70 ° (-4...158 °)	873P-D30AI-6000-D4
100...900 (3.93...35.43)	±7°	15...30V DC	N/A	0...10V DC	3 mm	500 ms	300 kHz	-20...+60 ° (-4...140 °)	873P-D18AV-900-D4
200...2200 (7.87...86.61)							200 kHz		873P-D18AV-2200-D4
350...6000 mm (13.8...236.2 in.)	15° ±2°				6 mm	600 ms	75 kHz	-20...+70 ° (-4...158 °)	873P-D30AV-6000-D4
Dual Discrete and One Analog									
200...2500 (7.87...98.42)	14 ±1°	15...30V DC	2 Hz	2 PNP & (1) 0...10V DC	2 mm	Analog = 600 ms, Discrete =250 ms	150 kHz	-20...+70 ° (-4...158 °)	873P-D30AVP2-2500-D5
250...3500 (9.84...137.79)	15 ±2°	12...30V DC			4 mm		112 kHz		873P-D30AIP2-3500-D5
350...6000 mm (13.8...236.2 in.)	15° ±2°	12...30V DC	1 Hz (digital output)	2 PNP & (1) 4...20 mA	6 mm	500 ms (digital output), 600 ms (analog output)	75 kHz	-20...+70 ° (-4...+158 °)	873P-D30AIP2-6000-D5

¹ Blind Zone = 0 mm to minimum sensing distance

² The barrel diameter is indicated after the first **D** in the catalog number. For example, catalog number 873P-**D**18P1-400-D4 is an 18 mm barrel diameter and 873P-**D**30P1-2500-D4 is a 30 mm barrel diameter.

³ The **-D4** suffix indicates a 4-pin DC Micro (M12) **-QD** and the **-D5** suffix indicates a 5-pin DC Micro (M12) **QD**.

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP67
Current Consumption	<50 mA
Protection Type	Short circuit, reverse polarity, transient noise, overload
Housing Material	PBT
Repeatability	0.1% up to 3.5 m, 0.2% from 3.5 m to 6 m
Absolute Accuracy	0.1% of sensing range (analog only)
Sensor Voltage Drop	<2.2V DC (discrete only)
Hysteresis	1% of full scale value

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
DC Micro (M12) QD cordset, straight, 5-pin, 2 m (6.5 ft)	889D-F5AC-2
Swivel/tilt style mounting bracket (M18)	60-2649
Swivel/tilt style mounting bracket (M30)	60-2439
Zinc-plated steel right angle bracket (M18)	871A-BRN18
Stainless steel right angle bracket (M18)	871A-BRS18
Zinc-plated steel right angle bracket (M30)	871A-BRN30
Stainless steel right angle bracket (M30)	871A-BRS30

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Ultrasonic Sensors



18 mm Metal General Purpose 873M

- Detect clear, shiny, or non-reflective objects
- Sensing range up to 800 mm (31.5 in.)
- Compact 18 mm (0.71 in.) housing
- Scalable analog output models
- Teachable discrete output models (single set-point or window mode)
- Remote teach or optional programming cable

Compact Clear Object Detection

The 873M general purpose ultrasonic sensors detect solid or liquid targets by using sound waves. These compact sensors are a great solution for areas with limited space and are excellent for standard packaging and assembly applications. They are ideal for sensing targets that are challenging for photoelectric sensors to detect, including clear, shiny, or non-reflective objects.



Film position detection – An 873M ultrasonic checks for continual feed of a clear wrap while monitoring tension.



Part counting – A right angle 873M counts bottles that, due to color, luster and clarity, might be difficult to sense with photoelectric sensors.

Ultrasonic Sensors

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45

Proximity Sensors



6-46...6-75



6-76...6-79

Limit Switches



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

18 mm Metal General Purpose

Sensing Distance [mm (in.)] ¹	Sensing Direction	Operating Voltage	Switching Frequency [Hz]	Output Type	Repeatability	Transducer Frequency	Response Time	Cat. No.
30...300 (1.18...11.8)	Straight	10...30V DC	13	PNP, Selectable N.O./N.C.	<1%	390 kHz	30 ms	873M-D18P0300-D4
								873M-D18RPO300-D4
	Right angle	15...30V DC	N/A	4...20 mA	±0.5% of full-scale value			873M-D18RAI300-D4
				0...10V DC				873M-D18RAV300-D4
	Straight	10...30V DC	N/A	4...20 mA	±0.5% of full-scale value			873M-D18AI300-D4
				0...10V DC				873M-D18AV300-D4
50...800 (1.97...31.5)	Straight	10...30V DC	4	PNP, Selectable N.O./N.C.	<1%	255 kHz	100 ms	873M-D18P0800-D4
								873M-D18RPO800-D4
	Right angle	10...30V DC	N/A	4...20 mA	±0.5% of full-scale value			873M-D18RAI800-D4
				0...10V DC				873M-D18RAV800-D4
	Straight	10...30V DC	N/A	4...20 mA	±0.5% of full-scale value			873M-D18AI800-D4
				0...10V DC				873M-D18AV800-D4

¹ Blind Zone = 0 mm to minimum sensing distance

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Barrel Size	M18
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)
Protection Type	Short circuit, overload, reverse polarity
Load Current	200 mA
Current Consumption	<20 mA
Housing Material	Nickel-plated brass
Resolution	0.4 mm at max. sensing range
Voltage Drop	<3V
Hysteresis	1% set operating distance

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
Zinc-plated steel right angle bracket	871A-BRN18
Programming cable	873M-ProgCable
Snap clamp mounting bracket (18 mm)	871A-SCBP18
Swivel/tilt style bracket (18 mm)	60-2649



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Limit Switches

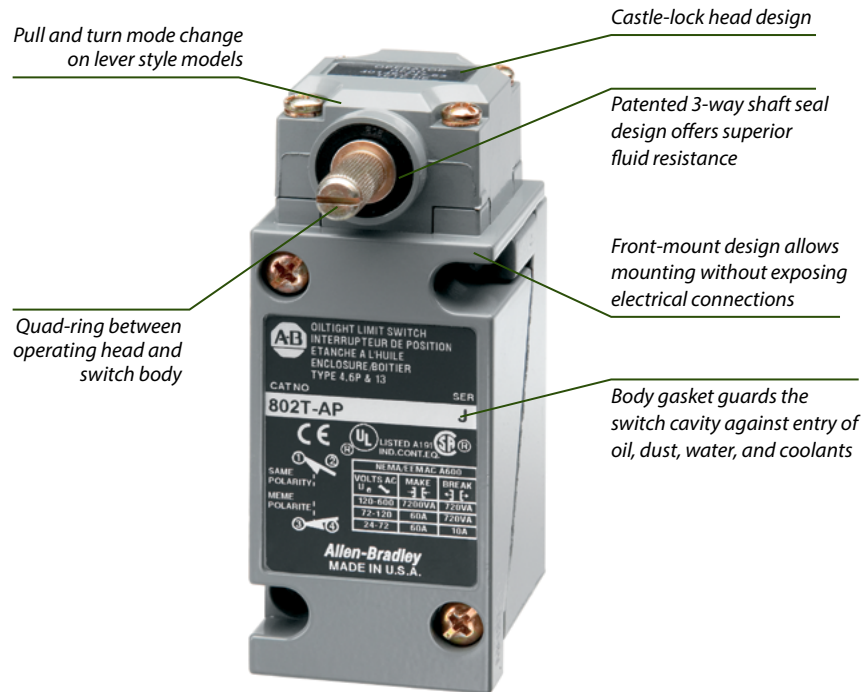


Oiltight Plug-in 802T

- Heavy duty
- Plug-in style
- Front mount
- Side rotary or side push styles
- Quick mode change (CW/CCW)
- Castle-lock head design

The Benchmark for Toughness and Reliability

The 802T limit switches are ideal for applications in which heavy-duty pilot ratings, small size, a high degree of versatility and a rugged NEMA Type 4, 13, and 6P construction are desirable. These limit switches are extensively applied in rugged and heavy-duty production environments.



Limit Switches						
<p>IO-Link</p>  <p>6-2...6-3</p>	<p>Photoelectric Sensors</p>  <p>6-4...6-45</p>	<p>Proximity Sensors</p>  <p>6-46...6-75</p>	<p>Ultrasonic Sensors</p>  <p>6-76...6-79</p>	 <p>6-80...6-93</p>	<p>Encoders</p>  <p>6-94...6-99</p>	<p>Condition Sensing</p>  <p>6-100...6-107</p>



Product Selection – Oiltight Plug-in

Lever Type, Spring Return Standard and Low Operating Torque Models – Switch without Lever

No. of Circuits	Lever Movement	Torque to Operate [N·m (lb·in.)]	Travel to Operate Contacts	Maximum Travel	Travel to Reset Contacts	Cat. No.
2	CW or CCW	0.29 (2.6) max.	13° max.	90°	7°	802T-AP
2	CW or CCW	0.29 (2.6) max.	18° max.	90°	7°	802T-ASP
2	CW or CCW	0.56 (5) max.	9° max.	90°	4°	802T-HP
2	CW	0.29 (2.6) max.	13° max.	90°	7°	802T-A1P
2	CW or CCW	0.106 (0.94) max.	13° max.	90°	7°	802T-ALP
4	CW or CCW	0.45 (4) max.	13° max.	90°	7°	802T-ATP
4	CW or CCW	0.79 (7) max.	9° max.	90°	4°	802T-HTP

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 4, 6P, and IP67
Ambient Temperature [C (F)]	-18...+110° (0...230°) Wobble stick & cat whisker models: -18...+54° (0...130°)



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

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Limit Switches

Product Selection – Oiltight Plug-in

Lever Type, Maintained Contact Models – Switch without Lever

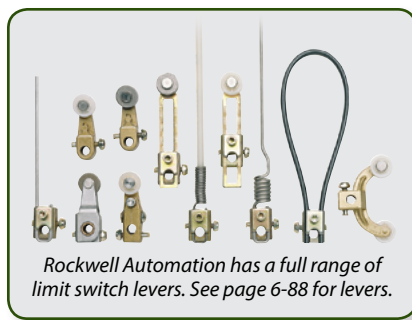
No. of Circuits	Lever Movement	Torque to Operate	Travel to Operate Contacts	Maximum Travel	Travel to Reset Contacts	Cat. No.
2	CW or CCW	0.31 N·m (2.75 lb·in.) max.	70° max.	88°	32° max.	802T-AMP

Lever Type, Spring Return Neutral Position Models – Switch without Lever

No. of Circuits	Torque to Operate, Max.	Travel to Operate Contacts	Maximum Travel	Travel to Reset Contacts	Cat. No.
4	CW: 0.28 N·m (2.5 lb·in.), CCW: 0.47 N·m (4.2 lb·in.)	13° max.	75°	7° max.	802T-NPTP

Wobble Stick and Cat Whisker, Spring Return – Complete Switch

No. of Circuits	Operator Type	Torque to Operate	Travel to Operate Contacts	Maximum Travel	Travel to Reset Contacts	Cat. No.
2	Nylon wobble stick	0.51 N·m (4.5 lb·in.) max.	9° max.	10°	5° max.	802T-WSP
	Wire cat whisker	0.06 N·m (8 oz·in.) max.	21° max.	28°	14° max.	802T-CWP



Limit Switches

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107


Product Selection – Oiltight Plug-in Push Type, Spring Return – Complete Switch

No. of Circuits	Operator Type	Force to Operate [N (lb)]	Travel to Operate Contacts [mm (in.)]	Maximum Travel [mm (in.)]	Travel to Reset Contacts [mm (in.)]	Cat. No.
2	Top push rod	13.8 (3.1)	1.4 (0.057) max.	6.0 (0.236)	0.9 (0.034) max.	802T-BP
	Adjustable top push rod					802T-BAP
	Side push rod	16.4 (3.7)	3.3 (0.131) max.	5.7 (0.226)	1.9 (0.074) max.	802T-CP
					1.3 (0.052) max.	802T-CGP ¹
	Top push rod	13.8 (3.1)	1.4 (0.057) max.	6.0 (0.236)	0.9 (0.034) max.	802T-DP
					0.7 mm (0.028 in.)	802T-DGP ¹
	Side push vertical roller	16.4 (3.7)	3.3 (0.131) max.	5.7 (0.226)	1.9 (0.074) max.	802T-KP
					1.3 (0.052) max.	802T-KGP ¹
4	Top push rod	22.2 (5.0)	1.4 (0.057) max.	6.0 (0.236)	0.9 (0.034) max.	802T-BTP
						802T-DTP

¹ Low energy models.

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 4, 6P, and IP67
Ambient Temperature [C (F)]	-18...+110 ° (0...230 °) Wobble stick & cat whisker models: -18...+54 ° (0...130 °)



Connected Components

Simpler, faster, cost-effective machine building.

rockwellautomation.com/global/capabilities/industrial-automation-control/

RFID



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For more information on our complete family of limit switch products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Limit-Switches>



Limit Switches



Pre-wired, Factory Sealed 802M and 802MC

- Harsh environment applications
- NEMA 4, 4X, 6P, and IP69K enclosure ratings
- Resistant to moisture and cleaning agents
- Submersible (802MC)
- Sealed, corrosion resistant versions with stainless steel shaft and hardware (802MC)
- Two- and four-circuit versions (only two-circuit for 802MC)
- Oil resistant cable on pre-wired models

For the Most Demanding Environments

The 802M and 802MC compact pre-wired limit switches are factory-sealed to meet the demanding requirements for NEMA Type 4, 4X, 6P, and IP67 enclosures. A large variety of operating heads and levers are available to suit a wide range of applications, especially where the switch may be subject to washdowns, steams of coolant, or occasionally submerged in fluids commonly found on machines or in industrial processes.



Limit Switches						
IO-Link	Photoelectric Sensors	Proximity Sensors	Ultrasonic Sensors		Encoders	Condition Sensing
						
6-2...6-3	6-4...6-45	6-46...6-75	6-76...6-79	6-80...6-93	6-94...6-99	6-100...6-107



Product Selection Pre-wired, Factory Sealed

Description	Torque/Force to Operate, Max.	Travel to Operate Contacts, Max.	Maximum Travel	Travel to Reset Contacts, Max.	Connection Type	Cat. No.
Lever type – spring return	0.34 N•m (3 lb•in.)	15°	86°	6°	1.5 m (5 ft) cable	802M-AYS
Lever type – spring return corrosion resistant					5-pin mini QD	802M-AJ1
					1.5 m (5 ft) cable	802MC-AYS
					5-pin mini QD	802MC-AJ1
Lever type neutral position – spring return (4 circuit)	CW: 0.79 N•m (7 lb•in.), CCW: 0.85 N•m (7.5 lb•in.)	16°	75°	7°	1.5 m (5 ft) cable	802M-NPY5
Push type – spring return top push rod	13.3 N (3 lb)	1.45 mm (0.057 in.)	5.26 mm (0.207 in.)	0.56 mm (0.022 in.)	1.5 m (5 ft) cable	802M-BY5
Push type – spring return top push roller	14.7 N (3.3 lb)					802M-DY5
Push type – spring return side push vertical roller	20 N (4.5 lb)	2.59 mm (0.102 in.)	5.1 mm (0.203 in.)	1.14 mm (0.045 in.)	1.5 m (5 ft) cable	802M-KY5



Looking for More?
 This catalog highlights only our most essential components; for a complete product selection, visit us at:
<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 4, 6P, 13 and IP67 (802MC also NEMA 4X)
Ambient Temperature [C (F)]	0...80° (32...180°)

Required Cordsets and Accessories

Description	Cat. No.
Mini plus QD cordset, straight, 5-pin, 1.8 m (6 ft)	889N-F5AFC-6F

RFID



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For more information on our complete family of limit switch products, please visit:
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Limit Switches

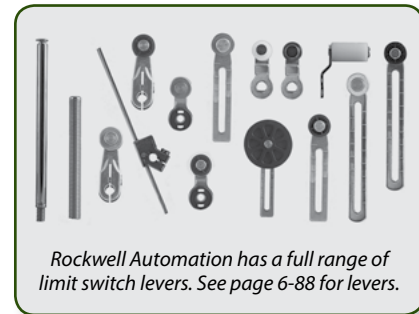


IEC 30 mm Metal 802K

- Rugged die-cast 30 mm housing
- Large selection of actuator heads
- Positive operation, forced disconnection of contacts
- Snap-acting, slow make before break, or slow break before make contact blocks
- Two- or four-contact configurations
- IP66 enclosure

Our Rugged, IEC-style Offering

The 802K limit switches have a range of options including snap action or slow break/make with two or four contact configurations and a choice of actuator heads. You can rotate the head in 90° increments before installation for easy mounting. Operation of these limit switches is achieved by the moving objects deflecting the plunger or lever.



Limit Switches						
IO-Link	Photoelectric Sensors	Proximity Sensors	Ultrasonic Sensors		Encoders	Condition Sensing
6-2...6-3	6-4...6-45	6-46...6-75	6-76...6-79	6-80...6-93	6-94...6-99	6-100...6-107



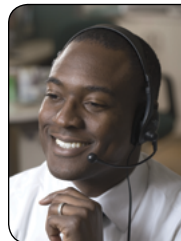
Product Selection

IEC 30 mm Metal

Operator Type	Force/Torque to Operate, Max.	Contacts	Aux Contacts	Contact Action	Connection Type	Cat. No.
Metal roller plunger	11 N (2.5 lb)	2 N.C.	2 N.O.	BBM	1/2 in. NPT conduit	802K-MRPB22E
	13 N (2.9 lb)	1 N.C.	1 N.O.	Snap acting		802K-MRPS11E
						802K-MDPS11E
	11 N (2.5 lb)	2 N.C.	2 N.O.	BBM	1/2 in. NPT conduit	802K-MDPB22E
					M20 conduit	802K-MDPB22B
Metal short lever	0.34 N•m (3.01 lb•in.)	1 N.C.	1 N.O.	Snap acting	1/2 in. NPT conduit	802K-MSLS11E
					M20 conduit	802K-MSLS11B
	0.20 N•m (1.77 lb•in.)	4 N.C.	–	–	1/2 in. NPT conduit	802K-MSLB04E
	0.34 N•m (3.01 lb•in.)	2 N.C.	2 N.O.	BBM	1/2 in. NPT conduit	802K-MSLB22E
					M20 conduit	802K-MSLB22B
Metal short lever, metal roller	0.34 N•m (3.01 lb•in.)	1 N.C.	1 N.O.	Snap acting	1/2 in. NPT conduit	802K-MMHS11E
					M20 conduit	802K-MMHS11B
	2 N.C.	2 N.O.	BBM	1/2 in. NPT conduit	802K-MMHB22E	
Metal adjustable lever	0.34 N•m (3.01 lb•in.)	1 N.C.	1 N.O.	Snap acting	1/2 in. NPT conduit	802K-MALS11E
					M20 conduit	802K-MALS11B
	2 N.C.	2 N.O.	BBM	1/2 in. NPT conduit	802K-MALB22E	
				M20 conduit	802K-MALB22B	
Metal rod lever	0.34 N•m (3.01 lb•in.)	1 N.C.	1 N.O.	Snap acting	1/2 in. NPT conduit	802K-MARS11E
Metal spring rod	0.20 N•m (1.77 lb•in.)	1 N.C.	1 N.O.	Snap acting	1/2 in. NPT conduit	802K-MSRS11E
					M20 conduit	802K-MSRS11B

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives
Enclosure Type Rating	IP66
Ambient Temperature [C (F)]	-25...+80 ° (-18...+176 °)



Need Help?

The Rockwell Automation Support Center is your 24/7 support for the answers you need now.

www.rockwellautomation.com/support/overview.page

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For more information on our complete family of limit switch products, please visit: <http://ab.rockwellautomation.com/Sensors-Switches/Limit-Switches>



Limit Switches



Operating Levers 802T and 802M

- Use with 802T, 802M, and 802MC limit switches
- Adjustable and non-adjustable levers
- Fork levers
- Offset levers
- Rod levers

Roller Levers

For use with the 802T, 802M, & 802X switches

Description	Roller Material	Roller Diameter	Roller Width	Cat. No.
Non-adjustable cast-lever 1.5 in. radius roller on front	Nylon	19 (0.748)	7.11 (0.28)	802T-W1
	Nylon	19 (0.748)	25.4 (1.0)	802T-W1H
	Steel	19 (0.748)	6.35 (0.25)	802T-W1A
	Ball bearing	19 (0.748)	5.84 (0.229)	802T-W1B
Non-adjustable cast-lever 1.5 in. radius roller on rear	Nylon	19.05 (0.749)	25.4 (1)	802T-W1D
	Steel	19.05 (0.749)	6.35 (0.25)	802T-W1F
	Steel	19.05 (0.749)	19.05 (0.749)	802T-W1C
Adjustable lever 1.19...3 in. radius	Nylon	19.05 (0.749)	7.11 (0.28)	802T-W2
	Nylon	19.05 (0.749)	25.4 (1.0)	802T-W2D
	Steel	19.05 (0.749)	6.35 (0.25)	802T-W2B
	Ball bearing	19.05 (0.749)	5.8 (0.228)	802T-W2C
Fork lever 1.5 in. radius	Steel; both rollers on front	19.05 (0.749)	6.35 (0.25)	802T-W4C
Micrometer adjustment lever 1.5 in. radius ¹	Nylon R.H. adjustable	19.05 (0.749)	7.11 (0.28)	802T-W6
	Steel R.H. adjustable	19.05 (0.749)	6.35 (0.25)	802T-W6A
Non-adjustable offset lever 1.44 in. radius roller on front	Steel	19.05 (0.749)	6.35 (0.25)	802T-W12A ²

Roller Levers

For use with the 802T, 802M, & 802X switches

Material	Rod Diameter [mm (in.)]	Cat. No.
Stainless steel rod, 5 in. long	3.3 (0.13)	802T-W3 ³
Stainless steel rod, 8.5 in. long	3.3 (0.13)	802T-W3B ³
Stainless steel rod, 11.5 in. long	3.3 (0.13)	802T-W3A
Stainless steel rod, 11.5 in. long	2.03 (0.08)	802T-W3F ⁴
Nylon rod, 12 in. long	6.35 (0.25)	802T-W3C
Stainless steel, 5 in. long	1.52 (0.06)	802T-W5 ³
Nylatron looped rod, 6 in. long, 2 in. wide loop	4.57 (0.18)	802T-W14

¹ The micrometer adjustment roller lever is designed especially for installations where the position of the roller is a critical factor. This lever has a pivoted roller which can be turned laterally. After clamping the lever to the switch shaft, the position of the roller can be precisely adjusted through an arc of 7.5° on either side of the center or straight-line position.

² When mounted on Plug-In devices, the offset lever provides equivalent cam tracking to the Non-Plug-In devices using catalog number 802T-W1 levers.

³ Recommended for use with low-operating-torque switches.

⁴ Not for use with catalog number 802M-NPY5 type switches.

Limit Switches

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107



Replacement Operating Levers 802K and 440P

- Use with all 440P safety and 802K non-safety lever type limit switches
- Adjustable and non-adjustable levers
- Rod levers
- Spring rod levers
- Short levers with wide roller
- Telescopic arm levers



Operating Levers, Rods, Spring Rods and Telescopic Arms

For use with 802K and 440P limit switches

Description	Cat. No.
Levers	
Short lever with nylon roller for 440P-ASL ¹ or -AWL ¹	440P-WA1
Short lever with metal roller for 440P-ASL ¹ or -AWL ¹	440P-WA1A
Short lever with wide roller for 440P-ASL ¹ or -AWL ¹	440P-WA1B
Short lever with nylon roller for 440P-CSL ¹ or -CHM ¹	440P-WC1
Short lever with metal roller for 440P-CSL ¹ or -CHM ¹	440P-WC1A
Short lever with nylon roller for 802K-/440P-MSL ¹ or -MMH ¹	440P-WM1
Short lever with metal roller for 802K-/440P-MSL ¹ or -MMH ¹	440P-WM1A
Adjustable lever arm with nylon roller for 440P-AAL ¹ or -AA1L ¹	440P-WA2A
Adjustable lever arm with steel roller for 440P-AAL ¹ or -AA1L ¹	440P-WA2B
Adjustable lever with nylon roller for 440P-CAL ¹ , -CRR ¹ , -MRR ¹	440P-WC2
Adjustable lever with large rubber roller for 440P-CAL ¹ , -CRR ¹ , -MRR ¹	440P-WC2A
Adjustable lever with metal roller for 440P-CAL ¹ or -CRR ¹	440P-WC2B
Adjustable lever with nylon roller for 802K-/440P-MAL ¹ or -MRR ¹	440P-WM2
Adjustable lever with metal roller for 802K-/440P-MAL ¹ or -MRR ¹	440P-WM2A
Rods	
Adjustable metal rod for 802K-/440P-MAR ¹	440P-WM3
Spring Rods	
Metal spring rod for 802K-/440P-MSR ¹	440P-WM4
Telescopic Arms	
Telescopic arm for 802K-/440P-MTA ¹	440P-WM5

¹ Use these levers only with this catalog number.

RFID



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<http://ab.rockwellautomation.com/Sensors-Switches/Limit-Switches>



Limit Switches

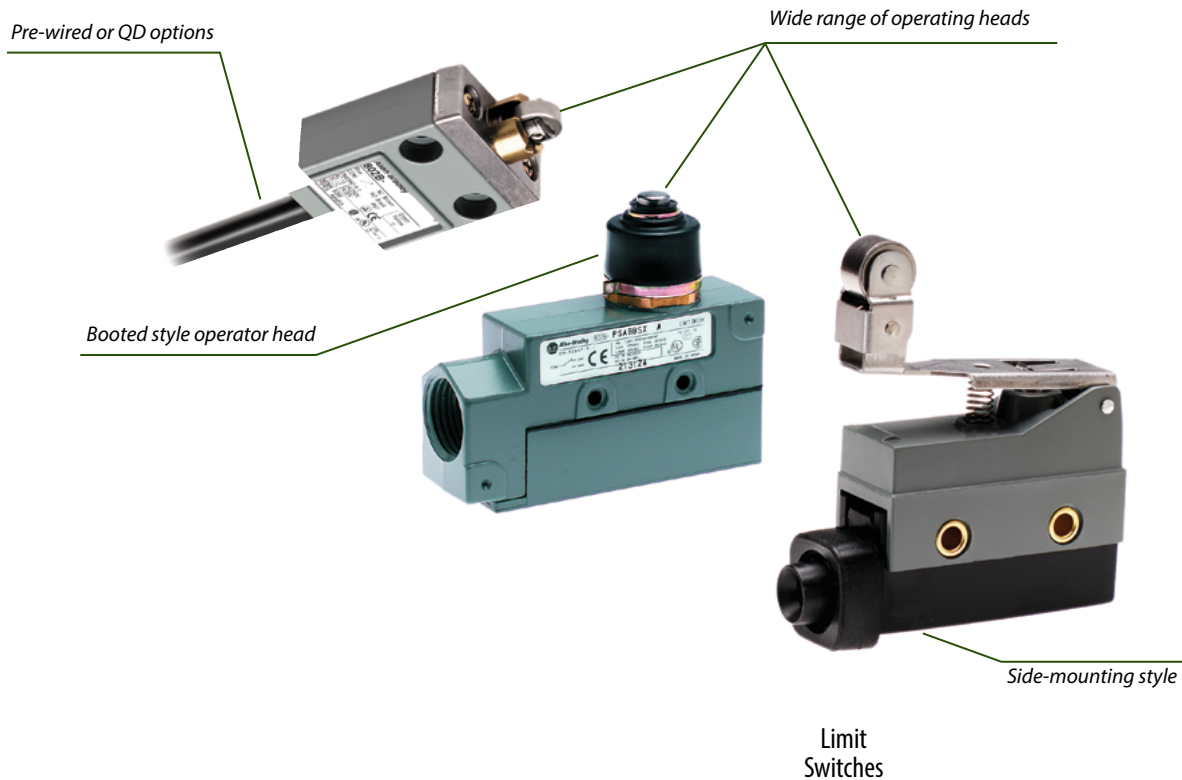


Compact, Precision and Small Precision 802B

- Rugged die-cast housings
- Industry standard dimensions
- Low trip and reset points (precision and small precision models)
- Wide range of options and operators

For When Bigger Switches Won't Fit

The 802B product line consists of different body styles: compact, precision, and small precision. Each style has been designed to withstand the rugged environments that industrial applications demand. The 802B family of limit switches can be mounted in areas that traditional NEMA limit switches can not, due to their size and mounting options.



Limit Switches

IO-Link	Photoelectric Sensors	Proximity Sensors	Ultrasonic Sensors	Limit Switches	Encoders	Condition Sensing
6-2...6-3	6-4...6-45	6-46...6-75	6-76...6-79	6-80...6-93	6-94...6-99	6-100...6-107

Product Selection

Compact

Head Type	Torque to Operate, Max. [N-m (lb-in.)]	Force to Operate [N (lb)]	Travel to Operate Contacts, Max.	Maximum Travel	Travel to Reset Contacts	Cat. No.
Rotary arm	0.216 (2)	–	25°	70°	3°	802B-CSAAXSXC3
Center rotary arm	0.216 (2)	–	10 ±3°	65°	4°	802B-CSAA2XSXC3
Wobble stick	0.118 (1.04)	–	15°	18° (Nominal Value)	11° (Nominal Value)	802B-CSACXSXC3
Top push booted head	–	17.65 (3.97)	1.8 mm (0.071 in.)	5 mm (0.197 in.)	0.2 mm (0.008 in.)	802B-CSABBSXC3
Top push roller booted head	–	17.65 (3.97)	1.8 mm (0.071 in.)	5 mm (0.197 in.)	0.2 mm (0.008 in.)	802B-CSADBSXC3
Top push cross roller booted head	–	17.65 (3.97)	1.8 mm (0.071 in.)	5 mm (0.197 in.)	0.2 mm (0.008 in.)	802B-CSAD1BSXC3
Top push panel mount	–	11.77 (2.65)	1.8 mm (0.071 in.)	5 mm (0.197 in.)	0.2 mm (0.008 in.)	802B-CPABXSXC3
Top push roller panel mount	–	11.77 (2.65)	1.8 mm (0.071 in.)	5 mm (0.197 in.)	0.2 mm (0.008 in.)	802B-CPADXSXC3
Top push cross roller panel mount	–	11.77 (2.65)	1.8 mm (0.071 in.)	5 mm (0.197 in.)	0.2 mm (0.008 in.)	802B-CPAD1XSXC3

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 3, 4, 6, 12, 13 and IP67
Operating Temperature [C (F)]	-10...+70 ° (14...158 °)
Contact Type	SPDT form C
Mechanical Life	10 million operations

Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

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Limit Switches

Product Selection

Precision

Head Type	Force to Operate [N (lb)]	Travel to Operate Contacts, Max. [mm (in.)]	Maximum Travel [mm (in.)]	Travel to Reset Contacts [mm (in.)]	Mounting	Cat. No.
Top push	2.45...3.43 (0.55...0.77)	0.4 (0.016)	5.9 (0.232)	0.05 (0.002)	Side	802B-PSABXSX
Top push roller	2.45...3.43 (0.55...0.77)	0.5 (0.020)	4.1 (0.161)	0.05 (0.002)	Side	802B-PSADXSX
Roller lever	5.59 (1.28)	4 (0.157)	10 (0.394)	0.4 (0.016)	Side	802B-PSARXSX
Top push booted	7.85 (1.76)	2 (0.079)	7 (0.276)	0.1 (0.004)	Side	802B-PSABBSX
Top push roller booted	4.9 (1.09)	1 (0.039)	4.5 (0.177)	0.12 (0.005)	Side	802B-PSADBSX
Top push cross roller booted	4.9 (1.09)	1 (0.039)	4.5 (0.177)	0.12 (0.005)	Side	802B-PSAD1BSX
Roller lever booted	6.28 (1.40)	5 (0.197)	11 (0.433)	0.4 (0.016)	Side	802B-PSARBSX

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	Non-booted models: NEMA 1 and IP60 Booted models: NEMA 1, 3, 4, and IP65
Operating Temperature [C (F)]	-10...+80 ° (14...176 °)
Contact Type	SPDT form C

Limit Switches

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79



6-80...6-93

Encoders



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

Small Precision

Head Type	Force to Operate [N (lb)]	Travel to Operate Contacts, Max. [mm (in.)]	Maximum Travel [mm (in.)]	Travel to Reset Contacts [mm (in.)]	Mounting	Cat. No.
Top push	11.8 (2.65)	1.5 (0.059)	3.9 (0.154)	0.2 (0.008)	Side	802B-SSABXSX
Top push panel mount	11.8 (2.65)	1.5 (0.059)	4.5 (0.177)	0.2 (0.008)	Side	802B-SPABXSX
Top push roller panel mount	11.8 (2.65)	1.5 (0.059)	4.5 (0.177)	0.2 (0.008)	Side	802B-SPADX SX
Top push roller booted	6.86 (1.54)	1.5 (0.059)	4 (0.157)	0.2 (0.008)	Side	802B-SSADBSX
Short hinge lever	3.92 (0.88)	6.2 (0.244) ± 1.2	12.2 (0.480)	1 (0.04)	Side	802B-SSAH1XSX
Hinge lever	2.75 (0.62)	8.2 (0.323) ± 1.2	16.6 (0.645)	1.4 (0.055)	Side	802B-SSAHXSX
Short roller lever	3.92 (0.88)	6.2 (0.244) ± 1.2	12.2 (0.480)	1 (0.04)	Side	802B-SSAR1XSX
Roller lever	2.75 (0.62)	8.3 (0.327) ± 1.2	16.7 (0.657)	1.4 (0.055)	Side	802B-SSARXSX

Specifications

Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives
Enclosure Type Rating	NEMA 1, 3, 4, 6, 13 and IP67
Operating Temperature [C (F)]	-10...+80 ° (14...176 °)
Contact Type	SPDT form C



Product Selection Tools

Available online or for download, our tools help you access info while in the office or on the go.

www.rockwellautomation.com/support/selection.page

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For more information on our complete family of limit switch products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Limit-Switches>



Encoders



EtherNet/IP 842E

- EtherNet/IP Interface
- Single- and multi-turn
- Status indication LEDs
- Easy integration and setup in Studio 5000 Logix Designer®
- Fully compliant CIP sync and CIP motion support (842E-CM)
- Endless shaft
- Flash upgradable

Integrated Motion on EtherNet/IP

EtherNet/IP uses CIP Sync and CIP Motion technologies to provide real-time, closed loop motion on standard Ethernet. This topology-independent network provides a simplified integration of the entire control solution on one network, including HMI, PAC, IO, and Motion Control.



Which version meets your application?



- Use the EtherNet/IP Encoder
- Provides position and velocity back to the Logix controller on EtherNet/IP
- Ideal applications: standard VFD drives

- Use the Integrated Motion on EtherNet/IP Encoder for servo applications
- Ideal applications: Kinetix® 5500 Servo drive applications that require auxiliary feedback or master half axis for gearing/camming applications

¹ Please see Product Selection on page 6-95 for complete catalog numbers.

Encoders

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



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6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

EtherNet/IP

Description	Single-/Multi-turn	Shaft Size/Type	Power Supply	Resolution	Connector Type	Cat. No.
EtherNet/IP Encoder	Single-turn	Solid shaft 10 mm with flat	10...30V DC	18 bit	M12	842E-SIP4BA
		Solid shaft 3/8 in. with flat				842E-SIP2BA
		Hollow shaft 15 mm				842E-SIP12BA
	Multi-turn	Solid shaft 10 mm with flat		30 bit		842E-MIP4BA
		Solid shaft 3/8 in. with flat				842E-MIP2BA
		Hollow shaft 1/2 in.				842E-MIP10BA
CIP Motion Encoder EIP	Single-turn	Solid shaft 3/8 in. with flat	10...30V DC	18 bit	M12	842E-CM-SIP2BA
		Solid shaft 3/8 in. with flat				842E-CM-SIP1BA
		Hollow shaft 1/2 in.				842E-CM-SIP10BA
	Multi-turn	Solid shaft 10 mm with flat		30 bit		842E-CM-MIP4BA
		Solid shaft 3/8 in. with flat				842E-CM-MIP2BA
		Hollow shaft 1/2 in.				842E-CM-MIP10BA

Specifications

Transmission Rate	10/100 MBit/s
Code Type	Binary
Operating Voltage Range	10...30V
No. of Revolutions, Max.	4,096 (12 Bit)
Operating Speed	9,000 RPM (solid shaft), max. 6,000 RPM (blind hollow shaft), max.
Shaft Loading	Radial: 80 N max. (solid shaft) Axial: 40 N max. (solid shaft)
Housing Material	Aluminum
Shaft Material	Stainless steel
Operating Temperature [C (F)]	-30...+85 ° (-22...+185 °)
Enclosure Type Rating ¹	IP 65 (shaft); IP 67 (housing)
Certifications	CE Marked for all applicable directives

¹ With mating connector inserted.

Required Cordsets and Accessories

Description	Cat. No.
Flexible coupling	845-CA-C-25
Flexible coupling	845-FC-B-B
842E Hollow shaft encoder clamp ring	845-MB-10
842E Hollow shaft encoder 2-point stator coupling	845-MB-11
842E square face mount flange, 63 mm	845-MB-12
DC Micro QD cordset (flying leads), straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
M12 D-code patchcord, straight, male/male, 2 m (6.5 ft)	1585D-M4TBDM-2
M12 to RJ45 patchcord, male/male, 2 m (6.5 ft)	1585D-M4TBJM-2
M12 D-code patchcord, straight, male/male (shielded), 2 m (6.5 ft)	1585D-M4UBDM-2
M12 to RJ45 patchcord (shielded), male/male, 2 m (6.5 ft)	1585D-M4UBJM-2

RFID



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For more information on our complete family of encoder products, please visit:
<http://ab.rockwellautomation.com/Motion-Control/Encoders>



Encoders

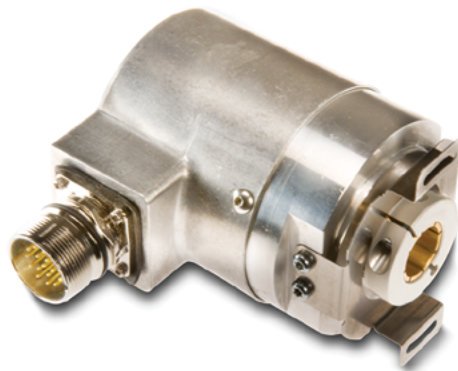


Sine Cosine/Serial 842HR

- Absolute feedback for position control
- High resolution incremental feedback for speed control
- Sine/Cosine differential interface
- Digital bi-directional RS-485 interface
- Compatible with Hiperface interface
- Internal diagnostic functions

Replace Multiple Encoders with a Single 842HR Encoder

Today's high performance digital servo drive systems require absolute feedback for position control and high resolution incremental feedback for speed control. Conventional systems use multiple incremental and absolute encoders to achieve this. The Allen-Bradley® 842HR Sine/Cosine encoder combines the advantages of incremental and absolute encoder technologies in a single, standalone unit targeted for high performance digital servo drive systems.



Ideal Applications

Compatible with a variety of motor control products including Kinetix drives and the Allen-Bradley Guardmaster® MSR57 safe speed monitoring relay, the 842HR is a flexible solution for wide range of industrial applications.

Single- Versus Multi-turn

In a single-turn encoder, absolute position retention on one full rotation of the encoder is provided. Multi-turn encoders provide absolute position on multiple turns of the encoder shaft (better for linear applications).

Encoders

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

Sine Cosine/Serial

Single-/Multi-turn	Shaft Size/Type	Power Supply	Resolution	Connector Type and Pinout	Cat. No.
Single-turn	Solid shaft 3/8 in. with flat	5...12V DC	15 bit	MS & 10-pin	842HR-SJDN115FWY2
					842HR-SJDZ115FWY2
Multi-turn	Solid shaft 3/8 in. with flat			M23 & 17-pin	842HR-SJDZ115FWYD
					842HR-MJDZ115FWYD
				Hub shaft 15 mm	MS & 10-pin
Multi-turn	Solid shaft 3/8 in. with flat			M23 & 17-pin	842HR-MJDN115FWYD



Looking for More?
 This catalog highlights only our most essential components; for a complete product selection, visit us at:
<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>

Specifications

Sine/Cosine	1024 cycles per revolution
Code Type	Binary
No. of Revolutions	4,096 (12 Bit), max.
Operating Speed	6,000 RPM, max.
Shaft Loading	Radial: 35 lb, max.
	Axial: 40 lb, max.
Housing Material	Aluminum
Shaft Material	Stainless steel
Operating Temperature [C (F)]	-20...+85 ° (-4...+185 °)
Enclosure Type Rating ¹	IP66
Certifications	CE Marked for all applicable directives

¹ With mating connector inserted.

Required Cordsets and Accessories

Description	Cat. No.
Pre-wired cable for 17-pin connector	2090-XXNFMF-S⊗
10-pin encoder cable assembly	845-CA-C-10
3/8 in. bore flex coupling	845-FC-B-B
Tether	842HR
Mounting Bracket	845-MB-15

⊗ The catalog number as listed is incomplete. Replace ⊗ with **1, 2, 3, 4, 5, 7, 9, 12, 15, 20, 25, or 30** for available lengths in meters.

RFID



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For more information on our complete family of encoder products, please visit:
<http://ab.rockwellautomation.com/Motion-Control/Encoders>



Encoders



General Purpose and Compact Incremental 847H and 847T

- 847H: General purpose, 2.5 in. diameter
847T: Compact, 2 in. diameter
- Resolution up to 65536 ppr
- Various output configurations, mounting options, and shaft sizes
- Cable, M12, and military-style connections
- Zero set input option

The General Purpose Encoder Family

Use the 847 incremental encoder for general purpose auxiliary feedback for a variety of configurable options. Ideal for machine tools, packaging machinery, motion control, and robotics.

847T



Square Flange

847H



Easy servo flange mount

847T-PY



2.5 in. with Bell housing and coupler, to protect encoder from damage and contamination

Encoders

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93



6-94...6-99

Condition Sensing



6-100...6-107



Product Selection

General Purpose and Compact Incremental

Mounting Configuration	Shaft Size	Power Supply	Output Configuration	Connector/ Cable Exit	Connector Type & Pinout	Cat. No. ¹
Standard square flange	3/8 in. diameter shaft with flat	4.5...5.5V DC	4.5...5.5V DC Line Driver Outputs(TTL)	Radial Exit	MS & 10-pin	847H-DN1A-RH01024
Standard servo mount		8...30V DC			M12 & 8-pin with mating connector ²	847H-HN2A-RA01024
Standard square flange	10 mm diameter shaft with flat	4.5...5.5V DC	8...30V Line Driver Outputs(HTL)		MS & 6-pin with mating connector	847T-DL2C-RC01024
	3/8 in. diameter shaft with flat	4.5...5.5V DC	4.5...5.5V DC Line Driver Outputs(TTL)		MS & 10-pin with mating connector	847T-DN1A-RG01024
		8...30V DC	4.5...5.5V DC Line Driver Outputs(TTL)		MS & 10-pin	847T-DN2A-RH01024
			8...30V Line Driver Outputs(HTL)		MS & 6-pin	847T-DN2C-RD01024
5PY mounting	5/8 in. diameter extended shaft with flat	8...30V DC	8...30V Line Driver Outputs(HTL)		M12 & 8-pin with mating connector ²	847T-DN2C-RA01024
						M12 & 8-pin with mating connector ²

¹ Replace **01024** (revolution) with **1...65536** for optional revolutions.

² 8-pin M12 connector is now available for all models.

Specifications

Revolutions	1...65536 CPR (16 bit)
Code Type	Incremental, 2 channels with zero index
Angular Acceleration	500,000 radians/sec ²
Operating Speed	9,000 RPM, max.
Shaft Loading	80 N radial
Housing Material	Aluminum
Shaft Material	Stainless steel
Operating Temperature [C (F)]	-30...+80 ° (-22...+176 °)
Enclosure Type Rating ³	IP67 housing, shaft seal IP65
Certifications	CE Marked for all applicable directives

³ With mating connector inserted.

Required Cordsets and Accessories

Description	Cat. No.
DC Micro M12 QD cordset, straight, 8-pin, 2 m (6.5 ft)	889D-F8FB-2 ⁴
6-pin encoder cable assembly	845-CA-A-10
7-pin encoder cable assembly	845-CA-B-10
10-pin encoder cable assembly	845-CA-C-10 ⁵
Flexible coupling	845-FC-B-B
Flexible coupling	845-CA-C-2 ⁵

⁴ Replace **2** with **5** or **10** for other standard cable lengths in meters.

⁵ Replace **10** with **25, 50, 100, 200,** or **330** for standard cable lengths in feet.

Sales Offices and Distributors

Our network of sales offices and distributors offers exceptional knowledge and service to help you design, implement and support your automation investment.

www.rockwellautomation.com/sales-partners/overview.page



RFID



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For more information on our complete family of encoder products, please visit: <http://ab.rockwellautomation.com/Motion-Control/Encoders>



Condition Sensing



Solid-State Pressure Sensors 836P

Display

- -1...551 bar (-14.5 psi to 8,000 psi)
- Rotatable housing (320°) and head(330°)
- IO-Link Enabled

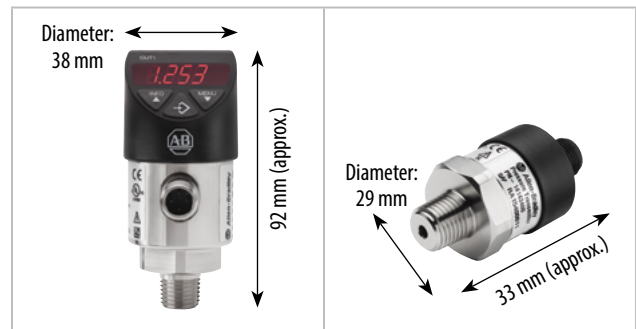
Non-Display

- -1...689 bar (-30 in. Hg to 10,000 psi)
- Multiple process connections available
- IP67 enclosure rating



Accurate and Reliable with Quick Response Time

High-accuracy, new technology, and rigid standards have combined to manufacture the Solid-State 836P Pressure Sensors, available in display and non-display models in rugged, compact housings with corrosion-resistant 316L solid-state sensor elements.



Features/Product Family			
Sensor Model	Standard	✓	✓
	Flush Mount	✓	
	Hygienic	✓	
Pressure Range Bar (psi)	-1 to 20 (-14.5 to 300)	✓	✓
	0 to 550 (0 to 8,000)	✓	
	0 to 689 (0 to 10,000)		✓
Process Connection	NPT (male/female)	✓	✓
	G BSPP (male/female)	✓	✓
	SAE (male)	✓	✓
	Sanitary	✓	
Pressure Type	Vacuum	✓	✓
	Absolute	✓	✓
	Gauge	✓	✓
Output Type	2 x PNP, IO-Link	✓	
	1 x PNP + 1 x Analog (4...20 mA), IO-Link	✓	
	Analog (4...20 mA)		✓
Connection Style	4 Pin DC Micro (M12) Integral QD	✓	✓

Condition Sensing

IO-Link



6-2...6-3

Photoelectric Sensors



6-4...6-45

Proximity Sensors



6-46...6-75

Ultrasonic Sensors



6-76...6-79

Limit Switches



6-80...6-93

Encoders





6-94...6-99



6-100...6-107



Product Selection

	Lower Pressure Range Bar (psi) ¹	Pressure Type	Process Connection ¹	Output Type	Catalog No.
836P- Display Model ⁴  Flush Mount and Hygienic options are also available	-1...1 (-14.5...14.5)	Gauge ²	1/4" NPT female	2 x PNP	836P-D1NFGA14PP-D4
	-1...10 (-14.5...145)		1/4" NPT female	1 x PNP + 1 analog (4...20 mA)	836P-D1NFGA14PA-D4
			1/4" NPT male	1 x PNP + 1 analog (4...20 mA)	836P-D1NMGB14PA-D4
			G 1/4" BSPP male	1 x PNP + 1 analog (4...20 mA)	836P-D1GMGB14PA-D4
	0...1 (0...14.5)		1/4" NPT female	2 x PNP	836P-D2NFGA14PP-D4
	0...2.5 (0...36.2)		1/4" NPT female	1 x PNP + 1 analog (4...20 mA)	836P-D2NFGA14PA-D4
				2 x PNP	836P-D2NFGA36PP-D4
	0...25 (0...362)		1/4" NPT female	1 x PNP + 1 analog (4...20 mA)	836P-D2NFGA36PA-D4
				2 x PNP	836P-D2NFGB36PP-D4
				1 x PNP + 1 analog (4...20 mA)	836P-D2NFGB36PA-D4
	0...100 (0...1450)		1/4" NPT female	1 x PNP + 1 analog (4...20 mA)	836P-D2NFGC14PP-D4
				2 x PNP	836P-D2NFGC36PP-D4
	0...248 (0...3600)		1/4" NPT female	1 x PNP + 1 analog (4...20 mA)	836P-D2NFGC36PA-D4
0...400 (0...5800)	1/4" NPT female	2 x PNP	836P-D2NFGC58PP-D4		
		1 x PNP + 1 analog (4...20 mA)	836P-D2NFGC58PA-D4		
		SAE 7/16-20 UNF female	2 x PNP	836P-D2SFGC58PP-D4	
836P- Non-Display Model 	-1.01...10 (-30 in. Hg...145)	Gauge ²	1/4" NPT male	Analog (4...20mA)	836P-N3NMGB14A-D4
	0...1 (0...14.5)		1/4" NPT female		836P-N3NFGB14A-D4
			1/4" NPT male		836P-N2NMGA14A-D4
	0...2 (0...30)		1/4" NPT male		836P-N2NMGA30A-D4
			1/4" NPT female		836P-N2NFGA30A-D4
	0...6.89 (0...100)		1/4" NPT male		836P-N2NMGB10A-D4
			1/4" NPT female		836P-N2NFGB10A-D4
	0...10 (0...145)		1/4" NPT male		836P-N2NMGB14A-D4
			1/4" NPT female		836P-N2NFGB14A-D4
	0...34 (0...500)		1/4" NPT male		836P-N2NMGB50A-D4
	0...68 (0...1000)		1/4" NPT male		836P-N2NMGC10A-D4
	0...206 (0...3000)		1/4" NPT male		836P-N2NMGC30A-D4
	0...344 (0...5000)		1/4" NPT male		836P-N2NMGC50A-D4

836P- Pressure Sensor Accessories

Description	Catalog No.
M12 x 1 Connector	889D-F4AC-2
M12 x 1 Right-angle connector	889D-R4AC-2
IO-Link Master Module for POINT I/O™	1734-4IOL
POINT I/O EtherNet/IP Adapter Module	1734-AENTR (dual-port Ethernet) ³
POINT I/O EtherNet/IP Adapter Module	1734-AENT (single Ethernet port) ³
ArmorBlock IO-Link Master	1732E-8IOLM12R

IO-Link enabled.

¹ For additional pressure ranges and process connections configurations, please visit our online product directory.

² Absolute pressure models also available.

³ Compatible only with Series B, firmware version 5.012 or later.

⁴ Hygienic and flush mount models available.

RFID



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For more information on our complete family of condition sensing products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Condition-Sensors>



Condition Sensing



Solid-State Temperature Switches 837T, 837RTD

Display

- Temperature Range: -20...80 °C (-4...176 °F)
- Large visual display rotates 180°

Non-display

- Temperature range: -50...250 °C (-58...482 °F)
- IP67, IP69K enclosure ratings

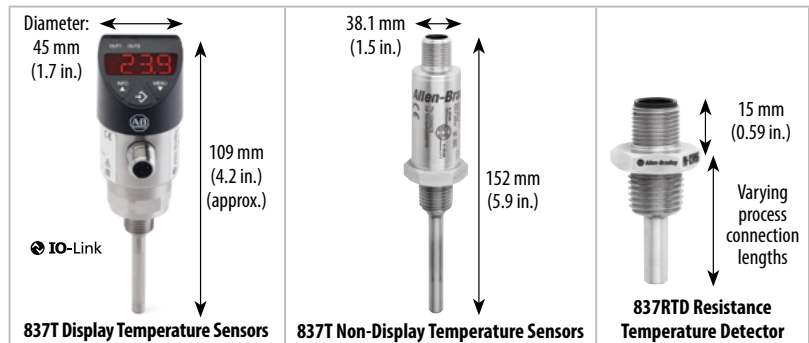
Resistance Temperature Detector

- Temperature range:
-50...200 °C (-58...392 °F)
- Pt100, Pt1000 measuring elements



A Compact, Comprehensive Solution

Built with high-accuracy and new technology, 837T and 837RTD solid-state switches provide users with a comprehensive solution for measuring temperatures in liquids, gases and vapors.



Sensor Model	Standard	Hygienic	837T Display Temperature Sensors	837 Non-Display Temperature Sensors	837RTD Resistance Temperature Detector
Temperature Range °C (°F)	-20... 80 (-4... 176)		✓	✓	
	-50... 150 (-58... 302)		✓	✓	
	-50... 250 (-58... 482)			✓	
	-30... 130 (-22... 266)				✓
	-50... 200 (-58... 392)				✓
Process Connection	1/4 NPT Male		✓	✓	✓
	1/2 NPT Male		✓		
	G 1/4 BSPP Male		✓	✓	✓
	G 1/2 BSPP Male		✓	✓	
	Sanitary			✓	
Probe Length	22 mm to 250 mm				✓
	25 mm to 400 mm		✓	✓	
Output Type	2 x PNP / 1 x PNP + 1 x Analog (4...20 mA)		✓		
	Analog (4...20 mA)		✓	✓	
	2 x PNP, IO-Link		✓		
	Pt100, Pt1000				✓
Connection Style	4-Pin DC Micro (M12) QD		✓	✓	✓

Condition Sensing

IO-Link



6-2...6-3

Photoelectric
Sensors



6-4...6-45

Proximity
Sensors



6-46...6-75

Ultrasonic
Sensors



6-76...6-79

Limit
Switches



6-80...6-93

Encoders






6-94...6-99



6-100...6-107

Product Selection
837T Display Model

	Process Connection	Probe Length mm (inch)	Temperature Range °C (°F)	Catalog No.			
				Output: 2 x PNP	Output: 1 PNP + 1 Analog 4...20...mA		
 <p>IO-Link</p>	1/4" NPT Male	25 (0.98)	-20...80 (-4...178)	837T-D3N14A25PP-D4	837T-D3N14A25PA-D4		
		50 (1.96)		837T-D3N14A50PP-D4	837T-D3N14A50PA-D4		
		100 (3.93)		837T-D3N14B10PP-D4	837T-D3N14B10PA-D4		
		150 (5.9)		837T-D3N14B15PP-D4	837T-D3N14B15PA-D4		
		250 (9.84)		837T-D3N14B25PP-D4	837T-D3N14B25PA-D4		
		350 (13.7)		837T-D3N14B35PP-D4	837T-D3N14B35PA-D4		
		25 (0.98)		837T-D3N12A25PP-D4	837T-D3N12A25PA-D4		
	50 (1.96)	837T-D3N12A50PP-D4		837T-D3N12A50PA-D4			
	100 (3.93)	837T-D3N12B10PP-D4		837T-D3N12B10PA-D4			
	150 (5.9)	837T-D3N12B15PP-D4		837T-D3N12B15PA-D4			
	250 (9.84)	837T-D3N12B25PP-D4		837T-D3N12B25PA-D4			
	 <p>Hygienic option is also available</p>	1/4" NPT Male		25 (0.98)	Standard -50...150 (-58...302)	1 Analog 4...20 mA	837T-N1N14A25A-D4
				50 (1.96)			837T-N1N14A50A-D4
				100 (3.93)			837T-N1N14B10A-D4
150 (5.9)			837T-N1N14B15A-D4				
250 (9.84)			837T-N1N14B25A-D4				
300 (11.81)			837T-N1N14B30A-D4				
350 (13.7)			837T-N1N14B35A-D4				
400 (15.75)			837T-N1N14B40A-D4				
25 (0.98)			Extended Range -50...250 (-58...482)	837T-N2N14A25A-D4			
50 (1.96)				837T-N2N14A50A-D4			
100 (3.93)				837T-N2N14B10A-D4			
150 (5.9)				837T-N2N14B15A-D4			
250 (9.84)				837T-N2N14B25A-D4			
300 (11.81)				837T-N2N14B30A-D4			
350 (13.7)	837T-N2N14B35A-D4						
400 (15.75)	837T-N2N14B40A-D4						
	1/4" NPT Male	28 (1.1)	Standard -30...130 (-22...266)	Resistance Output	837RTD-N1N14A28P1-D4		
		30 (1.18)			837RTD-N1N14A30P1-D4		
		40 (1.57)			837RTD-N1N14A40P1-D4		
		50 (1.97)			837RTD-N1N14A50P1-D4		
		60 (2.36)			837RTD-N1N14A60P1-D4		
		65 (2.56)			837RTD-N1N14A65P1-D4		
		28 (1.1)			Extended Range -50...200 (-58...392)	837RTD-N2N14A28P1-D4	
		30 (1.18)	837RTD-N2N14A30P1-D4				
		40 (1.57)	837RTD-N2N14A40P1-D4				
		50 (1.97)	837RTD-N2N14A50P1-D4				
		60 (2.36)	837RTD-N2N14A60P1-D4				
		65 (2.56)	837RTD-N2N14A65P1-D4				

Note: IO-Link Master Module (Catalog No. 1734-4I01 or 1732E-8IOLM12R) is required for premier IO-Link integration experience.

837T Temperature Sensor Accessories

Description	Catalog No.
DC Micro (M12) QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
DC Micro (M12) QD cordset, right angle, 4-pin, 2 m (6.5 ft)	889D-R4AC-2
IO-Link Master Module for POINT I/O™	1734-4I0L
ArmorBlock IP67 IO-Link Master	1732E-8IOLM12R

RFID



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For more information on our complete family of condition sensing products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Condition-Sensors>



Condition Sensing



Solid-State Flow Switches 839E

- Flow rates from 0.03...3 m/s
- Rugged, corrosion-resistant stainless steel housing, and sensing element
- RTD sensor technology
- Calorimetric measurement principle
- Independently programmable dual N.O./N.C. PNP outputs or 4...20 mA analog output with single PNP output
- Operation and visualization via PC using ReadWin 2000 software

Flow Sensors for the Harshest Environments

Allen-Bradley 839E solid-state flow sensors are used for process and industrial automation applications. Rockwell Automation sensors can be found in food and beverage, pharmaceuticals, water and waste water plants, and hydraulic applications.

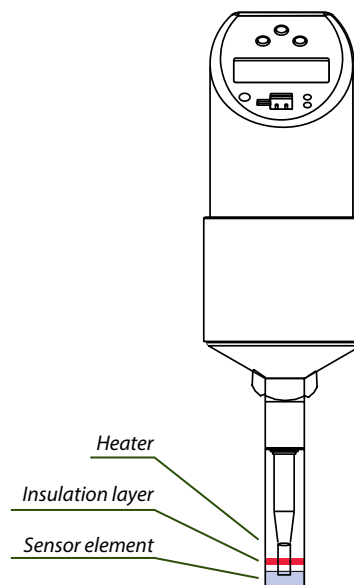
These sensors are capable of measuring the liquid flow rate from 0.03 m/s to 3 m/s. The flow rate is displayed as a percentage of flow rate. For example at no flow the display will read 0%. The sensor probe is designed using 316L stainless steel probe and is resistant to aggressive media and capable of withstanding corrosive liquids.

Technology

Allen-Bradley flow switches are based on the calorimetric principle. The 839E sensors incorporate a heated temperature element; as media flows passed the sensor heat is removed due to convection. The amount of heat transfer is dependent on the flow velocity of the medium and the temperature difference between the sensor and the medium.



Sanitary switch



Condition Sensing

IO-Link	Photoelectric Sensors	Proximity Sensors	Ultrasonic Sensors	Limit Switches	Encoders	Condition Sensing
6-2...6-3	6-4...6-45	6-46...6-75	6-76...6-79	6-80...6-93	6-94...6-99	6-100...6-107



Product Selection

Solid-State Flow Switches

Process Connection	Probe Length [mm (in.)]	Display	Output	Cat. No. ¹
1/4 in. NPT (male)	30 (1.18)	Yes	Dual PNP N.O./N.C. programmable	839E-DA1BN1A3D4
	100 (3.93)			839E-DA1BN1A2D4
	30 (1.18)		4...20 mA + 1 PNP	839E-DC1BN1A3D4
	100 (3.93)			839E-DC1BN1A2D4
1/2 in. NPT (male)	30 (1.18)		Dual PNP N.O./N.C. programmable	839E-DA1BN2A3D4
	100 (3.93)			839E-DA1BN2A2D4
	30 (1.18)		4...20 mA + 1 PNP	839E-DC1BN2A3D4
	100 (3.93)			839E-DC1BN2A2D4
G 1/4 BSPP	30 (1.18)		Dual PNP N.O./N.C. programmable	839E-DA1BN3A3D4
	100 (3.93)			839E-DA1BN3A2D4
	30 (1.18)		4...20 mA + 1 PNP	839E-DC1BN3A3D4
	100 (3.93)			839E-DC1BN3A2D4
G 1/2 BSPP	30 (1.18)		Dual PNP N.O./N.C. programmable	839E-DA1BN4A3D4
	100 (3.93)			839E-DA1BN4A2D4
	30 (1.18)		4...20 mA + 1 PNP	839E-DC1BN4A3D4
	100 (3.93)			839E-DC1BN4A2D4

¹ For sanitary connection options, please visit our online product directory.

Specifications

Certifications	cULus Listed and CE Marked for all applicable directives, and 3 A authorized only with sanitary adaptor
Enclosure Type Rating	IP66
Operating Range	Liquids from 0.03...3 m/s (0.1... 9.84 ft/s) Mass flow as a relative value between 0 and 100%
Media Temperature [C (F)]	-20...+85 ° (-4...+185 °)
Operating Voltage	18...30V DC, < 100 mA
Load Current, Max.	250 mA
Housing Material	316L stainless steel

Required Cordsets and Accessories

Description	Cat. No.
DC Micro QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
Configuration Kit (includes converter cable and ReadWin 2000 software)	836E-NSR
1...1.5 in. sanitary clamp	836E-NH7B
2 in. sanitary clamp	836E-NH7C

RFID



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For more information on our complete family of condition sensing products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Condition-Sensors>



Condition Sensing



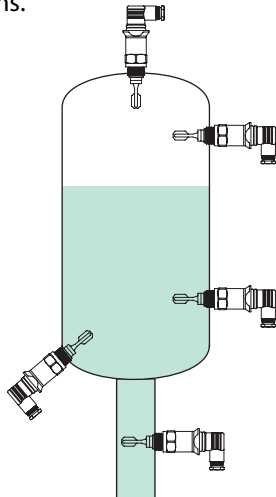
Solid-State Level Switches 840E

- Piezoelectric effect technology
- Rugged, corrosion-resistant stainless steel housing and sensing element
- DC Micro (M12) and DIN valve connection types
- Highly-visible status LED for process monitoring
- Complementary N.O./N.C. outputs
- Operation independent of the medium properties – build up, changing media, turbulence, air bubbles, foam, and vibration

Reliable Level Detection Regardless of Media Characteristics

Allen-Bradley level sensors are a quick and easy solution for applications requiring point level detection. These sensors have been applied in applications such as liquid level monitoring in tanks, containers, and pipes.

The 840E stainless steel liquid level sensors are capable of detecting corrosive liquid media and operate independently of the media properties such as liquid build up on the forks, change of media structure, turbulence, foam or air bubbles as well as plant vibrations.










Technology

The 840E switch uses piezoelectric effect technology to see the difference in vibration when the medium is sensed on the forks. The use of alternating voltage current causes the piezo to expand and contract. The difference in vibration oscillation detected by the medium indicates the presence of the medium.



Condition Sensing

<p>IO-Link</p>  <p>6-2...6-3</p>	<p>Photoelectric Sensors</p>  <p>6-4...6-45</p>	<p>Proximity Sensors</p>  <p>6-46...6-75</p>	<p>Ultrasonic Sensors</p>  <p>6-76...6-79</p>	<p>Limit Switches</p>  <p>6-80...6-93</p>	<p>Encoders</p>  <p>6-94...6-99</p>	<p>Condition Sensing</p>  <p>6-100...6-107</p>
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Product Selection

Solid-State Level Switches

Connector Type	Process Connection	Power Supply	Cat. No.
DC-PNP with M12 connector	1/2 in. NPT (male)	DC-PNP	840E-TB1B1A1-D4
	3/4 in. NPT (male)	DC-PNP	840E-TB1B2A1-D4
AC with NPT 1/2 valve connector	1/2 in. NPT (male)	AC	840E-TB2B1A1-E4
	3/4 in. NPT (male)	AC	840E-TB2B2A1-E4



Connected Components

Simpler, faster, cost-effective machine building.

rockwellautomation.com/global/capabilities/industrial-automation-control/

Specifications

Certifications	cCSAus Certified and CE Marked for all applicable directives
Enclosure Type Rating	DC-PNP with M12 connector: NEMA 4X (IP66/67) AC with NPT 1/2 valve connector: NEMA 4 (IP65)
Operating Temperature [C (F)]	-40...+70 ° (-40...+158 °)
Process Temperature [C (F)]	-40...+100 ° (-40...+212 °)
Operating Voltage	DC-PNP with M12 connector: 10...35V DC, 15 mA max. AC with NPT 1/2 valve connector: 19...253V AC, 3.8 mA max.
Load Current, Min.	250 mA
Repeatability	±0.5 mm (±0.02 in.)
Settling Time	< 2 s
Resolution [mm (in.)]	< 0.5 (0.02)
Hysteresis [mm (in.)]	3.0 ± 0.5 (0.12 ± 0.02)
Housing Material	316L stainless steel

Required Cordsets and Accessories

Description	Cat. No.
DC Micro QD cordset, straight, 4-pin, 2 m (6.5 ft)	889D-F4AC-2
AC DIN valve cordset	889V-RZ3ABE-2
Configuration Kit (includes converter cable and ReadWin 2000 software)	836E-NSR
1...1.5 in. sanitary clamp	836E-NH7B
2 in. sanitary clamp	836E-NH7C

RFID



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For more information on our complete family of condition sensing products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches/Condition-Sensors>





High Frequency 13.56 MHz ICODE with EtherNet/IP Interface 56RF

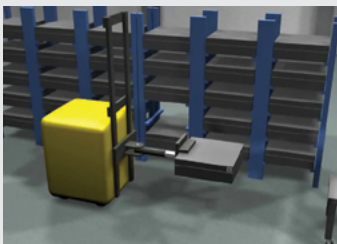
- One- and two-channel EtherNet/IP interface available
- Embedded switch with Device Level Ring (DLR)
- Rugged transceiver styles for industrial locations
- 13.56 MHz high-frequency technology for light industrial applications
- Tag memory options: 128 B, 2 KB and 8 KB
- Read/write speeds up to 625 B/s
- Different tag styles with sensing distances up to 185 mm (7.3 in.)

Track and Trace Materials Through Your Process

Industrial Radio Frequency Identification (RFID) systems are a rugged and reliable way to track and document products as they move through the manufacturing process. Unlike the bar code systems used for similar, less demanding applications, industrial RFID systems are designed to withstand harsh environments. Plus, reusable read/write tags allow for flexibility in information and application.

Manufacturing Application

Each tool, person, and machine has an RFID tag for validation and usage count.



- Inventory control by tagging each tool
- Validate user checking out tool



- Validate tool with machine
- Read/write tool usage count



- Schedule tool maintenance during downtime
- Total tool usage count stored on tool RFID tag

Other Applications

- Automotive
- Packaging
- AGV
- Pharmaceutical

To see the entire video and others, go to:

<http://ab.rockwellautomation.com/Sensors-Switches/RFID#applications>

IO-Link



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Photoelectric Sensors



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



6-80...6-93

Encoders



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Condition Sensing



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Product Selection

High Frequency 13.56 MHz ICODE with EtherNet/IP Interface

Transceivers

Dimensions [mm (in.)]	Recommended Sensing Distance [mm (in.)]	Max. Sensing Distance [mm (in.)]	Cat. No.
Rectangular 80 x 90 (3.15 x 3.54)	100 (3.94)	168 (6.61)	56RF-TR-8090
Square 40 x 40 (1.57 x 1.57)	50 (1.97)	85 (3.35)	56RF-TR-4040
Cylindrical M30	35 (1.38)	60 (2.36)	56RF-TR-M30
Cylindrical M18	18 (7.09)	30 (1.18)	56RF-TR-M18

Tags

Description	Type	Memory Size	Dimensions [mm (in.)]	Cat. No.
Disc	SLI	128 Bytes	16 (0.63)	56RF-TG-16
Disc	SLI	128 Bytes	30 (1.18)	56RF-TG-30
Disc	SLI	128 Bytes	50 (1.97)	56RF-TG-50
Disc - Mount on Metal	SLI	128 Bytes	50 (1.97)	56RF-TG-50MOM
Disc - FRAM	FRAM	2K Bytes	20 (0.79)	56RF-TG-20-2KB
Disc - FRAM	FRAM	2K Bytes	30 (1.18)	56RF-TG-30-2KB
Disc - FRAM	FRAM	2K Bytes	50 (1.97)	56RF-TG-50-2KB
Square - Hi Temp (220 °C (428 °F) max.)	SLI	128 Bytes	50 x 50 (1.97 x 1.97)	56RF-TG-50HT

EtherNet/IP Interface Blocks

RFID Ports	Inputs	Outputs	Cat. No.
2	1	1	56RF-IN-IPD22
2	2	–	56RF-IN-IPD22A

Specifications

Certifications	Interfaces & rectangular transceivers: cULus Listed, C-Tick, CE Marked for all applicable directives Cylindrical transceivers: CE Marked for all applicable directives
Enclosure Type Rating	Interfaces & transceivers: IP67; Tags: IP68, IP69K
Operating Temperature [C (F)]	Interfaces: -20...+60 ° (-4...+140 °) Transceivers, Disc Tags < 20mm: -25...+70 ° (-13...+158 °) Disc Tags ≥ 20mm: -25...+85 ° (-13...+185 °) Hi Temp Tags: -40...+220 ° (-40...+428 °)
Operating Voltage	24V DC
Output Current, max.	100 mA per transceiver
Frequency	13.56 MHz
Read/write Speed	625 B/s max.
Sensing Distance	185 mm (7.3 in.) max.
Tag Memory	Up to 8 KB, SLI, SLIX & FRAM

Required Cordsets and Accessories

Description	Cat. No.
DC Micro (M12) female straight to male straight QD patchcord, 5-pin, 2 m (6.5 ft)	889D-F5FCDM-J2
DC Micro (M12) female straight to male straight QD patchcord, 4-pin, 2 m (6.5 ft)	889D-F4ACDM-2
M12 D-code patchcords	1585D-M4TBDM-2



Looking for More?

This catalog highlights only our most essential components; for a complete product selection, visit us at:

<http://ab.rockwellautomation.com/allenbradley/productdirectory.page>

RFID



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For more information on our complete family of Sensor products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches>



Additional Sensor Products



42KL MiniSight General Purpose

Bulletin 42KL Minisight™ general purpose sensors are an exact match for one of the industry's most popular form factors, but with additional features. 871D cylinder position models for in-port end-of-stroke detection on hydraulic and pneumatic cylinders.

- Universal 18 mm and through-hole mounting
- Durable 1200 psi washdown-rated housing
- 360° visible status indicators

45CLR ColorSight

The 45CLR ColorSight™ is a compact color sensing solution that offers high-end performance and advanced features to address a broad range of color-based inspection challenges.

- Concurrent sensing of three different colors
- Easy-to-use teach button (3 channels) and remote teach (single channel)
- IP67 housing with 270° rotatable connector



45BPD/BRD Laser Measurement

The Allen-Bradley 45BPD and 45BRD are laser sensors intended for industrial applications requiring reliable small part detection, positioning and precision measurement.

- Visible red Class 2 laser for small beam spot and easy alignment
- Teach-in and fixed range models
- IP67 housing with 270° rotatable connector



IO-Link



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Photoelectric Sensors



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Proximity Sensors



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Ultrasonic Sensors



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Limit Switches



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Encoders



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Condition Sensing

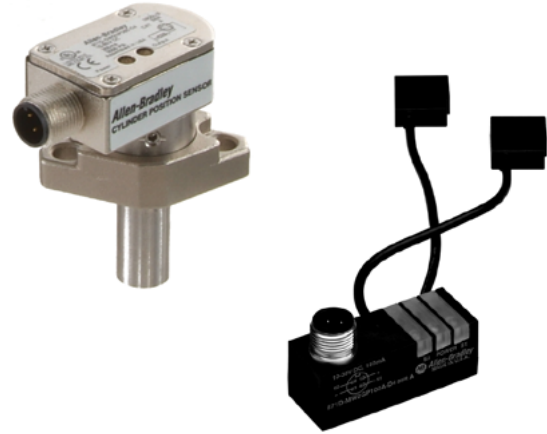


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Cylinder Position Sensors

Our cylinder position inductive proximity sensors are specialty models used to indicate position of pneumatic and hydraulic cylinders or power clamps and grippers.

- 871D cylinder position models for in-port end-of-stroke detection on hydraulic and pneumatic cylinders
- 871D WorldClamp™ sensors for open/closed position indication in power clamp and gripper applications
- Rugged, low-profile housings
- Weld-field immune



Rectangular Inductive Proximity Sensors

Our rectangular inductive proximity sensors offer sensing ranges longer than those found in traditional cylindrical housings. Choose from our many styles of rectangular sensors for your welding applications and other environments.

- 802PR heavy duty limit switch style sensors (including hazardous location models)
- 871L/872L limit switch style sensors
- 871F aluminum block sensors
- 871P can sensors

871C Specialty Proximity Sensors

We offer a complete line of 871C specialty inductive proximity sensors to address your toughest industrial applications in the harshest environments. Models include:

- Extended temperature
- Analog output
- Intrinsically safe
- Miniature



RFID



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For more information on our complete family of Sensor products, please visit:
<http://ab.rockwellautomation.com/Sensors-Switches>



Additional Sensor Products



801 General Purpose Limit Switches

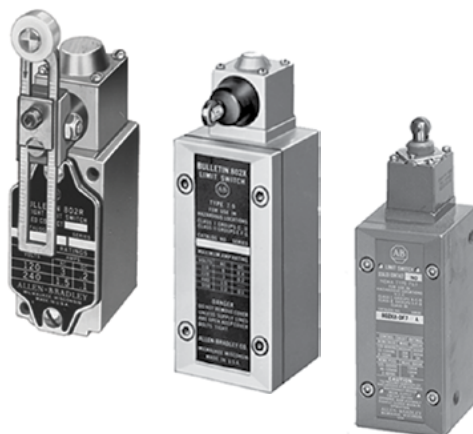
801 general purpose limit switches are ideal for a wide variety of applications.

- Multiple contact arrangements
- Slow and snap action contacts
- High snap-through force

802T Direct Action Limit Switches

802T direct action NEMA-style limit switches are used for safety applications per ISO 14119. Direct opening action assures that the normally closed contacts open when the limit switch is actuated.

- Direct opening action
- Snap acting contacts
- Rugged metal construction
- NEMA 6P/IP67 plug-in design



802R/X/XR Hazardous Location Limit Switches

Our hazardous location switches are designed for use in applications such as refineries, distilleries, grain elevators, and flour mills where dangerous gases or other materials may be present.

- 802R sealed contact (Class 1, Division 2)
- 802X NEMA Type 4 watertight (Class 1, groups B, C and D or Class 2, groups E, F and G or Class 3)
- 802XR sealed contact (Class 1, Groups B, C and D or Class 2, Groups E, F and G)

IO-Link



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Photoelectric Sensors



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Essential Components

Get the right components, at the right price, right when you need them.

Power



CIRCUIT BREAKERS



ROTARY DISCONNECT SWITCHES



VISIBLE BLADE DISCONNECT SWITCHES



CONTROL & LOAD SWITCHES



IEC CONTACTORS



NEMA CONTACTORS



IEC STARTERS



NEMA STARTERS



MOTOR PROTECTION



SOLID-STATE MOTOR CONTROL



DRIVES

Logic



RELAYS & TIMERS



PROGRAMMABLE CONTROLLERS



CONTROL CIRCUIT & LOAD PROTECTION



POWER SUPPLIES



POWER QUALITY & ENERGY MANAGEMENT



SURGE & FILTER

Operator Interface



PUSH BUTTONS

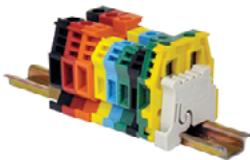


SIGNALING



GRAPHIC TERMINALS

Connectivity



TERMINAL BLOCKS



WIRING SYSTEMS



SIGNAL INTERFACE



CONNECTION SYSTEMS



SAFETY CONNECTION SYSTEMS



NETWORK MEDIA

Sensors



PHOTOELECTRIC SENSORS



PROXIMITY SENSORS



ULTRASONIC SENSORS



LIMIT SWITCHES



ENCODERS



CONDITION SENSING

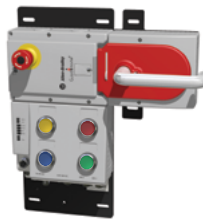
Safety



PRESENCE SENSING SAFETY DEVICES



INTERLOCK SWITCHES



ACCESS CONTROL



SAFETY RELAYS



EMERGENCY STOP DEVICES



SAFETY LIMIT SWITCHES

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Take advantage of upcoming events to learn more about how you can use technology as a competitive advantage – to get your products and services to market faster, reduce costs, better utilize power and plant-floor assets, and minimize the risks in your manufacturing environment.



Rockwell Automation
on the move



Rockwell Automation offers a variety of global industry events for partners and customers to learn more about our products and technologies.

<https://www.rockwellautomation.com/global/events/overview.page>

Rockwell Automation offers a breadth of quality Allen-Bradley® components to fit your specific needs. In order to assist you with your component selection, we offer a variety of configuration and selection tools.



Local Distributor

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Online Product Directory

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Product Selection Toolbox

Our powerful range of product selection and system configuration tools assist you in choosing and applying our products.
<https://www.rockwellautomation.com/global/support/product-selection-configuration/overview.page>



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