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ESSENTIAL COMPONENTS, EXCEPTIONAL VALUE

Essential Components Catalogue
September 2005

ALLEN-BRADLEY • ROCKWELL SOFTWARE • DODGE • RELIANCE ELECTRIC

Rockwell
Automation

ESSENTIAL COMPONENTS, EXCEPTIONAL VALUE.
Welcome to the latest edition of the Essential Components Catalogue from Rockwell Automation, where you will find many new and exciting products introduced over recent months.

IT'S ALL ABOUT YOUR SUCCESS.

Your success drives Rockwell Automation innovation, and it has for more than 100 years. We're intensely focused on your success by engineering essential components with exceptional value, helping you and your machines compete with anyone, anywhere, anytime.

LISTEN. THINK. SOLVE.

At Rockwell Automation, we're committed to listening to, thinking about, and solving your automation challenges. Your success is our success.

PREFERRED PRODUCTS

Preferred products are standard stock items.
They are identified in the catalog with bold catalog numbers.

PACKAGE QUANTITY (PQ)

All products without packaging information are single pack (PQ = 1). Orders must correspond to the multiple of the indicated packaging quantity. Packaging cannot be divided.

DISCOUNT GROUP

The product range is divided into different discount groups.

PRODUCT GROUP CODE (PGC)

Discount groups are subdivided into different product group codes.

TERMS AND CONDITIONS

«General Terms and Conditions of Sale» can be found in publication «6500(EN) - January 2004».
This publication is available as a PDF file (Adobe Acrobat) at <http://www.rockwellautomation.com/termsofsale>.





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Circuit Breakers

Product Line Overview

Circuit Breakers

				
Bulletin	140A, Manual Motor Starter	140M-RC2	140M-C2	140M-D8
Spring Clamp Terminals	—	✓	—	—
Screw Terminals	✓	—	✓	✓
Max. Current I_o	16 A	16 A	25 A	25 A
Current Rating	0.1...16 A	0.1...16 A	0.1...25 A	1.6...25 A
Short Circuit Protection	✓	✓	✓	✓
Standard Magnetic Trip	✓	✓	✓	✓
High Magnetic Trip	—	—	✓	✓
Overload Protection	✓	✓	✓	✓
Trip Class	10	10	10	10
Magnetic Only Trip (MCP)	—	—	✓	✓
Standards Compliance:				
CSA 22.2, No. 14	✓	✓	✓	✓
UL 508 Manual, Self Protected (Type E)	✓	✓	✓	✓
UL 508 (Group Install.)	✓	✓	✓	✓
UL 508 (Overload Protection)	✓	✓	✓	✓
IEC 60947-2	✓	✓	✓	✓
IEC 60947-4	✓	✓	✓	✓
CE	✓	✓	✓	✓
Accessories				
Ext. Rotary Operator	—	✓	✓	✓
Flex Cable Operator	—	—	—	—
Auxiliary Contacts	✓	✓	✓	✓
Trip Indication Contacts	✓	✓	✓	✓
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Circuit Breakers



Bulletin	140M-F8	140-CM	140M-K, -M, -P
Spring Clamp Terminals	—	—	—
Screw Terminals	✓	✓	✓
Max. Current I_n	45 A	90 A	160 A, 250 A, 400 A
Current Rating	6.3...45 A	16...90 A	50...400 A
Short Circuit Protection	✓	✓	✓
Standard Magnetic Trip	✓	✓	✓
High Magnetic Trip	✓	✓	—
Overload Protection	✓	✓	✓
Trip Class	10	10	5, 10, 15, 20
Magnetic Only Trip (MCP)	✓	—	—
Standards Compliance:			
CSA 22.2, No. 14	✓	✓	—
UL 508 Manual, Self Protected (Type E)	✓	—	—
UL 508 (Group Install.)	✓	✓	—
UL 508 (Overload Protection)	✓	✓	—
IEC 60947-2	✓	✓	✓
IEC 60947-4	✓	✓	✓
CE	✓	✓	✓
Accessories			
Ext. Rotary Operator	✓	✓	✓
Flex Cable Operator	—	—	✓
Auxiliary Contacts	✓	✓	✓
Trip Indication Contacts	✓	✓	✓
Product Selection	Page 10	Page 10	Page 20

Bulletin 140A

Manual Motor Starters

Product Selection

Manual Motor Starters 140A

- Current Range 0.1...16 A
- Motor Protection
- For Economical Motor Starters
- Usable as Main Switch
- Temperature Compensated
- Worldwide applicable because of the conformity with IEC, UL (USA and Canada)



140A-C2A

3-Pole Manual Motor Starters

Rated Operational Current (I_e)	Motor Current Adjustment Range	Switching of 3-Phase AC Motors AC-2, AC-3 @ 400/415V (50 Hz) *		Cat. No.	PGC
		[kW]	$I_{cu} = I_{cs}$ [kA]		
[A]	[A]				
0.16 A	0.1...0.16	0.02	65	140A-C2A-A16	W9G9
0.25 A	0.16...0.25	0.06	65	140A-C2A-A25	W9G9
0.4 A	0.25...0.4	0.09	65	140A-C2A-A40	W9G9
0.63 A	0.4...0.63	0.12/0.18	65	140A-C2A-A63	W9G9
1.0 A	0.63...1.0	0.25	65	140A-C2A-B10	W9G9
1.6 A	1.0...1.6	0.37/0.55	65	140A-C2A-B16	W9G9
2.5 A	1.6...2.5	0.75	50	140A-C2A-B25	W9G9
4.0 A	2.5...4.0	1.1/1.5	10	140A-C2A-B40	W9G9
6.3 A	4.0...6.3	2.2	10	140A-C2A-B63	W9G9
10 A	6.3...10	3.0/4.0	8	140A-C2A-C10	W9G9
16 A	10...16	5.5/7.5	6	140A-C2A-C16	W9G9

* Power ratings: Preferred values according to IEC 60072-1
Discount Group MAC

Accessories 140A

	Description	Term. No.			For Use With	Cat. No.	PGC
			N.O.	N.C.			
	Auxiliary Contact for Flush Mounting 1-pole No additional space required	13-14	1	0	140A	140A-C-AEA10	W9G9
		33-34	1	0		140A-C-AEA210	W9G9
		11-12	0	1		140A-C-AEA01	W9G9
		31-32	0	1		140A-C-AEA201	W9G9
	Auxiliary Contact for Left-side Mounting 2-pole Adds 9 mm to the width of the Manual Motor Starter Use compact bus bars with 54 mm spacing	13-14 23-24	2	0	140A	140A-C-ASA20	W9G9
		13-14 21-22	1	1		140A-C-ASA11	W9G9
		11-12 21-22	0	2		140A-C-ASA02	W9G9

Discount Group MAC
See Publication 140-SG001_-EN-P for complete product information.

Accessories 140A

	Description	For Use With	Cat. No.		PGC
	Undervoltage Trip Release For right-side mounting Adds 18 mm to the width of the Manual Motor Starter	24V 60 Hz	140A-C-UXJ		W9G9
		24V 50 Hz	140A-C-UXK		W9G9
		220...230V 50 Hz	140A-C-UXF		W9G9
		240V 50 Hz / 277V 60 Hz	140A-C-UXT		W9G9
		400V 50 Hz / 460V 60 Hz	140A-C-UXN		W9G9
		415V 50 Hz / 480V 60 Hz	140A-C-UXB		W9G9
		110V 50 Hz / 120V 60 Hz	140A-C-UXD		W9G9
		240...260V 60 Hz	140A-C-UXA		W9G9
		110V 50 / 60 Hz	140A-C-UXKD		W9G9
	Shunt Trip Release For right-side mounting Adds 18 mm to the width of the Manual Motor Starter	24V 60 Hz	140A-C-SXJ		W9G9
		24V 50 Hz	140A-C-SXK		W9G9
		220...230V 50 Hz	140A-C-SXF		W9G9
		240V 50 Hz / 277V 60 Hz	140A-C-SXT		W9G9
		400V 50 Hz / 460V 60 Hz	140A-C-SXN		W9G9
		415V 50 Hz / 480V 60 Hz	140A-C-SXB		W9G9
		110V 50 Hz / 120V 60 Hz	140A-C-SXD		W9G9
		240...260V 60 Hz	140A-C-SXA		W9G9
		110V 50 / 60 Hz	140A-C-SXKD		W9G9
	Compact Bus Bars 45 mm spacing for manual motor starters with flush-mounted auxiliary contact blocks	2 x 3 Terminal links	140A-C-W452		W9G9
		3 x 3 Terminal links	140A-C-W453		W9G9
		4 x 3 Terminal links	140A-C-W454		W9G9
		5 x 3 Terminal links	140A-C-W455		W9G9
	Compact Bus Bars 54 mm spacing for manual motor starters with side-mounted auxiliary contact blocks	2 x 3 Terminal links	140A-C-W542		W9G9
		3 x 3 Terminal links	140A-C-W543		W9G9
		4 x 3 Terminal links	140A-C-W544		W9G9
		5 x 3 Terminal links	140A-C-W545		W9G9
	Bus Bar Feeder Terminal Supply of compact busbars Increases wiring capacity	140A-C-W	140A-C-WT		W9G9
	Blank Space Cover For covering unused terminal links	140A-C-W	140A-C-WS		W9G9
	Emergency-Stop Push Button Set For use with enclosures Twist to release	140A-C-E...	140A-C-MT55		W9G9
	Emergency-Stop Push Button Set For use with enclosures Key release	140A-C-E...	140A-C-MK55		W9G9

Discount Group MAC

See Publication 140-SG001_EN-P for complete product information.

Accessories 140A

	Description			For Use With	Cat. No.		PGC
	Enclosures for Surface Mounting With centre marks for 2 indicator lights Includes protective earth and neutral wire terminals	Protection Class: IP41		140A	140A-C-EA41		W9G9
		Protection Class: IP55 (with seal and protective membrane)		140A	140A-C-EA55		W9G9
	Enclosures for Flush Mounting Includes protective earth and neutral wire terminals	Protection Class: IP41		140A	140A-C-EE41		W9G9
		Protection Class: IP55 (with seal and protective membrane)		140A	140A-C-EE55		W9G9
	Button Membrane For IP55 enclosures Replacement part with 4 screws (mounting frame included)			140A-C-EA55 140A-C-EE55	140A-C-N18		W9G9
	Indicator Lights Mounting in upper part of enclosure Length of connection leads: 180 mm Includes lamp Protection Class: IP54 Suitable for enclosures 140A-C-E...	green	120V	140A-C-E...	140-LG120		W9G
			240V		140-LG240		W9G
			400V		140-LG400		W9G
		red	120V	140A-C-E...	140-LR120		W9G
			240V		140-LR240		W9G
			400V		140-LR400		W9G
		white	120V	140A-C-E...	140-LW120		W9G
			240V		140-LW240		W9G
			400V		140-LW400		W9G
	Locking Arrangement Suitable for enclosures 140A-C-E... For 1...3 padlocks with ø 4...8 mm			140A-C-E...	140A-C-M3E		W9G9
	Locking Arrangement For locking ON-button of the Manual Motor Starter For 1...3 padlocks with ø 4...6 mm			140A	140A-C-M3		W9G9
	Screw Adapter Hut (DIN) rail 35 x 7.5 mm, length 44 mm			140A	140A-C-N12		W9G9

Discount Group MAC
See Publication 140-SG001_-EN-P for complete product information.

Motor Protection Circuit Breakers 140M with Spring Clamp Terminals

- Short Circuit Protection — Standard Magnetic Trip (Fixed at $13 \times I_e$)
- Overload Protection — Trip Class 10 (Adjustable Current Range)
- Ambient temperature compensation
- Phase-loss protection



140M-RC

Rated Operational Current (I_e)	Motor Current Adjustment Range	Switching of 3-Phase AC Motors AC-2, AC-3 @ 400/415V (50 Hz)			Cat. No.		PGC
[A]	[A]	[kW]	I_{cu} [kA]	I_{cs} [kA]			
C-Frame							
0.16 A	0.10...0.16	0.02	100	100	140M-RC2E-A16		W9G1
0.25 A	0.16...0.25	0.06	100	100	140M-RC2E-A25		W9G1
0.40 A	0.25...0.40	0.09	100	100	140M-RC2E-A40		W9G1
0.63 A	0.40...0.63	0.12/0.18	100	100	140M-RC2E-A63		W9G1
1.0 A	0.63...1.0	0.12	100	100	140M-RC2E-B10		W9G1
1.6 A	1.0...1.6	0.18/0.25	100	100	140M-RC2E-B16		W9G1
2.5 A	1.6...2.5	0.37	100	100	140M-RC2E-B25		W9G1
4.0 A	2.5...4.0	0.55/0.75	100	100	140M-RC2E-B40		W9G1
6.3 A	4.0...6.3	1.1/1.5	100	100	140M-RC2E-B63		W9G1
10 A	6.3...10	2.2	100	100	140M-RC2E-C10		W9G1
16 A	10...16	3.0/4.0	50	50	140M-RC2E-C16		W9G1

Discount Group MAC

Bulletin 140M, 140-CM

Circuit Breakers

Product Selection

Motor Protection Circuit Breakers 140M, 140-CMN

- Short Circuit Protection — Standard Magnetic Trip (Fixed at 13 x I_e)
- Overload Protection — Trip Class 10 (Adjustable Current Range)
- Ambient temperature compensation
- Phase-loss protection



140M-C2E

Rated Operational Current (I _e)	Motor Current Adjustment Range	Switching of 3-Phase AC Motors AC-2, AC-3 @ 400/415V (50 Hz)				Cat. No.		PGC
		[kW]	I _{cu} [kA]	I _{cs} [kA]	*			
[A]	[A]							
C-Frame								
0.16 A	0.10...0.16	0.02	100	100	*	140M-C2E-A16		W9G1
0.25 A	0.16...0.25	0.06	100	100	*	140M-C2E-A25		W9G1
0.40 A	0.25...0.40	0.09	100	100	*	140M-C2E-A40		W9G1
0.63 A	0.40...0.63	0.12...0.18	100	100	*	140M-C2E-A63		W9G1
1.0 A	0.63...1.0	0.25	100	100	*	140M-C2E-B10		W9G1
1.6 A	1.0...1.6	0.37...0.55	100	100	*	140M-C2E-B16		W9G1
2.5 A	1.6...2.5	0.75	100	100	*	140M-C2E-B25		W9G1
4.0 A	2.5...4.0	1.1...1.5	100	100	*	140M-C2E-B40		W9G1
6.3 A	4.0...6.3	2.2	100	100	*	140M-C2E-B63		W9G1
10 A	6.3...10	3.0...4.0	100	100	*	140M-C2E-C10		W9G1
16 A	10...16	5.5...7.5	50	50	*	140M-C2E-C16		W9G1
20 A	14.5...20	7.5...10	15	15	*	140M-C2E-C20		W9G1
25 A	18...25	11	15	15	*	140M-C2E-C25		W9G1
D-Frame								
2.5 A	1.6...2.5	0.75	100	100		140M-D8E-B25		W9G1
4.0 A	2.5...4.0	1.1...1.5	100	100		140M-D8E-B40		W9G1
6.3 A	4.0...6.3	2.2	100	100		140M-D8E-B63		W9G1
10 A	6.3...10	3.0...4.0	100	100		140M-D8E-C10		W9G1
16 A	10...16	5.5...7.5	100	100		140M-D8E-C16		W9G1
20 A	14.5...20	7.5...10	65	25		140M-D8E-C20		W9G1
25 A	18...25	11	65	25		140M-D8E-C25		W9G1
F-Frame								
10 A	6.3...10	3.0...4.0	65	50		140M-F8E-C10		W9G1
16 A	10...16	5.5...7.5	65	50		140M-F8E-C16		W9G1
20 A	14.5...20	7.5...10	65	50		140M-F8E-C20		W9G1
25 A	18...25	11	65	50		140M-F8E-C25		W9G1
32 A	23...32	15	65	50		140M-F8E-C32		W9G1
45 A	32...45	18.5...22	65	50		140M-F8E-C45		W9G1
CMN-Frame								
25 A	16...25	7.5...13	65	65		140-CMN-2500		W9H
40 A	25...40	15...22	65	50		140-CMN-4000		W9H
63 A	40...63	25...32	65	50		140-CMN-6300		W9H
90 A	63...90	37...45	50	25		140-CMN-9000		W9H

* May be ordered in package quantities of 20. Add letter **M** to the end of the cat. no. (Example: 140M-C2E-A16M).
Discount Group MAC

Circuit Breakers 140M, Short-Circuit Protection for Starters

- Short Circuit Protection — Standard Magnetic Trip (Fixed at $13 \times I_e$)
- Overload Protection — None (Magnetic Trip Only)
- Suitable for Transformer Protection (IEC only)



140M-C2N

Rated Operational Current (I_e)	Switching of 3-Phase AC Motors AC-2, AC-3 @ 400/415V (50 Hz)					Cat. No.		PGC
	[A]	[kW]	I_{cu} [kA]	I_{cs} [kA]				
C-Frame								
0.16 A	0.02	100	100	*	140M-C2N-A16		W9G1	
0.25 A	0.06	100	100	*	140M-C2N-A25		W9G1	
0.40 A	0.09	100	100	*	140M-C2N-A40		W9G1	
0.63 A	0.12...0.18	100	100	*	140M-C2N-A63		W9G1	
1.0 A	0.25	100	100	*	140M-C2N-B10		W9G1	
1.6 A	0.37...0.55	100	100	*	140M-C2N-B16		W9G1	
2.5 A	0.75	100	100	*	140M-C2N-B25		W9G1	
D-Frame								
2.5 A	0.75	100	100	*	140M-D8N-B25		W9G1	
4.0 A	1.1...1.5	100	100	*	140M-D8N-B40		W9G1	
6.3 A	2.2	100	100	*	140M-D8N-B63		W9G1	
10 A	3.0...4.0	100	100	*	140M-D8N-C10		W9G1	
16 A	5.5...7.5	100	50	*	140M-D8N-C16		W9G1	
25 A	11	65	25	*	140M-D8N-C25		W9G1	
F-Frame								
25 A	11	65	50		140M-F8N-C25		W9G1	
32 A	15	65	50		140M-F8N-C32		W9G1	
45 A	18.5...22	65	50		140M-F8N-C45		W9G1	

* May be ordered in package quantities of 20. Add letter **M** to the end of the cat. no. (Example: **140M-C2N-A16M**).
Discount Group MAC

Circuit Breakers 140M, 140-CMT; Transformer Protection

- Short Circuit Protection — High Magnetic Trip (Fixed at 16...20 x I_e)
- Overload Protection — Trip Class 10
- Transformer Protection

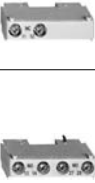


140M-C2T

Rated Operational Current (I _e)	Motor Current Adjustment Range	Switching of 3-Phase AC Motors AC-2, AC-3 @ 400/415V (50 Hz)						
[A]	[A]	[kW]	I _{cu} [kA]	I _{cs} [kA]		Cat. No.		PGC
C-Frame								
0.16 A	0.10...0.16	0.02	100	100	*	140M-C2T-A16		W9G1
0.25 A	0.16...0.25	0.06	100	100	*	140M-C2T-A25		W9G1
0.40 A	0.25...0.40	0.09	100	100	*	140M-C2T-A40		W9G1
0.63 A	0.40...0.63	0.12...0.18	100	100	*	140M-C2T-A63		W9G1
1.0 A	0.63...1.0	0.25	100	100	*	140M-C2T-B10		W9G1
1.6 A	1.0...1.6	0.37...0.55	100	100	*	140M-C2T-B16		W9G1
2.5 A	1.6...2.5	0.75	100	100	*	140M-C2T-B25		W9G1
4.0 A	2.5...4	1.1...1.5	100	100	*	140M-C2T-B40		W9G1
6.3 A	4...6.3	2.2	100	100	*	140M-C2T-B63		W9G1
10 A	6.3...10	3.0...4.0	100	100	*	140M-C2T-C10		W9G1
16 A	10...16	5.5...7.5	50	15	*	140M-C2T-C16		W9G1
D-Frame								
16 A	10...16	5.5...7.5	65	25	*	140M-D8T-C16		W9G1
20 A	14.5...20	7.5...10	65	25	*	140M-D8T-C20		W9G1
F-Frame								
25 A	18...25	11	65	50		140M-F8T-C25		W9G1
32 A	23...32	15	65	50		140M-F8T-C32		W9G1
CMT-Frame								
40 A	25...40	15/22	65	50		140-CMT-4000		W9H
63 A	40...63	25/31.5	65	50		140-CMT-6300		W9H

* May be ordered in package quantities of 20. Add letter **M** to the end of the cat. no. (Example: **140M-C2T-A16M**).
Discount Group MAC

Accessories 140M, 140-CM

	Description	Term. No.			For Use With		Cat. No.		PGC
			N.O.	N.C.					
	Front-Mounted Auxiliary Contact 1-pole or 2-pole No additional space required - Only (1) per MPCB	13-14	1	0	140M-C, D, F	*	140M-C-AFA10		W9G5
		11-12	0	1	140M-C, D, F		140M-C-AFA01		W9G5
		13-14	1	1	140M-C, D, F	*	140M-C-AFA11		W9G5
		21-22							
		13-14	2	0	140M-C, D, F		140M-C-AFA20		W9G5
		23-24							
		11-12	0	2	140M-C, D, F		140M-C-AFA02		W9G5
		21-22							
	Right Side-Mounted Auxiliary Contact 2-pole Adds 9 mm to the width of the device - (2) per MPCB	33-34	2	0	140M-C, D, F		140M-C-ASA20		W9G5
		43-44							
		31-32	0	2	140M-C, D, F		140M-C-ASA02		W9G5
		41-42							
		33-34	1	1	140M-C, D, F	*	140M-C-ASA11		W9G5
		41-42							
	Front-Mounted Auxiliary Contact 1-pole or 2-pole No additional space required - Only (1) per MPCB	13-14	1	0	140M-R		140M-RC-AFA10		W9G1
		11-12	0	1	140M-R		140M-RC-AFA01		W9G1
	Front-Mounted Auxiliary Contact 1-pole or 2-pole No additional space required	13-14	1	1	140M-R		140M-RC-AFA11		W9G1
		21-22							
		13-14	2	0	140M-R		140M-RC-AFA20		W9G1
		23-24							
	Front-Mounted Auxiliary Contact Internal 2-pole - (1) per MPCB	13-14	2	0	140-CM		140-CA20		W9H
		23-24							
		11-12	0	2	140-CM		140-CA02		W9H
		21-22							
		13-14	1	1	140-CM		140-CA11		W9H
		21-22							

* May be ordered in package quantities of 20. Add letter **M** to the end of the cat. no. (Example: **140M-C-AFA10M**).
Discount Group MAC

Bulletin 140M, 140-CM
Circuit Breakers
Accessories

Accessories 140M, 140-CM

	Description	Term. No.			For Use With	Cat. No.		PGC
			N.O.	N.C.				
	Front-Mounted Trip Contact 2-pole Indicates tripping of device No additional space required	13-14	2	0	140M-C, D, F	140M-C-AFAR10A10		W9G5
		27-28						
		11-12	1	1	140M-C, D, F	140M-C-AFAR10A01		W9G5
		27-28						
	Right Side-Mounted Trip Contact 2-pole Indicates tripping of Motor Protection Circuit Breaker Adds 9 mm to the width of the circuit breaker - Only (1) per MPCB - A Right Side-mounted Auxiliary Contact may be tandem mounted on top of this Trip Contact	57-58	2	0	140M-C, D, F	140M-C-ASAR10M10		W9G5
		67-68						
		57-58	1	1	140M-C, D, F	140M-C-ASAR10M01		W9G5
		65-66						
		55-56	1	1	140M-C, D, F	140M-C-ASAR01M10		W9G5
		67-68						
		55-56	0	2	140M-C, D, F	140M-C-ASAR01M01		W9G5
		65-66						
	Front-Mounted Trip Contact 2-pole Indicates tripping of device No additional space required	13-14	2	0	140M-R	140M-RC-AFAR10A10		W9G5
		27-28						
		11-12	1	1	140M-R	140M-RC-AFAR10A01		W9G5
		27-28						
	Front-Mounted Trip-Indicating Auxiliary Contact Internal 2-pole - (1) per MPCB	37-38	2	0	140-CM	140-CT10-10		W9H
		43-44						
		35-36	0	2	140-CM	140-CT01-01		W9H
		41-42						
		35-36	1	1	140-CM	140-CT01-10		W9H
		43-44						
		37-38	1	1	140-CM	140-CT10-01		W9H
		41-42						

Discount Group MAC

Accessories 140M, 140-CM

Description		Trip Rating	For Use With	Cat. No.	PGC
	Undervoltage Trip Left-side mounted Adds 18 mm to the width of the circuit breaker Automatically trips MPCB/MCP when voltage falls below 35-70%	24V, 60 Hz	140M-C, D, F	140M-C-UXJ	W9G5
		24V, 50 Hz		140M-C-UXK	W9G5
		120V, 60 Hz		140M-C-UXD	W9G5
		110V, 50 Hz		140M-C-UXC	W9G5
		220...230V, 50 Hz		140M-C-UXF	W9G5
		240...260V, 60 Hz		140M-C-UXA	W9G5
		277V, 60 Hz		140M-C-UXT	W9G5
		380...400V, 50 Hz		140M-C-UXN	W9G5
		480V, 60 Hz/415V, 50 Hz		140M-C-UXB	W9G5
		575V, 60 Hz/500V, 50 Hz		140M-C-UXM	W9G5
	Undervoltage Trip Left-side mounted 2 early make contacts integrated Adds 18 mm to the width of the circuit breaker Automatically trips MPCB/MCP when voltage falls below 35-70%	24V, 60 Hz	140M-C, D, F	140M-C-UCJ	W9G5
		24V, 50 Hz		140M-C-UCK	W9G5
		120V, 60 Hz		140M-C-UCD	W9G5
		110V, 50 Hz		140M-C-UCC	W9G5
		220...230V, 50 Hz		140M-C-UCF	W9G5
		240...260V, 60 Hz		140M-C-UCA	W9G5
		277V, 60 Hz		140M-C-UCT	W9G5
		380...400V, 50 Hz		140M-C-UCN	W9G5
		480V, 60 Hz/415V, 50 Hz		140M-C-UCB	W9G5
		575V, 60 Hz/500V, 50 Hz		140M-C-UCM	W9G5
	Shunt Trip Left-side mounted Adds 18 mm to the width of the circuit breaker Provides remote tripping of the MPCB/MCP	24V, 60 Hz	140M-C, D, F	140M-C-SNJ	W9G5
		24V, 50 Hz		140M-C-SNK	W9G5
		120V, 60 Hz		140M-C-SND	W9G5
		110V, 50 Hz		140M-C-SNC	W9G5
		220...230V, 50 Hz		140M-C-SNF	W9G5
		240...260V, 60 Hz		140M-C-SNA	W9G5
		277V, 60 Hz		140M-C-SNT	W9G5
		380...400V, 50 Hz		140M-C-SNN	W9G5
		480V, 60 Hz/415V, 50 Hz		140M-C-SNB	W9G5
		575V, 60 Hz/500V, 50 Hz		140M-C-SNM	W9G5
	Undervoltage Trip Unit Internal, front mounted Integrated short-circuit trip indication Automatically trips MPCB when voltage falls below 35-70%	24V, 50/60 Hz	140-CM	140-CUV-KJ	W9H
		110V, 50 Hz/120V, 60 Hz		140-CUV-D	W9H
		220V, 50 Hz/240V, 60 Hz		140-CUV-A	W9H
	Shunt Trip Unit Internal, front mounted Integrated short-circuit trip indication Provides remote tripping of the MPCB	24V, 50/60 Hz	140-CM	140-CRT-KJ	W9H
		110V, 50 Hz/120V, 60 Hz		140-CRT-D	W9H
		220V, 50 Hz/240V, 60 Hz		140-CRT-A	W9H

Discount Group MAC

Circuit Breakers

Accessories

Accessories 140M, 140-CM

Description		For Use With	Cat. No.		PGC
	Anti-Tamper Shield Provides protection against inadvertent adjustment of the current setting Package quantity = 10 *	140M-C, D, F	140M-C-CA		W9G5
	Lockable Twist Knob For 1 padlock 4...8 mm (5/16 in.) dia. shackle Can be locked in OFF position	Black	140M-C, D, F	140M-C-KN	W9G5
		Red/Yellow	140M-C/-D	140M-C-KRY	W9G5
		Red/Yellow	140M-F	140M-F-KRY	W9G5
	Padlockable Operating Knob Accepts 8 mm (5/16 in.) padlock — up to three padlocks Permits padlocking in the off position	Black	140-CM	140-KN	W9H
		Red/Yellow		140-KRY	W9H
	Door Coupling Handle For 3 padlocks 4...8 mm (5/16 in.) in diameter IP66 Protection/Type 1, 12 Interlock override capability Can be modified for locking in ON position Ships with coupling — order extension shaft and legend plate separately Mounting depth (adapter-door): 140-C: 105.5 mm ± 5 mm (4.5 in. ± 3/16 in.) 140-D: 114.5 mm ± 5 mm (4.5 in. ± 3/16 in.) 140-F: 137.1 mm ± 5 mm (5.4 in. ± 3/16 in.)	Black	140M-C, D, F	140M-C-DN66	W9G5
			140-CM	140-CDN66	W9H
		Red/Yellow	140M-C, D, F	140M-C-DRY66	W9G5
			140-CM	140-CDRY66	W9H
	Extension Shaft Cut to required length for mounting depth (adapter-door): 140M-C: 117...338 mm (4.6 in....13.3 in.) 140M-D: 126...347 mm (5.0 in....13.7 in.) 140M-F: 149...369 mm (5.4 in....14.5 in.) 140-CMN: 180...403 mm (7.1 in....15.9 in.)	140M-C-DN66, 140M-C-DRY66, 140-CDN66, 140-CDRY66	140M-C-DS		W9G5
	Legend Plate Marking: "Hauptschalter" and "Main Switch" Marking: "Not-Aus" and "Emergency Off"	140-CDN66	140M-C-DFCN		W9G5
		140-CDRY66	140M-C-DFCRY		W9G5
	Locking Tag Padlock attachment to the lockable handles Up to three padlocks 4...8 mm (5/16 in.) shackle	140M-C-KN 140M-C-KRY 140M-F-KRY	140M-C-M3		W9G5

* Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.

Discount Group MAC

Accessories 140M

	Description		For Use With	Cat. No.		PGC
	IP65 Non-Metallic Enclosure Knockouts for PG16 and PG21 fittings Suitable for flexible cable with internal ground wire or conduit when externally grounded around the outside of the enclosure	Handle Black	140M-C	198E-AYTG2		W9T
		Handle Red/Yellow	140M-C	198E-AYTJ2		W9T
	Terminal Cover For covering of unused Commoning Link terminals IP2X finger protection		140M-C, 140M-D	140M-C-WS		W9G5
			140M-F	140M-F-WS		W9G5
	Screw Adapter For screw arrangement of a Motor Protection Circuit Breaker Package quantity = 10 *		140M-C, D, F	140M-C-N45		W9G5
	Disconnecter Module Provides visible isolation from line side connections to the Bulletin 140M-C, -D circuit breakers. Can be removed or put in a "park" position. Padlockable with up to 2 padlocks 3...6mm (1/4") in diameter.		140M-C, -D	140M-C-TRE		W9G5

* Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.
Discount Group MAC

Accessories 140M

Description		For Use With		Cat. No.	PGC	
	ECO Connecting Modules — 25 A Eco-starters mount on SINGLE DIN Rail (140M on DIN Rail) ELECTRICAL AND MECHANICAL interconnection of 140M MPCB and 100-M (with AC or DC coils) or 100-C (with AC coils) contactors		140M-C to 100-M	*	140M-C-PEM12	W9G5
			140M-C to 100-C09...C23	*	140M-C-PEC23	W9G5
			140M-D to 100-C09...C23	*	140M-D-PEC23	W9G5
	Connecting Modules — 25 A and 45 A • Contactor and MPCB MUST BE mounted separately on (2) DIN Rails ELECTRICAL interconnection between 140M MPCB and 100-C contactors (with AC coils)	140M-C to 100-C09...C23		140M-C-PNC23	W9G5	
		140M-D to 100-C09...C23		140M-D-PNC23	W9G5	
		140M-D to 100-C30...C37		140M-D-PNC37	W9G5	
		140M-F to 100-C30...C37		140M-F-PNC37	W9G5	
140M-F to 100-C43			140M-F-PNC43	W9G5		
	Spacing Adapter Required for Self-Protected combination motor controller (Type E) applications of 140M-C, -D, and -F MPCBs		140M-C, -D		140M-C-TE	W9G5
			140M-F		140M-F-TE	W9G5
	Compact Bus Bar Feeder Block Supply of compact busbars Increases terminal capacity	IEC terminal spacings	140M-C, -D		140M-C-WB	W9G5
		UL terminal spacings	140M-C, -D		140M-C-WBE	W9G5
			140M-F		140M-F-WBE	W9G5
	Compact Busbar Feeder Terminal For supply of commoning links Top feed — overlaps commoning link		140M-C, -D		140M-C-WTE	W9G5
			140M-F		140M-F-WTE	W9G5
	Communication Module DeviceNet Starter Auxiliary DSA I/O for Distributed Starters, see page 38					

* May be ordered in package quantities of 20. Add letter **M** to the end of the cat. no. (Example: **140M-C-PEM12M**).
Discount Group MAC

Accessories 140M

Description		No. of Connections	For Use With	Cat. No.		PGC
	Three-Phase Compact Busbar for 25 A Motor Protection Circuit Breakers — 63 A Max. Continuous Current 45 mm spacing For use with front-mounted auxiliary contact	2	140M-C, -D	140M-C-W452		W9G5
		3		140M-C-W453		W9G5
		4		140M-C-W454		W9G5
		5		140M-C-W455		W9G5
	Three-Phase Compact Busbar for 25 A Motor Protection Circuit Breakers — 63 A Max. Continuous Current 54 mm spacing For use with side-mounted auxiliary contact	2	140M-C, -D	140M-C-W542		W9G5
		3		140M-C-W543		W9G5
		4		140M-C-W544		W9G5
		5		140M-C-W545		W9G5
	Three-Phase Compact Busbar for 25 A Motor Protection Circuit Breakers — 63 A Max. Continuous Current 63 mm spacing For use with side-mounted undervoltage trip and shunt trip	2	140M-C, -D	140M-C-W632		W9G5
		3		140M-C-W633		W9G5
		4		140M-C-W634		W9G5
		5		140M-C-W635		W9G5
	Three-Phase Compact Busbar for 45 A Motor Protection Circuit Breakers — 115 A Max Continuous Current 54 mm spacing For use with front-mounted auxiliary contact	2	140M-F	140M-F-W542		W9G5
		3		140M-F-W543		W9G5
		4		140M-F-W544		W9G5
	Three-Phase Compact Busbar for 45 A Motor Protection Circuit Breakers — 115 A Max Continuous Current 63 mm spacing For use with side-mounted auxiliary contact	2	140M-F	140M-F-W632		W9G5
		3		140M-F-W633		W9G5
		4		140M-F-W634		W9G5
	Jumper for 140M-D to 140M-C Accommodates difference in depth from 140M-D to 140M-C 54 mm spacing Can be used with all other commoning links	2	140M-D to 140M-C	140M-C-WD542		W9G5

Discount Group MAC

Motor Protection Circuit Breakers 140M-K, -M, -P

- Short Circuit Protection — Standard Magnetic Trip (Fixed at 13 x I_e)
- Overload Protection — Trip Class 10 (Adjustable Current Range)
- Ambient temperature compensation
- Phase-loss protection



140M-K5F

3-Pole Circuit Breakers

Rated Operational Current (I _e)	Motor Current Adjustment Range	Switching of 3-Phase AC Motors AC-2, AC-3 @ 400/415V (50 Hz)			Cat. No.	PGC
		[kW]	I _{cu} [kA]	I _{cs} [kA]		
[A]	[A]					
50	40...50	25	65	33	140M-K5F-C50	W9G2
63	50...63	32	65	33	140M-K5F-C63	W9G2
80	63...80	37/45	65	33	140M-K5F-C80	W9G2
100	80...100	50/55	65	33	140M-K5F-D10	W9G2
125	100...125	63	65	33	140M-K5F-D12	W9G2
160	125...160	75/90	65	33	140M-K5F-D16	W9G2
160	125...160	75/90	65	33	140M-M5F-D16	W9G2
200	160...200	110	65	33	140M-M5F-D20	W9G2
250	200...250	132/150	65	33	140M-M5F-D25	W9G2
250	200...250	132/150	65	33	140M-P5F-D25	W9G2
320	250...320	160/185	65	33	140M-P5F-D32	W9G2
400	320...400	200/220	65	33	140M-P5F-D40	W9G2

Discount Group MAC

4-Pole Circuit Breakers

Rated Operational Current (I _e)	Motor Current Adjustment Range	Switching of 3-Phase AC Motors AC-2, AC-3 @ 400/415V (50 Hz)			Cat. No.	PGC
		[kW]	I _{cu} [kA]	I _{cs} [kA]		
[A]	[A]					
50	40...50	25	65	33	140M-K5F4-C50	W9G2
63	50...63	32	65	33	140M-K5F4-C63	W9G2
80	63...80	37/45	65	33	140M-K5F4-C80	W9G2
100	80...100	50/55	65	33	140M-K5F4-D10	W9G2
125	100...125	63	65	33	140M-K5F4-D12	W9G2
160	125...160	75/90	65	33	140M-K5F4-D16	W9G2
160	125...160	75/90	65	33	140M-M5F4-D16	W9G2
200	160...200	110	65	33	140M-M5F4-D20	W9G2
250	200...250	132/150	65	33	140M-M5F4-D25	W9G2
250	200...250	132/150	65	33	140M-P5F4-D25	W9G2
320	250...320	160/185	65	33	140M-P5F4-D32	W9G2
400	320...400	200/220	65	33	140M-P5F4-D40	W9G2

Discount Group MAC

Accessories 140M-K, -M, -P

Description		For Use With	Cat. No.		PGC
	Auxiliary Contact Block for Internal Mounting Leads labelled and fitted with terminal sleeves	140M-K	140M-K-EA11		W9G6
			140M-K-EA22		W9G6
		140M-M, -P5F	140M-P-EA11		W9G6
			140M-P-EA22		W9G6
	Trip Contact Block for Internal Mounting Leads labelled and fitted with terminal sleeves	140M-K	140M-K-ER11		W9G6
		140M-M, -P5F	140M-P-ER11		W9G6
	Auxiliary and Trip Contact Block for Internal Mounting Leads labelled and fitted with terminal end covers	140M-K	140M-K-EA11R11		W9G6
		140M-M, -P5F	140M-P-EA11R11		W9G6
	Undervoltage Trip for Internal Mounting Leads labelled and fitted with terminal end covers	24V 50/60 Hz	140M-K5F	140M-K-UKJ	W9G6
			140M-M, -P5F	140M-P-UKJ	W9G6
		110...127V 50/60 Hz	140M-K5F	140M-K-UKD	W9G6
			140M-K5F	140M-P-UKD	W9G6
		208...240V 50/60 Hz	140M-K5F	140M-K-UKF	W9G6
			140M-M, -P5F	140M-P-UKF	W9G6
		380...480V 50/60 Hz	140M-K5F	140M-K-UKN	W9G6
			140M-M, -P5F	140M-P-UKN	W9G6
		24V DC	140M-K5F	140M-K-UZJ	W9G6
			140M-M, -P5F	140M-P-UZJ	W9G6
		110...127V DC	140M-K5F	140M-K-UZD	W9G6
			140M-M, -P5F	140M-P-UZD	W9G6
	Shunt Trip for Internal Mounting Leads labelled and fitted with terminal end covers	24V 50/60 Hz	140M-K5F	140M-K-AKJ	W9G6
			140M-M, -P5F	140M-P-AKJ	W9G6
		110...127V 50/60 Hz	140M-K5F	140M-K-AKD	W9G6
			140M-M, -P5F	140M-P-AKD	W9G6
		208...240V 50/60 Hz	140M-K5F	140M-K-AKF	W9G6
			140M-M, -P5F	140M-P-AKF	W9G6
		380...480V 50/60 Hz	140M-K5F	140M-K-AKN	W9G6
			140M-M, -P5F	140M-P-AKN	W9G6
		24V DC	140M-K5F	140M-K-AZJ	W9G6
			140M-M, -P5F	140M-P-AZJ	W9G6
		110...127V DC	140M-K5F	140M-K-AZD	W9G6
			140M-M, -P5F	140M-P-AZD	W9G6
		220...250V DC	140M-K5F	140M-K-AZA	W9G6
			140M-M, -P5F	140M-P-AZA	W9G6

Discount Group MAC

Bulletin 140M-K, -M, -P

Circuit Breakers

Accessories

Accessories 140M-K, -M, -P

Description			For Use With	Cat. No.		PGC	
	Complete Door Assembly Consists of: door-mounted actuator with clutch, shaft, and drive Accepts up to 3 padlocks ø 4 mm Lockable in OFF position 330 mm shaft Protection class: IP54	Black knob	140M-K5F	140M-K-D54N		W9G6	
		Red/yellow knob		140M-K-D54RY		W9G6	
		Black knob	140M-M, -P5F	140M-P-D54N		W9G6	
		Red/yellow knob		140M-P-D54RY		W9G6	
	Door-mounted Actuator Single		140M-K, -M, -P5F	140M-K-HRY		W9G6	
	Replacement shaft for Complete Door Assembly Length = 330 mm		140M-K, -M, -P5F	140M-P-DS		W9G6	
	Locking Device for Toggle Switch For locking circuit breakers in the OFF position		140M-K5F	140M-K-M		W9G6	
			140M-M, -P5F	140M-P-M		W9G6	
	Lockable Knob Provision for 3 padlocks ø 6...8 mm Protection Class: IP40	Black knob	140M-K5F	140M-K-KN		W9G6	
		Red knob		140M-K-KE		W9G6	
		Black knob	140M-M, -P5F	140M-P-KN		W9G6	
		Red knob		140M-P-KE		W9G6	
	Remote Control ON- and OFF switching via push-button control. Self-switching of the drive via integr. position switches. Mechanical switch position display (ON/OFF/TRIPPED)		$U_s = 230V$	140M-K5F	140M-K-PF		W9G6
				140M-M5F	140M-M-PF		W9G6
				140M-P5F	140M-P-PF		W9G6
	Locking Arrangement for Remote Control Cylinder lock. Kit for on-site installation. Prevents electrical operation. Mechanically interlocked shutter prevents manual operation. Prevents removal of mechanism cover.		140M-K, -M, -P5F	140M-P-Q		W9G6	
	Terminal Covers Provides finger protection.	3-pole	140M-K5F	140M-K-C		W9G6	
			140M-M5F	140M-M-C		W9G6	
			140M-P5F	140M-P-C		W9G6	
		4-pole	140M-K5F4	140M-K-C4		W9G6	
			140M-M5F4	140M-M-C4		W9G6	
			140M-P5F4	140M-P-C4		W9G6	

Discount Group MAC

Product Line Overview
Mini-Contactors

Bulletin	100-M	104-M
Type	Mini-Contactor	Reversing Mini-Contactor
Max. Current I_e	12 A	12 A
Current Rating	5...12 A	5...12 A
Features	• Mini-contactors • Uniform panel mounting dimensions • Panel mounting or mounting on 35 mm DIN rail • AC or DC coil control • Made of environmentally friendly materials	• Mini-contactors • Uniform panel mounting dimensions • Panel mounting or mounting on 35 mm DIN rail • AC or DC coil control • Made of environmentally friendly materials
Contacts	3 power poles with internal N.O. or N.C. auxiliary contact. Optional frontmounted 2 or 4 pole external auxiliary contact block.	3 power poles with internal N.O. or N.C. auxiliary contact. Optional frontmounted 2 or 4 pole external auxiliary contact block.
Coil Voltages	AC = 24-480V AC, 50-60Hz DC = 12-250V DC	AC = 24-480V AC, 50-60Hz DC = 12-250V DC
Optional Overload Relays	Electronic or bimetallic	Electronic or bimetallic
Standards/ Approvals	UL, CSA, IEC, CE	UL, CSA, IEC, CE
Product Selection	Pages 26	

Contactors

Product Line Overview

Contactors, Reversing Contactors, Safety Contactors

				
Bulletin	100-C	100-CR	104-C	100S-C
Type	Contactor		Reversing Contactor	Safety Contactor
Spring Clamp Terminals	—	✓	—	—
Screw Terminals	✓	—	✓	✓
Max. Current I_e	85 A	16 A	85 A	85 A
Current Rating	9...85 A	9...16 A	9...85 A	9...85 A
Features	• Panel mounting or mounting on 35 mm DIN rail • Reversible coil terminals (line or load side) • AC or DC coil control • Common Accessories • Made of environmentally friendly materials			• Positively Guided/Mechanically Linked Auxiliary Contacts • Front-Mounted Auxiliary Contacts: - Permanently Fixed - Protective Cover to Prevent Manual Operation - Red Contact Housing for Easy Identification - Incorporates IEC 947-5-1 “Mechanically Linked” Symbol • AC and DC Operating Coils • SUVA Third-Party Certification
Contacts	3 power poles with internal N.O. or N.C. auxiliary contact or 4 power poles. Optional front or side mounted 1, 2 or 4 pole external auxiliary contact block.			3 Main Contacts
Coil Voltages	AC = 12-600V AC, 50-60Hz DC = 9-250V DC			AC = 12-600V AC, 50-60Hz DC = 12-250V DC
Optional Overload Relays	Electronic or bimetallic			—
Optional Accessories	—			Side-mount auxiliary contacts, surge suppressors, mechanical latches
Conformity to Standards	—			EN50205 CSA C22.2 No. 14 UL 508 EN/IEC 60947-4 IEC 60947-4-1 Annex H — Mirror Contacts IEC 60947-5-1 Annex L — Mechanically Linked Contacts
Approvals	UL, CSA, IEC, CE			SUVA Third-Party Certified CE Marked CSA Certified (Cert No. LR13908) UL Listed (File No. E3125; Guide No. NLDX)
Product Selection	Pages 29, 33		Pages 30, 33	Pages 31, 33

Contactors, Safety Contactors

			
Bulletin	100-D	100S-D	100-G
Type	Contactor	Safety Contactor	Contactor
	860 A	860 A	1200 A
Current Rating	95...860 A	95...860 A	550...1200 A
Features	- Panel mounting only - Made of environmentally friendly materials - AC or DC coil control (Conventional or Electronic) - Integrated PLC interface	- Positively Guided/Mechanically Linked Auxiliary Contacts which are required in feedback circuit for modern safety applications. - The Positively Guided N.C. Auxiliary Contacts will not change the state when a power contact welds.	- Panel mounting only - Made of environmentally friendly materials - AC or DC coil control (Electronic)
Contacts	3 power poles with external N.O. and N.C. side mounted auxiliary contact. Optional side mounted 2 pole external auxiliary contacts blocks	3 Main Contacts	3 power poles with up to 4 external N.O. and N.C. side mounted auxiliary contact blocks. Forth main contact pole
Coil Voltages	Conventional Coils 100-D95...D180 AC: 24...550V 50 Hz 24...600V 60Hz 100...277V 50/60Hz DC: 24...250V DC Electronic Coils 100-D95...D300 AC: 24...500V 50/60 Hz DC: 24...255V DC 100-D420 AC: 42...500V 50/60 Hz DC: 48...255V DC	Conventional Coils 100S-D95...D180 AC: 24...550V 50 Hz 24...600V 60Hz 100...277V 50/60Hz DC: 24...250V DC Electronic Coils 100S-D95...D300 AC: 24...500V 50/60 Hz DC: 24...255V DC 100S-D420 AC: 42...500V 50/60 Hz DC: 48...255V DC	AC = 110-480V AC, 50-60Hz DC = 100-440V DC
Optional Overload Relays	Electronic	—	—
Optional Accessories	—	Side-mount auxiliary contacts, surge suppressors, IP20 terminal blocks, terminal shields, terminal covers, connecting components, terminal lugs, mechanical/electrical interlocks	—
Conformity to Standards	—	IEC 60947-4-1 / A1: 2002-09, Annex F CSA C22.2 No. 14 UL 508	—
Approvals	UL, CSA, IEC, CE	CE Marked CSA Certified UL Listed SUVA Third-Party Certified	UL, CSA, IEC, CE
Product Selection	Pages 41, 44	Pages 42, 44	Pages 47

Contactors

Product Selection

Mini-Contactors 100-M, 104-M

- Compact Size
- Uniform Panel Mounting Dimensions
- Full Voltage Non-Reversing and Reversing Contactors
- 5, 9, and 12 A Contactors
- Compatible with Bulletin 193-E solid-state and 193-M bimetal Overload Relays



100-M12



104-M09

Mini-Contactors with 3 Main Contacts

Rated Operational Current		Ratings for switching AC motors	Auxiliary Contact Configuration		Cat. No. *	Price £	PGC		PGC
		3Ø AC-3 kW Ratings (50 Hz) ‡							
AC-3	AC-1	400V/415V	N.O.	N.C.		AC Coil		DC Coil	
5.3	20	2.2	1	0	100-M05N®3S	11.80	W9A4		W9A4
			0	1	100-M05N®31S	11.80	W9A4		W9A4
9	20	4	1	0	100-M09N®3S	12.50	W9A4		W9A4
			0	1	100-M09N®31S	12.50	W9A4		W9A4
12	20	5.5	1	0	100-M12N®3S	15.10	W9A4		W9A4
			0	1	100-M12N®31S	15.10	W9A4		W9A4

* May be ordered in package quantities of 10. Without letter **S** at the end of the cat. no. (Example: **100-M09NKF3**).
Multi-pack (10 pieces) only for coil voltage codes KD, D, KF, KK and Z24, ZD24
‡ Preferred value according to IEC 60072-1.
⊗ The cat. no. as listed is incomplete. Select a coil voltage code from the table on page 27.
Discount Group PRO

Reversing Mini-Contactors with 3 Main Contacts

Rated Operational Current		Ratings for switching AC motors	Auxiliary Contact Configuration		Cat. No. §		PGC
		3Ø AC-3 kW Ratings (50 Hz) ‡					
AC-3	AC-1	400V/415V	N.O.	N.C.		AC Coil	
5.3	20	2.2	1	0	104-M05N®3		W9A4
			0	1	104-M05N®31		W9A4
9	20	4	1	0	104-M09N®3		W9A4
			0	1	104-M09N®31		W9A4
12	20	5.5	1	0	104-M12N®3		W9A4
			0	1	104-M12N®31		W9A4

‡ Preferred value according to IEC 60072-1.
§ Not available with DC coil.
⊗ The cat. no. as listed is incomplete. Select a coil voltage code from the table on page 27.
Discount Group PRO

Coil Voltage Codes

⊗ Coil Voltage Codes for AC Control

The catalog number as listed is incomplete. Select a coil voltage code from the table below to complete the catalog number. Example: Catalog number **100-M05N03S** becomes catalog number **100-M05NKF3S** for 230 V AC. For other voltages, please consult your local sales office.

[V]	24	48	110	110-120	220-230	230	230-240	240	380-400	400-415
50 Hz	—	—	D	—	A	—	—	—	KK	—
60 Hz	—	—	—	D	—	—	A	—	—	KK
50/60 Hz	KD	KH	—	—	—	KF	—	KT	—	—

⊗ Coil Voltage Codes for DC Control

The catalog number as listed is incomplete. Select a coil voltage code from the table below to complete the catalog number. Example: Catalog number **100-M05N03S** becomes catalog number **100-M05NZ243S** for 24V DC. For other voltages, please consult your local sales office.

[V]	24	48	110	220
Standard	Z24	Z48	Z11	Z2
With diode protective circuit	ZD24	—	—	—

Voltage codes in bold type: Preferred coil voltage codes

Contactors

Accessories

Accessories for 100-M, 104-M

	Description	Type	For Use With		Cat. No.	PGC
	Auxiliary Contact Adder Deck Top mounted	2 N.C.	100/104-M05...M12		195-MB02	W9S2
		1 N.O./1 N.C.			195-MB11	W9S2
		2 N.O./2 N.C.			195-MB22	W9S2
		2 N.O.		*	195-MA20	W9S2
		4 N.O.		*	195-MA40	W9S2
	Solid-State Timing Element	0.3...3 s On-Delay, 110...250V AC or DC	100/104-M05...M12	*	196-MT3S	W9S2
		1...30 s On-Delay, 110...250V AC or DC		*	196-MT30S	W9S2
	Star-Delta Timer	220V AC		*	196-MTSDA1	W9S2
		110V AC		*	196-MTSDA2	W9S2
		48V AC		*	196-MTSDA3	W9S2
	35 mm DIN Rail Mounting Adapter For easy mounting of timer modules on standard DIN Rail (EN 50 022-35) and G-Rail			*	196-MTM	W9S2
		Mechanical Interlock Kit	Mechanical Interlock Only	100-M05...M12 (AC Coils Only)		199-MXM1
	Power Wiring Kit	For Reversing Contactors	100-M05...M12	⊗	140-KCR4	W9G5
		For star-delta switching			140-KCSD4	W9G5
	R-C Suppressor	24...48V AC	100/104-M05...M12	*	199-MSMA48	W9S2
		110...280V AC		*	199-MSMA1	W9S2
	MOV Suppressor	12...55V AC/12...77V DC		*	199-MSMV1	W9S2
		56...136V AC/78...162V DC		*	199-MSMV2	W9S2
		137...277V AC/163...350V DC		*	199-MSMV3	W9S2
	Diode Suppressor	12...250V DC		*	199-MSMD1	W9S2
	R-C Suppressor	24...48V AC	100M	*	199-MSMNA48	W9S2
		110...280V AC		*	199-MSMNA280	W9S2
		380...480V AC		*	199-MSMNA480	W9S2
	MOV Suppressor	12...55V AC/12...77V DC		*	199-MSMV4	W9S2
		56...136V AC/78...162V DC		*	199-MSMV5	W9S2
		137...277V AC/181...350V DC		*	199-MSMV6	W9S2
		Diode Suppressor		12...250V DC	*	199-MSMD2

* Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.

⊗ Not for use with direct-mounted overload relays.

Discount Group PRO

Contactors 100-C

- Compact Sizes from 4...45 kW/5...60 Hp (9...85 A)
- AC and DC Coil Control
- Common Accessories for All Contactor Sizes
- Front and Side Mounting of Auxiliary Contacts
- Electronic and Pneumatic Timing Modules
- Space-Saving Coil-Mounted Control Modules
- Reversible Coil Terminations (Line or Load Side)
- All Devices Can Be Attached to 35 mm DIN Mounting Rail
- Environmentally Friendly Materials



100-CR16



100-C23

Contactors with 3 Main Contacts

I_e [A]		Ratings for Switching AC Motors — AC-2, AC-3, AC-4	Aux. Contacts		Cat. No.	PGC	PGC
		3Ø kW (50 Hz)					
AC-3	AC-1	400V/415V	N.O.	N.C.		AC Coil	DC Coil

Contactors with Screw Terminals

9	32	4	1	0	*	100-C09Ø10		W9C1		W9D1
			0	1	*	100-C09Ø01		W9C1		W9D1
12	32	5.5	1	0	*	100-C12Ø10		W9C1		W9D1
			0	1	*	100-C12Ø01		W9C1		W9D1
16	32	7.5	1	0	*	100-C16Ø10		W9C1		W9D1
			0	1	*	100-C16Ø01		W9C1		W9D1
23	32	11	1	0	*	100-C23Ø10		W9C1		W9D1
			0	1	*	100-C23Ø01		W9C1		W9D1
30	65	15	0	0	*	100-C30Ø00		W9C2		W9D2
37	65	18.5/20	0	0	*	100-C37Ø00		W9C2		W9D2
43	85	22	0	0		100-C43Ø00		W9C2		W9D2
60	100	32	0	0		100-C60Ø00		W9C2		W9D3
72	100	40	0	0		100-C72Ø00		W9C2		W9D3
85	100	45	0	0		100-C85Ø00		W9C2		W9D3

Contactors with Spring Clamp Terminals

9	25	4	1	0		100-CR09Ø10		W9C1		W9D1
			0	1		100-CR09Ø01		W9C1		W9D1
12	25	5.5	1	0		100-CR12Ø10		W9C1		W9D1
			0	1		100-CR12Ø01		W9C1		W9D1
16	25	7.5	1	0		100-CR16Ø10		W9C1		W9D1
			0	1		100-CR16Ø01		W9C1		W9D1

* May be ordered in package quantities of 20. Add letter **M** to the end of the cat. no. Example: **100-C09KF10M**).

Ø The cat. no. as listed is incomplete. Select a coil voltage code from the table on page 32.

Discount Group PRO

Reversing Contactors 104-C

- Includes Mechanical/Electrical Interlock
- Includes Reversing Power Wiring



104-C09

Reversing Contactors with 3 Main Contacts

J_e [A]		Ratings for Switching AC Motors — AC-2, AC-3, AC-4	Auxiliary Contacts Installed per Contactor		Cat. No.	PGC	PGC
		3Ø kW (50 Hz)					
AC-3	AC-1	400V/415V	N.O.	N.C. *	Cat. No.	AC Coil	DC Coil
9	32	4	1	0	104-C09⊗10-E	W9CA	W9DA
			0	1	104-C09⊗00-E	W9CA	W9DA
12	32	5.5	1	2	104-C12⊗10-E	W9CA	W9DA
			0	1	104-C12⊗00-E	W9CA	W9DA
16	32	7.5	1	2	104-C16⊗10-E	W9CA	W9DA
			0	1	104-C16⊗00-E	W9CA	W9DA
23	32	11	1	2	104-C23⊗10-E	W9CA	W9DA
			0	1	104-C23⊗00-E	W9CA	W9DA
30	50	15	0	2	104-C30⊗00-E	W9CB	W9DB
37	50	18.5/20	0	2	104-C37⊗00-E	W9CB	W9DB
43	85	22	0	2	104-C43⊗00-E	W9CB	W9DB
60	100	32	1	1	104-C60⊗10-E	W9CB	W9DC
72	100	40	1	1	104-C72⊗10-E	W9CB	W9DC
85	100	45	1	1	104-C85⊗10-E	W9CB	W9DC

* The N.C. auxiliary contact is supplied as part of the mechanical/electrical interlock.
⊗ The cat. no. as listed is incomplete. Select a coil voltage code from the table on page 32.
Discount Group PRO

Safety Contactors 100S-C

- AC / DC control
- 3 / 4 main contacts
- Positively guided contacts according to IEC 947-5-1
- Mechanically coupled Contactor and Auxiliary contact block
- Protection against unintended actuation
- Auxiliary contacts are electronically compatible according to DIN 19240



100S-C

Safety Contactors with 3 Main Contacts

I_e [A]		Ratings for Switching AC Motors — AC-2, AC-3, AC-4 3Ø kW (50 Hz)	Auxiliary Contacts		Cat. No.*	AC Coil	PGC	DC Coil	PGC
			N.O.	N.C.					
AC-3	AC-1	400V/415V							
9	32	4	0	5	100S-C09®05C		W9C3		W9D4
			1	4	100S-C09®14C		W9C3		W9D4
			2	3	100S-C09®23C		W9C3		W9D4
12	32	5.5	0	5	100S-C12®05C		W9C3		W9D4
			1	4	100S-C12®14C		W9C3		W9D4
			2	3	100S-C12®23C		W9C3		W9D4
16	32	7.5	0	5	100S-C16®05C		W9C3		W9D4
			1	4	100S-C16®14C		W9C3		W9D4
			2	3	100S-C16®23C		W9C3		W9D4
23	32	11	0	5	100S-C23®05C		W9C3		W9D4
			1	4	100S-C23®14C		W9C3		W9D4
			2	3	100S-C23®23C		W9C3		W9D4
30	65	15	0	4	100S-C30®04C		W9C4		W9D5
			2	2	100S-C30®22C		W9C4		W9D5
37	65	18.5/20	0	4	100S-C37®04C		W9C4		W9D5
			2	2	100S-C37®22C		W9C4		W9D5
43	85	22	0	4	100S-C43®04C		W9C4		W9D5
			2	2	100S-C43®22C		W9C4		W9D5
60	100	32	0	4	‡ 100S-C60®04C		W9C4		W9D6
			2	2	‡ 100S-C60®22C		W9C4		W9D6
72	100	40	0	4	‡ 100S-C72®04C		W9C4		W9D6
			2	2	‡ 100S-C72®22C		W9C4		W9D6
85	100	45	0	4	‡ 100S-C85®04C		W9C4		W9D6
			2	2	‡ 100S-C85®22C		W9C4		W9D6

* If bifurcated front-mount auxiliary contacts are required, insert the letter "B" before the letter "C" in the cat. no.

Example: Cat. No. **100S-C09®05C** becomes cat. no. **100S-C09®05BC**. (with surcharge)

‡ Bifurcated front-mount auxiliary contacts on cat. no. **100S-C60...C85** conform to mirror contact performance only.

® The cat. no. as listed is incomplete. Select a coil voltage code from the table on page 32.

Discount Group PRO

Bulletin 100S-C
Contactors
Product Selection

Safety Contactors with 4 Main Contacts

I _e [A]		Ratings for Switching AC Motors — AC-2, AC-3, AC-4	Contact Configuration								
			Main Pole		Auxillary Contacts						
			3Ø kW (50 Hz)*								
AC-3	AC-1	400V/415V	N.O.	N.C.	N.O.	N.C.	Cat. No.*		PGC		PGC
AC-3	AC-1	400V/415V	N.O.	N.C.	N.O.	N.C.	Cat. No.*		PGC		PGC
23	32	11	4	0	0	4	100S-C23@404C		W9C3		W9D4
23	32	11	3	1	0	4	100S-C23@304C		W9C3		W9D4
23	32	11	4	0	2	2	100S-C23@422C		W9C3		W9D4

* For other contact configurations, please consult your local sales office.
* Three-phase ratings only apply to contactors with at least three N.O. power poles.
⊗ The cat. no. as listed is incomplete. Select a coil voltage code from the table below.
Discount Group PRO

Coil Voltage Codes

⊗ Coil Voltage Codes for AC-Control

[V]	12	24	32	36	42	48	100	100-110	110	120	127	200	200-220	200-230	208-240
50 Hz	R	K	V	W	X	Y	KP	—	D	P	S	KG	L	—	—
60 Hz	Q	J	—	V	—	X	—	KP	—	D	—	—	KG	H	L
50/60 Hz	—	KJ	—	—	—	KY	KP	—	KD	—	—	KG	—	KL	—

[V]	220-230	230	230-240	240	277	347	380	380-400	400	400-415	440	480	500	550	600
50 Hz	F	—	VA	T	—	—	—	N	—	G	B	—	M	C	—
60 Hz	—	—	—	A	T	I	E	—	—	—	N	B	—	—	C
50/60 Hz	—	KF	—	KA	—	—	—	—	KN	—	KB	—	—	—	—

⊗ Coil Voltage Codes for DC-Control

[V]		9 ‡	12	24 ‡	36	48	60	64	72
C09...C43	Standard	ZR	ZQ	ZJ	ZW	ZY	ZZ	ZB	ZG
C09...C43	With integrated diode	—	—	DJ	—	—	—	—	—

C60...C85	With integrated diode	DR	DQ	DJ	DW	DY	DZ	DB	DG
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[V]		80	110	115	125	220	230	250
C09...C43	Standard	ZE	ZD	ZP	ZS	ZA	ZF	ZT
C09...C43	With integrated diode	—	—	—	—	—	—	—

C60...C85	With integrated diode	DE	DD	DP	DS	DA	DF	DT
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Voltage codes in bold type: Preferred coil voltage codes
‡ Extended operating limits 0.7...1.25 x U_s
⊗ The cat. no. as listed is incomplete. Select a coil voltage code from the table above to complete the cat. no.
Example: 230V, 50/60Hz: Cat. no. 100S-C23⊗404C becomes cat. no.100S-C23KF404C.

Auxiliary Contacts (For 100-C09...C85 contactors) *

	Description	 N.O.	 N.C.	For Use With	Cat. No.*		PGC
	Auxiliary Contact Blocks for Front Mounting 2- and 4-pole Quick and easy mounting without tools Electronic-compatible contacts down to 17V, 5 mA Mechanically linked performance between N.O. and N.C. poles and to the main contactor poles (except for L types)	0	2	100-C all	100-FA02		W9W1
				C30®00...C85®00	100-FB02		W9W1
		1	1	100-C all	100-FA11		W9W1
				C30®00...C85®00	100-FB11		W9W1
				C09®10...C23®10	100-FC11		W9W1
		2	0	100-C all	100-FA20		W9W1
				C30®00...C85®00	100-FB20		W9W1
		1L	1L	C30®00...C85®00	100-FAL11		W9W1
				C30®00...C85®00	100-FBL11		W9W1
			Models with equal function with several terminal numbering choices 1L = Late break N.C./early make N.O. Bifurcated version for switching down to 8V, 5 mA	0	4	100-C all	100-FA04
1	3			100-C all	100-FA13		W9W1
2	2			100-C all	100-FA22		W9W1
				C30®00...C85®00	100-FB22		W9W1
				C09®10...C23®10	100-FC22		W9W1
3	1			100-C all	100-FA31		W9W1
				C09®10...C23®10	100-FC31		W9W1
4	0			100-C all	100-FA40		W9W1
1+1L	1+1L			100-C all	100-FAL22		W9W1

Discount Group PRO

Auxiliary Contacts with Spring Clamp Terminals *

						
	Description	N.O.	N.C.	For Use With	Cat. No.	PGC
	Auxiliary Contact Blocks for Front Mounting 2- and 4-pole Quick and easy mounting without tools Electronic-compatible contacts down to 17V, 5 mA Mechanically linked performance between N.O. and N.C. poles and to the main contactor poles (except for L types)	0	2	100-CR all, 700-CRF	100-CRFA02	W9W1
		1	1		100-CRFA11	W9W1
		1	1		100-CRFB11	W9W1
		1	1		100-CRFC11	W9W1
		2	0		100-CRFA20	W9W1
		1L	1L		100-CRFB11	W9W1
	between N.O. and N.C. poles and to the main contactor poles (except for L types) Models with equal function with several terminal numbering choices 1L = Late break N.C./early make N.O. Bifurcated version for switching down to 5V, 3 mA also available	2	2	100-CR all, 700-CRF	100-CRFA22	W9W1
		2	2		100-CRFC22	W9W1
		2	2		100-CRFB22	W9W1
		3	1		100-CRFA31	W9W1
		4	0		100-CRFA40	W9W1
		1+1L	1+1L		100-CRFAL22	W9W1

* Max. number of auxiliary contacts that may be mounted:

AC coil contactors — max. 4 N.O. contacts on the front of the contactor, 2 N.O. contacts on the side, 4 N.C. front or side, 6 total.

DC coil contactors — max. 4 N.O. contacts on the front of the contactor or max 2 N.O. contacts on the side, 4 N.C. front or side, 4 total.

* May be ordered in package quantities of 10. Add letter **M** to the end of the cat. no. (Example: **100-FA02M**).

Discount Group PRO

Auxiliary Contacts (For 100-C09...C85 contactors) *, continued

	Description			For Use With	*	Cat. No.		PGC
		N.O.	N.C.					
	Auxiliary Contact Blocks for Side Mounting with Sequence Terminal Designations 1- and 2-pole Two-way numbering for right or left mounting on the contactor Quick and easy mounting without tools	0	1	100-C all	*	100-SB01		W9W1
		1	0	100-C‡	*	100-SB10		W9W1
		0	2	100-C‡	*	100-SB02		W9W1
	Electronic-compatible contacts down to 17V, 10 mA Mirror contact performance to the main contactor poles 1L = Late break N.C./early make N.O.	1	1	100-C‡	*	100-SB11		W9W1
		2	0	100-C‡	*	100-SB20		W9W1
		1L	1L	100-C‡	*	100-SBL11		W9W1

* Max. number of auxiliary contacts that may be mounted:
AC coil contactors — max. 4 N.O. contacts on the front of the contactor, 2 N.O. contacts on the side, 4 N.C. front or side, 6 total.
DC coil contactors — max. 4 N.O. contacts on the front of the contactor or max 2 N.O. contacts on the side, 4 N.C. front or side, 4 total.

* May be ordered in package quantities of 10. Add letter **M** to the end of the cat. no. Example: **100-SB01M**).

‡ Double numbering — Left-side mounting only is recommended for **cat. no. 100-C09...100-C23** due to double numbering.

Discount Group PRO

Control Modules (For 100-C09...C85 contactors)

	Description	For Use With	Cat. No.		PGC
	Pneumatic Timing Modules Pneumatic timing element contacts switch after the delay time. The contacts on the main control relay continue to operate without delay.	100-C with AC coils	100-FPTA30 100-FPTA180		W9W1 W9W1
	Electronic Timing Modules — On-Delay Delay of the contactor or control relay solenoid. The contactor or control relay is energized at the end of the delay time.	100-C all	100-FPTB30 100-FPTB180		W9W1 W9W1
	Electronic Timing Modules — Off-Delay Delay of the contactor or control relay solenoid. After interruption of the control signal, the contactor or control relay is deenergized at the end of the delay time.	100-C with DC coils	100-ETAZJ3 100-ETAZJ30 100-ETAZJ180		W9W1 W9W1 W9W1
	Electronic Timing Modules — Off-Delay Delay of the contactor or control relay solenoid. After interruption of the control signal, the contactor or control relay is deenergized at the end of the delay time.	100-C with AC coils	100-ETB3 100-ETB30 100-ETB180		W9W1 W9W1 W9W1
	Electronic Timing Modules — 100-ETY Delay of the contactor solenoid. Contactor K 3 (Y) is de-energized (off) and K 2 (D) is energized (on) after the end of the set Y end time. (Switching delay at 50 ms.) Continuous adjustment range High repeat accuracy	100-C09...C37 with AC coils	100-ETBKJ3 100-ETBKJ30 100-ETBKJ180		W9W1 W9W1 W9W1
	Transition Time Y Contactor 1...30 s Range 110...240V, 50/60 Hz	100-C with AC coils	100-ETY30		W9W1

Discount Group PRO

Contactors

Accessories

Control Modules (For 100-C09...C85 contactors), continued

	Description	For Use With	Cat. No.		PGC
	Electronic Star-Delta Timing Relay Output Y picks up when the supply voltage is applied and resets again after time t. After a fixed changeover time tu, output relay Δ picks up and remains energized until the supply voltage is interrupted.	• 22.5 mm width Supply Voltage (A1/A2) U23 24...48V DC, 24...240V AC, 50/60 Hz A40 346...440V AC, 50/60 Hz	100-M, 100-C, 100-D	700-FSY2DU23	W91
				700-FSY2DA40	W91
		• 17.5 mm width Supply Voltage (A1/A2) U23 24...48V DC 24...240V AC. 50/60 Hz	100-M, 100-C, 100-D	700-FEY2QU23	W91
	Mechanical Interlocks For interlocking of two contactors. Common interlock for all 100-C contactor sizes Interlocking of different sizes possible Mechanical and electrical interlocking possible in one module by means of integrated auxiliary contacts 9 mm dovetail connector included	Mechanical only Without auxiliary contacts	100-C all	100-MCA00	W9W1
		Mechanical/ electrical With 2 N.C. auxiliary contacts	100-C all	100-MCA02	W9W1
	Mechanical Latch Following contactor latching, the contactor coil is immediately de-energized (off) by the N.C. auxiliary contact (65-66). Electrical or manual release 1 N.O. + 1 N.C. auxiliary contacts Suitable for all 100-C contactor sizes, 9...85 A		100-C with AC coils	100-FL11 ⊗	W9W1

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⊗ Voltage Suffix Code for Mechanical Latch

The cat. no. as listed is incomplete. Select a voltage suffix code from the table below to complete the cat. no. Example: 230V, 50/60 Hz: **Cat. no. 100-FL11**⊗ becomes **cat. no. 100-FL11KF**.

	[V]	12	24	32	36	42	48	100	100-110	110	120	127	200	200-220	200-230	208-240
50 Hz	R	K	V	W	X	Y	KP	—	—	D	P	S	KG	L	—	—
60 Hz	Q	J	—	V	—	X	—	KP	—	D	—	—	—	KG	H	L
50/60 Hz	—	KJ	—	—	—	KY	KP	—	—	KD	—	—	KG	—	KL	—

	[V]	220-230	230	230-240	240	277	347	380	380-400	400	400-415	440	480	500	550	600
50 Hz	F	—	VA	T	—	—	—	—	N	—	G	B	—	M	C	—
60 Hz	—	—	—	A	T	I	E	—	—	—	—	N	B	—	—	C
50/60 Hz	—	KF	—	KA	—	—	—	—	—	KN	—	KB	—	—	—	—

Voltage codes in bold type: Preferred coil voltage codes

Control Modules (For 100-C09...C85 contactors), continued

	Description		Voltage Range	For Use With	Cat. No.		PGC
	DC Interface (electronic) Interface between the DC control signal (PLC) and the AC operating mechanism of the contactor. Requires no additional surge suppression on the relay coils		Input: 12V DC Output: 110...240V AC	100-C with AC coils 110...240V AC	100-JE12		W9W1
			Input: 18...30V DC Output: 110...240V AC		100-JE		W9W1
			Input: 48V DC Output: 110...240V AC		100-JE48		W9W1
	Surge Suppressors For limitation of coil switching transients. Plug-in, coil mounted Suitable for all 100-C contactor sizes, 9...85 A RC, Varistor and Diode Versions		RC Module AC Operating Mechanism	100-C with AC coils	*	100-FSC48	W9W1
			24...48V AC, 50/60 Hz		*	100-FSC280	W9W1
			110...280V AC, 50/60 Hz		*	100-FSC480	W9W1
			380...480V AC, 50/60 Hz	100-C all	*	100-FSV55	W9W1
			Varistor Module AC/DC Operating Mechanism		*	100-FSV136	W9W1
			12...55V AC/ 12...77V DC		*	100-FSV277	W9W1
			56...136V AC/ 78...180V DC		*	100-FSV575	W9W1
			137...277V AC/ 181...350V DC	100-C with DC coils	*	100-FSD250	W9W1
			278...575V AC				
			Diode Module DC Operating Mechanism				
			12...250V DC				

* May be ordered in package quantities of 10. Add letter **M** to the end of the cat. no. Example: **100-FSC48M**.
Discount Group PRO

Control Modules with Spring Clamp Terminals

	Description		Voltage Range	For Use With	Cat. No.		PGC
	Surge Suppressors For limitation of coil switching transients. Plug-in, coil mounted Suitable for all 100-C contactor sizes, 9...85 A RC, Varistor and Diode Versions		RC Module AC Operating Mechanism	100-CR with AC coils, 700-CRF with AC coils	100-CRFSC48		W9W1
			24...48V AC, 50/60 Hz		100-CRFSC280		W9W1
			110...280V AC, 50/60 Hz		100-CRFSC480		W9W1
			380...480V AC, 50/60 Hz	100-CR with AC coils, 700-CRF with AC coils	100-CRFSV55		W9W1
			Varistor Module AC/DC Operating Mechanism		100-CRFSV136		W9W1
			12...55V AC/ 12...77V DC		100-CRFSV277		W9W1
			56...136V AC/ 78...180V DC		100-CRFSV575		W9W1
			137...277V AC/ 181...350V DC	100-CR with AC coils, 700-CRF with AC coils	100-CRFSV575		W9W1
			278...575V AC				
			Diode Module DC Operating Mechanism				
			12...250V DC				

Discount Group PRO

Contactors

Accessories

Assembly Components (For 100-C09...C85 contactors)

	Description	For Use With	PQ	Cat. No.		PGC
	Dovetail Connectors For use in contactor and starter assemblies. Single Connector — 0 mm Spacing	100-C all	10	100-S0		W9W1
	Dovetail Connectors For use in contactor and starter assemblies. Dual Connector — 9 mm Spacing			100-S9		W9W1
	ECO Connecting Modules — 25 A Eco-starters mount on SINGLE DIN Rail (140M on DIN Rail) ELECTRICAL AND MECHANICAL interconnection of 140M MPCB and 100-M (with AC or DC coils) or 100-C (with AC coils) contactors	140M-C to 100-M	*	140M-C-PEM12		W9G5
		140M-C to 100-C09...C23	*	140M-C-PEC23		W9G5
		140M-D to 100-C09...C23	*	140M-D-PEC23		W9G5
	Connecting Modules — 25 A and 45 A • Contactor and MPCB MUST BE mounted separately on (2) DIN Rails ELECTRICAL interconnection between 140M MPCB and 100-C contactors (with AC coils)	140M-C to 100-C09...C23		140M-C-PNC23		W9G5
		140M-D to 100-C09...C23		140M-D-PNC23		W9G5
		140M-D to 100-C30...C37		140M-D-PNC37		W9G5
		140M-F to 100-C30...C37		140M-F-PNC37		W9G5
		140M-F to 100-C43		140M-F-PNC43		W9G5

* May be ordered in package quantities of 20. Add letter **M** to the end of the cat. no. Example: **140M-C-PEM12M**.
PQ = Package Quantity
Discount Group PRO (100-S0, 100-S9), Discount Group MAC (140M...)

DeviceNet Starter Auxiliary DSA I/O for Distributed Starters

- Includes complete connector plug set
- Removable connectors
- Slender 22.5 mm wide profile
- Screw or DIN Rail mounting
- Rotary node address switches
- DeviceNet address settable via hardware or software — no need to adjust rotary node address switches

Inputs from:

- Contactor Aux
- Relay
- Pushbutton
- Proximity Switch
- Limit Switch

Outputs to:

- Contactor Coil
- Starter
- Relay
- Signal Lamp
- Valve



No. of Inputs	No. of Outputs	Cat. No.		PGC
4 (120V AC)	2 Relay (250V rated)	100-DNY41R		W9F2
4 (24V DC)	2 Relay (250V rated)	100-DNY42R		W9F2
4 (24V DC)	2 Solid-State (24V DC)	100-DNY42S		W9F2

Discount Group COM

Wye-Delta/Star-Delta Starter Kits

Wye-Delta power wiring kits were designed to aid in the field assembly of open-transition wye-delta starters that use Bulletin 100-C contactors. These kits include line, load, and start-point (shorting) connections. Assembling a wye-delta starter requires the use of the following additional components:

- Contactors
- Overload Relay
- Cat. No. 100-MCA02 Mechanical/Electrical Interlock
- Cat. No. 100-ETY30 Electronic Y-Δ Timer
- Cat. No. 100-S9 Base Coupler for 1M to 2M contactor (optional)



170-PW23

3-Phase Rating (50 Hz)				Use with Cat. No. 100-...			Cat. No.	PGC
230V	380/415V	500V	690V	Delta		Wye		
[kW]				1M	2M	1S	170-PW23	W9W1
5.5	8	8	8	C09	C09	C09		
7.5	11	11	11	C12	C12	C09		
10	14	15	14	C16	C16	C12		
14	21	21	19	C23	C23	C12	170-PW37	W9W1
18	28	28	28	C30	C30	C16		
19	35	35	32	C37	C37	C23	170-PW43	W9W1
23	40	40	41	C43	C43	C30	170-PW72	W9W1
33	58	60	56	C60	C60	C37	170-PW85	W9W1
39	69	67	70	C72	C72	C43		
47	82	82	81	C85	C85	C60		W9W1

Discount Group PRO

Marking Systems

	Description	PQ	Cat. No.		PGC
	Label Sheet 10 sheets with 105 self-adhesive paper labels each, 6 x 17 mm	10	100-FMS		W9W1
	Marking Tag Sheet 10 sheets with 160 perforated paper labels each, 6 x 17 mm To be used with a transparent cover	10	100-FMP		W9W1
	Transparent Cover 100 each To be used with marking tag sheets	100	100-FMC		W9W1
	Marking Tag Adapters 100 each To be used with marking tag:	100	100-FMA1		W9W1
	Marking Tag Adapters 100 each To be used with marking tag: and 198E-AY...	100	100-FMA2		W9W1

PQ = Package Quantity
Discount Group PRO

Contactors

Accessories

Enclosures

Description				For Use With	Cat. No.		PGC
	Enclosures For Bulletin 100-C contactors with overload relays Bulletin 193-CT For DOL starters Protection class IP66 Prestampings for two pilot lights	with blue RESET button		100-C09...C23	198E-AYLU1		W9T
		with green and red buttons START / STOP, RESET			198E-AYLU2		W9T
		with white and black buttons START / STOP, RESET			198E-AYLU3		W9T
		with green and extended red buttons: START/STOP, RESET			198E-AYLU4		W9T
		with white and extend. black buttons: START / STOP, RESET			198E-AYLU5		W9T
	Enclosures For Bulletin 100-C contactors with overload relays Bulletin 193-E For DOL starters Protection class IP66 Prestampings for two pilot lights	Without buttons			198E-AYMN2		W9T
		with blue RESET button			198E-AYMU1		W9T
		with green and red buttons START / STOP, RESET			198E-AYMU2		W9T
		with green and extended red buttons: START/STOP, RESET			198E-AYMU4		W9T
		with white and black buttons: START/STOP, RESET			198E-AYMU3		W9T
		with white and extend. black buttons: START / STOP, RESET			198E-AYMU5		W9T
		with blue RESET button		100-C30...C37	198E-AYNU1		W9T
		with green and red buttons: START/STOP, RESET			198E-AYNU2		W9T
		with green and extended red buttons: START / STOP, RESET			198E-AYNU4		W9T
		with white and black buttons START/STOP, RESET			198E-AYNU3		W9T
		with white and extend. black buttons: START/STOP, RESET			198E-AYNU5		W9T
Auxiliary Contact (START) For use with Cat. No. 198E-AY enclosure Package quantity = 1 *				100-C	100-SD10		W9W1
	Indicator Lights Mounting in upper part of enclosure Length of connection leads: 180 mm Includes lamp Protection Class: IP54 Suitable for enclosures 140A-C-E...	green	120V	140A-C-E...	140-LG120		W9G
			240V		140-LG240		W9G
			400V		140-LG400		W9G
		red	120V		140-LR120		W9G
			240V		140-LR240		W9G
			400V		140-LR400		W9G
		white	120V		140-LW120		W9G
			240V		140-LW240		W9G
			400V		140-LW400		W9G

* May be ordered in package quantities of 10. Add letter **M** to the end of the cat. no. Example: **100-SD10M**.
Discount Group MAC, Discount Group PRO (100-SD10)

Contactors 100-D

Contactors with 3 Main Contacts

- Conventional and Electronic Coils
- 3 Main Contacts



100-D95



100-D420



100-D860

Rated Operational Current I_e [A]		Switching of 3-phase motors — AC-2, AC-3	Auxiliary contacts		Cat. No.	PGC
AC-3 (60 °C)	AC-1 (40 °C)	kW (50 Hz)				
400V/525V	400V/525V		N.O	N.C		

3-Pole AC-Operated Contactors

95/95	160	50/63	1	1	* 100-D95⊗11	W9A3
					* 100-D95⊗11	W9A3
110/110	160	55/75	1	1	* 100-D110⊗11	W9A3
					* 100-D110⊗11	W9A3
140/140	250	75/100	1	1	* 100-D140⊗11	W9A3
140/115		75/80			* 100-D140⊗11	W9A3
180/180	250	90/125	1	1	* 100-D180⊗11	W9A3
180/140		90/90			* 100-D180⊗11	W9A3
210/210	350	110/150	1	1	100-D210⊗11	W9A3
250/250	350	132/160	1	1	100-D250⊗11	W9A3
300/300	450	160/200	1	1	100-D300⊗11	W9A3
420/420	500	220/300	1	1	100-D420⊗11	W9A3
630/630	800	355/450	1	1	100-D630⊗11	W9A3
860/753	1000	500/560	1	1	100-D860⊗11	W9A3

3-Pole DC-Operated Contactors

95/95	160	50/63	1	1	* 100-D95⊗11	W9B3
			2	1/1L	* 100-D95⊗22L	W9B3
110/110	160	55/75	1	1	* 100-D110⊗11	W9B3
			2	1/1L	* 100-D110⊗22L	W9B3
140/140	250	75/100	1	1	* 100-D140⊗11	W9B3
140/115		75/80	2	1/1L	* 100-D140⊗22L	W9B3
180/180	250	90/125	1	1	* 100-D180⊗11	W9B3
180/140		90/90	2	1/1L	* 100-D180⊗22L	W9B3
210/210	350	110/150	1	1	100-D210⊗11	W9B3
250/250	350	132/160	1	1	100-D250⊗11	W9B3
300/300	450	160/200	1	1	100-D300⊗11	W9B3
420/420	500	220/300	1	1	100-D420⊗11	W9B3
630/630	800	355/450	1	1	100-D630⊗11	W9A3
860/753	1000	500/560	1	1	100-D860⊗11	W9A3

* With conventional coil

⊗ With electronic coil

⊗ The cat. no. as listed is incomplete. Select a coil voltage code from the table on page 43 to complete the cat. no.
Example: 230V, 50/60 Hz: Cat. no. **100-D95⊗11** becomes cat. no. **100-D95KF11**.

Discount Group PRO

Safety Contactors 100S-D

- Conventional and Electronic AC Coils
- 3 Main Contacts



100S-D860

Contactors with 3 Main Contacts

I_e [A]		Ratings for Switching AC Motors — AC-2, AC-3, AC-4	Coil Type	Auxiliary contacts		Cat. No.	PGC
				N.O.	N.C. *		
60 °C	40 °C	3Ø kW (50 Hz)					
AC-3	AC-1	400/415V					

3-Pole AC-Operated Contactors

95	160	50	Conventional	2	2	100S-D95Ø22C		W9A6
			Electronic	2	2	100S-D95Ø22C		W9A6
110	160	55	Conventional	2	2	100S-D110Ø22C		W9A6
			Electronic	2	2	100S-D110Ø22C		W9A6
140	250	75	Conventional	2	2	100S-D140Ø22C		W9A6
			Electronic	2	2	100S-D140Ø22C		W9A6
180	250	90	Conventional	2	2	100S-D180Ø22C		W9A6
			Electronic	2	2	100S-D180Ø22C		W9A6
210	350	110	Electronic	2	2	100S-D210Ø22C		W9A6
250	350	132	Electronic	2	2	100S-D250Ø22C		W9A6
300	450	160	Electronic	2	2	100S-D300Ø22C		W9A6
420	500	220	Electronic	2	2	100S-D420Ø22C		W9A6
630	800	355	Electronic	2	2	100S-D630Ø22C		W9A6
860	1000	500	Electronic	2	2	100S-D860Ø22C		W9A6

3-Pole DC-Operated Contactors

95	160	50	Conventional	3	2/1L	※	100S-D95Ø33LC		W9B6
			Electronic	2	2		100S-D95Ø22C		W9B6
110	160	55	Conventional	3	2/1L	※	100S-D110Ø33LC		W9B6
			Electronic	2	2		100S-D110Ø22C		W9B6
140	250	75	Conventional	3	2/1L	※	100S-D140Ø33LC		W9B6
			Electronic	2	2		100S-D140Ø22C		W9B6
180	250	90	Conventional	3	2/1L	※	100S-D180Ø33LC		W9B6
			Electronic	2	2		100S-D180Ø22C		W9B6
210	350	110	Electronic	2	2		100S-D210Ø22C		W9B6
250	350	132	Electronic	2	2		100S-D250Ø22C		W9B6
300	450	160	Electronic	2	2		100S-D300Ø22C		W9B6
420	500	220	Electronic	2	2		100S-D420Ø22C		W9B6
630	800	355	Electronic	2	2		100S-D630Ø22C		W9A6
860	1000	500	Electronic	2	2		100S-D860Ø22C		W9A6

* The N.C. contacts meet IEC 60947-4 Annex F requirements to mirror contact performance. The N.C. mirror contacts are wired in series or parallel and must be used as monitoring contacts with feedback to the safety circuit.

※ For Conventional DC Coil only. The pickup winding must be interconnected with the N.C. late-breaking auxiliary contact.

Discount Group PRO

⊗ Coil Voltage Codes for AC Control

Conventional Coil	[V]	24	48	100	110	120	200	208	220-230	230
D95...D180	50 Hz	K	Y	—	D	—	—	—	A	—
	60 Hz	J	X	—	—	D	—	H	—	—
	50/60 Hz	—	—	KP	KN	—	KG	—	—	KF

Conventional Coil	[V]	240	277	380-400	415	440	480	500	550	600
D95...D180	50 Hz	T	—	N	B	G	—	M	C	—
	60 Hz	A	T	—	—	N	B	—	—	C
	50/60 Hz	KA	—	—	—	—	—	—	—	—

Electronic Coil w/ EI Interface *	[V]	24	42-64	100	110-130	200	208-277	380-415	440-480	500	600
D95...D250	50/60 Hz	EJ *	EY	EP	ED	EG	EA	EN	EN	EN	—
D300...D420	50/60 Hz	—	EY	EP	ED	EG	EA	EN	EN	EN	—
D630...D860	50/60 Hz	—	—	EP	ED	EG	EA	EN	EB	EM	EC

⊗ Coil Voltage Codes for DC Control

Conventional Coil	[V]	24	48	110	125	220	250
D95...D180 ‡	DC	ZJ	ZY	ZD	ZS	ZA	ZT

Electronic Coil w/ EI Interface *	[V]	24	48-72	110-130	200-255
D95...D300	DC	EZJ	EZY	EZD	EZA
D420	DC	—	EZY	EZD	EZA
D630...D860	DC	—	—	ED	EA

Voltage codes in bold type: Preferred coil voltage codes

* Signal voltage of the cat. no. 100S-D... electronic interface: nominal U_e : 24V DC/ I_e : 15 mA

Pickup voltage: 13.0V DC...30.2V DC

Dropout Voltage: -3.0V DC...+5.0V DC.

* Not available with 100S-D300.

‡ For conventional DC coils, the pickup winding must be interconnected with the N.C. late-breaking auxiliary contact(s).

Auxiliary Contacts

	Description			For Use With	Cat. No.		PGC
		N.O.	N.C.				
	Auxiliary Contacts Side-mounted With IEC sequence terminal designations	1	1	100-D Left or Right Inside Mounting	100-DS1-11		W9W1
		1	1	100-D Left or Right Outside Mounting	100-DS2-11		W9W1
		1	1L	100-D Left or Right Inside Mounting	100-DS1-L11		W9W1
		2	0	100-D Left or Right Inside Mounting	100-DS1-20		W9W1
		2	0	100-D Left or Right Outside Mounting	100-DS2-20		W9W1
	Auxiliary Contacts Electronically compatible auxiliary contacts Ideal for use when switching low-power control circuits Contact ratings: AC-12, 250V, 0.1 A AC-15, DC-13, 3...125V, 1...100 mA	1	1	100-D Left or Right Inside Mounting	100-DS1-B11		W9W1



Marking Systems, see page 39

Discount Group PRO

Suppressor Modules

	Description	Suppressor Rating	For Use With	Cat. No.		PGC
	Suppressor Module for 100-D Contactors - For limiting surge voltage when coil circuits are interrupted - Can be plugged into all 100-D contactors - Supplied as standard on all conventional DC coil contactors and all electronic coil contactors (as part of the supply module or delivered with separate suppressor module)	RC Module (AC control) for contactors with conventional coil 21...48V, 50 Hz/24...55V, 60 Hz	100-D95...100-D180	100-DFSC48		W9W1
		95...110V, 50 Hz/110...127V, 60 Hz		100-DFSC110		W9W1
		180...277V, 50 Hz/208...277V, 60 Hz		100-DFSC240		W9W1
		380...550V, 50 Hz/440...600V, 60 Hz		100-DFSC550		W9W1
		Varistor Module for contactors with conventional coil 55V AC	100-D95...100-D180	100-DFSV55		W9W1
		56...136V AC		100-DFSV136		W9W1
		137...277V AC		100-DFSV277		W9W1
		278...600V AC		100-DFSV575		W9W1
		208...277V AC *	100-D95...100-D180	100-DFSV550		W9W1

* For overvoltage category IV (IEC 947 for 100-D...-EI) e.g., lightning protection requirements.

Discount Group PRO

Connecting Components

	Description	Output Connection	For Use With			Cat. No.	PGC
			100-D 95...180	100-D 210...420	100-D 630...860		
	Reversing: Input Connection Wye-Delta: Main-Delta connection	50 mm ²	X			100-D180-VL	W9W1
		120 mm ²		X		100-D420-VL	W9W1
		350 mm ²			X	100-D860-VL	W9W1
	Reversing: Output Connection Wye-Delta: Delta-Wye connection	50 mm ²	X			100-D180-VLTB	W9W1
		120 mm ²		X		100-D420-VLTB	W9W1
	Reversing: Output Connection Wye-Delta: Delta-Wye connection	50 mm ²	X			100-D180-VT	W9W1
		120 mm ²		X		100-D420-VT	W9W1
		350 mm ²			X	100-D860-VT	W9W1
	Reversing: Output Connection Wye-Delta: Delta-Wye connection	50 mm ²	X			100-D180-VTTB	W9W1
		120 mm ²		X		100-D420-VTTB	W9W1
	Delta-Wye connection if 100-D95...180 is used as a Wye contactor	80 mm ²	—	X		100-D420-VYTB	W9W1
	Wye-Delta: Neutral bridge	—	X			100-D180-VYU	W9W1
		—		X		100-D420-VYU	W9W1
		—			X	100-D860-VYU	W9W1
	Power Wiring Kits (for contactors using 100-DL lug kits)	For 100-D95...100-D180 Reversing				100-DPW180	W9W1
			Two-speed, or changeover			100-D180-VL	W9W1
			Wye-Delta/Star-Delta			100-DPY180	W9W1
		For 100-D210...100-D420 Reversing				100-DPW420	W9W1
			Two-speed, or changeover			100-D420-VL	W9W1
			Wye-Delta/Star-Delta			100-DPY420	W9W1
	Terminal Shields Set of 2 Protection class IP10 per IEC 60529 and DIN 40 050 For direct-on-line, reversing, two-speed, and wye-delta/star-delta assemblies	For 100-D95...100-D180 Reversing				100-DPW860	W9W1
			Two-speed, or changeover			100-D860-VL	W9W1
		100-D95, 100-D110				100-DTS110	W9W1
	Terminal Covers Protection class IP20 per IEC 60529 and DIN 40 050 For direct-on-line, reversing, two-speed, and wye-delta/star-delta assemblies	100-D140, 100-D180, 100-D95-E...100-D180-E				100-DTS180	W9W1
		100-D210...100-D420				100-DTS420	W9W1
		100-D95...100-D180, 193-EC_F, 193-EE_F				100-DTC180	W9W1
	Terminal Covers Protection class IP20 per IEC 60529 and DIN 40 050 For direct-on-line, reversing, two-speed, and wye-delta/star-delta assemblies	100-D210...100-D420, 193-EC_G, 193-EE_G				100-DTC420	W9W1
		100-D630...100-D860, 193-EC_H, 193-EE_H				100-DTC860	W9W1

Discount Group PRO

Bulletin 100-D
Contactors
Accessories

Connecting Components, Continued

	Description	For Use With	Cat. No.		PGC
	Terminal Blocks Set of 2 Protection class IP2X per IEC 60529 and DIN 40 050	100-D95, 100-D110	100-DTB110		W9W1
		100-D140, 100-D180, 100-D95E...D180E, 193-EC_F, 193-EE_F	100-DTB180		W9W1
		100-D210...100-D420, 193-EC_G, 193-EF2C, 193-EE_G	100-DTB420		W9W1
	Mounting Plate Galvanized steel plate for starter combinations For direct-on-line, reversing, two-speed, wye-delta/star-delta, and Dahlander assemblies	100-D95...100-D180	100-DMS180		W9W1
			100-DMU180		W9W1
			100-DMY180		W9W1
		100-D210...100-D420	100-DMS420		W9W1
			100-DMU420		W9W1
		100-DMY420		W9W1	
	Control Circuit Terminal 2 x 2.5 mm²	Connects to 100-D95...D180	100-DAT1		E1A
		Connects to 100-D210...D420	100-DAT2		E1A
	Phase Barriers Set of 4	100-D630...D860, 193-EC_H, 193-EE_H	100-DPB860		W9W1

Discount Group PRO

Interlocks

	Description	For Use With	Cat. No.		PGC
	Interlock — Mechanical only No additional space required	100-D95...100-D420	100-DMA00		W9W1
	Interlock — Dual Electrical/Mechanical No additional space required 2 N.C. Auxiliary Contacts	100-D95...100-D860	100-DMD02		W9W1
	Interlock — Mechanical only No additional space required	100-D95...100-D860	100-DMD00		W9W1
	Interlock — Mechanical only Provides interlocking between 100-C and 100-D contactors	100-C60...100-C85 between 100-D95...100-D180	100-DMC00		W9W1
	Interlock — Dual Electrical/Mechanical Provides interlocking between 100-C and 100-D contactors 2 N.C. Auxiliary contacts	100-C60...100-C85 between 100-D95...100-D180	100-DMC02		W9W1

Discount Group PRO

Contactors 100-G

- 315...710 kW, 400V
- 350...900 Hp, 460/575V
- 3-Pole Contactors
- 4th Add-On Neutral Switching Pole
- AC and DC Control
- Horizontal and Vertical Interlocking
- Mechanical Latching
- Meets IEC, CE, UL, and cUL Standards and Approvals



100-G550

Contactors with 3 Main Contacts

AC-1	3-Phase AC-2, AC-3 kW Rating (50 Hz), 400V	Auxiliary Contacts		Cat. No.	AC Coil	PGC	DC Coil	PGC
I_e (A)	kW (50 Hz)							
40 °C	400V	N.O.	N.C.					
760	315	2	2	100-G550 ⊗22		W9A5		W9A5
1000	400	2	2	100-G700 ⊗22		W9A5		W9A5
1100	500	2	2	100-G860 ⊗22		W9A5		W9A5
1200	560	2*	2	⊗ 100-G1000 ⊗12		W9A5		W9A5
1350	710	2*	2	100-G1200 ⊗12		W9A5		W9A5

* 1 N.O. contact used in control circuit

⊗ No UL/cUL

Discount Group PRO

⊗ Coil Voltage Codes

		100- 110	110- 120	200- 220	220- 240	345- 380	380- 415	400- 440	440- 480
100-G550...100-G860	50/60 Hz	—	KD	—	KF	—	KN	—	KB
	DC	KD	—	KF	—	KN	—	KB	—

		110- 115	110	220- 230	220	240	380- 400	440	480
100-G1000...100-G1200	50/60 Hz	KD	—	KF	—	KA	KN	KB	KU
	DC	—	ZD	—	ZA	—	—	—	—

Control Modules

	Description	For Use With	Cat. No.		PGC
 4-Pole	Auxiliary Contact Block For mounting between T1 & T2 or between T2 & T3 Adjustable; provides normal, delayed, or overlapping contacts Max. 2 blocks/contactor Alternate terminal marking tags included 2 N.O. and 2 N.C. contacts	100-G550...100-G860	100-EF22		W9S1
 2-Pole	Auxiliary Contact Block For side mounting on either side of the contactor Max. 4 blocks/contactor Alternate terminal marking tags included 1 N.O. and 1 N.C. contact	100-G1000...100-G1200	100-EB11		W9S1
	1 N.C. and 1 N.O. late break		100-EB11DC		W9S1
	Fourth Add-On Neutral Switching Pole Left- or right-side mountable Note: no UL/cUL	100-G550	100-NP500-5		W9S1
		100-G700, 100-G860	100-NP500-6		W9S1
		100-G700, 100-G860	100-NP1000-6		W9S1
		100-G1000, 100-G1200	100-NP1000-7		W9S1
	Mechanical Latch Mechanical life: 0.5 million operations Direct and Impulse Control	100-G550	100-FLAM5⊗		W9S1
		100-G700, 100-G860	100-FLAM6⊗		W9S1
	Mechanical Interlock — Horizontal	100-G550 to 100-G550	100-MC00-5H		W9S1
		100-G550 to 100-G700 or 100-G860	100-MC00-56H		W9S1
		100-G700 or 100-G860 to 100-G700 or 100-G860	100-MC00-6H		W9S1
		100-G700 or 100-G860 to 100-G1000 or 100-G1200	100-MC00-67H		W9S1
		100-G1000 or 100-G1200 to 100-G1000 or 100-G1200	100-MC00-7H		W9S1
	Mechanical Interlock — Vertical	100-G550 to 100-G550	100-MC00-5V		W9S1
		100-G550 to 100-G700 or 100-G860	100-MC00-56V		W9S1
		100-G700 or 100-G860 to 100-G700 or 100-G860	100-MC00-6V		W9S1
		100-G700 or 100-G860 to 100-G1000 or 100-G1200	100-MC00-67V		W9S1
		100-G1000 or 100-G1200 to 100-G1000 or 100-G1200	100-MC00-7V		W9S1

Discount Group PRO

⊗ Coil Voltage Codes *

	[V]	110-120	220-240	380-415	440-480
100-G550... 100-G860	50-60Hz	KD	KF	KN	KB

* For other voltages, please consult your local sales office.

Motor Protection

Overload Relays

Product Line Overview

Overload Relays

					
Bulletin	193-M	193-CT	193-T	193-ED	193-EE
Type	Bimetallic Overload Relay			E1 Plus Electronic Overload Relay	
Rated Current (Range)	0.1...12.5 A	0.1...17.5 A	0.1...90 A	0.1...27 A	0.1... 800 A
Operating Voltage, Nominal	600V	600V	690V	690V	690V AC (IEC)/ 600V AC (CSA/UL) * 1000V AC (IEC)/ 600V AC (CSA/UL) *
Overload Type	Bimetallic	Bimetallic	Bimetallic	Solid State	Solid State
Trip Class (Fixed)	10	10	10	10	—
Trip Class (Adjustable)	—	—	—	—	10, 15, 20 or 30
Ambient Compensated	✓	✓	✓	✓	✓
Reset Type	Manual	Manual	Automatic and Manual	Manual	Manual / Auto-Manual
Adjustment Range	1.5:1	1.5:1	1.5:1	5:1	5:1
Phase Loss	Normal Sensing	Normal Sensing	Normal Sensing w/differential mechanism	✓	✓
N.C. Trip Contact	✓	✓	✓	✓	✓
N.O. Alarm Contact	✓(Optional)	✓(Optional)	✓	✓	✓
Mounts to Contactor	100-M	100-C	100-C	100-C	100-C
Product Selection	Page 52	Page 52	Page 54	Page 56	Page 56

* 193-*B, 193-*D, 193-*E

* 193-*F, 193-*G, 193-*H

Motor Protection
Product Line Overview

Overload Relays

		
Bulletin	193-EC1/EC2	825-P
Type	Relay E3 and E3 Plus Electronic Overload Relay	Modular Protection System
Rated Current (Range)	0.4...5000 A	0.5...5000 A
Operating Voltage, Nominal	690V	690V/1000V
Overload Type	Microprocessor Based	Microprocessor Based
Trip Class (Adjustable)	5...30	1...600
Ambient Compensated	✓	✓
Reset Type	Automatic, Manual and Remote	Automatic, Manual and Remote
Adjustment Range	5:1	4:1
Phase Loss	Imbalance Sensing	Imbalance Sensing
Phase Reversal	—	✓
Ground (Earth) Fault	E3 Plus: Sensitive	Residual or Sensitive
Overcurrent (Jam) Detection	✓	✓
Stall Detection	✓	✓
Starts/Hour Monitoring	—	✓
Underload Detection	✓	✓
Current Imbalance	✓	✓
Short Circuit Protection	—	✓
PTC Thermistor Monitoring	✓ (E3 Plus)	✓
RTD Monitoring	—	12-Channel Optional Scanner
Warning Settings	✓	✓
N.C. Trip Contact	✓	✓
Alarm Contact	✓	✓
Number of Outputs	E3: 1/E3 Plus: 2	3 (Basic)/7 (with I/O Expansion)
Number of Inputs	E3: 2/E3 Plus: 4	2 (Basic)/5 (with I/O Expansion)
Number of Analog Outputs	—	1 (with I/O Expansion)
ODVA (DeviceNet) Conformance	✓	✓
Atex Certification	In Preparation	—
Variable Frequency (VFD) Compatible	✓	—
Mounts to Contactor	100-C, 100-D	100-D (825-MCM)
Product Selection	Page 58	Page 61

Motor Protection

Product Line Overview

Dedicated Function Motor Protection Relays

								
Bulletin	809S			813S	817		819	
Type	E1	E2	E3	E2	E1	E2	E1	E2
	Current Monitors			Phase Monitors	Thermistor Monitors		Motor Rotation Monitors	
Under- and overcurrent protection	✓	✓	—	—	—	—	—	—
Under- and overvoltage protection	✓	—	—	✓	—	—	—	—
Phase imbalance and phase loss protection	—	—	Current based	Voltage based	—	—	—	—
Overtemperature protection	—	—	—	—	✓	✓	—	—
Speed detection via frequency input	—	—	—	—	—	—	✓	—
Speed detection evaluation of motor feedback voltage	—	—	—	—	—	—	✓	✓
Case size: H: (mm) W: (mm) D: (mm)	110 22.5 75	109.5 45 75	109.5 45 75	109.5 45 75	89 22.5 98.8	89 22.5 98.8	110 22.5 75	109.5 45 75
LCD / Keypad	✓	✓	✓	✓	—	—	✓	✓
LED Status Indicator	—	—	—	—	✓	✓	—	—
Automatic reset	✓	✓	✓	✓	✓	✓	✓	✓
Manual reset	—	—	—	—	—	✓	—	—
Remote reset	—	—	—	—	—	✓	—	—
Changeover contacts (SPDT)	1	1	1	1	—	—	—	1
N.O. contacts	—	1	1	1	2	2 (independent)	2 (independent)	1
Programmable trip level, reset level and time delay settings	✓	✓	✓	✓	—	—	✓	✓
Trip cause identification	—	—	—	✓	✓	✓	—	—
Measuring Circuit Monitoring (open, short)	—	—	—	—	✓	✓	✓	✓
Product Selection	Page 63			Page 63	Page 63		Page 63	

Bimetallic Overload Relays 193-M, 193-CT

- Bimetallic overload relay
- Directly mounts to 100-C contactors (193-CT) or 100-M (193-M)
- Phase loss sensitivity (trips at maximum 125% of current setting)
- Trip class 10
- Optional normally open auxiliary contact
- Manual reset only
- Trip indication



193-M

For Use With	Setting Range	Cat. No.		PGC
	[A]			
100-M05...M12	0.10...0.15	193-M-A15		W9K4
	0.15...0.23	193-M-A23		W9K4
	0.23...0.35	193-M-A35		W9K4
	0.35...0.55	193-M-A55		W9K4
	0.55...0.8	193-M-A80		W9K4
	0.8...1.2	193-M-B12		W9K4
	1.2...1.8	193-M-B18		W9K4
	1.8...2.7	193-M-B27		W9K4
	2.7...4	193-M-B40		W9K4
	4...6	193-M-B60		W9K4
100-M09...M12	6...7.7	193-M-B77		W9K4
	7.5...9	193-M-B90		W9K4
100-M12	8.8...10.5	193-M-C10		W9K4
	10.4...12.5	193-M-C12		W9K4
100-C09...C23	0.10...0.15	193-CT-A15		W9K4
	0.15...0.23	193-CT-A23		W9K4
	0.23...0.35	193-CT-A35		W9K4
	0.35...0.55	193-CT-A55		W9K4
	0.55...0.8	193-CT-A80		W9K4
	0.8...1.2	193-CT-B12		W9K4
	1.2...1.8	193-CT-B18		W9K4
	1.8...2.7	193-CT-B27		W9K4
	2.7...4	193-CT-B40		W9K4
	4...6	193-CT-B60		W9K4
	6...9	193-CT-B90		W9K4
100-C12...C23	9...12.5	193-CT-C12		W9K4
100-C16...C23	12.5...17.5	193-CT-C17		W9K4

Discount Group PRO

Accessories

Description	For Use With	Cat. No.		PGC
Auxiliary Contact Optional 1 N.O.	193-M, 193-CT	193-M-F10		W9K4
DIN Rail/Panel Adapter For separate mounting – can be mounted to top-hat rail EN 50 02-35.	193-CT	193-CTAPM		W9K4

Discount Group PRO

Labeling Materials

Uniform labeling materials for contactors, motor starting equipment, timing relays and circuit breakers.

	Description	PQ	Cat. No.		PGC
	Label Sheet 10 sheets with 105 self-adhesive paper labels each, 6 x 17 mm	10	100-FMS		W9W1
	Marking Tag Sheet 10 sheets with 160 perforated paper labels each, 6 x 17 mm To be used with a transparent cover	10	100-FMP		W9W1
	Transparent Cover 100 each To be used with marking tag sheets	100	100-FMC		W9W1
	Marking Tag Adapters 100 each To be used with marking tag:	100	100-FMA2		W9W1

PQ = Package Quantity

Discount Group PRO

Bulletin 193-T

Motor Protection

Product Selection

Bimetallic Overload Relays 193-T

- Phase Failure Sensitivity
- Temperature Compensation
- Auxiliary Switch (1 N.O. and 1 N.C. Contact)
- Test/Stop Button
- Manual/Auto Reset Button
- Individual Mounting



193-T

For Use With*	Setting Range [A]‡	Cat. No.		PGC
100-C09...100-C37	0.1...0.16	193-TAA16		W9K4
	0.16...0.24	193-TAA24		W9K4
	0.24...0.4	193-TAA40		W9K4
	0.4...0.6	193-TAA60		W9K4
	0.6...1.0	193-TAB10		W9K4
	1.0...1.6	193-TAB16		W9K4
	1.6...2.4	193-TAB24		W9K4
	2.4...4	193-TAB40		W9K4
	4...6	193-TAB60		W9K4
	6...10	193-TAC10		W9K4
100-C12...100-C37	10...16	193-TAC16		W9K4
100-C23...100-C37	16...24	193-TAC24		W9K4
100-C30...100-C43	18...30	193-TBC30		W9K4
100-C37...100-C43	30...45	193-TBC45		W9K4
100-C60...100-C85	18...30	193-TCC30		W9K5
	30...45	193-TCC45		W9K5
	45...60	193-TCC60		W9K5
100-C72...100-C85	60...75	193-TCC75		W9K5
Separate Mounting Required	70...90	193-TDC90		W9K5

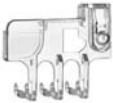
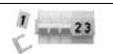
* Bulletin 193-T overload relays should not be used with DC contactors.

‡ To select the setting range for use in Y-Δ Starters, multiply the rated operating current of the motor by a factor of 0.58.

‡ For motors with service factor of 1.15 or greater, use motor nameplate full load current. For motors with service factor of 1.0, use 90% of the motor nameplate full load current.

Discount Group PRO

Add-On Modules

	Description	For Use With	PQ	Cat. No.		PGC
	DIN Rail/Panel Mounting Adapter For separate mounting of overload relays Snaps on to DIN Rail EN 50 022-35	193-TA...	5	193-TAPM		W9K4
		193-TC...	2	193-TCPM		W9K5
	Anti-tamper Shield Protects against unauthorized or unintentional modification of reset mode and full-load current settings	193-T all	1	193-BC1		W9S1
	Current Adjustment Shield Protects against unauthorized or unintentional adjustment of the full-load current setting	193-T all	1	193-BC3		W9S1
	Remote Reset Solenoid for remote reset of electronic overload	193-T all, 150-C, 150-D	1	193-ER1⊗		W9M1
	External Reset Button For enclosed, through-the-door reset applications. Metal construction IP66, non-illuminated with rod (length: 142 mm, adjustable range 141...159 mm). Refer to the 800F catalog pages for additional types.	193-T (all)	1	800FP-R611		A3T
			1	800F-ATR08		A3T
	Marking Systems, see page 53					

PQ = Package Quantity

Discount Group PRO, Discount Group PBN (800FP, 800F)

⊗ AC/DC Coil Voltage Code for Remote Reset Solenoid

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: **Cat. No. 193-ER1⊗** becomes **Cat. No. 193-ER1D** for 120V, 60 Hz.

[V]	24	48	110	115	120	220	240
50 Hz	J	—	D	—	—	A	—
60 Hz	J	—	—	—	D	—	A
DC	Z24	Z48	—	Z01	—	—	—

Motor Protection

Product Selection

Electronic Overload Relays E1 Plus - 193-ED, 193-EE

- Self-Powered
- Fast Phase Loss Protection
- Wide Adjustment Range (5:1)
- Insert-Molded Power Connections
- 1 N.O. and 1 N.C. Isolated Auxiliary Contacts (B600, AC-15 Rated)
- Low Energy Consumption (150 mW)
- Ambient Temperature Compensation
- Visible Trip Indication
- Jam/Remote Reset optional accessories



193-ED1



193-EE

Description	Mounts to Contactor	Adjustment Range [A]	Cat. No.		PGC
Three-Phase Devices 193-ED					
• 0.1...27 A Current Range • Fixed Trip Class 10 • Manual Reset	100-C09...100-C23	0.1...0.5	193-ED1AB		W9M6
		0.2...1.0	193-ED1BB		W9M6
		1.0...5.0	193-ED1CB		W9M6
		3.2...16	193-ED1DB		W9M6
		5.4...27	193-ED1EB		W9M6
Three-Phase Devices 193-EE					
• 0.1...800 A Current Range • Selectable Trip Class (10, 15, 20 or 30) • Selectable Manual/Auto-Manual Reset • Single-Phase and Devices with Cage Clamp Control Terminals are also available, see publication 193-SG009_-EN-P.	100-C09...100-C23	0.1...0.5	193-EEAB		W9M6
	100-C09...100-C23	0.2...1.0	193-EEBB		W9M6
	100-C09...100-C23	1.0...5.0	193-EECB		W9M6
	100-C09...100-C23	3.2...16	193-EEDB		W9M6
	100-C09...100-C23	5.4...27	193-EEEB		W9M6
	100-C30...100-C43	5.4...27	193-EEED		W9M6
	100-C30...100-C43	9...45	193-EEFD		W9M6
	100-C60...100-C85	18...90	193-EEGE		W9M6
	100-D95...100-D180	30...150	193-EEHF		W9M7
	100-D95...100-D180	40...200	193-EEJF		W9M7
	100-D210...100-D420	40...200	193-EEJG		W9M7
	100-D210...100-D420	60...300	193-EEKG		W9M7
	100-D210...100-D420	100...500	193-EELG		W9M7
	100-D630...100-D860	120...600	193-EEMH		W9M7
	100-D630...100-D860	160...800	193-EENH		W9M7

Discount Group PRO (< 90 A), Discount Group MPC (> 90 A)

Accessories for 193-ED, 193-EE

	Description	For Use With	PQ	Cat. No.		PGC
	DIN Rail/Panel Adapter For separate mounting – can be mounted to top-hat rail EN 50 022-35.	193-ED1_B, 193-EE_B	1	193-EPB		W9M6
		193-EE_D		193-EPD		W9M6
		193-EE_E		193-EPE		W9M6
	Current Adjustment Shield Prevents inadvertent adjustment of the current setting. Must be ordered in multiples of package quantities.	193-ED (all) 193-EE (all) 592-EE (all)	10	193-BC8		W9S1
	External Reset Adapter For enclosed, through-the-door reset applications. Use with External Reset Button.	193-ED (all) 193-EE_B, 193-EE_D, 193-EE_E	1	193-ERA		W9M1
	External Reset Button For enclosed, through-the-door reset applications. Metal construction IP66, non-illuminated with rod (length: 142 mm, adjustable range 141...159 mm). Refer to the 800F catalog pages for additional types.	193-ED (all) 193-EE (all)	1	800FP-R611		A3T
			1	800F-ATR08		A3T
	Marking Systems, see page 53					

PQ = Package Quantity

Discount Group PRO, Discount Group PBN (800FP, 800F)

Electronic Overload Relays E3 and E3 Plus 193-EC

- DeviceNet™ communication integrated
- LED indicators
- Test / Reset button
- Adjustable trip Class (5...30)
- Integrated I/O's E3: 2 inputs / 1 output
E3 Plus: 4 inputs / 2 outputs
- Low-level ground (earth) fault protection 193-EC2
Ground fault range 1...5 A
- PTC thermistor input 193-EC2
- Programmable trip and warning settings
- Diagnostic functions (History of last 5 trips)
- Diagnostic functions (History of last 5 trips)



Electronic Motor Protection Relays 193-EC1 – Direct Contactor Mount

- 2 inputs
- 1 output
- DeviceLogix (series B)

Mounts to Contactor	Adjustment Range [A]		Cat. No.	PGC
100-C09...100-C23	0.4...2.0		193-EC1PB	W9M5
	1...5		193-EC1AB	W9M5
	3...15		193-EC1BB	W9M5
	5...25		193-EC1CB	W9M5
100-C30...100-C43	1...5		193-EC1AD	W9M5
	3...15		193-EC1BD	W9M5
	5...25		193-EC1CD	W9M5
	9...45		193-EC1DD	W9M5
100-C60...100-C85	9...45		193-EC1DE	W9M5
	18...90		193-EC1EE	W9M5
100-D95...100-D180	28...140	*	193-EC1FF	W9M5
	42...210	*	193-EC1GF	W9M5
100-D210...100-D420	42...210	*	193-EC1GG	W9M5
	60...302	*	193-EC1HG	W9M5
	84...420	*	193-EC1JG	W9M5
100-D630...100-D860	125...630	*	193-EC1KH	W9M5
	172...860	*	193-EC1LH	W9M5

* Does not include terminal lugs.
Discount Group MPC

Electronic Motor Protection Relay 193-EC2 – Direct Contactor Mount

- 4 inputs
- 2 outputs
- Built-in ground fault sensor (through 90 A rating)
- PTC thermistor input
- DeviceLogix (series B)

Mounts to Contactor	Adjustment Range [A]		Cat. No.		PGC
100-C09...100-C23	0.4...2.0		193-EC2PB		W9M5
	1...5		193-EC2AB		W9M5
	3...15		193-EC2BB		W9M5
	5...25		193-EC2CB		W9M5
100-C30...100-C43	1...5		193-EC2AD		W9M5
	3...15		193-EC2BD		W9M5
	5...25		193-EC2CD		W9M5
	9...45		193-EC2DD		W9M5
100-C60...100-C85	9...45		193-EC2DE		W9M5
	18...90		193-EC2EE		W9M5
100-D95...100-D180	28...140	*	193-EC2FF		W9M5
	42...210	*	193-EC2GF		W9M5
100-D210...100-D420	42...210	*	193-EC2GG		W9M5
	60...302	*	193-EC2HG		W9M5
	84...420	*	193-EC2JG		W9M5
100-D630...100-D860	125...630	*	193-EC2KH		W9M5
	172...860	*	193-EC2LH		W9M5

* Does not include terminal lugs.

Discount Group MPC

Panel Mount Devices for use with External Current Transformers

Description	Adjustment Range [A] §	Cat. No.		PGC
• 2 Inputs • 1 Output • DeviceLogix (series B)	9...5000	193-EC1ZZ		W9M5
• 4 Inputs • 2 Outputs • Ground Fault Sensor Input • PTC Thermistor Input • DeviceLogix (series B)	9...5000	193-EC2ZZ		W9M5

Current transformers supplied by customer.

Order panel adapter 193-ECPM2 separately.

§ CT Ratio to FLA setting range correlation.

Discount Group MPC

CT Ratio	FLA Setting Range (A)	CT Ratio	FLA Setting Range (A)	CT Ratio	FLA Setting Range (A)
50:5	9...45	300:5	60...302	1200:5	240...1215
100:5	18...90	500:5	84...420	2500:5	450...2250
150:5	28...140	600:5	125...630	5000:5	1000...5000
200:5	42...210	800:5	172...860	—	—

Bulletin 193-EC

Motor Protection

Accessories

Add-on Accessories

	Description	For Use With	Cat. No.		PGC
	DIN Rail/Panel Adapter *	193-EC__B	193-ECPM1		W9M5
		193-EC__D, 193-EC__ZZ	193-ECPM2		W9M5
		193-EC__E	193-ECPM3		W9M5
	Programming and Control Terminal 1 m communication cable provided	193-EC — all 592-EC — all	193-PCT		W9M5
	3 m communication cable *	193-PCT	193-C30		W9M5
	10 m communication cable *		193-C100		W9L7
	Handheld Panel Mount Adapter/Door Mount Bezel Kit		2707-MVMNT		OI2
	AC Input Interface Module rated 110/120V AC, 50/60 Hz	193-EC — all 592-EC — all	193-EIMD		W9M5
	Core Balance Ground Fault Sensor	193-EC2__F, 193-EC2__G, 193-EC2__H, 193-EC2ZZ	825-CBCT		A1S1
	Terminal Blocks Set of 2 Protection class IP2X per IEC 60529 and DIN 40 050	100-D140, 100-D180, 100-D95E...D180E, 193-EC__F, 193-EE__F	100-DTB180		W9W1
		100-D210...100-D420, 193-EC__G, 193-EF2C, 193-EE__G	100-DTB420		W9W1
	Terminal Covers Protection class IP20 per IEC 60529 and DIN 40 050 For direct-on-line, reversing, two-speed, and wye-delta/star-delta assemblies	100-D95...100-D180, 193-EC__F, 193-EE__F	100-DTC180		W9W1
		100-D210...100-D420, 193-EC__G, 193-EE__G	100-DTC420		W9W1
		100-D630...100-D860, 193-EC__H, 193-EE__H	100-DTC860		W9W1
	Phase Barriers Set of 4	100-D630...D860, 193-EC__H, 193-EE__H	100-DPB860		W9W1
	Marking Systems, see page 53				

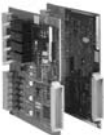
* The electronic motor protection relay can be mounted separately to top-hat rail EN 50 02-35.

* Intended only for point-to-point configurations.

Discount Group MPC, Discount Group PRO (100-DT..., 193-C100), Discount Group OI (2707-MVMNT)

Modular Protection System 825-P

- 0.5...5000 A current range
- Suitable for low- and medium-voltage applications
- Modular design with pluggable options
 - Voltage input card
 - Expansion I/O cards
 - Communications cards, including DeviceNet
 - RTD scanner module
- Comprehensive protection functions
- Built-in keypad and backlit 2-Line LCD
- Test / Reset button
- Status LEDs
- 3 output relays
- 2 configurable inputs

	Description		Cat. No.		PGC
	Basic Unit Note: The minimum requirements for a complete basic system are one Basic Unit and one Converter Module.	120...240V AC/DC	825-PD		A1S1
	User Manual Ships separate from Basic Unit. Please consult your local sales office.	825-UM004_-EN-P			
	Converter Module	0.5...2.5 A	825-MCM2		A1S1
		2.5...20 A	825-MCM20		A1S1
		20...180 A	825-MCM180		A1S1
		160...630 A	825-MCM630N		A1S1
	Core Balance Ground Fault Sensor	100:1	825-CBCT		A1S1
	RTD Scanner Module 12 RTD input channels with individual programming for 10 Ω copper, 100 Ω nickel, 120 Ω nickel, or 100 Ω platinum. Fiber optic connection to Basic Unit. Class I, Division 2, Group T48	120 / 240V AC	825-PR12D		A1S1
	Voltage Input Card Monitoring of V_A , V_B , V_C , and V_N	240V AC Max.	*	825-PVS	A1S1
	Expansion I/O Card (3) Inputs (4) Output Relays (1) 4...20 mA Analog Output	120V AC Rated Inputs		825-PIOD	A1S1
		24V DC Rated Inputs	*	825-PIOR	A1S1
	DeviceNet Communication Card DeviceLogix™ technology Node address selection switches ODVA conformance tested		*	825-PDN	A1S1
	DeviceNet User Manual Please consult your local sales office.	825-UM005_-EN-P			
	Modbus RTU Communication Card	—	*	825-PMB	A1S1

* Please consult your local sales office for factory configured devices with option cards.
Discount Group MPC

Accessories

	Description		Cat. No.		PGC
	M8 connections Set of 3 4 x 16 x 102 mm (1/8 x 5/8 x 4-1/64 in.) (125 A max.) Universally applicable Weight: 230 g		825-MVM		A1S1
	M8 connections Set of 3 4 x 20 x 117 mm (180 A max.) Universally applicable		825-MVM2		A1S1
	M6 lower connections Set of 3 For mounting on 100-D95 and 100-D110 contactors with conventional coil		825-MVS		A1S1
	M8 lower connections Set of 3 For mounting on 100-D140, 100-D180 conventional and 100-D95E...100-D180E contactors with electronic coil		825-MVS2		A1S1
	Terminal Shields Set of 2 Protection class IP10 per IEC 60529 and DIN 40 050 For direct-on-line, reversing, two-speed, and wye-delta/star-delta assemblies	100-D95, 100-D110	100-DTS110		W9W1
		100-D140, 100-D180, 100-D95-E...100-D180-E	100-DTS180		W9W1
		100-D210...100-D420	100-DTS420		W9W1
	Terminal Blocks Set of 2 Protection class IP2X per IEC 60529 and DIN 40 050	100-D95, 100-D110	100-DTB110		W9W1
		100-D140, 100-D180, 100-D95E...D180E, 193-EC_F, 193-EE_F	100-DTB180		W9W1
		100-D210...100-D420, 193-EC_G, 193-EF2C, 193-EE_G	100-DTB420		W9W1
	Thermal Utilization Meter		For display of percent thermal capacity utilized Requires the use of an Expansion I/O Card		A1S1
	Connection cable (replacement) 825-P to 825-MCM connection		825-MCA		A1S1

Discount Group MPC

MachineAlert Relays 809, 813, 817, 819

- Current Monitors
- Phase Monitors
- Thermistor Monitors
- Rotation Monitors



The MachineAlert Relays family of dedicated function electronic motor protection relays offers state-of-the-art supplementary protective functions that are easily added and applied to motor control circuits. MachineAlert Relays are an economical choice for protecting equipment investments and minimizing production downtime. To meet specific application requirements, a full range of products allows selective addition of protective enhancing functions for both motors and equipment.

Motor Protection Relay Type	Description	Cat. No.	PGC	PGC
			AC Supply Voltage	DC Supply Voltage
Bulletin 809S • under-, overcurrent, under-, overvoltage	0.5...5 A AC/DC (1-phase), 2.0...24.9V or 20...249V AC/DC 50/60 Hz	809S-E1 ⊗	A1Z1	A1Z1
• under-, overcurrent	2.0...15 A AC/DC (1-phase)	809S-E2 ⊗50	A1Z1	A1Z1
• phase loss, current imbalance, phase sequence	0.5...5 A AC (3-phase)	809S-E3 ⊗50	A1Z1	A1Z1
Bulletin 813S Phase Monitors • phase loss, under-, overvoltage, phase imbalance, phase sequence	Monitoring Range 150...500V AC	813S-E2B ⊗50	A1Z1	A1Z1
	Monitoring Range 250...690V AC	813S-E2C⊗50	A1Z1	A1Z1
Bulletin 817 Thermistor Monitors • overtemperature	Automatic Reset *	817-E1	A1Z1	A1Z1
	Automatic, manual or remote reset, status storage *	817-E2	A1Z1	A1Z1
Bulletin 819 Motor Rotation Monitors • zero speed detection	Max. Monitored Voltage 400V AC max. (IEC), 300V AC max. (CSA/UL), or Frequency Monitoring for signals of any curve form in the range 16...100Vpp.	819-E1⊗	A1Z1	A1Z1
	Max. Monitored Voltage 690V AC max. (IEC), 600V AC max. (CSA/UL)	819-E2⊗	A1Z1	A1Z1

Discount Group MPC

⊗ Supply Voltage Suffix Code

The Cat. No. as listed is incomplete. Select a Supply Voltage Suffix Code from the table below to complete the Cat. No. Example: **Cat. No. 809S-E1**⊗ becomes **809S-E1D**.

Voltage Rating	24V DC	115V AC	230V AC
	ZJ	D	A

* Rated supply voltage of 24...240 V AC/DC.

Motor Protection

Notes

Starter Selection

			
Bulletin	190E / 191E	190S / 191S	103T / 107T
Type	Eco Starters	Compact Starters	Starters
Current Range	0.1...25 A	0.1...45 A	0.1...100 A
Motor Range (Max. Kilowatt)	11 kW at 400V	22 kW at 400V	45 kW at 400V
Short Circuit Motor Protection	✓	✓	✓
Overload Protection: Trip Class	10	10, 15, 20, 30	10, 15, 20, 30
Mounting Options			
Standard Busbar Mount	✓	✓	✓
Iso Busbar Mount	✓	✓	✓
Panel Mount	✓	✓	✓
Standards Compliance			
UL 508 and CSA 22.2, No. 14, Self-Protected Combination Motor Controller	✓	✓	✓
IEC 60947-4, CE	✓	✓	✓
Major Components			
140M Motor Protection Circuit Breaker	✓	✓	✓
100C Contactors	✓	✓	✓
193-E Overload Relays	—	—	✓
Accessories			
Lockable Knobs	✓	✓	✓
Aux/Trip Contacts for Circuit Breaker	✓	✓	✓
Aux Contacts for Contactor	✓	✓	✓
UV/Shunt Trip for Circuit Breaker	✓	✓	✓
Product Selection	Page 66	Page 69	Pages 72, 75

Bulletin 280/281

ArmorStart™

Distributed Motor Controller



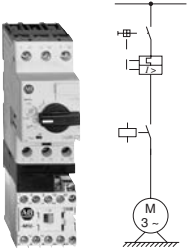
- On Machine Full-Voltage and Reversing Starting Solution
- Power Range 0.37...7.5 kW
- Robust IP67 enclosure rating
- Quick Disconnect connections for I/O, communications and motor
- 4 Inputs and 2 Outputs (Expandable with ArmorPoint™)
- LED Status Indication
- DeviceNet™ Communications
- DeviceLogix™ Component Technology
- ControlNet and EtherNet Communication via ArmorPoint™
- Factory Installed Options:
 - Hand/Off/Auto (HOA) Keypad Configuration
 - Safety Monitor

Product Selection

See publication 280-SG001_-EN-P

Direct On-Line Eco Starters Bulletin 190E

- 190E Eco Starters with Bulletin 140M Circuit Breakers and Bulletin 104-M Mini Reversing Contactors
- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Accessories: Bulletin 140M Circuit Breakers and 100-M Mini-Contactors
- IEC and UL/CSA compliant
- Mounting Options:
 Snap Fixing on (1) 35 mm DIN Rail



Note: Line voltage and short-circuit coordination see MCS Star.
Verify that the circuit breaker can be set to the rated motor current!

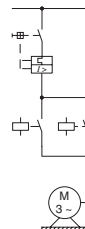
Standard Configurations for AC-Control

Standard Motors AC-3, 3-Phase	Max. Fault Current I_q 400/415V		Motor Current Setting Range	Magnetic Trip Current	Direct On-Line Eco Starters		PGC
	Type 1	Type 2					
[kW]	[kA]	[kA]	[A]	[A]	Cat. No.		
C-Frame							
0.02	65	65	0.10...0.16	2.1	190E-MN $\otimes$ 2-CA16B		W9J3
0.06	65	65	0.16...0.25	3.3	190E-MN $\otimes$ 2-CA25B		W9J3
0.09	65	65	0.25...0.40	5.2	190E-MN $\otimes$ 2-CA40B		W9J3
0.18	65	65	0.40...0.63	8.2	190E-MN $\otimes$ 2-CA63B		W9J3
0.25	65	65	0.63...1.0	13	190E-MN $\otimes$ 2-CB10B		W9J3
0.55	65	65	1.0...1.6	21	190E-MN $\otimes$ 2-CB16B		W9J3
0.75	65	50	1.6...2.5	33	190E-MN $\otimes$ 2-CB25B		W9J3
1.5	65	—	2.5...4.0	52	190E-MN $\otimes$ 2-CB40B		W9J3
2.2	65	—	4.0...6.3	82	190E-MN $\otimes$ 2-CB63B		W9J3
4.0	65	—	6.3...10	130	190E-MN $\otimes$ 2-CC10B		W9J3
5.5	50	50	10...12	208	190E-MN $\otimes$ 2-CC16B		W9J3

1 N.O. + 1 N.C. auxiliary contacts on 140M and 1 N.O. auxiliary contact on 100-M are standard.
List prices for DC-control voltages and optional configurations on request.
 $\otimes$ For coil voltage codes and optional configurations, see page 68.
Discount Group MAC

Eco Reversing Starters Bulletin 191E

- 191E Eco Starters with Bulletin 140M Circuit Breakers and Bulletin 104-M Mini Reversing Contactors
- Completely assembled with Main Current Connections
- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Accessories: Bulletin 140M Circuit Breakers and 100-M Mini-Contactors
- IEC and UL/CSA compliant
- Mounting Options:
Snap Fixing on (1) 35 mm DIN Rail



Note: Line voltage and short-circuit coordination see MCS Star.
Verify that the circuit breaker can be set to the rated motor current!

Standard Configurations for AC-Control

Standard Motors AC-3, 3-Phase	Max. Fault Current I_q 400/415V		Motor Current Setting Range	Magnetic Trip Current	Eco Reversing Starter		PGC
	Type 1	Type 2					
[kW]	[kA]	[kA]	[A]	[A]	Cat. No.		
C-Frame							
0.02	65	65	0.10...0.16	2.1	191E-MN⊗1-CA16B		W9J3
0.06	65	65	0.16...0.25	3.3	191E-MN⊗1-CA25B		W9J3
0.09	65	65	0.25...0.40	5.2	191E-MN⊗1-CA40B		W9J3
0.18	65	65	0.40...0.63	8.2	191E-MN⊗1-CA63B		W9J3
0.25	65	65	0.63...1.0	13	191E-MN⊗1-CB10B		W9J3
0.55	65	65	1.0...1.6	21	191E-MN⊗1-CB16B		W9J3
0.75	65	50	1.6...2.5	33	191E-MN⊗1-CB25B		W9J3
1.5	65	—	2.5...4.0	52	191E-MN⊗1-CB40B		W9J3
2.2	65	—	4.0...6.3	82	191E-MN⊗1-CB63B		W9J3
4.0	65	—	6.3...10	130	191E-MN⊗1-CC10B		W9J3
5.5	50	50	10...12	208	191E-PN⊗1-CC16B		W9J3

1 N.O. + 1 N.C. auxiliary contacts on 140M and 1 N.O. auxiliary contact on 100-M are standard.

List prices for DC-control voltages and optional configurations on request.

⊗ For coil voltage codes and optional configurations, see page 68.

Discount Group MAC

191E Reversing Starters:

Starters with AC-control are available **with** mechanical interlock.

Starters with DC-control are only available **without** mechanical interlock.

Optional Configurations for Bulletin 190E and 191E

190E-MN ⊗ 2 – CA16 B
a b

a

Auxiliary Contacts for Contactors		
Options	Type	Description
1	190E	1 N.C.
2		1 N.O.
1	191E *	1 N.C.
5		1 N.O. + 2 N.C.
6		2 N.O. + 1 N.C.

b

Auxiliary Contacts + Trip Contacts for Circuit Breaker (front mounting)	
Options	Description
A	1 N.C.
B	1 N.O.
C	1 N.O. + 1 N.C.
D	2 N.O.
S	1 N.O. + 1 N.O. trip contact

* 1 N.C. is used for electric interlock

⊗ Coil Voltage Codes for AC Control

The cat. no. as listed is incomplete. Select a Coil Voltage Code from the table below to complete the cat. no. Example: Cat. no. **190E-MN⊗2-CA16B** becomes **cat. no. 190E-MNKF2-CA16B**. For other voltages, please consult your local sales office.

[V]	24	48	110	110-120	220-230	230	230-240	240	380-400	400-415
50 Hz	—	—	D	—	A	—	—	—	KK	—
60 Hz	—	—	—	D	—	—	A	—	—	KK
50/60 Hz	KD	KH	—	—	—	KF	—	KT	—	—

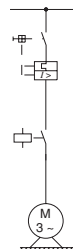
⊗ Coil Voltage Codes for DC Control

[V]	24	48	110	220
Standard	Z24	Z48	Z11	Z2
With diode protective circuit	ZD24	—	—	—

Voltage codes in bold type: Preferred coil voltage codes

Direct On-Line Starters Bulletin 190S

- 190S Compact Starters with Bulletin 140M Circuit Breakers and Bulletin 100-C Contactors
- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Complete unit, ready for connection with internal wiring
- Auxiliary Contacts Wired to Terminal Block at Bottom of Starter Assembly
- Accessories: Bulletin 140M Circuit Breakers and 100-C Contactors
- Removable cover
- IEC and UL/CSA compliant
- Mounting Versions:
 - Screw Fixing
 - Snap Fixing on (1) or (2) 35 mm DIN Rails
 - Snap Fixing on (1) 75 mm DIN Rail



Note: Line voltage and short-circuit coordination see MCS Star.

Verify that the circuit breaker can be set to the rated motor current!

Standard Configurations for AC-Control

Standard Motors AC-3, 3-Phase	Max. Fault Current I_q 400/415V	Motor Current Setting Range	Magnetic Trip Current	Direct On-Line Starters	PGC
	Type 2				
[kW]	[kA]	[A]	[A]	Cat. No.	
C-Frame					
0.02	65	0.10...0.16	2.1	190S-AN®2-CA16C	W9J4
0.06	65	0.16...0.25	3.3	190S-AN®2-CA25C	W9J4
0.09	65	0.25...0.40	5.2	190S-AN®2-CA40C	W9J4
0.18	65	0.40...0.63	8.2	190S-AN®2-CA63C	W9J4
0.25	65	0.63...1.0	13	190S-AN®2-CB10C	W9J4
0.55	65	1.0...1.6	21	190S-AN®2-CB16C	W9J4
0.75	65	1.6...2.5	33	190S-AN®2-CB25C	W9J4
1.5	50	2.5...4.0	52	190S-AN®2-CB40C	W9J4
2.2	50	4.0...6.3	82	190S-AN®2-CB63C	W9J4
4.0	50	6.3...10	130	190S-AN®2-CC10C	W9J4
5.5	50	10...16	208	190S-BN®2-CC16C	W9J4
7.5	50	10...16	208	190S-CN®2-CC16C	W9J4
D-Frame					
1.5	65	2.5...4.0	52	190S-AN®2-DB40C	W9J4
2.2	65	4.0...6.3	82	190S-AN®2-DB63C	W9J4
4.0	65	6.3...10	130	190S-AN®2-DC10C	W9J4
5.5	65	10...16	208	190S-BN®2-DC16C	W9J4
6.3	65	10...16	208	190S-CN®2-DC16C	W9J4
9.0	65	14.5...20	260	190S-DN®2-DC20C	W9J4
11	65	18...25	325	190S-DN®2-DC25C	W9J4
F-Frame					
15	65	25...32	416	190S-EN®3-FC32C	W9J4
18.5	65	32...45	585	190S-FN®3-FC45C	W9J4
22	65	32...45	585	190S-GN®3-FC45C	W9J4

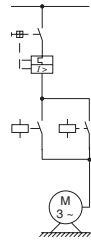
1 N.O. + 1 N.C. auxiliary contacts on 140M are standard. N.O. auxiliary contact on 100-C (1 N.O. + 1 N.C. for F-Frame types) are standard. List prices for DC-control voltages and optional configurations on request.

® For coil voltage codes and optional configurations, see page 71.

Discount Group MAC

Reversing Starters Bulletin 191S

- 191S Reversing Starters with Bulletin 140M Circuit Breakers and Bulletin 104-C Reversing Contactors
- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Complete unit, ready for connection with internal wiring
- Auxiliary Contacts Wired to Terminal Block at Bottom of Starter Assembly
- Accessories: Bulletin 140M Circuit Breakers and 100-C Contactors
- Removable cover
- IEC and UL/CSA compliant
- Mounting Versions:
 - Screw Fixing
 - Snap Fixing on (1) or (2) 35 mm DIN Rails
 - Snap Fixing on (1) 75 mm DIN Rail



Note: Line voltage and short-circuit coordination see MCS Star.
Verify that the circuit breaker can be set to the rated motor current!

Standard Configurations for AC-Control

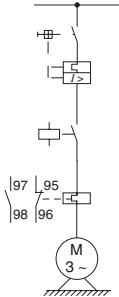
Standard Motors AC-3, 3-Phase	Max. Fault Current I_q 400/415V	Motor Current Setting Range	Magnetic Trip Current	Direct On-Line Starters		PGC
	Type 2					
[kW]	[kA]	[A]	[A]	Cat. No.		
C-Frame						
0.02	65	0.10...0.16	2.1	191S-AN®3-CA16C		W9J4
0.06	65	0.16...0.25	3.3	191S-AN®3-CA25C		W9J4
0.09	65	0.25...0.40	5.2	191S-AN®3-CA40C		W9J4
0.18	65	0.40...0.63	8.2	191S-AN®3-CA63C		W9J4
0.25	65	0.63...1.0	13	191S-AN®3-CB10C		W9J4
0.55	65	1.0...1.6	21	191S-AN®3-CB16C		W9J4
0.75	65	1.6...2.5	33	191S-AN®3-CB25C		W9J4
1.5	50	2.5...4.0	52	191S-AN®3-CB40C		W9J4
2.2	50	4.0...6.3	82	191S-AN®3-CB63C		W9J4
4.0	50	6.3...10	130	191S-AN®3-CC10C		W9J4
5.5	50	10...16	208	191S-BN®3-CC16C		W9J4
7.5	50	10...16	208	191S-CN®3-CC16C		W9J4
D-Frame						
1.5	65	2.5...4.0	52	191S-AN®3-DB40C		W9J4
2.2	65	4.0...6.3	82	191S-AN®3-DB63C		W9J4
4.0	65	6.3...10	130	191S-AN®3-DC10C		W9J4
5.5	65	10...16	208	191S-BN®3-DC16C		W9J4
6.3	65	10...16	208	191S-CN®3-DC16C		W9J4
9.0	65	14.5...20	260	191S-DN®3-DC20C		W9J4
11	65	18...25	325	191S-DN®3-DC25C		W9J4

1 N.O. + 1 N.C. auxiliary contacts on 140M and 1 N.O. + 1 N.C. auxiliary contacts on 100C are standard.
® For coil voltage codes and optional configurations, see page 71.
Discount Group MAC

191S Reversing Starters:
Mechanical interlock included. Reversing starters can only be delivered with AC-control.
(Electronic interfaces can be used alternatively)

Bulletin 103T with 140M and 193-EA Electronic Overload Relay
3-Component Direct On-Line Starters

- 103T Direct On-Line Starters with Bulletin 140M Circuit Breakers, Bulletin 100-C Contactors and Bulletin 193-EA Electronic Overload Relays
- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Completely assembled and wired on Bulletin 141A Mounting System
- IEC and UL/CSA compliant
- Mounting versions:
 - T - MCS Standard Busbar Module
Pluggable on busbar systems with 60 mm pole centre spacing
 - S - MCS Iso™ Busbar Module
Pluggable on busbar systems with 60 mm pole centre spacing
 - W - MCS Mounting Module
Snap on 2 top hat rails 35 mm / 1 top hat rail 75 mm or screw fixing



Note: Line voltage and short-circuit coordination see MCS Star.
Verify that the rated motor current is covered by the admissible setting range!

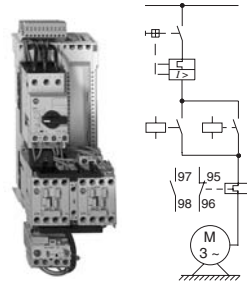
Standard Configurations for AC-Control

Standard Motors AC-3, 3-Phase	Max. Fault Current I_q 400/415V		Admissible Setting Range	Magnetic Trip Current	Bulletin 103T Direct On-Line Starters		PGC
	Type 1	Type 2					
[kW]	[kA]	[kA]	[A]	[A]	Cat. No.		
C Frame							
0.06	100	65	0.1...0.32	5.2	103T-AS®2-QA40C-A1A		W9E8
0.25	100	65	0.32...1.0	13	103T-AS®2-QB10C-A1C		W9E8
0.75	100	65	1.0...2.5	32	103T-AS®2-QB25C-A1D		W9E8
D Frame							
1.5	100	65	1.6...5.0	82	103T-AS®2-RB63C-A1E		W9E8
4	100	65	3.7...10	130	103T-AS®2-RC10C-A1F		W9E8
5.5	100	65	3.7...12	208	103T-BS®2-RC16C-A1F		W9E8
7.5	100	65	12...16	208	103T-CS®2-RC16C-A1G		W9E8
11	65	65	12...25	325	103T-DS®2-RC25C-A1G		W9E8
F Frame							
15	65	65	12...32	416	103T-ES®2-TC32C-A1H		W9E8
18.5	65	65	12...37	585	103T-FS®2-TC45C-A1H		W9E8

The final selection of the starter depends on the actual motor full load current and service factor.
List prices for DC-control voltages and optional configurations on request.
⊗ For coil voltage codes and optional configurations, see page 74.
Discount Group MAC

Bulletin 107T with 140M and 193-EA Electronic Overload Relay 3-Component Reversing Starters

- 107T Reversing Starters with Bulletin 140M Circuit Breakers, Bulletin 104-C Reversing Contactors and Bulletin 193-EA Electronic Overload Relays
- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Completely assembled and wired on Bulletin 141A Mounting System
- IEC and UL/CSA compliant
- Mounting versions:
 - T - MCS Standard Busbar Module
Pluggable on busbar systems with 60 mm pole centre spacing
 - S - MCS Iso™ Busbar Module
Pluggable on busbar systems with 60 mm pole centre spacing
 - W - MCS Mounting Module
Snap on 2 top hat rails 35 mm / 1 top hat rail 75 mm or screw fixin



Note: Line voltage and short-circuit coordination see MCS Star. Verify that the rated motor current is covered by the admissible setting range!

Standard Configurations for AC-Control

Standard Motors AC-3, 3-Phase	Max. Fault Current I_q 400/415V		Admissible Setting Range	Magnetic Trip Current	Bulletin 107T Reversing Starters		
	Type 1	Type 2					
[kW]	[kA]	[kA]	[A]	[A]	Cat. No.		PGC
C Frame							
0.06	100	65	0.1...0.32	5.2	107T-AS03-QA40C-A1A		W9E8
0.25	100	65	0.32...1.0	13	107T-AS03-QB10C-A1C		W9E8
0.75	100	65	1.0...2.5	32	107T-AS03-QB25C-A1D		W9E8
D Frame							
1.5	100	65	1.6...5.0	82	107T-AS03-RB63C-A1E		W9E8
4	100	65	3.7...10	130	107T-AS03-RC10C-A1F		W9E8
5.5	100	65	3.7...12	208	107T-BS03-RC16C-A1F		W9E8
7.5	100	65	12...16	208	107T-CS03-RC16C-A1G		W9E8
11	65	65	12...25	325	107T-DS03-RC25C-A1G		W9E8
F Frame							
15	65	65	12...32	416	107T-ES03-TC32C-A1H		W9E8
18.5	65	65	12...37	585	107T-FS03-TC45C-A1H		W9E8

The final selection of the starter depends on the actual motor full load current and service factor.
List prices for DC-control voltages and optional configurations on request.

⊗ For coil voltage codes and optional configurations, see page 74.

Discount Group MAC

Optional Configurations for Bulletin 103T and 107T (with 193-EA)

103T-A **S**  **2** – QA40 **C** **A1A** **_____**
a *b* *c* *d* *e*

a

Mounting Versions	
Options	Description
T	MCS Standard Busbar Module
S	MCS Iso™ Busbar Module (up to 22 kW only)
W	MCS Mounting Module (up to 22 kW only)

b

Auxiliary Contacts for Contactor		
Options	Type	Description
2	103T Direct On-Line Starters	1 N.O.
4		2 N.O.
3		1 N.O. + 1 N.C.
7	107T Reversing Starters	2 N.O. + 2 N.C. (with plug-in connector: 1 N.C. to wire directly)

c

Auxiliary Contacts for Circuit Breaker	
Options	Description
C	1 N.O. + 1 N.C.
D	2 N.O.

d

Electronic Overload Relay	
Options	Description
-A1...	Electronic overload relays: Manual reset
-A4...	Automatic / manual reset

e

Accessories for Contactor	
Options *	Description
-JE	Electronic interface (for coil voltages 110...240V AC, control voltages 18...30V DC)
-D	Surge suppressor diode: 12...250V DC
-R	Surge suppressor RC: 24...480V AC
-V	Surge suppressor varistor: 12...575V AC / 12...350V DC
Accessories for Mounting System	
-MS	Micro switch (with Iso™ Modules only)

* Select only one option per group. Multiple options separated by hyphens.

Coil Voltage Codes

⊗ Coil Voltage Codes for AC-Control

	[V]	12	24	32	36	42	48	100	100-110	110	120	127	200	200-220	200-230	208-240
50 Hz		R	K	V	W	X	Y	KP	—	D	P	S	KG	L	—	—
60 Hz		Q	J	—	V	—	X	—	KP	—	D	—	—	KG	H	L
50/60 Hz		—	KJ	—	—	—	KY	KP	—	KD	—	—	KG	—	KL	—

	[V]	220-230	230	230-240	240	277	347	380	380-400	400	400-415	440	480	500	550	600
50 Hz		F	—	VA	T	—	—	—	N	—	G	B	—	M	C	—
60 Hz		—	—	—	A	T	I	E	—	—	—	N	B	—	—	C
50/60 Hz		—	KF	—	KA	—	—	—	—	KN	—	KB	—	—	—	—

⊗ Coil Voltage Codes for DC-Control

	[V]	9 *	12	24 *	36	48	60	64	72	80	110	115	125	220	230	250
Standard		ZR	ZQ	ZJ	ZW	ZY	ZZ	ZB	ZG	ZE	ZD	ZP	ZS	ZA	ZF	ZT
With integrated diode ⊗		—	—	DJ	—	—	—	—	—	—	—	—	—	—	—	—

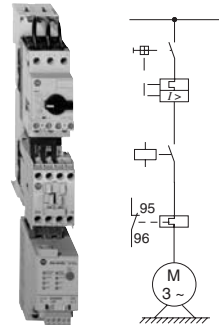
Voltage codes in bold type: Preferred coil voltage codes

* Extended operating limits 0.7...1.25 x U_s

⊗ Diode version with surcharge

Bulletin 103T with 140M and 193-EC Electronic Motor Protection Relay 3-Component Direct On-Line Starters

- 103T Direct On-Line Starters with Bulletin 140M Circuit Breakers, Bulletin 100-C Contactors and Bulletin 193-EC Electronic Motor Protection Relays
- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Integrated DeviceNet™ Interface
- Completely assembled and wired on Bulletin 141A Mounting System
- IEC and UL/CSA compliant
- Mounting versions:
 - T - MCS Standard Busbar Module
Pluggable on busbar systems with 60 mm pole centre spacing
 - S - MCS Iso™ Busbar Module
Pluggable on busbar systems with 60 mm pole centre spacing
 - W - Snap on 2 top hat rails 35 mm / 1 top hat rail 75 mm or screw fixing



Note: Line voltage and short-circuit coordination see MCS Star.
Verify that the rated motor current is covered by the admissible setting range!

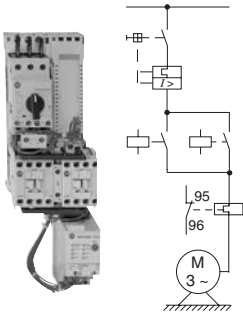
Standard Configurations for AC-Control

Standard Motors AC-3, 3-Phase List prices for DC-control voltages and optional configurations on request.	Max. Fault Current I_q 400/415V		Admissible Setting Range	Magnetic Trip Current	Bulletin 103T Direct On-Line Starters	PGC
	Type 1	Type 2				
[kW]	[kA]	[kA]	[A]	[A]	Cat. No.	
C Frame						
0.55	100	65	0.4...2.0	32	103T-AS®2-QB25C-C1P	W9E8
D Frame						
1.5	100	65	1.0...5.0	82	103T-AS®2-RB63C-C1A	W9E8
4	100	65	3.0...10	130	103T-AS®2-RC10C-C1B	W9E8
5.5	100	65	3.0...15	208	103T-BS®2-RC16C-C1B	W9E8
7.5	100	65	5.0...16	208	103T-CS®2-RC16C-C1C	W9E8
11	65	65	5.0...25	325	103T-DS®2-RC25C-C1C	W9E8
F Frame						
15	65	65	9.0...32	416	103T-ES®2-TC32C-C1D	W9E8
18.5	65	65	9.0...45	585	103T-FS®2-TC45C-C1D	W9E8

The final selection of the starter depends on the actual motor full load current and service factor.
 ® For coil voltage codes and optional configurations, see page 77.
 Discount Group MAC

Bulletin 107T with 140M and 193-EC Electronic Motor Protection Relay
3-Component Reversing Starters

- 107T Reversing Starters with Bulletin 140M Circuit Breakers, Bulletin 104-C Reversing Contactors and Bulletin 193-EC Electronic Motor Protection Relays
- Short-Circuit Coordination Type "1" and "2" according to IEC 60947-4-1
- Integrated DeviceNet™ Interface
- Completely assembled and wired on Bulletin 141A Mounting System
- IEC and UL/CSA compliant
- Mounting versions:
 - T - MCS Standard Busbar Module
 - Pluggable on busbar systems with 60 mm pole centre spacing
 - S - MCS Iso™ Busbar Module
 - Pluggable on busbar systems with 60 mm pole centre spacing
 - W - Snap on 2 top hat rails 35 mm / 1 top hat rail 75 mm or screw fixing



Note: Line voltage and short-circuit coordination see MCS Star. Verify that the rated motor current is covered by the admissible setting range!

Standard Configurations for AC-Control

Standard Motors AC-3, 3-Phase	Max. Fault Current I_q 400/415V		Admissible Setting Range	Magnetic Trip Current	Bulletin 103T Direct On-Line Starters		PGC
	Type 1	Type 2					
[kW]	[kA]	[kA]	[A]	[A]	Cat. No.		
C Frame							
0.55	100	65	0.4...2.0	32	107T-AS®3-QB25C-C2P		W9E8
D Frame							
1.5	100	65	1.0...5.0	82	107T-AS®3-RB63C-C2A		W9E8
4	100	65	3.0...10	130	107T-AS®3-RC10C-C2B		W9E8
5.5	100	65	3.0...15	208	107T-BS®3-RC16C-C2B		W9E8
7.5	100	65	5.0...16	208	107T-CS®3-RC16C-C2C		W9E8
11	65	65	5.0...25	325	107T-DS®3-RC25C-C2C		W9E8
F Frame							
15	65	65	9.0...32	416	107T-ES®3-TC32C-C2D		W9E8
18.5	65	65	9.0...45	585	107T-FS®3-TC45C-C2D		W9E8

The final selection of the starter depends on the actual motor full load current and service factor.
List prices for DC-control voltages and optional configurations on request.

© For coil voltage codes and optional configurations, see page 77.

Discount Group MAC

Optional Configurations for Bulletin 103T and 107T (with 193-EC)

103T-A **S** **⊗** **2** – QB25 **C** **C1P** **—**
a b c d e

a

Mounting Versions	
Options	Description
T	MCS Standard Busbar Module
S	MCS Iso™ Busbar Module (up to 22 kW only)
W	MCS Mounting Module (up to 22 kW only)

b

Auxiliary Contacts for Contactor		
Options	Type	Description
2	103T Direct On-Line Starters	1 N.O.
4		2 N.O.
3	107T Reversing Starters	1 N.O. + 1 N.C.
7		2 N.O. + 2 N.C. (with plug-in connector: 1 N.C. to wire directly)

c

Auxiliary Contacts for Circuit Breaker	
Options	Description
C	1 N.O. + 1 N.C.
D	2 N.O.

d

Electronic Overload Relay	
Options	Description
-C1...	Electronic motor protection relays: 2 inputs, 1 output (for direct on-line starters only)
-C2...	4 inputs, 2 outputs, built-in ground fault sensor, PTC thermistor input

e

Accessories for Contactor	
Options *	Description
-D	Surge suppressor diode: 12...250V DC
-R	Surge suppressor RC: 24...480V AC
-V	Surge suppressor varistor: 12...575V AC / 12...350V DC
Accessories for Mounting System	
-MS	Micro switch (with Iso™ Modules only)

* Select only one option per group. Multiple options separated by hyphens.

⊗ Coil Voltage Codes for AC-Control

[V]	12	24	32	36	42	48	100	100-110	110	120	127	200	200-220	200-230	208-240
50 Hz	R	K	V	W	X	Y	KP	—	D	P	S	KG	L	—	—
60 Hz	Q	J	—	V	—	X	—	KP	—	D	—	—	KG	H	L
50/60 Hz	—	KJ	—	—	—	KY	KP	—	KD	—	—	KG	—	KL	—

[V]	220-230	230	230-240	240	277	347	380	380-400	400	400-415	440	480	500	550	600
50 Hz	F	—	VA	T	—	—	—	N	—	G	B	—	M	C	—
60 Hz	—	—	—	A	T	I	E	—	—	—	N	B	—	—	C
50/60 Hz	—	KF	—	KA	—	—	—	—	KN	—	KB	—	—	—	—

⊗ Coil Voltage Codes for DC-Control

[V]	9 *	12	24 *	36	48	60	64	72	80	110	115	125	220	230	250
Standard	ZR	ZQ	ZJ	ZW	ZY	ZZ	ZB	ZG	ZE	ZD	ZP	ZS	ZA	ZF	ZT
With integrated diode *	—	—	DJ	—	—	—	—	—	—	—	—	—	—	—	—

Voltage codes in bold type: Preferred coil voltage codes

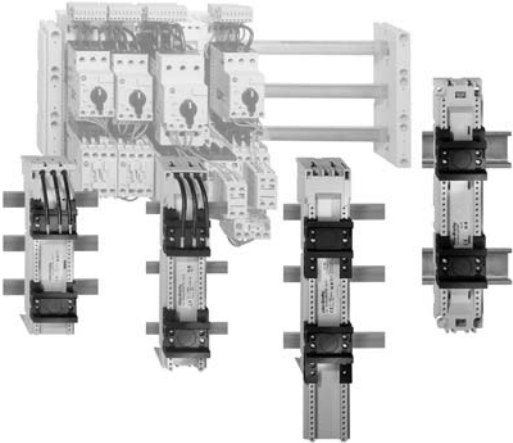
* Extended operating limits 0.7...1.25 x U_g

* Diode version with surcharge

Starters

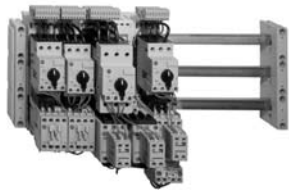
Notes

Mounting System

	
Bulletin	141A
Type	Mounting System
Features	• Standard Busbar Mounting • Iso™ Busbar Mounting – A Rockwell Exclusive feature • Panel Mounting – DIN rail or screw mounting • Supply Modules for easy 3 phase power connections • Circuit Breaker modules for mounting 140U breakers directly onto the busbars - For protecting the Busbar - For feeding other loads from the Busbar • MCS Star software for easy configuration/layout/design of Busbar Assemblies
Mounting Options:	
Standard Busbar Mount	✓
Iso Busbar Mount	✓
Panel Mount	✓
Product Selection	Page 80

MCS Iso™ Busbar Modules

- Consists of a device adapter plate carrying the load feeder components, which plugs onto a busbar module sitting on the busbars
- System finger proof with load feeders removed
- Test position with load circuit isolated
- Preferably for use with control plug (please order separately)
- Modules with current feed supply the load current by means of wire connections matched to MCS motor circuit breakers
- Modules can form bigger platforms using the connection clips
- For plugging on 12, 15, 20, 25, 30 mm x 5/10 mm thick busbars

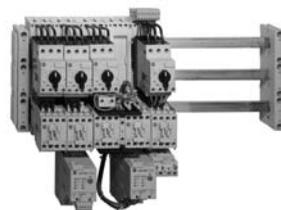


	Description	Rated Thermal Current I _{th} [A]	Width [mm]	Top Hat Rails	PQ	Cat. No.		PGC
	ISO Busbar Modules with Wires — Short Length Wires on DAP for electrical connection 200 mm high Top Hat Rails: R = MCS-Specific top hat rail	25	45	2R	*	141A-SS45RR25		W9T1
			54		*	141A-SS54RR25		W9T1
		45	54		*	141A-SS54RR45		W9T1
			63		1	141A-SS63RR45		W9T1
		Without Electrical Connections	45	1R	*	141A-SS45R		W9T1
			54		1	141A-SS54R		W9T1
	ISO Busbar Modules with Wires — Medium Length Wires on DAP for electrical connection 200 mm high Top Hat Rails: R = MCS-Specific top hat rail; S = Standard top hat rail	25	45	1R+1S	1	141A-SM45RS25		W9T1
			54			141A-SM54RS25		W9T1
		45	54			141A-SM54RS45		W9T1
			63			141A-SM63RS45		W9T1
		Without Electrical Connections	45	1S	1	141A-SM45S		W9T1
			54			141A-SM54S		W9T1
			63			141A-SM63S		W9T1
	Spacer Module (For covering the busbars when spacing load feeders) For spacing of load feeders by 9 mm e.g. for improved cooling. Including connection clips.				10	141A-AS9B		W9T1
	Spacer Modules (For covering the busbars when spacing load feeders and for spacing of device adapter plate) For spacing of load feeders by 9 mm e.g. for improved cooling. Including connection clips.				10	141A-AS9S		W9T1
	Micro Switch with wire connections NC Contact To wire in series with the contactor coils drops out when unplugging the device adapter plate.				10	141A-AS		W9T1

* May be ordered in package quantities of 10. Add letter **M** to the end of the cat. no. (Example: **141A-SS45RR25M**).
PQ = Package Quantity
Discount Group MAC

MCS Standard Busbar Modules

- Modules plug directly onto the busbar
- Suitable for use with control plug
- Modules with current ratings supply the load current by means of wire or terminal connections
- Modules can form bigger platforms using the connection clips (see accessories)
- For plugging on 12, 15, 20, 25, 30 mm x 5/10 mm thick busbars



	Description	Rated Thermal Current I_{th} [A]	Width [mm]	Rails	PQ	Cat. No.		PGC	
	Standard Busbar Modules with Wires — Short Length With wires for electrical connection 200 mm high Top Hat Rails: R = MCS-Specific top hat rail M = Metal top hat rail S = Standard top hat rail	25	45	2R	*	141A-GS45RR25		W9T1	
			54		*	141A-GS54RR25		W9T1	
		45	54		*	141A-GS54RR45		W9T1	
			63		1	141A-GS63RR45		W9T1	
		125 (For 140-CMN)	90	1M	1	141A-GS90M125		W9T1	
			180			141A-GS180M125		W9T1	
			270			141A-GS270M125		W9T1	
		125 (For 140M-H)	90	1M	1	141A-GS90M125H		W9T1	
			180		1	141A-GS180M125H		W9T1	
			270		1	141A-GS270M125H		W9T1	
		Without el. connections (i.e. for Rev. Starters)	45	1R	*	141A-GS45R		W9T1	
			54		1	141A-GS54R		W9T1	
72	1		141A-GS72S		W9T1				
81	1		141A-GS81S		W9T1				
	Standard Busbar Modules with Wires — Medium Length With wires for electrical connection 260 mm high Top Hat Rails: R = MCS-Specific top hat rail S = Standard top hat rail	25	45	1R+	1	141A-GM45RS25		W9T1	
			54			141A-GM54RS25		W9T1	
		45	54	141A-GM54RS45			W9T1		
			63	141A-GM63RS45			W9T1		
		Without el. connections (i.e. for Rev. Starters)	45	1S		141A-GM45S		W9T1	
			54			141A-GM54S		W9T1	
			63			141A-GM63S		W9T1	
	Standard Busbar Modules with Terminals — Short Length 200 mm high With terminals for electrical connection S = Standard top hat rail	25	45	1S	1	141A-FS45S25		W9T1	
			54			141A-FS54S63		W9T1	
			63			63	141A-FS63S63		W9T1
			72			141A-FS72S63		W9T1	
		81	141A-FS81S63				W9T1		
	Standard Busbar Modules with Terminals — Medium Length 260 mm high With terminals for electrical connection S = Standard top hat rail	63	25	2S		141A-FM45SS25		W9T1	
			54			141A-FM54SS63		W9T1	
			63			141A-FM63SS63		W9T1	
			72			141A-FM72SS63		W9T1	
			81			141A-FM81SS63		W9T1	
	Spacer Module (For covering the busbars when spacing load feeders) For spacing of load feeders by 9 mm e.g. for improved cooling. Including connection clips.				10	141A-AS9B		W9T1	

* May be ordered in package quantities of 10. Add letter **M** to the end of the cat. no. (Example: **141A-GS45RR25M**).
 Discount Group MAC

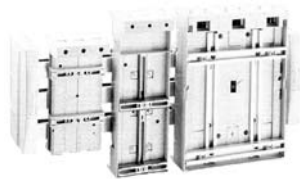
Bulletin 141A

Mounting System

Product Selection

MCS Standard Busbar Modules >100 A

- Busbar modules >100 A are screw mounted onto the busbars
- Sliding nuts for matching the fixing positions of components
- Terminal positions available on top or bottom
- For mounting components with current ratings 100 A (supply and load feeders)
- For plugging on 12, 15, 20, 25, 30 mm x 5/10 mm thick busbars



	Description	Rated Thermal Current I_{th} [A]	Width [mm]	Cat. No.		PGC
	Standard Busbar Module with Terminals on Top — Short Length 222 mm high With box terminals on top for electrical connection Wire size 70 mm ² (2/0 AWG) Universal mounting capability with sliding pocket nuts	200	108	141A-FS108V200T		W9T1
	Standard Busbar Module with Terminals on Top — Long Length 320 mm high With box terminals on top for electrical connection Wire size 120 mm ² (250 MCM) Universal mounting capability with sliding pocket nuts	250	110	141A-FL110V250T		W9T1
	Standard Busbar Module with Terminals on Bottom — Short Length 222 mm high With box terminals on bottom for electrical connection Wire size 70 mm ² (2/0 AWG) Universal mounting capability with sliding pocket nuts	200	108	141A-FS108V200B		W9T1
	Standard Busbar Module with Terminals on Bottom — Long Length 320 mm high With box terminals on bottom for electrical connection Wire size 120 mm ² (250 MCM) Universal mounting capability with sliding pocket nuts	250	110	141A-FL110V250B		W9T1
	MCS Standard Busbar Module With box terminals on top or bottom For plugging on 10 mm double-T busbars	630	250	141A-FL250V630U		W9T1

Discount Group MAC

MCS Standard Busbar Modules for Circuit Brakers

	Description	Rated Thermal Current I_{th} [A]	Width [mm]	Cat. No.		PGC
	Standard Busbar Module with Wires Wires for electrical connection For use with Bulletin 140U Circuit Breaker (H frame)	125	90	141A-CUH125T		W9T1
	For use with Bulletin 140M Circuit Breaker (H frame)	125	90	141A-CUH125B		W9T1
	Standard Busbar Module with Rear Connecting Studs Rear connecting studs for electrical connection For use with Bulletin 140U Circuit Breakers (J, K or L frames)	250	105	141A-CUJ250		W9T1
	For use with Bulletin 140M Circuit Breakers (J , K or L frames)	630	140	141A-CUL600		W9T1

Discount Group MAC

Bulletin 141A

Mounting System

Product Selection

Busbar Components

	Description				PQ	Cat. No.		PGC
	Busbar Fuse Switch 3-pole switch disconnecter with fuses	For fuse links D02, for D01 fuses use reducer	400V AC	63 A *	1	141A-NF0102		W9T1
		For 10 x 38 NFC cylindrical fuses	690V AC	32 A	1	141A-NF1038		W9T1
	Busbar Fuse Holder 3-pole fuse holder	For 10 x 38 NFC cylindrical fuses	690V AC	32 A	1	141A-NFH1038		W9T1
	Pilot Switch Pilot switch for signaling ON/OFF position of lid For 140-NF0102, 140-NF1038 and 140-NFH1038 250 V AC / 5 A; 30 V DC / 4 A				1	141A-NFASNF		W9T1
	Spacer Module Connectable on both sides 9 mm wide				5	141A-NFAD		W9T1
	Reducer D02 reducer for D01 fuses For 141A-NF0102				20	141A-NFAR		W9T1
	Class J Busbar Fuse Base Only for plugging on 10 mm and double-T busbars Connection bottom or top For fuses in compliance with UL 248-8			61...100 A	1	141A-NFJ100		W9T1
				101...200 A	1	141A-NFJ200		W9T1
				201...400 A	1	141A-NFJ400		W9T1
	NH Bus-Mounting Fuse Base Without NH Protection Covers Size 00 / 200 x 99 mm		Clamp terminals	160 A	4	141A-NFH2C		W9T1
			Screw terminals	160 A	4	141A-NFH2S		W9T1
	NH Protection Cover For NH bus mounting fuse base				30	141A-NFAC00B		W9T1

* The use of spacer module 141A-NFAD is recommended for a continuous load above 35 A.
PQ = Package Quantity
Discount Group MAC

Busbar Components, continued

	Description	PQ	Cat. No.	PGC
	NH Fuse Switch Disconnecter Connection bottom or top Size 00 for plugging on 5, 10 mm thick and double-T busbars. Sizes 1 and 2 conversion kit 141A-NFAFR5 is required for plugging on 5 mm thick busbars. Size 3 only for plugging on 10 mm and double-T busbars.	Size 00 / 200 x 106 mm M8 70 mm ² 160 A	1 141A-NFD160	W9T1
		Size 1 / 243 x 184 mm M10 120 mm ² 250 A	1 141A-NFD250	W9T1
		Size 2 / 288 x 210 mm M10 240 mm ² 400 A	1 141A-NFD400	W9T1
		Size 3 / 300 x 256 mm M12 240 mm ² 630 A	1 141A-NFD630	W9T1
	Pilot Switch For NH-fuse switch disconnectors Signaling ON/OFF position of lid 250V AC / 5 A; 30V DC / 4 A	Size 00 - 3	1 141A-NFASNFD	W9T1
	Wedge Clamp Terminal For NH-fuse switch disconnectors Connection accessories	Size 1 18 x 10 mm 70... 150 mm ²	1 141A-NFVF1150	W9T1
		Size 2 21 x 15 mm 120... 240 mm ²	1 141A-NFVF2240	W9T1
		Size 3 25 x 20 mm 150... 300 mm ²	1 141A-NFVF3300	W9T1
	Conversion Kit For NH-fuse switch disconnecter to reduce size 1 and 2 on to 5 mm busbars	Size 1 and 2	1 141A-NFAFR5	W9T1
	Cover for Cable Lugs For NH fuse switch disconnecter Can be clipped on bottom or top	Size 00	1 141A-NFAC00A	W9T1
		Size 1	2 141A-NFAC1A	W9T1
		Size 2	2 141A-NFAC2A	W9T1
		Size 3	2 141A-NFAC3A	W9T1
	Barrier for Handle For NH fuse switch disconnecter To close off handle area from rear	Size 1, 2 and 3	1 141A-NFAB	W9T1

PQ = Package Quantity
Discount Group MAC

Bulletin 141A

Mounting System

Product Selection

Busbar Components, continued

	Description	PQ	Cat. No.		PGC
	Busbar Support 60 mm pole center spacing The busbar support can easily be adjusted to the busbar size via the integral slide rail. 3-pole with inside mounting holes	10	141A-TR3		W9T1
	Busbar Support 60 mm pole center spacing The busbar support can easily be adjusted to the busbar size via the integral slide rail. 4-pole with inside mounting holes		141A-TR4		W9T1
	Busbar Support 60 mm pole center spacing The busbar support can easily be adjusted to the busbar size via the integral slide rail. 1-pole		141A-TR1		W9T1
	Busbar Support with terminals 60 mm pole center spacing Terminals for electrical connections 16 mm ² (#6 AWG) 3-pole	10	141A-TR3F16		W9T1
	Busbar End Cover Prevents contact with the busbar ends and prevents busbars from sliding. The end cover can easily be clipped on the busbar support.	3-pole	141A-TR3E		W9T1
		4-pole	141A-TR4E		W9T1
	Double-T Busbar Support For double-T busbars 60 mm spacing	3-pole	141A-T13		W9T1
		1-pole	141A-T11		W9T1
	End Cover Fits to 141A-T13	4	141A-T13E		W9T1
	Compartment Section Fits to 141A-T13	48 x 2400 mm	1	141A-BST48	W9T1
		76 x 2400 mm	1	141A-BST76	W9T1
	Busbar Cover For double-T busbars	5	141A-BCT1		W9T1
	Double-T Copper Busbar Tin-plated	Length: 2400 mm (1250 A)	1	141A-BT11NZ	W9T1
		Length: 2400 mm (1600 A)	1	141A-BT12NZ	W9T1

PQ = Package Quantity
Discount Group MAC

Busbar Components, continued

	Description	Busbar [mm]	PQ	Cat. No.		PGC
	Supply Module for 3-pole devices 6...70 mm ² (10...2/0 AWG) 54 mm wide	12...30 x 5 or 12...30 x 10		141A-VN370		W9T1
	Supply Module for 3-pole devices 35...120 mm ² (2 AWG...250 MCM) 81 mm wide			141A-VN3120		W9T1
	Supply Module for 3-pole devices 95...185 mm ² (4/0 AWG...350 MCM) 135 mm wide		1	141A-VN3185		W9T1
	Supply Module for 3-pole devices for round conductors 150...300 mm ² (300...600 MCM) 135 mm wide			141A-VN3300R		W9T1
	Supply Module for 3-pole devices for flat conductors up to 32 x 20 mm equivalent to 300 mm ² (300...600 MCM) round conductor ampacity 135 mm wide			141A-VN3300F		W9T1
	Single Terminals Single terminals for supplying busbars 2.5...16 mm ² (#14...6 AWG)	12...30 x 5	25	141A-VS116		W9T1
		12...30 x 10	25	141A-VS216		W9T1
	Single Terminals Single terminals for supplying busbars 4...35 mm ² (#12...2 AWG)	12...30 x 5	25	141A-VS135		W9T1
		12...30 x 10	25	141A-VS235		W9T1
	Single Terminals Single terminals for supplying busbars 16...70 mm ² (#6...2/0 AWG)	12...30 x 5	25	141A-VS170		W9T1
		12...30 x 10	25	141A-VS270		W9T1
	Profile Terminals For double-T busbars	400...800 mm ²	For use up to: 1600 A	3	141A-VS54136F	W9T1
		500...750 mm ²		3	141A-VS55121F	W9T1
		600...900 mm ²		3	141A-VS56421F	W9T1
	To connect with flat busbars and flexible copper busbars	600...1200 mm ²	1600 A / 2000 A *	3	141A-VS56436F	W9T1
		800...1600 mm ²	1600 A / 2500 A *	3	141A-VS58136F	W9T1
		1000...2000 mm ²	1600 A / 2800 A *	3	141A-VS510136F	W9T1

* >1600 A only for centre feeding

PQ = Package Quantity

Discount Group MAC

Busbar Components, continued

	Description	Busbar [mm]	PQ	Cat. No.		PGC
	Terminal Cover Finger protection when busbars supplied with single terminals. Attaches directly to busbars. Height: 180 mm, Width: 54 mm	12...30 x 5 or 12...30 x 10	1	141A-BK1		W9T1
	Busbar Connector System distance: 5...10 mm	12...20 x 5 or 12...20 x 10	12	141A-VC3A		W9T1
	Busbar Connector System distance: 13...20 mm		6	141A-VC3B		W9T1
	Busbar Connector System distance: 50...60 mm		3	141A-VC3C		W9T1
	Busbar Connector System distance: 100...110 mm		3	141A-VC3D		W9T1
	Busbar Shroud Cover 200 x 1100 mm Covers all 3 busbars	12...30 x 5	2	141A-BCF1		W9T1
	Busbar Shroud Holder 2 required per section of Busbar Shroud Cover	12...30 x 10	10	141A-BCF1H		W9T1
	Double-T Busbar Connectors For connection of double-T busbar racks with same dimensions, Width: 50 mm	Double-T	6	141A-VC5E		W9T1
	Double-T Busbar Connectors For connection of double-T busbar racks with same dimensions, Width: 95 mm		3	141A-VC5F		W9T1
	Double-T Busbar Connectors For connection of double-T busbar racks with same dimensions, Width: 150 mm		3	141A-VC5G		W9T1
	Busbar Cover PVC for contact protection. Length: 1 m.	12...30 x 5	10	141A-BS5		W9T1
		12...30 x 10		141A-BS10		W9T1

PQ = Package Quantity
Discount Group MAC

Accessories for MCS Mounting System

	Description	Width [mm]	PQ	Cat. No.		PGC
	Hat (DIN) Rails — MCS Top Hat Rail (plastic) Slides onto mounting modules and is then fixed with screws Has notches for MCS components (prevents movement of components when used with vertical busbar)	45	10	141A-AHR45		W9T1
		54		141A-AHR54		W9T1
		63		141A-AHR63		W9T1
	Hat (DIN) Rails — Standard Top Hat Rail (plastic) Slides onto mounting modules and is then fixed with screws	45	10	141A-AHS45		W9T1
		54		141A-AHS54		W9T1
		63		141A-AHS63		W9T1
		72		141A-AHS72		W9T1
		81		141A-AHS81		W9T1
	Control Plug Pull-apart terminal block allows fast and simple disconnection of control wiring Snaps on the support of the mobile device rail Composed of plug holder, male and female parts	8 Poles	1 *	141A-APC8		W9T1
		10 Poles		141A-APC10		W9T1
		12 Poles		141A-APC12		W9T1
	Control Plug Holder Suitable for use with 8-, 10-, or 12-pole control plugs		1	141A-APH		W9T1
	Connection Clip For joining base of mounting modules		50	141A-AK		W9T1

* May be ordered in package quantities of 10. Add letter **M** to the end of the Cat. No. (Example: **141A-APC8M**).

PQ = Package Quantity

Discount Group MAC

Smart Motor Controllers

				
Bulletin	150-C	150-D	150-F	150-B
Type	SMC-3 Controller	SMC-Delta Controller	SMC Flex Controller	SMC Dialog Plus Controller
Current Range	200...600V 1...85 A	200...600V 1...147 A	200...600V 1...480 A	200...600V 1...1000 A
Soft Start	✓	—	✓	✓
Kickstart	✓	—	✓	✓
Current Limit	✓	—	✓	✓
Dual Ramp Start	—	✓	✓*	✓
Full Voltage	—	—	✓	✓
Soft Stop	✓	—	✓	✓*
Pump Control	—	—	✓*	✓*
Preset Slow Speed	—	—	✓*	✓*
Linear Speed	—	—	✓*	—
SMB™ Smart Motor Braking	—	—	✓*	✓*
Accu-Stop™	—	—	✓*	✓*
Slow Speed with Braking	—	—	✓*	✓*
Integrated Bypass Contacts	✓	✓	✓	—
Integrated Motor Protection	✓	✓	✓	✓
Communication	—	—	✓	✓
Metering	—	—	✓	✓
Keypad Programming/ LCD Display	—	—	✓	✓
Standards Compliance: CE Marked per Low Voltage Directive 73/23/EEC, 93/68/EEC CSA Certified (File No. LR 1234), UL Listed (File No. E96956)	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
Product Selection	Pages 93, 95	Pages 94, 95	Page 96	Page 99

* Depending on selected option

ArmorStart™ 283

	
Bulletin	283
Type	ArmorStart™ Distributed Motor Controller
Features	• On Machine Solid-State Motor Control Starting Solution • Power Range 0.37...5.5 kW • Robust IP67 enclosure rating • Quick Disconnect connections for I/O, communications and motor • 4 Inputs and 2 Outputs (Expandable with ArmorPoint™) • LED Status Indication • DeviceNet™ Communications • DeviceLogix™ Component Technology • ControlNet and EtherNet Communication via ArmorPoint™ • Factory Installed Options: - Hand/Off/Auto (HOA) Keypad Configuration - Source Brake Contactor - Safety Monitor
Product Selection	See publication 280-SG001_-EN-P

Smart Motor Controllers SMC-3

- 1...85 A Range
- Soft Start
- Current Limit Start
- Selectable Kick Start
- Selectable Soft Stop
- Built-In Overload Protection
- Built-In SCR Bypass



Up to 480V AC

Current Rating * [A]	Starting Duty 380/400/415V AC, 50 Hz [kW]		100...240V 50/60 Hz Control			24V AC/DC Control		
	350 %	450 %	Cat. No.		PGC	Cat. No.		PGC
1...3	1.1	0.75	150-C3NBD		W41	150-C3NBR		W41
3...9	4	3	150-C9NBD		W41	150-C9NBR		W41
5.3...16	7.5	5.5	150-C16NBD		W41	150-C16NBR		W41
6.3...19	7.5	5.5	150-C19NBD		W41	150-C19NBR		W41
9.2...27.7	11	9.5	150-C25NBD		W41	150-C25NBR		W41
10...30	15	11	150-C30NBD		W41	150-C30NBR		W41
12.3...37	18.5	15	150-C37NBD		W41	150-C37NBR		W41
14.3...43	22	15	150-C43NBD		W43	150-C43NBR		W43
20...60	30	22	150-C60NBD		W43	150-C60NBR		W43
28.3...85	45	37	150-C85NBD		W43	150-C85NBR		W43

Discount Group MAC

Up to 600V AC

Current Rating * [A]	Starting Duty 525V AC, 50 Hz [kW]		100...240V 50/60 Hz Control			24V AC/DC Control		
	350 %	450 %	Cat. No.		PGC	Cat. No.		PGC
1...3	1.5	1.1	150-C3NCD		W41	150-C3NCR		W41
3...9	5.5	4	150-C9NCD		W41	150-C9NCR		W41
5.3...16	7.5	7.5	150-C16NCD		W41	150-C16NCR		W41
6.3...19	11	7.5	150-C19NCD		W41	150-C19NCR		W41
9.2...27.7	15	11	150-C25NCD		W41	150-C25NCR		W41
10...30	18.5	15	150-C30NCD		W41	150-C30NCR		W41
12.3...37	22	18.5	150-C37NCD		W41	150-C37NCR		W41
14.3...43	22	22	150-C43NCD		W43	150-C43NCR		W43
20...60	37	37	150-C60NCD		W43	150-C60NCR		W43
28.3...85	55	45	150-C85NCD		W43	150-C85NCR		W43

* Motor FLA must fall within the current range of the device.

Accessories for SMC-3, see Page 95

Discount Group MAC

Smart Motor Controllers SMC-Delta

- 1...147 A Range
- Current Limit Start
- Current Limit Start
- Built-In Overload Protection
- Built-In SCR Bypass
- For "inside the delta" connection only!



Up to 480V AC

Current Rating * [A]	380/400/415V AC 50 Hz	100...240V 50/60 Hz Control			24V AC/DC Control		
	[kW]	Cat. No.		PGC	Cat. No.		PGC
1...3	1.1	150-D3NBD		W42	150-D3NBR		W42
3...9	4	150-D9NBD		W42	150-D9NBR		W42
5.3...16	7.5	150-D16NBD		W42	150-D16NBR		W42
6.7...20	7.5	150-D20NBD		W42	150-D20NBR		W42
9.2...27.7	11	150-D25NBD		W42	150-D25NBR		W42
10.6...32.9	15	150-D32NBD		W42	150-D32NBR		W42
17.3...51.9	22	150-D51NBD		W42	150-D51NBR		W42
21.3...64	30	150-D64NBD		W42	150-D64NBR		W42
24.7...74	37	150-D74NBD		W44	150-D74NBR		W44
34.7...104	55	150-D104NBD		W44	150-D104NBR		W44
49...147	75	150-D147NBD		W44	150-D147NBR		W44

Discount Group MAC

Up to 600V AC

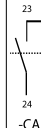
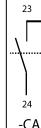
Current Rating * [A]	525V AC, 50 Hz	100...240V 50/60 Hz Control			24V AC/DC Control		
	[kW]	Cat. No.		PGC	Cat. No.		PGC
1...3	1.5	150-D3NCD		W42	150-D3NCR		W42
3...9	5.5	150-D9NCD		W42	150-D9NCR		W42
5.3...16	7.5	150-D16NCD		W42	150-D16NCR		W42
6.7...20	11	150-D20NCD		W42	150-D20NCR		W42
9.2...25	15	150-D25NCD		W42	150-D25NCR		W42
10.6...32	18.5	150-D32NCD		W42	150-D32NCR		W42
17...51	30	150-D51NCD		W42	150-D51NCR		W42
21.3...64	37	150-D64NCD		W42	150-D64NCR		W42
24.7...74	45	150-D74NCD		W44	150-D74NCR		W44
34.7...104	55	150-D104NCD		W44	150-D104NCR		W44
49...147	90	150-D147NCD		W44	150-D147NCR		W44

* Motor FLA must fall within the current range of the device.

Accessories for SMC-3, see Page 95

Discount Group MAC

Accessories for SMC-3 and SMC-Delta

Description	N.O.	N.C.	Connection Diagram				Cat. No.		PGC
 Auxiliary Contact Blocks for Side Mounting with Sequence Terminal Designations 1- and 2-pole Quick and easy mounting without tools One block per device only	1	0	 -CA10	 -CA20	 -CA01	 -CA11	150-CA10		W4Y
	2	0					150-CA20		W4Y
	0	1					150-CA01		W4Y
	1	1	 -CA10	 -CA20	 -CA01	 -CA11	150-CA11		W4Y

Discount Group MAC

Description	For Use With	Cat. No.		PGC
 Fan Field installed.	150-C3...37 150-D3...64 *	150-CF64		W4Y
 Connecting modules to 140-M Electrical interconnection between SMC-Delta/SMC-3 and 140-M. Motor protector and SMC must be mounted separately.	Connects 140-M-C to 150-C3...25/150-D3...25	150-CC25		W4Y
	Connects 140-M-D to 150-C3...25/150-D3...25	150-CD25		W4Y
	Connects 140-M-F to 150-C3...37/150-D3...32	150-CF45		W4Y
 Connecting modules to 100-C Electrical interconnection between SMC-Delta/SMC-3 and 100-C. Contactor and SMC must be mounted separately.	Connects 100-C09...23 to 150-C3...19/150-D3...20	150-CI23		W4Y
	Connects 100-C30...37 to 150-C3...37/150-D3...32	150-CI37		W4Y
 480V Protective Module	150-C3...37NB or 150-D3...64NB	150-C84		W4Y
	150-C43...85NB or 150-D74...147NB	150-C84P		W4Y
	150-C3...37NC or 150-D3...64NC	150-C86		W4Y
	150-C43...85NC or 150-D74...147NC	150-C86P		W4Y
 600V Protective Module				

* For devices above this range, the fan is shipped with the device as standard.

Discount Group MAC

Smart Motor Controllers SMC-Flex

- 1...480 A Range
- Soft Start
- Current Limit Start
- Dual Ramp
- Full Voltage
- Linear Speed Acceleration
- Preset Slow Speed
- Soft Stop



Options

- Pump Control
- Braking Control

Up to 480V AC

Rating for line connection **‡		Rating for delta connection **‡		100...240V AC 50/60 Hz Control					
				Without Option			With Pump Control Option		
Motor Current [A]	400V [kW]	Motor Current [A]	400V [kW]	Cat. No.		PGC	Cat. No.		PGC
1...5	0.37...2.2	1.7...8.7	0.75...4	150-F5NBD		W430	150-F5NBDB		W430
5...25	2.2...11	8.7...43	4...22	150-F25NBD		W430	150-F25NBDB		W430
8.6...43	4...22	14.9...74	7.5...37	150-F43NBD		W430	150-F43NBDB		W430
12...60	7.5...30	20.8...104	11...55	150-F60NBD		W430	150-F60NBDB		W430
17...85	11...45	29.4...147	15...75	150-F85NBD		W430	150-F85NBDB		W430
27...108	15...55	47...187	30...90	150-F108NBD		W431	150-F108NBDB		W431
34...135	18.5...75	59...234	37...132	150-F135NBD		W431	150-F135NBDB		W431
100...201	75...110	174...348	110...160	150-F201NBD		W431	150-F201NBDB		W431
125...251	75...132	218...435	132...250	150-F251NBD		W431	150-F251NBDB		W431
158...317	90...160	275...549	160...315	150-F317NBD		W431	150-F317NBDB		W431
180...361	110...200	313...625	200...355	150-F361NBD		W431	150-F361NBDB		W431
240...480	160...250	415...831	250...450	150-F480NBD		W431	150-F480NBDB		W431

* Controllers rated 108 A and greater are not equipped with line and load terminal lugs.

‡ Motor FLA rating must fall within specified current range for unit to operate properly.

‡ Utilization category: AC-53b: 3-50: 1750.

Discount Group SOF

SMC-Flex Smart Motor Controllers, continued

Up to 600V AC

Rating for line connection *†‡		Rating for delta connection *†‡		100...240V AC 50/60 Hz Control					
				Without Option			With Pump Control Option		
Motor Current [A]	500V [kW]	Motor Current [A]	500V [kW]	Cat. No.		PGC	Cat. No.		PGC
1...5	0.55...2.2	1.7...8.7	1.1...5.5	150-F5NCD		W430	150-F5NCDB		W430
5...25	3...15	8.7...43	5.5...15	150-F25NCD		W430	150-F25NCDB		W430
8.6...43	5.5...22	14.9...74	11...45	150-F43NCD		W430	150-F43NCDB		W430
12...60	7.5...37	20.8...104	15...55	150-F60NCD		W430	150-F60NCDB		W430
17...85	11...55	29.4...147	22...90	150-F85NCD		W430	150-F85NCDB		W430
27...108	18.5...75	47...187	37...132	150-F108NCD		W431	150-F108NCDB		W431
34...135	30...90	59...234	45...160	150-F135NCD		W431	150-F135NCDB		W431
100...201	75...132	174...348	132...250	150-F201NCD		W431	150-F201NCDB		W431
125...251	90...160	218...435	160...315	150-F251NCD		W431	150-F251NCDB		W431
158...317	100...200	275...549	200...400	150-F317NCD		W431	150-F317NCDB		W431
180...361	132...250	313...625	250...450	150-F361NCD		W431	150-F361NCDB		W431
240...480	200...315	415...831	315...560	150-F480NCD		W431	150-F480NCDB		W431

* Controllers rated 108 A and greater are not equipped with line and load terminal lugs.

† Motor FLA rating must fall within specified current range for unit to operate properly.

‡ Utilization category: AC-53b: 3-50: 1750.

Discount Group SOF

Optional Configurations

150-F108NB $\frac{D}{a} \frac{B}{b}$

a

Options	Control Voltage
D	100...240V AC 50/60 Hz
R	24 V AC/DC

b

Options	Description
Blank	Standard
B	Pump Control Provides smooth motor acceleration and deceleration, reducing surges caused by the starting and stopping of centrifugal pumps. Starting time is adjustable from 0...30 seconds, and stopping time is adjustable from 0...120 seconds.
D	Braking Control Provides Smart Motor Braking (SMB), Accu-Stop, and Slow Speed with Braking. Prices on request.

Accessories for SMC-Flex
Protective Modules *

	Current Rating [A]	Description	Field Modification Cat. No.		PGC
	5...85	480V Protective Module	150-F84		W4X
	108...480		150-F84L		W4X
	5...85	600V Protective Module	150-F86		W4X
	108...480		150-F86L		W4X

* The same protective module mounts on the line or load side of the SMC-Flex. For applications requiring both line and load side protection, two protective modules must be ordered.
Discount Group SOF

IEC Terminal Covers *

	Description	Field Modification Cat. No.		PGC
	Terminal Covers IEC line or load terminal covers for 201...251 A devices. Dead front protection	150-TC2		W4X
	Terminal Covers IEC line or load terminal covers for 317...480 A devices. Dead front protection	150-TC3		W4X

* One terminal cover is shipped as standard with the SMC-Flex controllers.
Discount Group SOF

Human Interface Modules

	Description		Cat. No.		PGC
	Hand Held Human Interface Modules	‡LCD Display, Full Numeric Keypad	20-HIM-A3		23F1
		‡LCD Display, Programmer Only HIM	20-HIM-A5		23F1
	Door Mounted Human Interface Modules	LCD Display, Full Numeric Keypad (includes 3 m cable)	20-HIM-C3S		23F1
	Human Interface Module Interface Cables	HIM Interface Cable, 1 m (39 in.)	20-HIM-H10		23F1

‡ Requires a 20-HIM-H10 cable to connect to the SMC-Flex.
Discount Group 23

Communication Modules

(IP30/Type 1)Description		For Use With	Cat. No.		PGC
	Communication Modules	Remote I/O	20-COMM-R		23F1
		RS-485/DF1	20-COMM-S		23F1
		ProfIBUS	20-COMM-P		23F1
		ControlNet	20-COMM-C		23F1
		DeviceNet™	20-COMM-D		23F1
		Ethernet/IP	20-COMM-E		23F1

Discount Group 23

Smart Motor Controllers SMC Dialog Plus

- 24...1000 A Ratings
- 4 Starting Modes
- 6 Optional Features
- Electronic Motor Protection
- Communication
- Plain Language LCD Display



Up to 480V AC

Current Rating [A]	380...400 V AC 50 Hz * [kW]	100...240V AC Control						
		Without Option		With Soft Stop Option		With Pump Control Option		PGC
		Cat. No.		Cat. No.		Cat. No.		
24 A	11	150-B24NBD		150-B24NBDA		150-B24NBDB		W4J
35 A	18.5	150-B35NBD		150-B35NBDA		150-B35NBDB		W4J
54 A	22	150-B54NBD		150-B54NBDA		150-B54NBDB		W4J
97 A	45	150-B97NBD		150-B97NBDA		150-B97NBDB		W4K
135 A	75	150-B135NBD		150-B135NBDA		150-B135NBDB		W4K
180 A	90	150-B180NBD		150-B180NBDA		150-B180NBDB		W4K
240 A	132	150-B240NBD		150-B240NBDA		150-B240NBDB		W4K
360 A	200	150-B360NBD		150-B360NBDA		150-B360NBDB		W4K
500 A	257	150-B500NBD		150-B500NBDA		150-B500NBDB		W4K
650 A	355	150-B650NBD		150-B650NBDA		150-B650NBDB		W4L
720 A	400	150-B720NBD		150-B720NBDA		150-B720NBDB		W4L
850 A	475	150-B850NBD		150-B850NBDA		150-B850NBDB		W4L
1000 A	530	150-B1000NBD		150-B1000NBDA		150-B1000NBDB		W4L

Discount Group SOF

Up to 600V AC

Current Rating [A]	500V AC 50 Hz * [kW]	100...240V AC Control						
		Without Option		With Soft Stop Option		With Pump Control Option		PGC
		Cat. No.		Cat. No.		Cat. No.		
24 A	15	150-B24NCD		150-B24NCDA		150-B24NCDB		W4J
35 A	22	150-B35NCD		150-B35NCDA		150-B35NCDB		W4J
54 A	37	150-B54NCD		150-B54NCDA		150-B54NCDB		W4J
97 A	63	150-B97NCD		150-B97NCDA		150-B97NCDB		W4K
135 A	90	150-B135NCD		150-B135NCDA		150-B135NCDB		W4K
180 A	132	150-B180NCD		150-B180NCDA		150-B180NCDB		W4K
240 A	160	150-B240NCD		150-B240NCDA		150-B240NCDB		W4K
360 A	250	150-B360NCD		150-B360NCDA		150-B360NCDB		W4K
500 A	355	150-B500NCD		150-B500NCDA		150-B500NCDB		W4K
650 A	475	150-B650NCD		150-B650NCDA		150-B650NCDB		W4L
720 A	500	150-B720NCD		150-B720NCDA		150-B720NCDB		W4L
850 A	600	150-B850NCD		150-B850NCDA		150-B850NCDB		W4L
1000 A	710	150-B1000NCD		150-B1000NCDA		150-B1000NCDB		W4L

* Ask your local sales office for specific ratings according to your application requirements (motor current, number of starts per hour, starting time, operating temperature)

Discount Group SOF

SMC Dialog Plus Smart Motor Controllers, continued

Optional Configurations

150-B24NB $\frac{D}{a}$ $\frac{B}{b}$

a

Options	Control Voltage
D	100...240V AC 50/60 Hz
R	24 V AC/DC

b

Options (Select Only One)	
Code	Description
Blank	Standard
A	Soft Stop
B	Pump Control
C	Preset Slow Speed
D	SMB Smart Motor Braking
E	Accu-Stop
F	Slow Speed with Braking

Accessories for SMC Dialog Plus Smart Motor Controllers

Human Interface Modules

Description		Degree of Protection	Cat. No.		PGC
	Human Interface Module ‡	Door Mount Bezel Kit	IP30 (Type 1)	1201-DMA	20N1
		Programmer Only	IP30 (Type 1) *	1201-HAP	20N1
		Analog Control Panel *	IP30 (Type 1) *	1201-HA1	20N1
		Digital Control Panel *	IP30 (Type 1) *	1201-HA2	20N1

Discount Group 20

Communication Modules

Description				For Use With	Cat. No.		PGC
	Communication Module ‡	Single Point Remote I/O ‡		Bulletin 150 SMC Dialog Plus	1203-GD1		20N1
		RS-232/RS-422/RS-485/DF1, or DH485 (Series B)			1203-GD2		20N1
		ControlNet			1203-CN1		20N1
		DeviceNet Network ‡			1203-GK5		20N1
		Enhanced DeviceNet			1203-GU6		20N1
	Flex I/O SCANport Module ‡♣ Flex I/O Terminal Base			Bulletin 150 SMC Dialog Plus	1203-FB1		20N1
	Flex I/O Module ➤				1203-FM1		20N1
	SLC Communication Module ‡				1203-SM1		20N1
	Communication Cable Flex I/O Module	Male-Male	0.3 m	Human Interface Module and Communication Modules	1202-C03		20N1
			1 m		1202-C10		20N1
			3 m		1202-C30		20N1
			9 m		1202-C90		20N1

* Start, Stop, and Jog buttons are the only active controls when used with the SMC Dialog Plus Controller.

⌘ Requires Type 1 Door Mount Bezel Kit.

‡ Separately powered 120/240V AC.

§ Requires the use of a Cat. No. 1203-GD2 communication module.

♣ Each Flex I/O SCANport Module requires (1) Cat. No. 1203-FB1 and (1) Cat. No. 1203-FM1.

➤ Requires a Communication Option Cable (Cat. No. 1202-C03/C10/C30/C90) to be functional. These units are not acceptable for NEMA Type 4 door mounting or UL Type 4X outdoor only.

Discount Group 20

Accessories for SMC Dialog Plus Smart Motor Controllers, continued

Description		Motor Full Load Current Range [A]	Cat. No.		PGC
Converter Modules *					
	Includes 4 m connecting cable.				
	With terminals 1 x 4 mm ²	2.5...20 A	825-MCM20		A1S1
	Without bus bars	20...180 A	825-MCM180		A1S1
	With bus bars 25 x 8 mm (for single mounting)	64...360 A	825-MCM630		A1S1
Connection cable (replacement) 825-P to 825-MCM connection (Length 4 m)			825-MCA		A1S1
	Fanning Strip for Bulletin 825 Converter Modules		150-NFS		W4X
	M8 connections Set of 3 4 x 16 x 102 mm (1/8 x 5/8 x 4-1/64 in.) (125 A max.) Universally applicable Weight: 230 g		825-MVM		A1S1

* Must be used with fanning strip Cat. No. 150-NFS.
Discount Group MPC, Discount Group SOF (150-NFS)

Technical data and prices for medium voltage devices (2400, 3300, 4200, 6600V) on request.

Product Line Overview

Product Line Overview

			
Bulletin	22A...	22B...	22C...
Type	PowerFlex 4	PowerFlex 40	PowerFlex 400
Ratings 240V Single Phase	0.25...2.2 kW	0.37...2.2 kW	N/A
Ratings 200...240V	0.25...4.0 kW	0.37...7.5 kW	2.2...37 kW
Ratings 400...480V	0.37...4.0 kW	0.37...11 kW	2.2...110 kW
Ratings 500...600V	N/A	0.75...11 kW	N/A
Ratings 690V	N/A	N/A	N/A
Ambient Temperature	IP 20 -10 °C to 50 °C	IP 20 -10 °C to 50 °C	IP 20 0 °C to 50 °C
EMC Filters	Internal (1 phase) External (3 phase)	Internal (1 phase) External (3 phase)	External (3 phase)
Standards	UL, CE, CSA, C-Tick	UL, CE, CSA, C-Tick	UL, CE, CSA, C-Tick
Carrier Frequency	2...16 kHz	2...16 kHz	2...10 kHz
Overload Capability	150% for 60 s 200% for 3 s	150% for 60 s 200% for 3 s	110% for 60 s
Control Performance	- Volts per Hertz - Slip Compensation	- Volts per Hertz - Slip Compensation - Sensorless Vector	- Volts per Hertz - Slip Compensation
Communications Options	- Integral RS485 - RTU Slave	- Integral RS485 - RTU Slave - DeviceNet - Ethernet - Profibus	- Integral RS485 - RTU Slave - DeviceNet - Ethernet - Profibus
Product Selection	Page 106, 117	Page 108, 117	Page 110, 117

Drives

Product Line Overview

		
Bulletin	20A...	20B...
Type	PowerFlex 70	PowerFlex 700
Ratings 240V Single Phase	N/A	N/A
Ratings 200...240V	0.37...7.5 kW	0.37...55 kW
Ratings 400...480V	0.37...37 kW	0.37...132 kW
Ratings 500...600V	0.37...15 kW	0.37...132 kW
Ratings 690V	N/A	45...132 kW
Ambient Temperature	IP 20 0 °C to 50 °C	IP 20 0 °C to 50 °C
EMC Filters	Internal	Internal
Standards	UL, CE, CSA, C-Tick	UL, CE, CSA, C-Tick
Carrier Frequency	2...10 kHz	2...10 kHz
Overload Capability	Normal Duty Application 110% - 60 s 150% - 3 s Heavy Duty Application 150% - 60 s 200% - 3 s	Normal Duty Application 110% - 60 s 150% - 3 s Heavy Duty Application 150% - 60 s 200% - 3 s
Control Performance	- Volts per Hertz - Slip Compensation - Sensorless Vector - Field Oriented Control with or without Encoder for Speed Control and Torque Regulation	- Volts per Hertz - Slip Compensation - Sensorless Vector - Field Oriented Control with or without Encoder for Speed Control and Torque Regulation
Communications Options	- DeviceNet - ControlNet - EtherNet - Remote I/O - RS485 DF1 - Profibus - InterBus - CanOpen - LonWorks - HVAC - ModBus - Metasys	- DeviceNet - ControlNet - EtherNet - Remote I/O - RS485 DF1 - Profibus - InterBus - CanOpen - LonWorks - HVAC - ModBus - Metasys
Product Selection	Page 112, 117	Page 115, 117

ArmorStart™ 284

	
Bulletin	284
Type	ArmorStart™ Distributed Motor Controller
Features	• On Machine Starting Solution with Variable Frequency AC Drive using PowerFlex™ Technology • Power Range 0.4...3.3 kW • Robust IP67 enclosure rating • Quick Disconnect connections for I/O, communications and motor • 4 Inputs and 2 Outputs (Expandable with ArmorPoint™) • LED Status Indication • DeviceNet™ Communications • DeviceLogix™ Component Technology • ControlNet and EtherNet Communication via ArmorPoint™ • Factory Installed Options: - Hand/Off/Auto (HOA) Keypad Configuration - EMI Filter - Dynamic Brake Connector - Output Contactor - Source Brake Contactor - Shielded Motor Cable - Safety Monitor - 0...10V Analog Input
Product Selection	See publication 280-SG001_-EN-P

PowerFlex 4

Drives

Product Selection

PowerFlex 4

- 0.25 kW to 2.2 kW 240V, Single Phase, 0.25 kW to 4 kW 240V and 400V, 3-Phase
- V/Hz Control Modes with Sensorless Vector performance
- Internal EMC Filter Options for Single Phase and external up to 100 m for all 3-Phase
- Integral Brake Chopper
- Integral RS 485 Communication for multi drop configurations
- Programmable via Drive Explorer or Drive Executive (a 22-SCM-232 converter is required)
- Integral Programming Keypad and local LED status indication
- Top hat rail and Zero-Stacking mounting
- Dedicated for simple machines and applications



Typical Motor Rating		Input Voltage	Drive Output [A]			Frame	Dimensions	Cat. No.	PGC
[kW]	[A]		Cont.	60 s	3 s		H x W x D		
0.25	1.3	200-240V 50/60Hz, 1-Phase, EMC Filter, no Brake Chopper	1.4	2.1	2.8	A	152x80x136	22A-A1P4N113	23A1
0.37	1.9		2.1	3.2	4.2	A	152x80x136	22A-A2P1N113	23A1
0.75	3.3		3.6	5.4	7.2	A	152x80x136	22A-A3P6N113	23A1
1.5	6.1		6.8	10.2	13.6	B	180x100x136	22A-A6P8N113	23A1
2.2	8.9		9.6	14.4	19.2	B	180x100x136	22A-A9P6N113	23A1
0.25	1.3	200-240V 50/60Hz, 1-Phase, no EMC Filter, no Brake Chopper	1.4	2.1	2.8	A	152x80x136	22A-A1P4N103	23A1
0.37	1.9		2.1	3.2	4.2	A	152x80x136	22A-A2P1N103	23A1
0.75	3.3		3.6	5.4	7.2	A	152x80x136	22A-A3P6N103	23A1
1.5	6.1		6.8	10.2	13.6	B	180x100x136	22A-A6P8N103	23A1
2.2	8.9		9.6	14.4	19.2	B	180x100x136	22A-A9P6N103	23A1
0.25	1.3	200-240V 50/60Hz, 1-Phase, EMC Filter, Brake Chopper	1.5	2.3	3.0	A	152x80x136	22A-A1P5N114	23A1
0.37	1.9		2.3	3.5	4.6	A	152x80x136	22A-A2P3N114	23A1
0.75	3.3		4.5	6.8	9.0	A	152x80x136	22A-A4P5N114	23A1
1.5	6.1		8.0	12.0	16.0	B	180x100x136	22A-A8P0N114	23A1
0.25	1.3		1.5	2.3	3.0	A	152x80x136	22A-A1P5N104	23A1
0.37	1.9	200-240V 50/60Hz, 3-Phase, no EMC Filter, Brake Chopper	1.5	2.3	3.0	A	152x80x136	22A-A2P3N104	23A1
0.75	3.3		4.5	6.8	9.0	A	152x80x136	22A-A4P5N104	23A1
1.5	6.1		8.0	12.0	16.0	B	180x100x136	22A-A8P0N104	23A1
0.25	1.3		1.5	2.3	3.0	A	152x80x136	22A-B1P5N104	23A2
0.37	1.9		2.3	3.5	4.6	A	152x80x136	22A-B2P3N104	23A2
0.75	3.3	200-240V 50/60Hz, 3-Phase, no EMC Filter, Brake Chopper*	4.5	6.8	9.0	A	152x80x136	22A-B4P5N104	23A2
1.5	6.1		8.0	12.0	16.0	A	152x80x136	22A-B8P0N104	23A2
2.2	8.9		12.0	18.0	24.0	B	180x100x136	22A-B012N104	23A2
4	15.3		17.0	25.5	34.0	B	180x100x136	22A-B017N104	23A2
0.37	1.1		1.4	2.1	2.8	A	152x80x136	22A-D1P4N104	23A3
0.75	1.9	400-480V 50/60Hz, 3-Phase, no EMC Filter, Brake Chopper*	2.3	3.5	4.6	A	152x80x136	22A-D2P3N104	23A3
1.5	3.5		4.0	6.0	8.0	A	152x80x136	22A-D4P0N104	23A3
2.2	5		6.0	9.0	12.0	B	180x100x136	22A-D6P0N104	23A3
4	8.4		8.7	13.1	17.4	B	180x100x136	22A-D8P7N104	23A3

* 0.25 and 0.37kW Drives are without Brake Chopper.

Discount Group 23

See Publication 22-TD001_-EN-P for complete product information.

External EMC Filter for up to 10 m of Motor Cable	Cat. No.		PGC
EMC Filter PowerFlex 4, 200-240V, 3~, 9.5A, Frame A	22-RF9P5-AS		23A4
EMC Filter PowerFlex 4/40, 200-240V, 3~, 21A, Frame B	22-RF021-BS		23A4
EMC Filter PowerFlex 4, 400-480V, 3~, 5.7A, Frame A	22-RF5P7-AS		23A4
EMC Filter PowerFlex 4/40, 400-480V, 3~, 12A, Frame B	22-RF012-BS		23A4

External EMC Filter for up to 10 m of Motor Cable, Low Leakage Current	Cat. No.		PGC
EMC Filter PowerFlex 4, 230V, 1~, 18 A, Frame B, Low Leakage	22-RFL018-BS		23A4
EMC Filter PowerFlex 4, 230V, 1~, 10 A, Frame A, Low Leakage	22-RFL010-AS		23A4
EMC Filter PowerFlex 4, 230V, 3~, 21 A, Frame B, Low Leakage	22-RFL021-BS		23A4
EMC Filter PowerFlex 4, 400V, 3~, 12 A, Frame B, Low Leakage	22-RFL012-BS		23A4
EMC Filter PowerFlex 4, 230/400V, 3~, 9.5 A, Frame A, Low Leakage	22-RFL9P5-AS		23A4

External EMC Filter for >10 m up to 100 m of Motor Cable	Cat. No.		PGC
EMC Filter PowerFlex 4, 200-240V, 1~, 10A, Frame A	22-RF010-AL		23A4
EMC Filter PowerFlex 4/40, 200-240V, 1~, 18A, Frame B	22-RF018-BL		23A4
EMC Filter PowerFlex 4, 200-240V, 3~, 9.5A, Frame A	22-RF9P5-AL		23A4
EMC Filter PowerFlex 4/40, 200-240V, 3~, 21A, Frame B	22-RF021-BL		23A4
EMC Filter PowerFlex 4, 400-480V, 3~, 5.7A, Frame A	22-RF5P7-AL		23A4
EMC Filter PowerFlex 4/40, 400-480V, 3~, 12A, Frame B	22-RF012-BL		23A4

External User Interface Modules	Cat. No.		PGC
Panel Mount, IP66, Full Numeric LCD, Cable 2.9 m	22-HIM-C2S		23A4
Hand Held, IP30, Full Numeric LCD, Cable 1 m	22-HIM-A3		23A4
Bezel Kit, IP20 for use with 22-HIM-A3	22-HIM-B1		23A4
DSI HIM Cable, 1 m	22-HIM-H10		23A4
DSI HIM Cable, 2.9 m	22-HIM-H30		23A4

Communication Options	Cat. No.		PGC
Built in RS485 (standard)	—		—
RJ45 One Port to Two Ports Splitter	AK-U0-RJ45-SC1		23A4
RJ45 120 Ohm Terminating Resistors (2 pcs)	AK-U0-RJ45-TR1		23A4
Communication Option, RJ45 Dual Position Terminal Block (5 pcs)	AK-U0-RJ45-TB2P		23A4

PC Programming Tool	Cat. No.		PGC
Serial Converter Module with Software DriveExplorer Light Version	22-SCM-232		23F1

Programming Software	Cat. No.		PGC
DriveExplorer, Full version	9306-4EXP02ENE		05T1
DriveTools SP Suite, DriveExecutive and DriveObserver	9303-4DTS01ENE		05T1

Discount Group 23, Discount Group 5 (9306-4EX..., 9303-4DT...)
See Publication 22-TD001_-EN-P for complete product information.

PowerFlex 40

Drives

Product Selection

PowerFlex 40

- 0.37 kW to 2.2 kW 240V Single Phase, 0.37 to 7.5 kW 240V and 0.37 to 11 kW 400V 3-Phase
- V/Hz Control and Sensorless Vector modes
- Internal EMC Filter Options for Single Phase and external up to 100m for all drives versions
- Integral Brake Chopper
- Extended digital and analog I/O's compared to PowerFlex 4
- Integral RS 485 Communication for multi drop configurations
- Optional DeviceNet Card with up to 4 PowerFlex 4/40 slaves control
- Programmable via Drive Explorer or Drive Executive (a 22-SCM-232 converter is required)
- Internal PID Loop
- Integral Programming Keypad and local LED status indication
- Timer/Counter functions, AND/OR functions, STEP Logic
- Standard DIN rail and Zero-Stacking mounting
- The right drive for complex machines and multi drive coordination in low power automation



Typical Motor Rating		Input Voltage	Drive Output [A]			Frame	Dimensions	Cat. No.	PGC
[kW]	[A]		Cont.	60 s	3 s		H x W x D		
0.37	1.9	200-240V 50/60Hz, 1-Phase, EMC Filter, Brake Chopper*	2.3	3.5	4.6	B	180x100x136	22B-A2P3N114	23B1
0.75	3.3		5.0	7.5	10.0	B	180x100x136	22B-A5P0N114	23B1
1.5	6.1		8.0	12.0	16.0	B	180x100x136	22B-A8P0N114	23B1
2.2	8.9		12.0	18.0	24.0	C	260x130x180	22B-A012N114	23B1
0.37	1.9	200-240V 50/60Hz, 1-Phase, no EMC Filter, Brake Chopper*	2.3	3.5	4.6	B	180x100x136	22B-A2P3N104	23B1
0.75	3.3		5.0	7.5	10.0	B	180x100x136	22B-A5P0N104	23B1
1.5	6.1		8.0	12.0	16.0	B	180x100x136	22B-A8P0N104	23B1
2.2	8.9		12.0	18.0	24.0	C	260x130x180	22B-A012N104	23B1
0.37	1.9	200-240V 50/60Hz, 3-Phase, no EMC Filter, Brake Chopper*	2.3	3.5	4.6	B	180x100x136	22B-B2P3N104	23B2
0.75	3.3		5.0	7.5	10.0	B	180x100x136	22B-B5P0N104	23B2
1.5	6.1		8.0	12.0	16.0	B	180x100x136	22B-B8P0N104	23B2
2.2	8.9		12.0	18.0	24.0	B	180x100x136	22B-B012N104	23B2
4	15.3	200-240V 50/60Hz, 3-Phase, no EMC Filter, Brake Chopper*	17.0	25.5	34.0	B	180x100x136	22B-B017N104	23B2
5.5	21		24.0	36.0	48.0	C	260x130x180	22B-B024N104	23B2
7.5	28		33.0	49.5	66.0	C	260x130x180	22B-B033N104	23B2
0.37	1.1	400 - 480V 50/60Hz, 3-Phase, no EMC Filter, Brake Chopper*	1.4	2.1	2.8	B	180x100x136	22B-D1P4N104	23B3
0.75	1.9		2.3	3.5	4.6	B	180x100x136	22B-D2P3N104	23B3
1.5	3.5		4.0	6.0	8.0	B	180x100x136	22B-D4P0N104	23B3
2.2	5		6.0	9.0	12.0	B	180x100x136	22B-D6P0N104	23B3
4	8.4	400 - 480V 50/60Hz, 3-Phase, no EMC Filter, Brake Chopper*	10.0	15.0	20.0	B	180x100x136	22B-D010N104	23B3
5.5	11.4		12.0	18.0	24.0	C	260x130x180	22B-D012N104	23B3
7.5	15		17.0	25.5	34.0	C	260x130x180	22B-D017N104	23B3
11	22		24.0	36.0	48.0	C	260x130x180	22B-D024N104	23B3

* 0.25 and 0.37kW Drives are without brake chopper.

Discount Group 23

See Publication 22-TD001_-EN-P for complete product information.

Options

External EMC Filter for up to 10 m of Motor Cable	Cat. No.		PGC
EMC Filter PowerFlex 4/40, 200-240V, 3~, 21A, Frame B	22-RF021-BS		23A4
EMC Filter PowerFlex 40, 200-240V, 3~, 34A, Frame C	22-RF034-CS		23A4
EMC Filter PowerFlex 4/40, 400-480V, 3~, 12A, Frame B	22-RF012-BS		23A4
EMC Filter PowerFlex 40, 400-480V, 3~, 18A, Frame C	22-RF018-CS		23A4
EMC Filter PowerFlex 40, 230V, 3~, 34 A, Frame C	22-RF034-CS		23A4

External EMC Filter for up to 100 m of Motor Cable	Cat. No.		PGC
EMC Filter PowerFlex 4/40, 200-240V, 1~, 18A, Frame B	22-RF018-BL		23A4
EMC Filter PowerFlex 40, 200-240V, 1~, 25A, Frame C	22-RF025-CL		23A4
EMC Filter PowerFlex 4/40, 200-240V, 3~, 21A, Frame B	22-RF021-BL		23A4
EMC Filter PowerFlex 40, 200-240V, 3~, 34A, Frame C	22-RF034-CL		23A4
EMC Filter PowerFlex 4/40, 400-480V, 3~, 12A, Frame B	22-RF012-BL		23A4
EMC Filter PowerFlex 40, 400-480V, 3~, 18A, Frame C	22-RF018-CL		23A4
EMC Filter PowerFlex 40, 230V, 3~, 34 A, Frame C	22-RF034-CL		23A4

External User Interface Modules	Cat. No.		PGC
Panel Mount, IP66, Full Numeric LCD, Cable 2.9 m	22-HIM-C2S		23A4
Hand Held, IP30, Full Numeric LCD, Cable 1 m	22-HIM-A3		23A4
Bezel Kit, IP20 for use with 22-HIM-A3	22-HIM-B1		23A4
DSI HIM Cable, 1 m	22-HIM-H10		23A4
DSI HIM Cable, 2.9 m	22-HIM-H30		23A4

Communication Options	Cat. No.		PGC
Built in RS485 (standard)	—		—
RJ45 One Port to Two Ports Splitter	AK-U0-RJ45-SC1		23A4
RJ45 120 Ohm Terminating Resistors (2 pcs)	AK-U0-RJ45-TR1		23A4
Communication Option, RJ45 Dual Position Terminal Block (5 pcs)	AK-U0-RJ45-TB2P		23A4
Communication Module, DeviceNet (Frame B or C cover is needed)	22-COMM-D		23A4
Communication Module, Profibus (Frame B or C cover is needed)	22-COMM-P		23A4
Communication Module, EtherNet/IP (Frame B or C cover is needed)	22-COMM-E		23A4
Cover for Frame B PowerFlex 40	22B-CCB		23A4
Cover for Frame C PowerFlex 40	22B-CCC		23A4

PC Programming Tool	Cat. No.		PGC
Serial Converter Module with Software DriveExplorer Light Version	22-SCM-232		23F1

Programming Software	Cat. No.		PGC
DriveExplorer, Full version	9306-4EXP02ENE		05T1
DriveTools SP Suite, DriveExecutive and DriveObserver	9303-4DTS01ENE		05T1

Discount Group 23, Discount Group 5 (9306-4EX..., 9303-4DT...)
See Publication 22-TD001_-EN-P for complete product information.

PowerFlex 400

Drives

Product Selection

PowerFlex 400

- Ideal for mechanical fan and pump systems
- 2.2...37 kW @ 200...240V AC and 2.2...110 kW @ 380...480V AC
- Volts per Hertz Control
- EMC compliance through the addition of external RFI filter.
- Internal Communication (Options)
- Local LED status indication
- Additional built in features include:
 - Sleep function
 - Purge frequency and freeze/fire interlock
 - Integral PID controller
 - Skip frequencies and bands
 - Integral LCD keypad
 - Selectable fan/pump curves
 - Automatic restart
 - Flying start



Typical Motor Rating		Input Voltage	Drive Output [A]		Frame	Dimensions H x W x D	Cat. No.	PGC
[kW]	[A]		Cont.	60 s				
2.2	9	200 - 240V 50/60Hz, 3-Phase	12	13.2	C	260x130x180	22C-B012N103	14A1
3.7	16		17.5	19.25	C	260x130x180	22C-B017N103	14A1
5.5	21		24	26.4	C	260x130x180	22C-B024N103	14A1
7.5	28		33	36.3	C	260x130x180	22C-B033N103	14A1
11	40		49	53.9	D	384x250x205.4	22C-B049A103	14A1
15	52		65	71.5	D	384x250x205.4	22C-B065A103	14A1
18.5	61		75	82.5	D	384x250x205.4	22C-B075A103	14A1
22	72		90	99	D	384x250x205.4	22C-B090A103	14A1
30	95		120	132	E	589x370x260	22C-B120A103	14A1
37	117		145	159.5	E	589x370x260	22C-B145A103	14A1
2.2	5	380 - 480V 50/60Hz, 3-Phase	6.0	6.6	C	260x130x180	22C-D6P0N103	14B1
4.0	8.4		10.5	11.55	C	260x130x180	22C-D010N103	14B1
5.5	11.4		12	13.2	C	260x130x180	22C-D012N103	14B1
7.5	15		17	18.7	C	260x130x180	22C-D017N103	14B1
11	22		22	24.2	C	260x130x180	22C-D022N103	14B1
15	29		30	33	C	260x130x180	22C-D030N103	14B1
18.5	34		38	41.8	D	384x250x205.4	22C-D038A103	14B1
22	40		45.5	50.05	D	384x250x205.4	22C-D045A103	14B1
30	53		60	66	D	384x250x205.4	22C-D060A103	14B1
37	65		72	79.2	E	589x370x260	22C-D072A103	14B1
45	78		88	96.8	E	589x370x260	22C-D088A103	14B1
55	98		105	115.5	E	589x370x260	22C-D105A103	14B1
75	132		142	156.2	E	589x370x260	22C-D142A103	14B1
90	158		170	187	F	850x425x280	22C-D170A103	14B1
110	194		208	228.8	F	850x425x280	22C-D208A103	14B1

Discount Group 14

See Publication 22C-TD001_-EN-P for complete product information.

Options

Conversion Kit	Drive Frame	Cat. No.		PGC
IP30/NEMA 1/UL Type 1 Kit	C	22-JBAC		23A4
IP30/NEMA 1/UL Type 1 Kit with Communication Option	C	22-JBCC		23A4

External User Interface Modules	Cat. No.		PGC
Panel Mount, IP66, Full Numeric LCD, Cable 2.9 m	22-HIM-C2S		23A4
Hand Held, IP30, Full Numeric LCD, Cable 1 m	22-HIM-A3		23A4
Bezel Kit, IP20 for use with 22-HIM-A3	22-HIM-B1		23A4
DSI HIM Cable, 1 m	22-HIM-H10		23A4
DSI HIM Cable, 2.9 m	22-HIM-H30		23A4

Communication Options	Cat. No.		PGC
Serial Converter Module (RS485 to RS232)	22-SCM-232		23F1
Serial Flash Cable, 2m	1203-SFC		20N1
Serial Null Modem Adapter	1203-SNM		20N1
DSI Cable 2.0 meter RJ45 to RJ45 cable, male to male connectors.	22-RJ45CBL-C20		23F1
RJ45 One Port to Two Ports Splitter	AK-U0-RJ45-SC1		23A4
RJ45 120 Ohm Terminating Resistors (2 pcs)	AK-U0-RJ45-TR1		23A4
Communication Option, RJ45 Dual Position Terminal Block (5 pcs)	AK-U0-RJ45-TB2P		23A4
Communication Module, DeviceNet (Frame B or C cover is needed)	22-COMM-D		23A4
Communication Module, Profibus (Frame B or C cover is needed)	22-COMM-P		23A4
Communication Module, EtherNet/IP (Frame B or C cover is needed)	22-COMM-E		23A4
External DSI Communications Kit	22-XCOMM-DC-BASE		23F1
External Comms Power Supply	20-XCOMM-AC-PS1		23F1
Communication Adapter Cover * Houses the Communication Adapter for Frame C drives.	22C-CCC		23A4

* If NEMA 1/IP30 is required, must also order 22-JBCC (Frame C drives only).

Programming Software	Cat. No.		PGC
DriveExplorer, Full version	9306-4EXP02ENE		05T1
DriveTool SP	9303-4DTS01ENE		05T1

Other Options	Cat. No.		PGC
Auxiliary Relay Board	AK-U9-RLB1		23A4

Discount Group 23, Discount Group 20 (1203-S...), Discount Group 5 (9306-4EX..., 9303-4DT...)
See Publication 22C-TD001_-EN-P for complete product information.

PowerFlex 70

- 0.37 kW to 37 kW, 400V 3-Phase
- Volts per Hertz, Sensorless Vector, Field Oriented Control with or without Encoder
- Integral EMC Filter as standard
- Integral Dynamic Braking Resistor (Options)
- Internal Communication (Options)
- Unique Thermal Regulator for «Trip Free» use
- Local LED status indication
- Device Port Interface (DPI) for 2nd Network or Ancillary Equipment connection
- Safety optional board



Typ. Motor Rating		Input Voltage	Drive Output [A]			Frame	Dimensions H x W x D	Cat. No.	PGC
[kW]	[A]		Cont.	60 s	3 s				
0.37	1.06	400 - 480V 50/60Hz, 3-Phase, EMC Filter, Brake Chopper	1.3	1.4	1.9	B	235x171x180	20AC1P3A0AYNANC0	23C4
0.75	1.88		2.1	2.4	3.2	B	235x171x180	20AC2P1A0AYNANC0	23C4
1.5	3.5		3.5	4.5	6	B	235x171x180	20AC3P5A0AYNANC0	23C4
2.2	5		5	5.5	7.5	B	235x171x180	20AC5P0A0AYNANC0	23C4
4	8.4		8.7	9.9	13.2	B	235x171x180	20AC8P7A0AYNANC0	23C4
5.5	11		11.5	13	17.4	C	300x186x180	20AC011A0AYNANC0	23C6
7.5	15		15.4	17.2	23.1	C	300x186x180	20AC015A0AYNANC0	23C6
11	21		22	24.2	33	D	350x220x180	20AC022A0AYNANC0	23C6
15	29		30	33	45	D	350x220x180	20AC030A0AYNANC0	23C6
18.5	34		37	45	60	D	350x220x180	20AC037A0AYNANC0	23C6
22	40		43	55	74	D	350x220x180	20AC043A0AYNANC0	23C6
30	53		60	66	90	E	350x220x180	20AC060A0AYNANC0	23C6
37	65		72	90	120	E	350x220x180	20AC072A0AYNANC0	23C6
0.37	1.06	400 - 480V 50/60Hz, 3-Phase, EMC Filter, Brake Chopper, IP66 with Full Numeric User Interface	1.3	1.4	1.9	B	240x171x203	20AC1P3C3AYNANC0	23C4
0.75	1.88		2.1	2.4	3.2	B	240x171x203	20AC2P1C3AYNANC0	23C4
1.5	3.5		3.5	4.5	6	B	240x171x203	20AC3P5C3AYNANC0	23C4
2.2	5		5	5.5	7.5	B	240x171x203	20AC5P0C3AYNANC0	23C4
4	8.4		8.7	9.9	13.2	B	240x171x203	20AC8P7C3AYNANC0	23C4
5.5	11		11.5	13	17.4	D	350x220x211	20AC011C3AYNANC0	23C6
7.5	15		15.4	17.2	23.1	D	350x220x211	20AC015C3AYNANC0	23C6
11	21		22	24.2	33	D	350x220x211	20AC022C3AYNANC0	23C6
15	29		30	33	45	D	350x220x211	20AC030C3AYNANC0	23C6
18.5	34		37	45	60	D	350x220x211	20AC037C3AYNANC0	23C6
22	40		43	55	74	D	350x220x211	20AC043C3AYNANC0	23C6
30	53		60	66	90	E	350x220x211	20AC060C3AYNANC0	23C6
37	65		72	90	120	E	350x220x211	20AC072C3AYNANC0	23C6

Discount Group 23

PowerFlex 70, continued

Typ. Motor Rating		Input Voltage	Drive Output [A]			Frame	Dimensions H x W x D	Cat. No.	PGC
[kW]	[A]		Cont.	60 s	3 s				
0.37	1.06	400 - 480V 50/60Hz, 3-Phase, EMC Filter, Brake Chopper, IP66 without User Interface	1.3	1.4	1.9	B	240x171x203	20AC1P3C0AYNANC0	23C4
0.75	1.88		2.1	2.4	3.2	B	240x171x203	20AC2P1C0AYNANC0	23C4
1.5	3.5		3.5	4.5	6	B	240x171x203	20AC3P5C0AYNANC0	23C4
2.2	5		5	5.5	7.5	B	240x171x203	20AC5P0C0AYNANC0	23C4
4	8.4		8.7	9.9	13.2	B	240x171x203	20AC8P7C0AYNANC0	23C4
5.5	11		11.5	13	17.4	D	350x220x211	20AC011C0AYNANC0	23C6
7.5	15		15.4	17.2	23.1	D	350x220x211	20AC015C0AYNANC0	23C6
11	21		22	24.2	33	D	350x220x211	20AC022C0AYNANC0	23C6
15	29		30	33	45	D	350x220x211	20AC030C0AYNANC0	23C6
18.5	34		37	45	60	D	350x220x211	20AC037C0AYNANC0	23C6
22	40		43	55	74	D	350x220x211	20AC043C0AYNANC0	23C6
30	53		60	66	90	E	350x220x180	20AC060C0AYNANC0	23C6
37	65		72	90	120	E	350x220x180	20AC072C0AYNANC0	23C6
0.37	—	500 - 600V 50/60Hz, 3-Phase, EMC Filter, Brake Chopper	0.9	1	1.4	A	226x123x180	20AE0P9A0AYNNNC0	23C5
0.75	—		1.7	1.9	2.6	A	226x123x180	20AE1P7A0AYNNNC0	23C5
1.5	—		2.7	3.6	4.8	A	226x123x180	20AE2P7A0AYNNNC0	23C5
2.2	—		3.9	4.3	5.8	B	235x172x180	20AE3P9A0AYNNNC0	23C5
4	—		6.1	6.7	9.1	B	235x172x180	20AE6P1A0AYNNNC0	23C5
5.5	—		9	9.9	13.5	C	300x185x180	20AE9P0A0AYNNNC0	23C5
7.5	—		11	13.5	18	C	300x185x180	20AE011A0AYNNNC0	23C5
11	—		17	18.7	25.5	D	350x220x180	20AE017A0AYNNNC0	23C5
15	—		22	25.5	34	D	350x220x180	20AE022A0AYNNNC0	23C5
0.37	—	500 - 600V 50/60Hz, 3-Phase, Brake Chopper, IP66 with Full Numeric User Interface	0.9	1	1.4	B	235x172x203	20AE0P9C3AYNNNC0	23C5
0.75	—		1.7	1.9	2.6	B	235x172x203	20AE1P7C3AYNNNC0	23C5
1.5	—		2.7	3.6	4.8	B	235x172x203	20AE2P7C3AYNNNC0	23C5
2.2	—		3.9	4.3	5.8	B	235x172x203	20AE3P9C3AYNNNC0	23C5
4	—		6.1	6.7	9.1	B	235x172x203	20AE6P1C3AYNNNC0	23C5
5.5	—		9	9.9	13.5	D	350x220x211	20AE9P0C3AYNNNC0	23C5
7.5	—		11	13.5	18	D	350x220x211	20AE011C3AYNNNC0	23C5
11	—		17	18.7	25.5	D	350x220x211	20AE017C3AYNNNC0	23C5
15	—		22	25.5	34	D	350x220x211	20AE022C3AYNNNC0	23C5

Discount Group 23

See Publication 20A-TD001_-EN-P for complete product information.

PowerFlex 70

Drives

Product Selection

Options

State-Off Option	Cat. No.		PGC
DriveGuard Safe-Off Board PowerFlex 70	20A-DG01		23F1

User Interface Modules	Cat. No.		PGC
Full Numeric LCD	20-HIM-A3		23F1
Programming Only LCD	20-HIM-A5		23F1
DPI-Port Cable, 1 m	20-HIM-H10		23F1
Full Numeric LCD, IP66, includes 3 m cable	20-HIM-C3S		23F1
Programming Only LCD, IP66, includes 3 m cable	20-HIM-C5S		23F1
DPI-Port Cable Extension, 0.30 m	1202-H03		20N1
DPI-Port Cable Extension, 1 m	1202-H10		20N1
DPI-Port Cable Extension, 3 m	1202-H30		20N1
DPI-Port Cable Extension, 9 m	1202-H90		20N1

Internal Communication Option	Cat. No.		PGC
Communication Module, DeviceNet	20-COMM-D		23F1
Communication Module, ControlNet	20-COMM-C		23F1
Communication Module, EtherNet/IP	20-COMM-E		23F1
Communication Module, RIO	20-COMM-R		23F1
Communication Module, RS485 DF1	20-COMM-S		23F1
Communication Module, Profibus	20-COMM-P		23F1
Communication Module, InterBus	20-COMM-I		23F1
Communication Module, CANopen	20-COMM-K		23F1
Communication Module, LonWorks	20-COMM-L		23F1
Selectable Communication Module, HVAC ModBus RTU, Metasys N2	20-COMM-H		23F1
Communication Module, Option Compact I/O to DPI/SCANport module	1769-SM1		23A4

Encoder Option	Cat. No.		PGC
Encoder Feedback, 12/5V DC, PowerFlex 70	20A-ENC-1		23F1

PC Programming Tool	Cat. No.		PGC
Serial Converter Module with Software DriveExplorer Light Version	1203-SSS		20N1

Programming Software	Cat. No.		PGC
DriveExplorer, Full version	9306-4EXP02ENE		05T1
DriveTools SP Suite, DriveExecutive and DriveObserver	9303-4DTS01ENE		05T1

Internal Brake Resistors, 5% Duty Cycle	Cat. No.		PGC
Brake Resistor Kit, PowerFlex 70 Frame A, 400-600V, 115 Ohm	20AD-DB1-A		23F1
Brake Resistor Kit, PowerFlex 70 Frame B, 400-600V, 115 Ohm	20AD-DB1-B		23F1
Brake Resistor Kit, PowerFlex 70 Frame C, 400-600V, 115 Ohm	20AD-DB1-C		23F1
Brake Resistor Kit, PowerFlex 70 Frame D, 400-480V, 62 Ohm	20AD-DB1-D		23F1

See Publication 20A-TD001_EN-P for complete product information.

PowerFlex 700

- 0.37 kW to 132 kW, 400V 3-Phase
- Volts per Hertz, Sensorless Vector, Field Oriented Control with or without Encoder
- Internal EMC Filter as Standard
- Integral Dynamic Braking Resistor (Options)
- «Zero Stacking», Space saving Installation
- Unique integrated cassette module; (ICM) containing, main control board, additional I/O option on board
- ICM simplifies Installation, Training and Maintenance
- Pull-Apart Control Terminal Blocks allow easy wiring and quick disconnect
- The ideal drive for all complex machines and integrated automation systems
- Lift function and Torque Prove function embedded



Typical Motor Rating		Input Voltage	Drive Output [A]			Frame	Dimensions H x W x D	Cat. No.	PGC
[kW]	[A]		Cont.	60 s	3 s				
0.75	1.88	400 - 480V 50/60Hz, 3-Phase, EMC Filter, Brake Chopper	2.1	2.4	3.2	0	336x110x200	20BC2P1A0AYNANC0	23G1
1.5	3.5		3.5	4.5	6	0	336x110x200	20BC3P5A0AYNANC0	23G1
2.2	5		5	5.5	7.5	0	336x110x200	20BC5P0A0AYNANC0	23G1
4	8.4		8.7	9.9	13.2	0	336x110x200	20BC8P7A0AYNANC0	23G1
5.5	11		11.5	13	17.4	0	336x110x200	20BC011A0AYNANC0	23G1
7.5	15		15.4	17.2	23.1	1	336x135x200	20BC015A0AYNANC0	23G1
11	21		22	24.2	33	1	336x135x200	20BC022A0AYNANC0	23G1
15	29		30	33	45	2	343x220x200	20BC030A0AYNANC0	23G2
18.5	34		37	45	60	2	343x220x200	20BC037A0AYNANC0	23G2
22	40		43	56	74	3	518x220x200	20BC043A0AYNANC0	23G2
30	53		56	64	86	3	518x220x200	20BC056A0AYNANC0	23G2
37	65		72	84	112	3	518x220x200	20BC072A0AYNANC0	23G2
45	78		85	94	128	4	759x220x200	20BC085A0AYNANC0	23G2
55	98		105	116	158	5	645x309x276	20BC105A0AYNANC0	23G3
75	132		140	154	210	5	645x309x276	20BC140A0AYNANC0	23G3
90	158		170	187	255	6	850x404x276	20BC170A0AYNANC0	23G3
110	194		205	220	289	6	850x404x276	20BC205A0AYNANC0	23G3
132	235		260	286	390	6	850x404x276	20BC260A0AYNANC0	23G3
45	78	400 - 480V 50/60Hz, 3-Phase, EMC Filter, no Brake Chopper	85	94	128	4	759x220x200	20BC085A0ANNANC0	23G2
55	98		105	116	158	5	645x309x276	20BC105A0ANNANC0	23G3
75	132		140	154	210	5	645x309x276	20BC140A0ANNANC0	23G3
90	158		170	187	255	6	850x404x276	20BC170A0ANNANC0	23G3
110	194		205	220	289	6	850x404x276	20BC205A0ANNANC0	23G3
132	235		260	286	390	6	850x404x276	20BC260A0ANNANC0	23G3

Discount Group 23

See Publication 20B-TD001_-EN-P for complete product information.

PowerFlex 700

Drives

Product Selection

Options

User Interface Modules	Cat. No.		PGC
Full Numeric LCD	20-HIM-A3		23F1
Programming Only LCD	20-HIM-A5		23F1
DPI-Port Cable, 1 m	20-HIM-H10		23F1
Full Numeric LCD, IP66, includes 3 m cable	20-HIM-C3S		23F1
Programming Only LCD, IP66, includes 3 m cable	20-HIM-C5S		23F1
DPI-Port Cable Extension, 0.30 m	1202-H03		20N1
DPI-Port Cable Extension, 1 m	1202-H10		20N1
DPI-Port Cable Extension, 3 m	1202-H30		20N1
DPI-Port Cable Extension, 9 m	1202-H90		20N1

Internal Communication Option	Cat. No.		PGC
Communication Module, DeviceNet	20-COMM-D		23F1
Communication Module, ControlNet	20-COMM-C		23F1
Communication Module, EtherNet/IP	20-COMM-E		23F1
Communication Module, RIO	20-COMM-R		23F1
Communication Module, RS485 DF1	20-COMM-S		23F1
Communication Module, Profibus	20-COMM-P		23F1
Communication Module, InterBus	20-COMM-I		23F1
Communication Module, CANopen	20-COMM-K		23F1
Communication Module, LonWorks	20-COMM-L		23F1
Selectable Communication Module, HVAC ModBus RTU, Metasys N2	20-COMM-H		23F1
Communication Module, Option Compact I/O to DPI/SCANport module	1769-SM1		23A4

Encoder Option	Cat. No.		PGC
PowerFlex 700 Encoder Feedback, 12/5VDC	20B-ENC-2		23F1

PC Programming Tool	Cat. No.		PGC
Serial Converter Module with Software DriveExplorer Light Version	1203-SSS		20N1

Programming Software	Cat. No.		PGC
DriveExplorer, Full version	9306-4EXP02ENE		05T1
DriveTools SP Suite, DriveExecutive and DriveObserver	9303-4DTS01ENE		05T1

Internal Brake Resistors, 5% Duty Cycle	Cat. No.		PGC
Brake Resistor Kit, PowerFlex 700 Frame 0, 400-480V, 115 Ohm	20BD-DB1-0		23F1
Brake Resistor Kit, PowerFlex 700 Frame 1, 400-480V, 115 Ohm	20BD-DB1-1		23F1
Brake Resistor Kit, PowerFlex 700 Frame 2, 400-480V, 68 Ohm	20BD-DB1-2		23F1

See Publication 20B-TD001_-EN-P for complete product information.

External Dynamic Brake Resistors for all PowerFlex Drives

kW	Braking Torque % of Motor Power	Duty Cycle %	Description	Cat. No.		PGC
200-240V Drives						
0.37	100%	46%	Dynamic Brake Resistor, 200-480V, 91 Ohm, 86 W	AK-R2-091P500		23F1
0.75	100%	23%	Dynamic Brake Resistor, 200-480V, 91 Ohm, 86 W	AK-R2-091P500		23F1
1.5	100%	11%	Dynamic Brake Resistor, 200-480V, 91 Ohm, 86 W	AK-R2-091P500		23F1
2.2	100%	15%	Dynamic Brake Resistor, 200-480V, 47 Ohm, 166 W	AK-R2-047P500		23F1
4	79%	11%	Dynamic Brake Resistor, 200-480V, 47 Ohm, 166 W	AK-R2-047P500		23F1
5.5	90%	10%	Dynamic Brake Resistor, 200-480V, 30 Ohm, 260 W	AK-R2-030P1K2		23F1
7.5	66%	10%	Dynamic Brake Resistor, 200-480V, 30 Ohm, 260 W	AK-R2-030P1K2		23F1
11	90%	10%		*		
15	66%	10%		*		
400 - 480V Drives						
0.37	100%	47%	Dynamic Brake Resistor, 200-480V, 360 Ohm, 86 W	AK-R2-360P500		23F1
0.75	100%	23%	Dynamic Brake Resistor, 200-480V, 360 Ohm, 86 W	AK-R2-360P500		23F1
1.5	100%	12%	Dynamic Brake Resistor, 200-480V, 360 Ohm, 86 W	AK-R2-360P500		23F1
2.2	100%	24%	Dynamic Brake Resistor, 200-480V, 120 Ohm, 260 W	AK-R2-120P1K2		23F1
4	100%	13%	Dynamic Brake Resistor, 200-480V, 120 Ohm, 260 W	AK-R2-120P1K2		23F1
5.5	90%	10%	Dynamic Brake Resistor, 200-480V, 120 Ohm, 260 W	AK-R2-120P1K2		23F1
7.5	66%	10%	Dynamic Brake Resistor, 200-480V, 120 Ohm, 260 W	AK-R2-120P1K2		23F1
11	90%	10%		*		
15	66%	10%		*		

* For 11 and 15 kW applications, use two 7.5 size resistors wired in parallel.

Discount Group 23

For technical details, refer to publication RA-IN004-EN-P.

Drives

Accessories

Line Reactors, 3% Input Impedance

kW	PowerFlex 4			PowerFlex 40			PowerFlex 400		
	Cat. No.		PGC	Cat. No.		PGC	Cat. No.		PGC
200-240V 3-Phase Drives									
0.2	1321-3R2-A		20G4	1321-3R2-A		20G4			
0.75	1321-3R8-B		20G4	1321-3R8-B		20G4			
1.5	1321-3R8-A		20G4	1321-3R8-A		20G4			
2.2	1321-3R12-A		20G4	1321-3R12-A		20G4	1321-3R12-A		20G4
4	1321-3R18-A		20G4	1321-3R18-A		20G4	1321-3R18-A		20G4
5.5				1321-3R25-A		20G4	1321-3R25-A		20G4
7.5				1321-3R35-A		20G4	1321-3R35-A		20G4
11							1321-3R45-A		20G4
15							1321-3R55-A		20G4
18.5							1321-3R80-A		20G4
22							1321-3R80-A		20G4
30							1321-3R100-A		20G4
37							1321-3R130-A		20G4
400-480V 3-Phase Drives									
0.37	1321-3R2-B		20G4	1321-3R2-B		20G4			
0.75	1321-3R2-B		20G4	1321-3R2-B		20G4			
1.5	1321-3R4-B		20G4	1321-3R4-B		20G4			
2.2	1321-3R4-B		20G4	1321-3R4-B		20G4	1321-3R8-B		20G4
4	1321-3R8-B		20G4	1321-3R8-B		20G4	1321-3R12-B		20G4
5.5				1321-3R12-B		20G4	1321-3R12-B		20G4
7.5				1321-3R18-B		20G4	1321-3R18-B		20G4
11							1321-3R25-B		20G4
15							1321-3R35-B		20G4
18.5							1321-3R35-B		20G4
22							1321-3R45-B		20G4
30							1321-3R55-B		20G4
37							1321-3R80-B		20G4
45							1321-3R80-B		20G4
55							1321-3R100-B		20G4
75							1321-3R130-B		20G4
90							1321-3R160-B		20G4
110							1321-3R200-B		20G4

Discount Group 20

For technical details, refer to publication RA-IN004-EN-P.

Solid State Devices 700-SH, -SE, -SC

			
Bulletin	700-SH	700-SE	700-SC
Type	Hockey Puck	Flat Pack	Miniature, Ice Cube Socketed
Features	Panel/DIN Mount, High Current, Protective Cover, LED Status	Panel/DIN Mount, Low Profile	Compatible w/700-HN103 or 128 socket, LED Status & Zero-cross AC Switching Options
Load Type	AC (47...63 Hz)	AC (47...63 Hz)	AC (47...63 Hz) DC
Load Voltage Range	19...264V AC, 180...528V AC	75...264V AC	75...264V AC 3...52.8V DC or 3...125V DC
Load Current Max. (Continuous)	6 A/40 A *	5 A/20 A *	3 A 3A @ 48V DC, or 2A @ 110V DC
Max Leakage Current to Load	5 mA @ 100V, 10 mA @ 200V, 20 mA @ 400V	5 mA @ 100V, 10 mA @ 200V	5 mA @ 100V AC 10 mA @ 200V AC 5 mA @ 50V DC, or 0.1mA @ 100V DC
Zero Cross Load Switching	Yes	Yes (optional)	Yes (optional) N/A
Equivalent Electromechanical Relay Contact Arrangement	1 N.O. Form A	1 N.O. Form A	1 N.O. Form A
Rated Control (Input) Voltage	5...24V DC, 100...120V AC, 200...240V AC	5V DC, 12V DC, 24V DC	5...24V DC, 100...110V AC, 200/220V AC 5...24V DC
LED Indicator	Yes	No	Yes (optional) Yes (optional for 48V DC)
Mounting Method	Panel w/o heat sink, Panel or DIN w/heat sink	Panel w/o heat sink, Panel or DIN w/heat sink	Panel or DIN w/socket
Dielectric Strength	2500V AC, 50/60 Hz, 1 min.	2000V AC, 50/60 Hz, 1 min.	1500V AC, 50/60 Hz, 1 min.
Certification	cURus, CE, TÜV *	cURus, CE, TÜV	cURus, CE, VDE
Max. Ambient Operating Temperature	-30...80 °C (no condensation)	-30...80 °C (no condensation)	-30...80 °C (no condensation)
Product Selection	Page 122	Page 123	Page 124

* With heat sink.

Bulletin 700-S, 156

Solid State Devices

Product Line Overview

Solid State Devices 700-SA, -SK

						
Bulletin	700-SA		700-SK			
Type	Tube Base, Socketed		Slim Line, Socketed			
Features	Compatible w/700-HN100, 125,108, and 204 socket, LED status, zero-cross switching		Compatible w/700-HN121 socket. Supports Input (sensor) module or Output (SSR) module			
Load Type	AC (47...63 Hz)	DC	Output Module		Input Module	
			AC (47...63 Hz)	DC	AC (47...63 Hz)	DC
Load Voltage Range	75...264V AC	3 ...125V DC	75 ... 264V AC	4 ... 60V DC, 40 ... 200V DC	Field Input: 60... 264V AC	Field Input: 6.6... 32V DC
Load Current Max. (Continuous)	5 A	3 A	2 A	2A @ 60V, 1.5A @ 200V	Supply Current: 0.1 ... 100 mA	Supply Current: 0.1 ... 100 mA
Max Leakage Current to Load	5 mA @ 100V, 10 mA @ 200V	5 mA @ 125V	1.5 mA	1 mA	5 µA	5 µA
Zero Cross Load Switching	Yes	N/A	Yes (optional)	N/A	No	N/A
Equivalent Electromechanical Relay Contact Arrangement	1 N.O. Form A		1 N.O. Form A			
Rated Control (Input) Voltage	5...24V DC		5 ... 24 V DC	5 ... 24 V DC	5 ... 24V DC	5 ... 24V DC
LED Indicator	Yes		Yes			
Mounting Method	Panel or DIN w/socket		Panel or DIN w/socket			
Dielectric Strength	1500V AC, 50/60 Hz, 1 min.		4000V AC, 50/60 Hz, 1 min.			
Certification	cURus, CE, VDE		cURus, CE, TÜV			
Max. Ambient Operating Temperature	-30 ... 80 °C, (no condensation)		-30 ... 80 °C (no condensation)			
Product Selection	Page 125		Page 126			

Solid State Devices 156



Bulletin	156	156	156
Type	Single Phase	Dual Phase	Three Phase
Current Ratings	15, 30 or 50 A	30 or 50 A	10 or 20 A
Operational Voltage	24...600V AC		
Control Voltage	5...24V DC 24...230V AC		
Product Mountings	DIN or Panel		
Applications	Long Life: Solid State Contactors use electronic current switching devices. Since there are no moving parts, this means long life. This makes the solid state contactor ideal for high duty cycle applications such as heaters.		
	Low Maintenance: There are no moving parts or contacts to wear out or to be effected by shock and vibration. Maintenance pounds, parts replacement, and downtime are reduced drastically, if not eliminated altogether.		
	Typical Applications: Ovens (Industrial and commercial cooking), plastic molding/extruding machines, packaging equipment, replacement for mercury relays and contactors.		
Approvals/Standards	IEC 60947-4-2 IEC 60947-4-3 CE cULus CSA		
Product Selection	Page 127		

Hockey Puck Relays for DIN Rail Mounting 700-SH



700-SH

Input-to-Output Isolation Method	Zero Cross Function	LED Indicator	Output (Load) Max. Continuous Current and Rated Voltage Range *	Rated Input Control Voltage	Cat. No.		PGC
Phototriac	Yes	Yes	5 A @ 24...240V AC (47...63 Hz)	5...24V DC	700-SH05GZ25		A2D1
Photocoupler				100...120V AC	700-SH05GA12		A2D1
				200...240V AC	700-SH05GA22		A2D1
Phototriac	Yes	Yes	10 A @ 24...240V AC (47...63 Hz)	5...24V DC	700-SH10GZ25		A2D1
Photocoupler				100...120V AC	700-SH10GA12		A2D1
				200...240V AC	700-SH10GA22		A2D1
Photocoupler			10 A @ 200...480V AC (47...63 Hz)	5...24V DC	700-SH10HZ25		A2D1
			Yes	Yes	25 A @ 24...240V AC (47...63 Hz)	5...24V DC	700-SH25GZ25
100...120V AC	700-SH25GA12					A2D1	
200...240V AC	700-SH25GA22					A2D1	
Photocoupler	Yes	Yes	25 A @ 200...480V AC (47...63 Hz)	5...24V DC	700-SH25HZ25		A2D1
Phototriac				40 A @ 24...240V AC (47...63 Hz)	5...24V DC	700-SH40GZ25	
Photocoupler			100...120V AC		700-SH40GA12		A2D1
			200...240V AC		700-SH40GA22		A2D1
Photocoupler			40 A @ 200...480V AC (47...63 Hz)	5...24V DC	700-SH40HZ25		A2D1

* Maximum load current when mounted on the appropriate heat sink.
Discount Group RAA

Accessories

	Description	Cat. No.		PGC
	Heat Sink— Panel or DIN Rail Mount	700-S10		A2D1
		700-S20		A2D1
		700-S30		A2D1

Discount Group RAA

Flat Pack Relays for DIN Rail Mounting 700-SE



700-SE

Input-to-Output Isolation Method	Zero Cross Function	LED Indicator	Output (Load) Max. Continuous Current and Rated Voltage Range *	Rated Input (Control) Voltage	Cat. No.	PGC
Phototriac	Yes	No	(47...63 Hz)5 A @ 100...240V AC	5V DC	700-SE05GZZ05	A2D1
				12V DC	700-SE05GZZ12	A2D1
				24V DC	700-SE05GZZ24	A2D1
			(47...63 Hz)10 A @ 100...240V AC	5V DC	700-SE10GZZ05	A2D1
				12V DC	700-SE10GZZ12	A2D1
				24V DC	700-SE10GZZ24	A2D1
			(47...63 Hz)20 A @ 100...240V AC	5V DC	700-SE20GZZ05	A2D1
				12V DC	700-SE20GZZ12	A2D1
				24V DC	700-SE20GZZ24	A2D1
	No	No	(47...63 Hz)5 A @ 100...240V AC	5V DC	700-SE05GNZ05	A2D1
				12V DC	700-SE05GNZ12	A2D1
				24V DC	700-SE05GNZ24	A2D1
			(47...63 Hz)10 A @ 100...240V AC	5V DC	700-SE10GNZ05	A2D1
				12V DC	700-SE10GNZ12	A2D1
				24V DC	700-SE10GNZ24	A2D1
			(47...63 Hz)20 A @ 100...240V AC	5V DC	700-SE20GNZ05	A2D1
				12V DC	700-SE20GNZ12	A2D1
				24V DC	700-SE20GNZ24	A2D1

* Maximum load current when mounted on the appropriate heat sink.

Discount Group RAA

Accessories

	Description	Cat. No.	PGC
	Heat Sink— Panel or DIN Rail Mount	700-S10	A2D1
		700-S20	A2D1
		700-S30	A2D1

Discount Group RAA

Ice Cube Relays with Blade Style Terminals 700-SC



700-SC

Input-to-Output Isolation Method	Zero Cross Function	LED Indicator	Output (Load) Max. Continuous Current and Rated Voltage Range	Rated Input (Control) Voltage	Cat. No.		PGC
Photocoupler	Yes	Yes	3 A @ 100...240V AC (47...63 Hz)	5...24V DC	700-SCZY3Z25		A2D1
			2 A @ 100...240V AC (47...63 Hz)	100/110V AC	700-SCZY2A1		A2D1
				200/220V AC	700-SCZY2A2		A2D1
Phototriac	No		3 A @ 100...240V AC (47...63 Hz)	24V DC	700-SCTY3Z24		A2D1
Photocoupler	Not Applicable		3 A @ 4...48V DC	5...24V DC	700-SCNY3Z25		A2D1
	Yes		No	3 A @ 100...240V AC (47...63 Hz)	4...24V DC	700-SCZN3Z26	
Phototriac	No	24V DC			700-SCTN3Z24		A2D1
Photocoupler	Not Applicable	3 A @ 4...48V DC		4...24V DC	700-SCNN3Z26		A2D1
		2 A @ 5...110V DC		5...24V DC	700-SCNN2Z25		A2D1

Discount Group RAA

Accessories

	Description	PQ	Cat. No.	PGC
	Screw Terminal Socket — Panel or DIN Rail Mounting; Guarded Terminal Construction. I_{th} = 10 A per pole. 14-Blade miniature socket for use with Bulletin 700-HC Relays. Order must be in ten or multiples of ten	10	700-HN103	W3N
	Screw Terminal Socket – Panel or DIN Rail Mounting. Guarded Terminal Construction I_{th} = 10 A per pole. 14-blade miniature socket for use with Bulletin 700-HC relays. This socket has coil and contact separation as well as the ability to plug in optional plug in modules (700-A** accessories: LED, Surge Suppression, Timing Modules)	10	700-HN104	W3N
	Retainer Clip for Cat. Nos. 700-HN103, -HN104 and -HN128 Sockets with 700-HC Relays and Cat. Nos. 700-HN116 Sockets with Bulletin 700-HF DPDT Relays * Secures relay in socket. Order must be for 10 clips or multiples of 10.	10	700-HN114	W3N
	On-Delay Time Module Voltage Range: 12...24V AC/DC used with 700-HN104 socket	1	700-AT1	W3N
	One Shot Timing Module Voltage Range: 12...24V AC/DC used with 700-HN104 socket	1	700-AT2	W3N

* Series B retainer clip must be used with Bulletin 700-SC
PQ = Package Quantity
Discount Group RAA

Tube Base Relays with Pin Terminals 700-SA



700-SA

Input-to-Output Isolation Method	Zero Cross Function	LED Indicator	Output (Load) Max. Continuous Current and Rated Voltage Range	Rated Input (Control) Voltage	Cat. No.	PGC
Photocoupler	Yes	Yes	(47...63 Hz) 5 A @ 100...240V AC	5...24V DC	700-SAZY5Z25	A2D1
	Not Applicable		3 A @ 5...110V DC		700-SANY3Z25	A2D1

Discount Group RAA

Accessories

	Description	PQ	Cat. No.	PGC
	Screw Terminal Tube Base Socket — Panel or DIN Rail Mounting; Guarded Terminal Construction. Order ten or multiples of ten	10	700-HN100	W3N
	Retainer Clip for Cat. Nos. 700-HN100, -HN101, -HN200, -HN201, -HN204, and -HN205 Sockets with Bulletin 700-HA Relays Secures relay in socket. Order must be for 10 clips or multiples of 10.	10	700-HN157	W3N
	8-Pin Socket—Screw Terminal Tube Base Sockets — panel or DIN Rail mounting. Order must be for 10 sockets or multiples of 10.	10	700-HN204	W3N

PQ = Package Quantity

Discount Group RAA

"Slim Line" Relays with Plug-in Quick Connect Terminals 700-SK

- High response speed models
- Input sensor module to allow high voltage 100...240V AC or 12...24V DC sensor
- Interface to low voltage (Logic) device such as a PC output module for typical SSR applications
- LED indicator
- Input modules and output modules can be used with the 700-HN121 socket



700-SK

Input/Sensor Module

Input-to-Output Isolation Method	LED Indicator	Response Speed	Logic Level		Rated Input Sensor Voltage	Cat. No.	PGC
			Supply Voltage	Supply Current			
Photocoupler	Yes	10 Hz	4...32V DC	0.1...100 mA	*100...240V AC	700-SKICA18	A2D1
		High-speed (1 kHz)			12...24V DC	700-SKICZ24	A2D1

* 47...63 Hz
Discount Group RAA

Output/SSR Module

Input-to-Output Isolation Method	Zero Cross Function	LED Indicator	Output (Load) Max. Continuous Current and Rated Voltage Range	Rated Input Control Voltage	Cat. No.		PGC
Phototriac	Yes	Yes	*2 A @ 100...240V AC	5...24V DC	700-SKOZ2Z25		A2D1
	No				700-SKON2Z25		A2D1
Photocoupler	Not Applicable		2 A @ 5...48V DC		700-SKOC2Z25		A2D1
			1.5 A @ 48...200V DC		700-SKOC1Z25		A2D1

* 47...63 Hz
Discount Group RAA

Accessories

	Description	PQ	Cat. No.	PGC
	Screw Terminal Socket — Panel or DIN Rail Mounting 5-blade miniature socket. Socket includes a retainer clip. Order must be in multiples of ten.	10	700-HN121	W3N

PQ = Package Quantity
Discount Group RAA

Solid State Contactors 156-A

- Compact modular design complete with heatsink
- DIN Rail mountable
- Easy and quick installation
- Specification according to industry standard
- Available in single-phase, dual-phase or three-phase version
- Operational current up to 50 A (AC-1), 15 A (AC-3)
- LED Status indication.
- Line voltage up to 600V AC
- Universal control voltage
- Burst firing (zero cross)
- IP 20 protection
- Built-in varistor protection phase or three-phase
- Standards compliance: CE marked, cULus, CSA



Single-Phase

Current Rating [A]	Control Voltage	Operational Voltage								
		24...230V AC			24...480V AC			24...600V AC		
		Cat. No.		PGC	Cat. No.		PGC	Cat. No.		PGC
15	5...24V DC	156-A15AB1		W4Z	156-A15BB1		W4Z	156-A15CB1		W4Z
15	24...230V AC/DC	156-A15AA1		W4Z	156-A15BA1		W4Z	156-A15CA1		W4Z
30	5...24V DC	156-A30AB1		W4Z	156-A30BB1		W4Z	156-A30CB1		W4Z
30	24...230V AC/DC	156-A30AA1		W4Z	156-A30BA1		W4Z	156-A30CA1		W4Z
50	5...24V DC	156-A50AB1		W4Z	156-A50BB1		W4Z	156-A50CB1		W4Z
50	24...230V AC/DC	156-A50AA1		W4Z	156-A50BA1		W4Z	156-A50CA1		W4Z

Discount Group RAA

Dual-Phase

Current Rating [A]	Control Voltage	Operational Voltage								
		24...230V AC			24...480V AC			24...600V AC		
		Cat. No.		PGC	Cat. No.		PGC	Cat. No.		PGC
30	5...24V DC	156-A30AB2		W4Z	156-A30BB2		W4Z	156-A30CB2		W4Z
30	24...230V AC/DC	156-A30AA2		W4Z	156-A30BA2		W4Z	156-A30CA2		W4Z
50	5...24V DC	156-A50AB2		W4Z	156-A50BB2		W4Z	156-A50CB2		W4Z
50	24...230V AC/DC	156-A50AA2		W4Z	156-A50BA2		W4Z	156-A50CA2		W4Z

Discount Group RAA

Solid State Contactors 156-A, continued
Three-Phase

Current Rating [A]	Control Voltage	Operational Voltage								
		24...230V AC			24...480V AC			24...600V AC		
		Cat. No.		PGC	Cat. No.		PGC	Cat. No.		PGC
10	5...24V DC	156-A10AB3		W4Z	156-A10BB3		W4Z	156-A10CB3		W4Z
10	24...230V AC/DC	156-A10AA3		W4Z	156-A10BA3		W4Z	156-A10CA3		W4Z
20	5...24V DC	156-A20AB3		W4Z	156-A20BB3		W4Z	156-A20CB3		W4Z
20	24...230V AC/DC	156-A20AA3		W4Z	156-A20BA3		W4Z	156-A20CA3		W4Z

Discount Group RAA

Temperature Controllers 900-TC

			
Bulletin	900-TC8	900-TC16	900-TC32
Dimensions:			
Height	96 mm	48 mm	24 mm
Width	48 mm	48 mm	48 mm
Depth	78 mm	78 mm	100 mm
Sample Rate	250 or 500 ms		500 ms
Indication Accuracy	±0.5% PV ±1 digit max.		
Heating/Cooling Control Mode	✓	✓	✓
Control Method	ON/OFF or 2-PID (auto-tune and self-tune) with time proportioning ON/OFF output		
Inputs	• Thermocouple Input • Platinum Resistance Temperature Sensor • Analog Input 0...20 mA, 4...20 mA / 1...5V DC, 0...5V DC, 0...10V DC, 0...50mV DC * • Non-Contact Temperature Sensor		
Control Output 1	• Relay Output (electromechanical) • Voltage Output for Solid-State Relay • Triac Output (AC only) • Analog Output 4...20 mA and 0...20 mA		• Relay Output (electromechanical) • Voltage Output for Solid-State Relay
Control Output 2	• Voltage Output for Solid-State Relay • Triac Output (AC only)	• Voltage Output for Solid-State Relay (with option unit)	—
Max. Number of Alarms	3	2 (with option unit)	1
RS-232C Communications Function	✓ (with option unit)	—	—
RS-485 Communications Function	✓ (with option unit)	✓ (with option unit)	✓
Event Input	✓ (with option unit)	✓ (with option unit)	—
Run/Stop via Keypad or Interrupts	✓	✓	Keypad
Multiple SP Selection via Keypad or Interrupts	✓	✓	Keypad
Heater Burnout and Heater Short Alarm	✓	✓	—
Product Selection	Page 130	Page 131	Page 132

* 900-TC32 only available with 0...50 mV DC.

Bulletin 900-TC

Temperature Controllers

Product Selection

Temperature Controllers 900-TC8



Power Supply Voltage	Max No. of Alarms Supported	Control Output 1	Control Output 2	Supports Heater Burnout (Open) and Heater Short-Circuit Alarm	Cat. No.	PGC
Input Type: Thermocouple or RTD						
100... 240V AC	3	Relay	—	No	900-TC8RGTZ25	A5B1
			—	Yes (1-Phase)	900-TC8RGTH1Z25	A5B1
			Voltage (for driving SSR)	No	900-TC8RVGTZ25	A5B1
			—	Yes (3-Phase)	900-TC8RGTH3Z25	A5B1
		Voltage (for driving SSR)	—	No	900-TC8VGTZ25	A5B1
			—	Yes (1-Phase)	900-TC8VGTH1Z25	A5B1
			Triac	No	900-TC8VYGTZ25	A5B1
			Voltage (for driving SSR)	No	900-TC8VVGTZ25	A5B1
		0...20 or 4...20 mA Analog Output	—	Yes (3-Phase)	900-TC8VGTH3Z25	A5B1
			—	No	900-TC8ACGTZ25	A5B1
			Triac	No	900-TC8ACYGTZ25	A5B1
			Voltage (for driving SSR)	No	900-TC8ACVGTZ25	A5B1
24V AC/DC	3	Relay	—	No	900-TC8RGTU25	A5B1
			—	Yes (1-Phase)	900-TC8RGTH1U25	A5B1
		Voltage (for driving SSR)	—	No	900-TC8VGTU25	A5B1
			—	Yes (1-Phase)	900-TC8VGTH1U25	A5B1
		0...20 or 4...20 mA Analog Output	—	No	900-TC8ACGTU25	A5B1
			Input Type: Analog Current & Voltage 0...20 and 4...20 mA 0...5, 1...5, and 0...10V DC			
100... 240V AC	3	Relay	—	Yes (1-Phase)	900-TC8RABH1Z25	A5B1
		Relay	—	No	900-TC8RABZ25	A5B1
		Voltage (for driving SSR)	—	Yes (1-Phase)	900-TC8VABH1Z25	A5B1
		Voltage (for driving SSR)	—	No	900-TC8VABZ25	A5B1
		Voltage (for driving SSR)	Triac	No	900-TC8VYABZ25	A5B1
		0...20 or 4...20 mA Analog Output	—	No	900-TC8ACABZ25	A5B1

A current transformer (CT) is not provided with the unit.

When the heating and cooling function or the heater burnout alarm is used, one of the relay alarm outputs can be used as the heating or cooling output or heater burnout alarm.

Discount Group RAA

Temperature Controllers 900-TC16



Power Supply Voltage	Max No. of Alarms Supported	Control Output *	Supports Heater Burnout (Open) and Heater Short-Circuit Alarm	Cat. No.		PGC
Input Type: Thermocouple or RTD						
100... 240V AC	2	Relay	Yes *	900-TC16RGTU25		A5B1
		Triac	Yes *	900-TC16YGTZ25		A5B1
		Voltage (for driving SSR)	Yes *	900-TC16VGTZ25		A5B1
		0...20 or 4...20 mA Analog Output	No	900-TC16ACGTZ25		A5B1
24V AC/DC	2	Relay	Yes *	900-TC16RGTU25		A5B1
		Voltage (for driving SSR)	Yes *	900-TC16VGTU25		A5B1
		0...20 or 4...20 mA Analog Output	No	900-TC16ACGTZ25		A5B1
Input Type: Analog Current & Voltage 0...20 and 4...20 mA 0...5, 1...5, and 0...10V DC						
100... 240V AC	2	Relay	Yes *	900-TC16RABZ25		A5B1
		Triac	Yes *	900-TC16YABZ25		A5B1
		Voltage (for driving SSR)	Yes *	900-TC16VABZ25		A5B1
		0...20 or 4...20 mA Analog Output	No	900-TC16ACABZ25		A5B1
24V AC/DC	2	Relay	Yes *	900-TC16RABU25		A5B1
		Voltage (for driving SSR)	Yes *	900-TC16VABU25		A5B1
		0...20 or 4...20 mA Analog Output	No	900-TC16ACABU25		A5B1

A current transformer (CT) is not provided with the unit.

When the heating and cooling function or the heater burnout alarm is used, one of the relay alarm outputs can be used as the heating or cooling output or heater burnout alarm.

* To implement the single-phase or three-phase heater burnout and heater short alarm function, an option module must be inserted into the 900-TC16 controller. For a list of 900-TC16 option modules, refer to the Option Units table, page 6. The heater burnout and heater short alarm is available by mounting the appropriate option module into any 900-TC16 controller that supports (yes) the heater burnout (open) or heater short-circuit feature.

* The Bulletin 900-TC16 can have a second ON/OFF control output (SSR) by adding an option unit to the controller. Refer to Option Units table on page 5.

Discount Group RAA

Bulletin 900-TC

Temperature Controllers

Product Selection

Temperature Controllers 900-TC32



Power Supply Voltage	Max No. of Alarms Supported	Control Output Type	RS485 Communication Port	Cat. No.		PGC
Controller with Thermocouple Support						
100...240V AC	1	Relay	No	900-TC32RTZ25		A5B1
		Voltage (for driving SSR)		900-TC32VTZ25		A5B1
24V AC/DC	1	Relay	No	900-TC32RTU25		A5B1
		Voltage (for driving SSR)		900-TC32VTU25		A5B1
100...240V AC	No	Relay	Yes	900-TC32CRTZ25		A5B1
		Voltage (for driving SSR)		900-TC32CVTZ25		A5B1
24V AC/DC	No	Relay	Yes	900-TC32CRTU25		A5B1
		Voltage (for driving SSR)		900-TC32CVTU25		A5B1
Controller with Platinum RTD Support						
100...240V AC	1	Relay	No	900-TC32RPZ25		A5B1
		Voltage (for driving SSR)		900-TC32VPZ25		A5B1
24V AC/DC	1	Relay	No	900-TC32RPU25		A5B1
		Voltage (for driving SSR)		900-TC32VPU25		A5B1
100...240V AC	No	Relay	Yes	900-TC32CRPZ25		A5B1
		Voltage (for driving SSR)		900-TC32CVPZ25		A5B1
24V AC/DC	No	Relay	Yes	900-TC32CRPU25		A5B1
		Voltage (for driving SSR)		900-TC32CVPU25		A5B1

If the heating/cooling function is used, ALM1 will be used for the cooling control output and so the alarm output relay will not be available.

Cat. Nos. with a C designator (e.g., Cat. No. 900-TC32C___) include RS-485 communications, but do not have an alarm (or cooling) output.

Discount Group RAA

Option Units (Bulletins 900-TC8 and 900-TC16 - Only One Option Unit per Controller)

The unit provides communications or event input functionality.

Bulletin No.	Name	Function	Cat. No.		PGC
900-TC8	Communications Unit	RS-232C communications ➤	900-TC8232 ❖		A5B1
		RS-485 communications	900-TC8COM ❖		A5B1
	Event Input Unit	Event input ⌘	900-TC8EIM		A5B1
900-TC16	Communications and 1-Phase Heater Burnout Unit and Heater Short	RS-485 communications with single-phase heater burnout (open) and heater short-circuit failure detection ⬆	900-TC16NCOM		A5B1
	Event Input Unit with 1-Phase Heater Burnout and Heater Short	Event Input with single-phase heater burnout (open) and heater short-circuit failure detection ⌘ ⬆	900-TC16NEIM		A5B1
	Event Input Unit	Event Input ⌘	900-TC16NACEIM		A5B1
	Communications Unit	RS-485 communications	900-TC16NACCOM		A5B1
	Communications and 3-Phase Heater Burnout and Heater Short Unit	RS-485 communications with 3-phase heater burnout (open) and heater short-circuit failure detection	900-TC16NCOMP3		A5B1
	Communications and Second Voltage (SSR) Output Unit	RS-485 communications and a second voltage (SSR) output	900-TC16NCOMV2		A5B1
	1-Phase Heater Burnout and second voltage (SSR) output	1-Phase Heater burnout (open) and heater short-circuit failure detection with a second control voltage (SSR) output	900-TC16P1V2		A5B1

➤ Enables direct RS-232 connection to personal computer using 900BuilderLite™ software. A Cat. No. 900-CP1X cable or equivalent is also required.

⌘ Provides two event inputs. Allows selecting up to 4 different pre-configured set points, controller Run/Stop or Auto/Manual mode, from 2 external inputs.

⬆ Heater burnout is not available for 0...20 or 4...20 mA analog output style 900-TC16 controllers such as the 900-TC16AC.

❖ To obtain 38.4 k baud rate, Series B communication units must be used with any 900-TC8x controller catalog number from the Product Selection table on the previous page.

Discount Group RAA

Bulletin 900-TC

Temperature Controllers

Accessories

Current Transformer (Use with Bulletins 900-TC8 and 900-TC16 Only for Heater Burnout)

For Use With	Hole Diameter *	Cat. No.	PGC
900-TC8, 900-TC16	5.8 dia.	900-CT1	A5B1
	12.0 dia.	900-CT2	A5B1

* The hole diameter is the only functional difference between the Cat. No. 900-CT1 and the Cat. No. 900-CT2. Current output to controller is the same.

900BuilderLite™ Personal Computer Configuration Software
(For Enhanced Functionality of 900-TC8 and 900-TC16 Controllers)

Free software. Allows online configuration and monitoring (direct or network) plus program upload/download capability to/from PC disk media for any enhanced 900-TC8 or 900-TC16 controller.

Note: To obtain the free software, go to <http://www.ab.com> and use the A-Z Product Directory under "Resources" to locate the Temperature Controller home page. With the Bulletin 900-TC Single-Loop website displayed, go to the "Get Software" selection in the upper right and click on 900BuilderLite. Follow the download instructions.

Accessory	Cat. No.
Free configuration software for Enhanced Functionality Bulletin 900-TC8 and 900-TC16 controllers.	900-BLDLTSW1

900Builder Personal Computer Configuration Software

Allows graphical configuration and monitoring of controller parameters with data-logging and trending, plus program upload/download capability for any Bulletin 900-TCx controller.

Accessory	Cat. No.	PGC
900Builder™ Personal Computer Configuration Software for Bulletin 900-TC32 Temperature Controllers (available in CD format only)	900-BLDSW1	A5B1

USB Direct Communication Cable

This cable allows direct 1-to-1 (no network capability) communication between a PC USB port and the serial port of a Bulletin 900-TC16 or a 900-TC8 controller. No communication option unit is required. The cable can be used with the 900BuilderLite™ software to modify parameters, monitor controller operation, and upload or download parameters to/from PC disk media.

Accessory	Cat. No.	PGC
USB-Serial Conversion Cable	900-CPOEM1	A5B1

Interface Converter (RS-232/USB to RS-485) Model

Converts personal computer RS-232 or USB (Ser. B or later) communications to RS-485. Use for interface with up to 31 units of controllers type 900-TC8 or 900-TC16 with communication option board or 900-TC32Cxx.

Bulletin	Size	Power Supply Voltage	Cat. No.	PGC
900-CONV	30 mm (W) x 80 mm (H) x 78 mm (D)	100...240V AC	900-CONVZ25	A5B1
		24V AC/DC	900-CONVU25	A5B1

RS-232 Interface Cable

Allows connection between a 900-TC8 with a 900-TC8232 option unit and a PC using 900Builder software or PC with 900Builder and a 900-CONV RS232-to-RS485 converter.

Accessory	Cat. No.	PGC
RS-232 cable with 9-pin female D shell and 3 flying leads (3 m)	900-CP1X	A5B1

Switched Mode Power Supplies 1606

			
Bulletin	1606-XLP	1606-XL	1606-XL
Type	Single Phase	Single Phase	Three Phase
Features	• Low inrush current • Wide range input; auto select input • Superior overload design (continuous current, no hiccup) • NEC Class 2 “Limited Power” option • Superior efficiency and temperature rating	• Low inrush current • PFC Choke • Wide range input; auto select input • Superior overload design (continuous current, no hiccup) • NEC Class 2 “Limited Power” Option • Selectable operating mode (single/parallel) • Superior efficiency and temperature rating	• Low inrush current • PFC Choke • Wide range input; auto select input • Superior overload design (continuous current, no hiccup) • Selectable operating mode (single/parallel) • Superior efficiency and temperature rating • Output signals
Output Power	25...100 W	60...480 W	120...960 W
Input Voltage	85...264V AC 85...375V DC	85...132/176...264V AC 160...375V DC	340...576V AC 450...820V DC
Efficiency	80...90%	87...93%	89...92.5%
Output Voltage	5, 10...12, 12, 15, 24, 48V DC	12, 24, 36, 48V DC	24, 48V DC
Rated Output Current	1.3...4.2 A	2.5...20 A	4...40 A
Operating Temperature Range (Tamb)	-10...+70°C >60°C with derating	-10...+70°C >60°C with derating	-10...+70°C >60°C with derating
Approvals	CE, UL508, UL1950, IEC/EN 60950, EMC	CE, UL508, UL1950, IEC/EN 60950, EN 50178, EMC	CE, UL508, UL1950, IEC/EN 60950, EN 50178, EMC
Standards	EN 50081-1, EN 61000-6-2, EN 61000-3-2 (A14)	EN 55011 (Class B), EN 55022 (Class B), EN 61000-6-2, EN 61000-3-2 (A14), EN 50081-1	EN 55011 (Class B), EN 55022 (Class B), EN 61000-6-2, EN 61000-3-2 (A14), EN 50081-1
Product Selection	Page 137	Page 137	Page 138

Switched Mode Power Supplies 1606, Control Circuit Transformer 1497

		
Bulletin	1606-XLS	1497
Type	Single/Three Phase	Control Circuit Transformer
Features	• Ultra-small size • Extra-low inrush current • Active Power Factor Correction • Wide range AC/DC input; auto select input • Superior reserve power (can support 150% rated power for 3...5 seconds) • Superior efficiency and temperature rating • DC OK and Overload LED	• Wide VA range • Enclosed construction 63...350 VA • Terminal covers finger safe • Optional fuse covers available • Dual primary and secondary fuse block available to 500 VA • Class B insulation (130°C) • All welded construction
Output Power	120...480 W	63..2000 VA
Input Voltage	85...276/ 323...552V AC 88...375/ 450...780V DC	208...600V
Efficiency	91.6...95%	—
Output Voltage	24V DC	24...120V Multi-tap 115...230V (50 Hz)
Rated Output Current	5...20 A	—
Operating Temperature Range (Tamb)	-25...+70°C >60°C with derating	—
Approvals	CE, UL508, UL1950, IEC/EN 60950, EN 50178, EMC	CE, UL506, NEC450, TÜV Rheinland
Standards	EN 55011 (Class B), EN 55022 (Class B), EN 61000-6-2, EN 61000-3-2 (A14), EN 50081-1 UL 508 UL 1950	EN 61558
Product Selection	Page 137	Page 140

Power Supplies 1606

- Low inrush current
- PFC choke
- Wide range input; auto select input
- Superior overload design (continuous current, no hiccup)
- NEC Class 2 'Limited Power' option
- Selectable operating mode (single/parallel)
- Superior efficiency and temperature rating



Single Phase Power Supplies

Output Power	Output Voltage	Output Current	Special Features	Parallel Operation (inclined Charact.)	Meets EN 61000-3-2 (PFC Harmonics)	Cat. No.		PGC	
1606-XLP Compact Single Phase									
25 W	5...5.5V DC	5.0 A	NEC Class 2	—	N/A	1606-XLP25A		A8A2	
30 W	10...12V DC	3.0 A	NEC Class 2	—	N/A	1606-XLP30B		A8A2	
	24...28V DC	1.3 A	NEC Class 2	—	N/A	1606-XLP30E		A8A2	
36 W	+/- 12/15V DC	2.8 A	Output voltage adjustable NEC Class 2	—	N/A	1606-XLP36C		A8A2	
50 W	12...15V DC	4.2 A		—	N/A	1606-XLP50B		A8A2	
	24...28V DC	2.1 A		NEC Class 2	—	N/A	1606-XLP50E		A8A2
	24...28V DC	2.1 A		NEC Class 2	—	N/A	1606-XLP50EZ		A8A1
	48...56V DC	1.0 A	NEC Class 2	—	N/A	1606-XLP50F		A8A2	
72 W	24...28V DC	3.0 A	NEC Class 2	—	N/A	1606-XLP72E		A8A2	
90 W	12...15V DC	8.0 A	NEC Class 2	Yes	Yes	1606-XLP90B		A8A1	
100 W	24...28V DC	4.2 A		Yes *	Yes	1606-XLP100E		A8A2	
	48...56V DC	2.1 A		Yes *	Yes	1606-XLP100F		A8A2	
1606-XL Standard Single Phase									
60 W	24V DC	2.5 A	NEC Class 2	—	Yes	1606-XL60D		A8A1	
120 W		5 A	—	—	Yes	1606-XL120D		A8A1	
180 W	12...15V DC	15 A	—	—	No	1606-XL180B		A8A1	
240 W	24...28V DC	10 A	FM Class 1 Div. 2 T3A	—	No	1606-XL240E		A8A1	
				—	Yes	1606-XL240EP		A8A1	
		48...56V DC	5.0 A	—	—	Yes	1606-XL240FP		A8A1
480 W	24...28V DC	20 A	Active inrush current limiting	Yes *	No	1606-XL480E		A8A1	
			—	Yes *	Yes	1606-XL480EP		A8A1	
			Remote shut down	Yes *	Yes	1606-XL480EPT		A8A1	
	36...43V DC	13.3 A	—	Yes *	Yes	1606-XL480GP		A8A1	
	48...56V DC	10 A	—	Yes *	No	1606-XL480F		A8A1	
1606-XLS Performance Single Phase									
120 W	24...28V DC	5.0 A	—	Yes	Yes	1606-XLS120E		A8A4	
240 W	24...28V DC	10 A	—	Yes	Yes	1606-XLS240E		A8A4	

* Single/parallel operation (inclined characteristic) selectable (jumper)
Discount Group RAA

Power Supplies 1606, continued



Three Phase Power Supplies

Output Power	Output Voltage	Output Current	Special Features	Parallel Operation (inclined Characteristics)	Meets EN 61000-3-2 (PFC Harmonics)	Cat. No.		PGC
1606-XL Standard Three Phase								
120 W	24...28V DC	5.0 A	—	—	Yes	1606-XL120E-3		A8A1
240 W		10 A	Overload behavior selectable (FUSE Mode/continuous current), 2-phase operation admissible	Yes *	Yes	1606-XL240E-3		A8A1
480 W		20 A	—	Yes *	Yes	1606-XL480E-3		A8A1
		20 A	Wide input range; overload behavior selectable (FUSE Mode/continuous current)	Yes *	Yes	1606-XL480E-3W		A8A1
		48...56V DC	10 A	Input voltage 400V AC	Yes *	Yes	1606-XL480F-3H	
720 W	24...28V DC	30 A	—	Yes *	Yes	1606-XL720E-3		A8A1
960 W		40 A	Passive load sharing	Yes *	Yes	1606-XL960E-3		A8A1
		40 A	Active inrush current limiting; output signals	Active current sharing	Yes	1606-XL960E-3S		A8A1
1606-XLS Performance Three Phase								
480 W	24...28V DC	20 A	—	Yes	Yes	1606-XLS480E-3		A8A4

* Single/parallel operation (inclined characteristic) selectable (jumper)
Discount Group RAA

Power Supplies 1606, continued

Output Power	Output Voltage	Output Current	Special Features	Parallel Operation (inclined Characteristics)	Meets EN 61000-3-2 (PFC Harmonics)	Cat. No.		PGC
1606-XL Special Modules								
—	23...27.8 V DC	20 A	Brownout buffer module	—	N/A	1606-XLBUFFER		A8A1
40 W	5.1V DC	8.0 A	DC/DC converter	—	No	1606-XLDC40A		A8A1
96 W	24V DC	4.0 A	Electronically limited 4 A	—	Yes	1606-XLDNET4		A8A1
91 W	24V DC	3.8 A			Yes	1606-XLSDNET4		A8A4
196 W	24V DC	8.0 A	Electronically limited 8 A	—	No	1606-XLDNET8		A8A1
192 W	24V DC	8.0 A			Yes	1606-XLSDNET8		A8A4
60 W	24V DC	2.5 A	N+1 Redundant capable , NEC Class 2 ‡	Yes *	N/A	1606-XL60DR		A8A1
120 W		5.0 A		Yes *	Yes	1606-XL120DR		A8A1
240 W		10 A	N+1 Redundant capable ‡	Yes *	No	1606-XL240DR		A8A1
—	V _{in} -6V typ	10 A	Compact Redundancy 10-60 V DC *	—	N/A	1606-XLPRED		A8A1
—	V _{in} -5V typ	30 A	Dual 1+1 redundancy *	—	N/A	1606-XLRED20-30		A8A1
—	V _{in} -6V typ	40 A	Single N+1 redundancy §	—	N/A	1606-XLRED40		A8A1

* Single/parallel operation (inclined characteristic) selectable (jumper)

* To be used alongside 20 and 30 A power supplies (or smaller)

‡ Used with a pair of identical power supplies to offer N+1 redundancy

§ To be used alongside 40 A power supplies (or smaller)

Discount Group RAA

Accessories

Description	Cat. No.		PGC
Back of panel bracket for XL	1606-XLA		A8A1

Discount Group RAA

Bulletin 1497

Control Circuit Transformers

Product Selection

Control Circuit Transformers 1497

Control Circuit Transformers are designed to reduce supply voltages to control circuits.
The complete line of transformers is available with optional factory-installed or panel-mount primary and secondary fuse block.
A dual primary and secondary fuse block is pre-wired and mounted on top of the transformer up to 500 VA.
Control Circuit Transformers offer single, dual, and multi-tap primary voltages.



Primary 220V (50 Hz) / 240V (60 Hz)

Continuous VA	Secondary 24V (50 Hz)/24V (60 Hz)			Secondary 110V (50 Hz)/120V (60 Hz)		
	Cat. No.		PGC	Cat. No.		PGC
63	1497-A-AXJK-0-N		A1P1	1497-A-AXSX-0-N		A1P1
80	1497-B-AXJK-0-N		A1P1	1497-B-AXSX-0-N		A1P1
130	1497-C-AXJK-0-N		A1P1	1497-C-AXSX-0-N		A1P1
200	1497-D-AXJK-0-N		A1P1	1497-D-AXSX-0-N		A1P1
250	1497-E-AXJK-0-N		A1P1	1497-E-AXSX-0-N		A1P1
350	1497-F-AXJK-0-N		A1P1	1497-F-AXSX-0-N		A1P1
500	1497-G-AXJK-0-N		A1P1	1497-G-AXSX-0-N		A1P1
750	1497-H-AXJK-0-N		A1P1	1497-H-AXSX-0-N		A1P1
800	1497-J-AXJK-0-N		A1P1	1497-J-AXSX-0-N		A1P1
1000	1497-K-AXJK-0-N		A1P1	1497-K-AXSX-0-N		A1P1
1600	1497-L-AXJK-0-N		A1P1	1497-L-AXSX-0-N		A1P1
2000	1497-M-AXJK-0-N		A1P1	1497-M-AXSX-0-N		A1P1

Discount Group NLP

Primary 220/440V (50 Hz) / 240/480V (60 Hz)

Continuous VA	Secondary 24V (50 Hz)/24V (60 Hz)			Secondary 110V (50 Hz)/120V (60 Hz)		
	Cat. No.		PGC	Cat. No.		PGC
63	1497-A-BAJK-0-N		A1P1	1497-A-BASX-0-N		A1P1
80	1497-B-BAJK-0-N		A1P1	1497-B-BASX-0-N		A1P1
130	1497-C-BAJK-0-N		A1P1	1497-C-BASX-0-N		A1P1
200	1497-D-BAJK-0-N		A1P1	1497-D-BASX-0-N		A1P1
250	1497-E-BAJK-0-N		A1P1	1497-E-BASX-0-N		A1P1
350	1497-F-BAJK-0-N		A1P1	1497-F-BASX-0-N		A1P1
500	1497-G-BAJK-0-N		A1P1	1497-G-BASX-0-N		A1P1
750	1497-H-BAJK-0-N		A1P1	1497-H-BASX-0-N		A1P1
800	1497-J-BAJK-0-N		A1P1	1497-J-BASX-0-N		A1P1
1000	1497-K-BAJK-0-N		A1P1	1497-K-BASX-0-N		A1P1
1600	1497-L-BAJK-0-N		A1P1	1497-L-BASX-0-N		A1P1
2000	1497-M-BAJK-0-N		A1P1	1497-M-BASX-0-N		A1P1

Discount Group NLP

Primary 380V, 400V, 415V (50 Hz)

Continuous VA	Secondary 115V/230V (50 Hz)		
	Cat. No.		PGC
63	1497-A-M4-0-N		A1P1
80	1497-B-M4-0-N		A1P1
130	1497-C-M4-0-N		A1P1
200	1497-D-M4-0-N		A1P1
250	1497-E-M4-0-N		A1P1
350	1497-F-M4-0-N		A1P1
500	1497-G-M4-0-N		A1P1
750	1497-H-M4-0-N		A1P1
800	1497-J-M4-0-N		A1P1
1000	1497-K-M4-0-N		A1P1
1600	1497-L-M4-0-N		A1P1
2000	1497-M-M4-0-N		A1P1

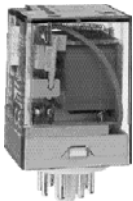
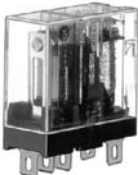
Discount Group NLP

Primary 550V (50 Hz) / 600V (60 Hz)

Continuous VA	Secondary 24V (50 Hz)/24V (60 Hz)			Secondary 110V (50 Hz)/120V (60 Hz)		
	Cat. No.		PGC	Cat. No.		PGC
63	1497-A-CXJK-0-N		A1P1	1497-A-CX SX-0-N		A1P1
80	1497-B-CXJK-0-N		A1P1	1497-B-CX SX-0-N		A1P1
130	1497-C-CXJK-0-N		A1P1	1497-C-CX SX-0-N		A1P1
200	1497-D-CXJK-0-N		A1P1	1497-D-CX SX-0-N		A1P1
250	1497-E-CXJK-0-N		A1P1	1497-E-CX SX-0-N		A1P1
350	1497-F-CXJK-0-N		A1P1	1497-F-CX SX-0-N		A1P1
500	1497-G-CXJK-0-N		A1P1	1497-G-CX SX-0-N		A1P1
750	1497-H-CXJK-0-N		A1P1	1497-H-CX SX-0-N		A1P1
800	1497-J-CXJK-0-N		A1P1	1497-J-CX SX-0-N		A1P1
1000	1497-K-CXJK-0-N		A1P1	1497-K-CX SX-0-N		A1P1
1600	1497-L-CXJK-0-N		A1P1	1497-L-CX SX-0-N		A1P1
2000	1497-M-CXJK-0-N		A1P1	1497-M-CX SX-0-N		A1P1

Discount Group NLP

Relay Selection

			
Bulletin	700-HA	700-HC	700-HK
Type	General Purpose Relay	Interposing/Isolation Relay	Interposing/Isolation Relay
Features	Pin Style Terminals, Standard ON/OFF Flag Indicator, Electrical Schematic on Face, Clear Cover for Visual Inspection, Optional Push-to-test and Manual Override, Optional LED	Pin Style Terminals, Standard ON/OFF Flag Indicator, Electrical Schematic on Face, Clear Cover for Visual Inspection, Optional Push-to-test and Manual Override, Optional LED	Optional Pilot Light, Built-in Retainer Clip, Low Switching Capacity
Contact Ratings			
Contact Form	DPDT, 3PDT	2PDT, 4PDT	SPDT, DPDT
Contact Type	Single, Bifurcated	Single	Single
Contact Material	AgNi, AgNi + Gold	AgNi, AgNi + Gold	AgCdO, AgCd+Gold
Max. operating current under resistive load	10 A	10 A (2PDT) 7 A (4PDT)	5 A (DPDT), 10 A (SPDT)
Coil Ratings			
Coil Voltage	AC: 6V, 12V, 24V, 48V, 110V, 120V, 208V, 230V, 240V, 277V DC: 6V, 12V, 24V, 36V, 48V, 60V, 80V, 110V, 125V, 140V, 220V	AC: 6V, 12V, 24V, 120V, 240V DC: 6V, 12V, 24V, 48V, 110V	AC: 6V, 12V, 24V, 120V, 240V DC: 6V, 12V, 24V, 48V, 110V
Electrical Ratings			
Dielectric Withstand Voltage	Pole-to-pole: 2000V Contact-to-coil: 2000V Contact-to-frame: 2000V	Pole-to-pole: 1600V Contact-to-coil: 1600V Contact-to-frame: 1600V	Pole-to-pole: 1500V AC Contact-to-coil: 1500V AC Contact-to-frame: 1500V AC
Electric Service Life (cycles)	100,000 minimum	100,000 minimum	100,000 minimum
Reference			
Certifications	CE, cULus, cURus, ABS, IMQ, RINA	CE, cULus, cURus, IMQ, ABS, RINA	CE, UL, UR, CSA
Socket Cat. No(s).	700-HN100, 700-HN101, 700-HN125, 700-HN126, 700-HN204, 700-HN205	700-HN103, 700-HN128, 700-HN104	700-HN121 700-HN122
Product Selection	Page 147	Page 150	Page 151

Relays and Timers

Product Line Overview

Relay Selection

		
Bulletin	700-HL	700-HP
Type	Interposing/Isolation Relay	Interposing/Isolation Relay
Features	Ideal for PLC Interfaces, Built-in Coil Surge Protection, Fully Assembled Relay/Sockets, Standard LED, Relay or Solid-state Output Optional: Leakage Current Suppression Solution	PCB “Pin Style” Mounting, 5 mm Pin spacing
Contact Ratings		
Contact Form	SPDT (1 c/o) 1 N.O. (SSR)	2PDT
Contact Type	Single	Single
Contact Material	AgSnO	AgNi, AgNi + Gold
Max. operating current under resistive load	6 A (SPDT), 2 A (SSR)	8 A
Coil Ratings		
Coil Voltage	AC: 12V, 24V, 48V, 110V, 120V, 230V, 240V DC: 12V, 24V, 48V, 125V, 230V, 240V	AC: 6V, 12V, 24V, 120V, 240V DC: 6V, 12V, 24V, 48V, 110V
Electrical Ratings		
Dielectric Withstand Voltage	Pole-to-pole: — Contact-to-coil: 4000V Contact-to-frame: 1500V	Pole-to-pole: 2000V Contact-to-coil: 5000V
Electric Service Life (cycles)	100,000 minimum	100,000 minimum
Reference		
Certifications	CE, cURus, cULus, ABS, IMQ	CE, cULus, cURus, IMQ, ABS, RINA
Socket Cat. No(s).	—	700-HN123
Product Selection	Page 152	Page 154

Timing Relay Selection

		
Bulletin	700-FE	700-FS
Type	DIN Rail Timer	DIN Rail Timer
Features	Only 17.5 mm wide, 5 A Contact Rating, Multifunction or Single Function	Electronic Timing Relay
Control Outputs: Time Limit Instantaneous	1 N.O. or SPDT Timed	SPDT, DPDT, 2 N.O. + 1 common
Operation Modes:	On-Delay Off-Delay One Shot Repeat Cycle-Pulse Fleeting Off-Delay Pulse Converter Star Delta	11 Different Timing Modes
Time Range	0.05 s...10 h	0.05s...60 h
Supply Voltage	24V AC/DC 110...240V AC 24V...48V AC/DC 24V...240V AC	12V DC 24V...48V DC 24V...240V AC
Contact Rating at 120V AC	6 A	8 A
Certifications	cUR, UL, CE	cUR, UL, CE
Product Selection	Page 156	Page 158

Relays and Timers

Product Line Overview

Control Relay Selection

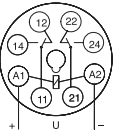
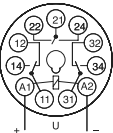
			
Bulletin	700-M	700-CF	700-CRF
Type	Miniature Control Relay	Control Relay	
Spring Clamp Terminals	—	—	✓
Screw Terminals	✓	✓	—
Features	Smallest Size, Long Life, Low Power Consumption, Mechanically Linked Contacts, Switch up to 600V AC and DC	Mechanically Linked Contacts, Timer and Latch Operations, Switch up to 600V AC and DC 700S-CF for Safety Circuits	
Contact Form	4-8 Poles Double Break	4-12 Poles Double Break	
Contact Type	X-Mark and Bifurcated	Cross Stamp, Bifurcated	
Contact Material	Silver-Copper	Silver, Gold	
Electrical			
Max. Current AC Resistive	15 A	25 A (Relay) 10 A (Adder Deck)	
Min. load	17V, 30 mA (700-M) 17V 5 mA (700-MB)	24V 10 mA (Silver) 12V 8 mA (Gold)	
Coil Voltage	24...480V AC 12...220V DC	12...600V AC 9...250V DC	
Coil Voltage Pickup	85...110% AC Coils, 80...110% DC Coils	85...110% AC Coils, 80...110% DC Coils	
Dielectric Withstand	2640V	2640V	
Reference			
Electric Service Life (cycles)	800K at 10 A 120V AC	1.2 million at 10 A 120V AC	
Certifications	UL, CSA, CE, IEC	UL, CSA, CE, IEC	
Sockets	DIN Rail or Panel Mount	DIN Rail or Panel Mount	
Product Selection	Page 162	Page 164	

General Purpose Relays 700-HA

- 10 A Contact Rating
- DPDT, 3PDT
- Pin Style Terminals
- Standard ON/OFF Flag Indicator
- Options: LED, Push-to-Test and Manual Override, Socket Mounted Surge Suppressor Module, or Multifunction Timer
- Contact Choices: Standard Silver Nickel, Bifurcated Silver Nickel, or Bifurcated with Gold Plating



Bulletin 700-HA Tube Base Relay with PIN Terminals (Single Contact) — Mechanical ON/OFF Indicator included *

Description	Contact Rating	Wiring Diagrams	Coil Voltage	Cat. No.*†§	PGC
DPDT 2-pole 2 Form C Single AgNi Contact	10 A B300		24V AC	700-HA32A24	W3A
	10 A B300		230V AC	700-HA32A03	W3A
	10 A B300		24V DC	700-HA32Z24	W3A
	10 A B300		110V DC	700-HA32Z1	W3A
Sockets		700-HN100 700-HN204			
3PDT 3-pole 3 Form C Single AgNi Contact	10 A B300		24V AC	700-HA33A24	W3A
	10 A B300		230V AC	700-HA33A03	W3A
	10 A B300		24V DC	700-HA33Z24	W3A
	10 A B300		110V DC	700-HA33Z1	W3A
Sockets		700-HN101 700-HN205			

* For time module and surge suppressor module, see page 149

‡ LED option: Add suffix (-4) to the selected Bulletin 700-HA relay cat. no., except for the 240V AC units, add (-4L).

† Push-to-test, manual override, and LED option: Add suffix (-3-4) to the selected Bulletin 700-HA relay cat. no., except for the 240V AC units, add (-3-4L).

§ Push-to-test and manual override option: Add suffix (-3) to the selected Bulletin 700-HA relay.

Discount Group PIR

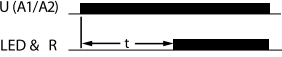
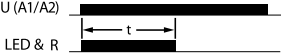
Bulletin 700-HA
Relays and Timers
Accessories

Accessories

	Description	PQ	Cat. No.		PGC
	Screw Terminal Tube Base Socket — Panel or DIN Rail Mounting; Guarded Terminal Construction. 8-Pin for use with DPDT Bulletin 700-HA Relays, -HX Timing Relays, -HT (On-Delay) and -HRM, -HRC and -HV (Repeat Cycle) Timing Relays. Order ten or multiples of ten	10	700-HN100		W3N
	Screw Terminal Tube Base Socket — Panel or DIN Rail Mounting; Open Style Construction. 8-Pin for use with DPDT Bulletin 700-HA Relays, -HT (On-Delay) and -HRM, -HRC and -HV (Repeat Cycle) Timing Relays. Order must be for 10 sockets or multiples of 10. No retainer clip required.	10	700-HN125		W3N
	Screw Terminal Tube Base Sockets — Panel or DIN Rail Mounting. Guarded Terminal Construction 11-pin for use with 3PDT Bulletin 700-HA relays, -HR and -HT (Off-Delay) timing relays. Order must be for 10 sockets or multiples of 10.	10	700-HN101		W3N
	Screw Terminal Tube Base Sockets — Panel or DIN Rail Mounting. Open Style Terminal Construction 11-pin for use with 3PDT Bulletin 700-HA relays, -HR and -HT (Off-Delay) timing relays. Order must be for 10 sockets or multiples of 10.	10	700-HN126		W3N
	8-Pin Socket — Can Be Used With or Without Timing Attachment or Surge Suppressor Screw Terminal Tube Base Sockets — panel or DIN Rail mounting. Guarded terminal construction. Used with DPDT Bulletin 700-HA Relays. Order must be for 10 sockets or multiples of 10.	10	700-HN204		W3N
	11-Pin Socket — Can Be Used With or Without Timing Attachment or Surge Suppressor Screw Terminal Tube Base Sockets — panel or DIN Rail mounting. Guarded terminal construction. Used with 3PDT Bulletin 700-HA relays. Order must be for 10 sockets or multiples of 10.	10	700-HN205		W3N

PQ = Package Quantity
Discount Group PIR

Accessories for 700-HA, continued

	Description	PQ	Cat. No.		PGC
	Diode Surge Suppressor * Voltage Range: 6...220V DC used with 700-HN204/205 socket	10	700-ADR		W3N
	Diode with LED Surge Suppressor * Voltage Range: 6...24V DC used with 700-HN204/205 socket	10	700-ADL1R		W3N
	Diode with LED Surge Suppressor * Voltage Range: 28...60V DC used with 700-HN204/205 socket	10	700-ADL2R		W3N
	Diode with LED Surge Suppressor * Voltage Range: 110...220V DC used with 700-HN204/205 socket	10	700-ADL3R		W3N
	Diode with LED Surge Suppressor * Voltage Range: 6...24V AC used with 700-HN204/205 socket	10	700-AV1R		W3N
	Varistor with LED Surge Suppressor * Voltage Range: 110...240V AC used with 700-HN204/205 socket	10	700-AV3R		W3N
	RC Surge Suppressor * Voltage Range: 6...24V AC/DC used with 700-HN204/205 socket	10	700-AR1		W3N
	RC Surge Suppressor * Voltage Range: 110...240V AC/DC used with 700-HN204/205 socket	10	700-AR2		W3N
	On-Delay Time Module * Voltage Range: 12...24V AC/DC used with 700-HN204/205 socket U (A1/A2) 	1	700-AT1		W3N
	One Shot Timing Module * Voltage Range: 12...24V AC/DC used with 700-HN204/205 socket U (A1/A2) 	1	700-AT2		W3N
	Multi-Function Multi-Range Time Module * - Voltage range 12...240V AC 50/60 Hz and 12...240V DC, with a voltage variation of 85...110%. Repeat accuracy of $\pm 1\%$. Reset time <50 ms. - Choice of 8 functions - Choice of 8 time ranges 0.1...240 h - Use with sockets 700-HN204/205	1	700-HT3		W3A

* Suppressors and timing modules easily plug into sockets (Cat. nos. 700-HN204 and 700-HN205). For use with Bulletin 700-HA relays.

PQ = Package Quantity

Discount Group PIR

ATTENTION: Cat. No. 700-HT3 is wired with signal “S” connected to “A1”.
See wiring diagram marked on the timer module.

Bulletin 700-HC
Relays and Timers
Product Selection

Interposing/Isolation Relays 700-HC

- 7 A or 10 A Contact Ratings
- 2PDT or 4PDT
- Standard ON/OFF Flag Indicator
- Blade Style Terminals
- Choice of Standard Silver Nickel Contacts, or Silver Nickel with Gold Plated Contacts for Low Energy Applications
- Options: LED, Push-to-Test with Manual Override Option
- Tungsten UL Approvals
4-Pole: 5A @ 24V DC
2-Pole: 10A @ 24V DC



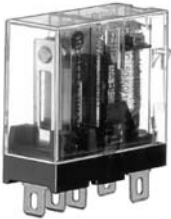
Bulletin 700-HC Miniature Square Base with Blade Terminals

Description	Contact Rating	Wiring Diagrams	Coil Voltage	PQ	Cat. No. **	PGC
2PDT 2-Pole 2 Form C Contacts: 10 A = AgNi Contacts	10 A C300 R300 Low energy rating; (10V, 10 mA)	 700-HN103 700-HN104	24V AC	1	700-HC22A24	W3C
			240V AC		700-HC22A2	W3C
Sockets			24V DC		700-HC22Z24	W3C
4PDT 4-Pole 4 Form C Contacts: 7A = AgNiAu Gold Plated Contacts	7 A Low energy rating; (10V, 1 mA)	 700-HN104	24V AC	1	700-HC14A24	W3C
			240V AC		700-HC14A2	W3C
			24V DC		700-HC14Z24	W3C
Socket			110V DC		700-HC14Z1	W3C
Socket Base				10	700-HN103	W3N
				10	700-HN104	W3N

* LED option: Add suffix (-4) to the selected Bulletin 700-HC relay cat. no. except for the 240V AC units, add (-4L).
** Push-to-test and LED option: Add suffix (-3-4) to the selected Bulletin 700-HC relay cat. no., except for the 240V AC units, add (-3-4L).
PQ = Package Quantity
Discount Group PIR

Interposing/Isolation Relays 700-HK

- 5 A/10 A Contact Ratings
- DPDT/SPDT
- Plug-in Blade Style Terminals
- Built-in Retainer Clip in Sockets
- Choice of Standard Silver Cadmium Contacts, or Silver with Gold Plated Contacts
- Options: LED



700-HK SPDT



700-HK DPDT

Slim Line Relay with Plug-in Quick Connect Terminations

Description	Contact Rating	Wiring Diagrams	Coil Voltage	PQ	Cat. No. **		PGC
SPDT 1-Pole 1 Form C AgCdO Contacts	10 A	 <i>700-HN121</i>	24V AC	1	700-HK36A24		W3I
			240V AC		700-HK36A2		W3I
			24V DC		700-HK36Z24		W3I
			110V DC		700-HK36Z1		W3I
DPDT 2-Pole 2 Form C AgCdO Contacts	5 A	 <i>700-HN122</i>	24V AC	1	700-HK32A24		W3I
			240V AC		700-HK32A2		W3I
			24V DC		700-HK32Z24		W3I
			110V DC		700-HK32Z1		W3I
Socket Base				10	700-HN121		W3N
				10	700-HN122		W3N

Terminal Block Relays 700-HL

- Up to 85% panel space savings vs. traditional relays
- DIN rail mounting
- Only 6.2 mm wide (SPDT)
- Standard LED, Reverse Polarity Protection and Surge Protection
- Screw Terminals and Spring Clamp Bases



700-HLT...



700-HLS...

SPDT Relays

Assembled Devices Input Voltage	Output Type	PQ		Cat. No. (Screw Terminals)		PGC	Cat. No. (Spring Clamp Terminals)		PGC
24V DC	SPDT (1 C/O); I _{th} = 6A *	10	※	700-HLT1Z24		W3S	700-HLT2Z24		W3S
24V AC/DC		10		700-HLT1U24		W3S	700-HLT2U24		W3S
110/125V AC/DC		10		700-HLT1U1		W3S	700-HLT2U1		W3S
220...240V AC/DC		10		700-HLT1U2		W3S	700-HLT2U2		W3S
§Built-in LCSC (leakage current suppression circuit) 120V AC and 125V DC		10	※	700-HLT1L1		W3S			
§Built-in LCSC (leakage current suppression circuit) 240V AC		10	※	700-HLT1L2		W3S			

Discount Group PIR

Solid State

Assembled Devices Input Voltage	Output Type	PQ		Cat. No. (Screw Terminals)		PGC	Cat. No. (Spring Clamp Terminals)		PGC
24V DC	1 N.O. solid- state; I _{th} = 2 A, 24V DC ‡	10	※	700-HLS1Z24		W3S	700-HLS2Z24		W3S
110/125V AC/DC		10	※	700-HLS1U1		W3S	700-HLS2U1		W3S
220...240V AC/DC		10	※	700-HLS1U2		W3S	700-HLS2U2		W3S
§Built-in LCSC (leakage current suppression circuit) 120V AC and 125V DC		10	※	700-HLS1L1		W3S			
§Built-in LCSC (leakage current suppression circuit) 240V AC		10	※	700-HLS1L2		W3S			

* For gold-plated contacts: Add the letter "X" at the end of the catalog number. For example: if cat. no. 700-HLT1Z24 is required with gold plating, the new cat. no. is 700-HLT1Z24X.
※ Electromechanical relay to solid-state relay interchangeability is possible.
‡ Reverse polarity on the output terminals of the solid-state relay will result in the output being "On" regardless of the state of the input voltage.
§ Leakage current suppression up to 2.2 mA off state current.
PQ = Package Quantity
Discount Group PIR

Accessories

	Description	Socket Input Voltage	PQ	Cat. No.		PGC
	Replacement Relays Order must be for 20 relays or multiples of 20. *	24V DC	20	700-TBR24		W3S
		110/125V DC 220...240V DC		700-TBR60		W3S
	Replacement SSR 4-blade miniature relay for use with 1 N.O. SSR output. Order must be for 20 relays or multiples of 20.	24V DC	20	700-TBS24		W3S
		110/125V DC 220...240V DC		700-TBS60		W3S
	Description	Color	PQ	Cat. No.		PGC
	20-Way Jumper Can be cut to required length. <i>lth</i> = 36 A max per 20-way jumper.	Red	1	700-TBJ20R		W3S
		Gray		700-TBJ20G		W3S
		Blue		700-TBJ20B		W3S
	End Barrier Used for visual inspection of groups, safe separation of neighboring 700-HL modules that end with jumpers. Order must be for 10 or multiples of 10.	Black	10	700-HN177		W3N

* For gold-plated contacts: Add the letter "X" at the end of the catalog number. For example: if Cat. No. 700-TBR24 is required with gold plating, the new cat. no. is 700-TBR24X. Gold-plated contacts with surcharge.

Note: Terminal block relay bases are not sold separately.

PQ = Package Quantity

Discount Group PIR

Bulletin 700-HP

Relays and Timers

Product Selection

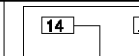
"Pin Style" Relays 700-HP (PCB)

- 8 A Contact Ratings
- DPDT/ (2 c/o) Contacts
- Plug-in PIN Style (PCB) Terminals (5 mm Pinning)
- Choice of Standard Silver Nickel Contacts, or Silver Nickel with Gold Plated Contacts
- Options: None



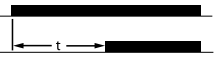
700-HP

Slim Line Relay with "PIN Style" Terminations

Description	Contact Rating	Wiring Diagram	Coil Voltage	PQ	Cat. No.		PGC
DPDT 2-Pole 2 Form C AgNi + Au Gold Plated Contacts	8 A		24V AC	10	700-HPX2A24		W3I
			240V AC	10	700-HPX2A2		W3I
			24V DC	10	700-HPX2Z24		W3I
			110V DC	10	700-HPX2Z1		W3I
DPDT 2-Pole 2 Form C AgNi Contacts			24V AC	10	700-HP32A24		W3I
			240V AC	10	700-HP32A2		W3I
			24V DC	10	700-HP32Z24		W3I
Socket			110V DC	10	700-HP32Z1		W3I

PQ = Package Quantity
Discount Group PIR

Accessories

	Description	PQ	Cat. No.		PGC
	Diode Surge Suppressor Voltage Range: 6...220V DC used with 700-HN123 socket	10	700-ADR		W3N
	Diode with LED Surge Suppressor Voltage Range: 6...24V DC used with 700-HN123 socket	10	700-ADL1R		W3N
	Diode with LED Surge Suppressor Voltage Range: 28...60V DC used with 700-HN123 socket	10	700-ADL2R		W3N
	Diode with LED Surge Suppressor Voltage Range: 110...220V DC used with 700-HN123 socket	10	700-ADL3R		W3N
	Diode with LED Surge Suppressor Voltage Range: 6...24V AC used with 700-HN123 socket	10	700-AV1R		W3N
	Varistor with LED Surge Suppressor Voltage Range: 110...240V AC used with 700-HN123 socket	10	700-AV3R		W3N
	RC Surge Suppressor Voltage Range: 6...24V AC/DC used with 700-HN123 socket	10	700-AR1		W3N
	RC Surge Suppressor Voltage Range: 110...240V AC/DC used with 700-HN123 socket	10	700-AR2		W3N
	On-Delay Time Module Voltage Range: 12...24V AC/DC used with 700-HN123 socket U (A1/A2) 	1	700-AT1		W3N
	One Shot Timing Module Voltage Range: 12...24V AC/DC used with 700-HN123 socket U (A1/A2) 	1	700-AT2		W3N
	Screw Terminal Socket — Panel or DIN Rail Mounting 8-pin miniature socket for use with 2-pole, Bulletin 700-HP relays. Incorporates coil and contact separation. Order must be for 10 sockets or multiples of 10.	10	700-HN123		W3N

PQ = Package Quantity
Discount Group PIR

Economy Timing Relays 700-FE

- Adjustable Function and Timing Range Timing Relays
- DIN Rail Mounted Without Cost of Socket
- 17.5 mm wide, Multi-Function or Single Function
- Available as 1 N.O. or SPDT Contact Output, 5A
- Timing Ranges From 0.05s...10.0h



700-FE

Single-Function

This device offers you one specific timing function.

Operating Mode	Contact Output	Timing Range	Input Voltage	Cat. No.		PGC
ON-delay	1 N.O.	0.75 s...1 h (4 settings) §	24V AC/DC 110...240V AC 50/60 Hz *	700-FEA1SU22		W91
	SPDT (1 C/O)	0.05 s...10 h (6 settings) ‡	24V...48V AC/DC 24...240V AC 50/60 Hz	700-FEA3TU23		W91
OFF-delay	1 N.O.	0.75 s...1 h (4 settings) §	24V AC/DC 110...240V AC 50/60 Hz *	700-FEB1SU22		W91
	SPDT (1 C/O)	0.05 s...10 h (6 settings) ‡	24V...48V AC/DC 24...240V AC 50/60 Hz	700-FEB3TU23		W91
One Shot	1 N.O.	0.75 s...1 h (4 settings) §	24V AC/DC 110...240V AC 50/60 Hz *	700-FED1SU22		W91
	SPDT (1 C/O)	0.05 s...10 h (6 settings) ‡	24V...48V AC/DC 24...240V AC 50/60 Hz	700-FED3TU23		W91
Fleeting OFF-delay	SPDT (1 C/O)	0.05 s...10 h (6 settings) ‡	24V...48V AC/DC 24...240V AC 50/60 Hz	700-FEE3TU23		W91
Flasher (repeat cycle starting with pulse)	1 N.O.	0.75 s...1 h (4 settings) §	24V AC/DC 110...240V AC 50/60 Hz *	700-FEF1SU22		W91
	SPDT (1 C/O)	0.05 s...10 h (6 settings) ‡	24V...48V AC/DC 24...240V AC 50/60 Hz	700-FEF3TU23		W91
Pulse Converter	SPDT (1 C/O)	0.05 s...10 h (6 settings) ‡	24V...48V AC/DC 24...240V AC 50/60 Hz	700-FEL3TU23		W91

* Voltage is either 24V AC 50/60 Hz or 24V DC.
‡ Time ranges: 0.05 s...1 s, 0.5...10 s, 0.05...1 min., 0.5...10 min, 0.05...1 h, 0.5...10 h.
§ Time ranges: 0.75...15 s, 3...60 s, 0.4...8 min., 3...60 min.
Discount Group PRO

Economy Timing Relays 700-FE, continued

Multi-Function

This device offers you the flexibility of selecting one of 4 single timing functions.

Operating Mode	Contact Output	Timing Range	Input Voltage	Cat. No.		PGC
ON-delay, OFF-delay, One Shot, Flasher (repeat cycle starting with pulse)	1 N.O.	0.75 s...1 h (4 settings) ※	24V AC/DC 110...240V AC 50/60 Hz *	700-FEM1RU22		W91
	SPDT (I C/O)	0.05 s...10 h (6 settings) ※	24V...48V AC/DC 24...240V AC 50/60 Hz	700-FEM3TU23		W91

Discount Group PRO

Special Functions

Operating Mode	Contact Output	Timing Range	Input Voltage	Cat. No.		PGC
Star-delta	2 N.O. with 1 Common	0.15 s...10 min. (4 settings) ♣	24V...48V AC/DC 24...240V AC 50/60 Hz	700-FEY2QU23		W91

* Voltage is either 24V AC 50/60 Hz or 24V DC.

※ Time ranges: 0.5 s...10 s, 3...60 s, 0.5 s...10 min., 3...60 min.

♣ Time ranges: (3s) 0.15...3 s, (10s) 0.5...10 s, (1m) 0.05...1 min, (10m) 0.5...10 min

Discount Group PRO

Electronic High Performance Timing Relays 700-FS

- Adjustable Function and Timing Range Timing Relays
- DIN Rail Mounted without Cost of Socket
- 22.5 mm Wide Multifunction or Single Functions
- Available as SPDT or DPDT Contact Output, 8 A
- Timing Ranges From 0.05s...60h



700-FS

Single Function (With SPDT 1 C/O contact)

Operating Mode	Timing Range	Input Voltage	Cat. No.		PGC
On-delay	0.05 s...60 h	24...48V DC 24...240V AC, 50/60 Hz	700-FSA3UU23		W91
	0.05...1 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSA3AU23		W91
	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSA3CU23		W91
	0.5...10 min	24...48V DC 24...240V AC, 50/60 Hz	700-FSA3GU23		W91
Off-delay	0.05 s...60 h	24...48V DC 24...240V AC, 50/60 Hz	700-FSB3UU23		W91
	0.05...1 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSB3AU23		W91
	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSB3CU23		W91
	0.5...10 min	24...48V DC 24...240V AC, 50/60 Hz	700-FSB3GU23		W91
On- and off-delay	0.05...1 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSC3AU23		W91
	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSC3CU23		W91
One shot	0.05...1 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSD3AU23		W91
	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSD3CU23		W91
Fleeting Off-delay	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSE3CU23		W91
Flasher (repeat cycle starts with pulse)	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSF3CU23		W91
Flasher (repeat cycle starts with pause)	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSG3CU23		W91
On-delay pulse generator	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSI3CU23		W91
On-delay (pulse controlled)	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSJ3CU23		W91
One shot/watch dog (pulse controlled)	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSK3CU23		W91
Pulse converter	0.5...10 s	24...48V DC 24...240V AC, 50/60 Hz	700-FSL3CU23		W91

Discount Group PRO

Optional Configurations, Single-Function (With SPDT 1 C/O contacts)

700-FS

A

3

A

U23

a

b

c

d

a

Operating Mode	
Code	Description
A	On-delay
B	Off-delay
C	On- and off-delay
D	One shot
E	Fleeting off-delay
F	Flasher (repeat cycle starts with pulse)
G	Flasher (repeat cycle starts with pause)
I	On-delay pulse generator
J	On-delay (pulse controlled)
K	One shot/watch dog (pulse controlled)
L	Pulse converter

b

Contact Output	
Code	All functions:
3	1 Changeover contact (SPDT)

c

Timing Range	
Code	Description
A	0.05...1 s
B	0.15...3 s
C	0.5...10 s
D	1.5...30 s
E	0.05...1 min
F	0.15...3 min
G	0.5...10 min
H	1.5...30 min
I	0.05...1 h
J	0.15...3 h
K	0.5...10 h
L	3.0...60 h
U	0.05 s...60 h*

d

Input Voltage	
Code	Description
U18	24...240V AC/DC
U23	24...48V DC 24...240V AC 50/60 Hz
Z12	12 V DC

* Valid for operating modes "A" and "B" only.

Single Function (With DPDT 2 C/O contacts)

Operating Mode	Timing Range	Input Voltage	Cat. No.	PGC
On-delay	0.05 s...60 h *	24...48V DC 24...240V AC, 50/60 Hz	700-FSA4UU23	W91
Off-delay	0.05 s...60 h *	24...48V DC 24...240V AC, 50/60 Hz	700-FSB4UU23	W91

* The timing range of "0.05 s...60 h" is selectable in 12 smaller ranges plus an ON and OFF function for maintenance needs.

Discount Group PRO

Bulletin 700-FS

Relays and Timers

Product Selection

Multi-Function Relays

(This device offers you the flexibility of selecting one of 8 single timing functions.)



700-FSM

Operating Mode	Contact Output	Timing Range	Input Voltage	Cat. No.		PGC
Multi-function timing relays 8 Single-functions: A, B, C, D, E, F, I, and L ON and OFF function additional (for installation and maintenance) note: See connection diagrams for further description.	(SPDT) 1 C/O	0.05 s...60 h *	24...48V DC 24...240V AC 50/60 Hz	700-FSM3UU23		W91
		0.05 s...60 h *	24...240V AC/DC	700-FSM3UU18		W91
		0.05 s...60 h *	346...440V AC 50/60 Hz	700-FSM3UA40		W91
	(DPDT) 2 C/O	0.05 s...60 h *	24...48V DC 24...240V AC 50/60 Hz	700-FSM4UU23		W91
		0.05 s...60 h *	24...240V AC/DC	700-FSM4UU18		W91
		0.05 s...60 h *	346...440V AC 50/60 Hz	700-FSM4UA40		W91

Discount Group PRO

Multi-Function Timing Relay Function and Time Range Settings

Description		 SPDT	 DPDT
 (A) On-Delay (B) Off-Delay (C) On- and Off-Delay (D) One shot (E) Fleeting Off-Delay (F) Flasher (repeat cycle starts with pulse) (I) On-Delay pulse generator (L) Pulse converter (On) ON-Function ⌘ (Off) OFF-Function ⌘ Note: Switch ⌘ is on DPDT relays only. When switch is down, one contact is instantaneous and one is timed. When switch is up, both contacts are timed.	Multi-function timing relays 700-FSM3U includes 10 setting functions: 	Multi-Time Setting Range 0.05 s...60 h 	
		(1 s) 0.05...1 s (3 s) 0.15...3 s (10 s) 0.5...10 s (1 min) 0.05...1 min (3 min) 0.15...3 min (10 min) 0.5...10 min (1 h) 0.05...1 h (3 h) 0.15...3 h (10 h) 0.5...10 h (60 h) 3...60 h	

* The time range of "0.05 s...60 h" is selectable in 12 smaller ranges plus an ON and OFF function for maintenance needs.

⌘ For installation and maintenance.

Special Function Relays



700-FSH



700-FSY

Operating Mode	Contact Output	Timing Range	Input Voltage	Cat. No.	PGC
—	(SPDT) 1 C/O	0.05 s...60 h *	24...48V DC 24...240V AC 50/60 Hz	700-FSH3UU23	W91
		2 x 0.05 s...60 h (2 ranges)	24...48V DC 24...240V AC, 50/60 Hz	700-FSH3VU23	W91
		0.05 s...60 h	346...440V AC 50/60 Hz	700-FSH3UA40	W91
		2 x 0.05 s...60 h (2 ranges)	346...440V AC 50/60 Hz	700-FSH3VA40	W91
OFF-delay without supply voltages (True OFF-delay) ‡	(SPDT) 1 C/O	0.15 s...10 m *	24...48V DC 24...240V AC 50/60 Hz	700-FSQ3QU18	W91
OFF-delay without supply voltages (True OFF-delay) ‡	(DPDT) 2 C/O			700-FSQ4QU18	W91
Star-Delta	2 N.O. + 1 Common	0.5 s...10 s	24...48V DC 24...240V AC 50/60 Hz	700-FSY2CU23	W91
		1.5...30 s		700-FSY2DU23	W91
		0.05 s...1 min.		700-FSY2EU23	W91
		0.15...3 min.		700-FSY2FU23	W91
		0.5...10 min.		700-FSY2GU23	W91
		0.5 s...10 s	346...440V AC 50/60 Hz	700-FSY2CA40	W91
		1.5...30 s		700-FSY2DA40	W91
		0.05 s...1 min.		700-FSY2EA40	W91
		0.15...3 min.		700-FSY2FA40	W91
		0.5...10 min.		700-FSY2GA40	W91

* The timing range of "0.05 s...60 h" is selectable in 12 smaller ranges plus an ON and OFF function for maintenance needs.

* This timing range is selectable in four smaller ranges: 0.15 s...2.5 s, 0.5 s...10 s, 4 s...80 s, 30 s...10 min.

‡ Due to shock during shipment, the state of the contacts should be verified before initial use.

Discount Group PRO

Miniature Control Relays 700-M

- IEC Compact Industrial Relay
- 700-M Standard Contacts (10 A)
- 700-MB Bifurcated Contacts For Low Energy Loads
- Positively Guided/Mechanically Linked Contacts Per IEC 60947-5-1 on All 700-M Relays



AC Coil Voltage Control Relays *

AC-1	AC-15	Contacts		Cat. No.*	PGC
<i>I_e</i> [A]	<i>I_e</i> [A]				
40 °C	400V	N.O.	N.C.		
16	2.5	2	2	700-M220S	W92
		3	1	700-M310S	W92
		4	—	700-M400S	W92
		1+1L	1+1L	700-MZ220S	W92

Discount Group PRO

DC Coil Voltage Control Relays *

AC-1	AC-15	Contacts		Cat. No.*	PGC
<i>I_e</i> [A]	<i>I_e</i> [A]				
40 °C	400V	N.O.	N.C.		
16	2.5	2	2	700DC-M220S	W92
		3	1	700DC-M310S	W92
		4	—	700DC-M400S	W92
		1+1L	1+1L	700DC-MZ220S	W92

- * Mechanically Linked Contacts — Summary:
700-M, 700-MB, 700DC-M, and 700DC-MB relays are positively guided for 4 main poles. Restrictions apply when using auxiliary contacts.
- * 10-packs can be ordered for the following voltage codes: A1, A2, A24, Z24, D24. To order a 10-pack, specify quantity in multiples of 10 and drop the final "S" from the catalog number.
- Discount Group PRO

⊗ AC Coil Voltage Code

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: **Cat. No. 700-M400S** becomes **Cat. No. 700-M400KFS** for 230V, 50/60 Hz. For other voltages, please consult your local sales office.

[V]	24	48	110	110-120	220-230	230	230-240	240	380-400	400-415
50 Hz	—	—	A1	—	A2	—	—	—	A3	—
60 Hz	—	—	—	A1	—	—	A2	—	—	A3
50/60 Hz	A24	A48	—	—	—	KF	—	A23	—	—

⊗ DC Coil Voltage Code

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: **Cat. No. 700DC-MB400S** becomes **Cat. No. 700DC-MB400Z24S** for 24V DC.

[V]	24	48	110	220
Standard	Z24	Z48	Z11	Z2
With diode protective circuit	D24	—	—	—

Voltage codes in bold type: Preferred coil voltage codes.

Auxiliary Contact Adder Decks

	Description			For Use With	PQ	Cat. No.		PGC
		N.O.	N.C.					
 Auxiliary Contact Blocks for Front Mounting • 2- and 4-pole • Quick and easy mounting without tools • Electronic-compatible H-contacts (700-MB...) • Contacts themselves in auxiliary contact block positively guided • Types with the same functions with several connection numbering variants		0	2	700-M400	10	195-MA02		W9S2
		1	1	700-M400	10	195-MA11		W9S2
		1	3	700-M400	10	195-MA13		W9S2
		2	0	700-M400, -M310, -M220, -MZ220	10	195-MA20		W9S2
		0	4	700-M400	10	195-MA04		W9S2
		2	2	700-M400	10	195-MA22		W9S2
		4	0	700-M400, -M310, -M220, -MZ220	10	195-MA40		W9S2

Discount Group PRO

Surge Suppressors

	Description		PQ	Cat. No.		PGC
	R-C Suppressor	24...48V AC	10	199-MSMA48		W9S2
		110...240V AC	10	199-MSMA1		W9S2
	MOV Suppressor	12...55V AC/12...77V DC	10	199-MSMV1		W9S2
		56...125V AC/78...178V DC	10	199-MSMV2		W9S2
		126...277V AC/181...350V DC	10	199-MSMV3		W9S2
	Diode Suppressor	12...250V DC	10	199-MSMD1		W9S2

Discount Group PRO

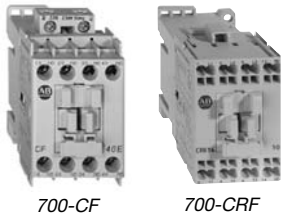
Timers

	Description		PQ	Cat. No.		PGC
	Solid-State Timing Element	0.1...3 s On-Delay	10	196-MT3S		W9S2
		1...30 s On-Delay	10	196-MT30S		W9S2
	Star-Delta Timer	220...250V 50/60Hz	10	196-MTSDA1		W9S2
		110...120V 50/60 Hz	10	196-MTSDA2		W9S2
		48V 50/60 Hz	10	196-MTSDA3		W9S2
	35 mm DIN Rail Mounting Adapter For easy mounting of timer modules on standard DIN Rail (EN 50 022-35) and G-Rail		10	196-MTM		W9S2

PQ = Package Quantity
Discount Group PRO

Control Relays 700-CF

- IEC Industrial Relays (Finger Safe Design)
- Positively-Guided/Mechanically-Linked Contacts per IEC 947-5-1 Annex L on Main and Auxiliary Contacts
- Gold Plated, Bifurcated Version for Low Level Switching Applications
- Master Control Relay Version rated 15 A (AC-15)
- Solid-State and Pneumatic Timing Modules
- 4...10 Poles
- 12...600V Coils



4-Pole AC Coil Voltage (Screw Terminals)

AC-12		AC-15		Contacts		Standard Contacts Cat. No. *	PGC
I _{th} [A]		I _{th} [A]					
40 °C	60 °C	240V	400V	N.O.	N.C.		
20	20	10	6	2	2	700-CF220⊗	W93
				3	1	700-CF310⊗	W93
				4	0	700-CF400⊗	W93

* May be ordered in package quantities of 20. Add letter **M** to the end of the cat. no. Example: **700-CF220KFM**). Discount Group PRO

4-Pole AC Coil Voltage (Spring Clamp Terminals)

AC-12		AC-15		Contacts		Standard Contacts Cat. No.	PGC
I _{th} [A]		I _{th} [A]					
40 °C	60 °C	240V	400V	N.O.	N.C.		
20	20	10	6	2	2	700-CRF220⊗	W93
				3	1	700-CRF310⊗	W93
				4	0	700-CRF400⊗	W93

Discount Group PRO

⊗ AC Coil Voltage Code

The Cat. No. as listed is incomplete. Select a Coil Voltage Code from the table below to complete the Cat. No. Example: **Cat. No. 700-CF220⊗** becomes **Cat. No. 700-CF220KF** for 230V, 50/60 Hz.

[V]	12	24	32	36	42	48	100	100-110	110	120	127	200	200-220	200-230	208-240
50 Hz	R	K	V	W	X	Y	KP	—	D	P	S	KG	L	—	—
60 Hz	Q	J	—	V	—	X	—	KP	—	D	—	—	KG	H	L
50/60 Hz	—	KJ	—	—	—	KY	KP	—	KD	—	—	KG	—	KL	—

[V]	220-230	230	230-240	240	277	347	380	380-400	400	400-415	440	480	500	550	600
50 Hz	F	—	VA	T	—	—	—	N	—	G	B	—	M	C	—
60 Hz	—	—	—	A	T	I	E	—	—	—	N	B	—	—	C
50/60 Hz	—	KF	—	KA	—	—	—	—	KN	—	KB	—	—	—	—

Voltage codes in bold type: Preferred coil voltage codes

4-Pole DC Coil Voltage (Screw Terminals)

AC-12		AC-15		Contacts		Standard Contacts Cat. No. *		PGC
I_{th} [A]		I_{th} [A]						
40 °C	60 °C	240V	400V	N.O.	N.C.			
20	20	10	6	2	2	700-CF220⊗		W93
				3	1	700-CF310⊗		W93
				4	0	700-CF400⊗		W93

* May be ordered in package quantities of 20. Add letter **M** to the end of the cat. no. Example: **700-CF220ZJM**).
Discount Group PRO

4-Pole DC Coil Voltage (Spring Clamp Terminals)

AC-12		AC-15		Contacts		Standard Contacts Cat. No.		PGC
I_{th} [A]		I_{th} [A]						
40 °C	60 °C	240V	400V	N.O.	N.C.			
20	20	10	6	2	2	700-CRF220⊗		W93
				3	1	700-CRF310⊗		W93
				4	0	700-CRF400⊗		W93

Voltage codes in bold type: Preferred products
Discount Group PRO

⊗ DC Coil Voltage Code*

The Cat. No. as listed is incomplete. Select a Coil Voltage Code from the table below to complete the Cat. No. Example: **Cat. No. 700-CF220⊗** becomes Cat. No. **700-CF220ZJ** for 24V DC

		[V]	9 ‡	12	24 ‡	36	48	60	64	72
700-CF 700-CRF	Standard		ZR	ZQ	ZJ	ZW	ZY	ZZ	ZB	ZG
	With integrated diode		—	—	DJ	—	—	—	—	—
	With integrated diode		DR	DQ	DJ	DW	DY	DZ	DB	DG

		[V]	80	110	115	125	220	230	250	
700-CF 700-CRF	Standard		ZE	ZD	ZP	ZS	ZA	ZF	ZT	
	With integrated diode		—	—	—	—	—	—	—	
	With integrated diode		DE	DD	DP	DS	DA	DF	DT	

Voltage codes in bold type: Preferred coil voltage codes

* When ordering DJ coil with built-in surge suppression, the DJ is not polarity sensitive. Drop out time: 14...20 ms.

‡ Extended operating limits 0.7...1.25 x U_s

Auxiliary Contacts for 700-CF, 700-CRF *

	Description			For Use With	Cat. No.		PGC
Auxiliary Contacts with Screw Terminals							
	Auxiliary Contact Blocks for Front Mounting 2- and 4-pole Quick and easy mounting without tools	0	2	700-CF	100-FA02		W9W1
		1	1		100-FA11		W9W1
	Electronic-compatible contacts down to 17V, 5 mA Mechanically linked performance between N.O. and N.C. poles and to the main contactor poles (except for L types) Models with equal function with several terminal numbering choices 1L = Late break N.C./early make N.O. Bifurcated version for switching down to 8V, 5 mA	2	0		100-FA20		W9W1
		2	2		100-FA22		W9W1
		3	1		100-FA31		W9W1
		4	0		100-FA40		W9W1
		1+1L	1+1L		100-FAL22		W9W1
Auxiliary Contacts with Spring Clamp Terminals							
	Auxiliary Contact Blocks for Front Mounting 2- and 4-pole Quick and easy mounting without tools	0	2	700-CRF	100-CRFA02		W9W1
		1	1		100-CRFA11		W9W1
	Electronic-compatible contacts down to 17V, 5 mA Mechanically linked performance between N.O. and N.C. poles and to the main contactor poles (except for L types) Models with equal function with several terminal numbering choices 1L = Late break N.C./early make N.O. Bifurcated version for switching down to 5V, 3 mA also available	2	0		100-CRFA20		W9W1
		2	2		100-CRFA22		W9W1
		3	1		100-CRFA31		W9W1
		4	0		100-CRFA40		W9W1
		1+1L	1+1L		100-CRFAL22		W9W1

* Max. number of auxiliary contacts that may be mounted:
AC coil contactors — max. 4 N.O. contacts on the front of the contactor, 2 N.O. contacts on the side, 4 N.C. front or side, 6 total.
DC coil contactors — max. 4 N.O. contacts on the front of the contactor or max 2 N.O. contacts on the side, 4 N.C. front or side, 4 total.
※ May be ordered in package quantities of 10. Add letter **M** to the end of the cat. no. (Example: **100-FA02M**).
Discount Group PRO

Additional Accessories for 700-CF, 700-CRF see page 33

Circuit Protection

Product Line Overview

Device Selection

		
Bulletin	1492-RCD	1492-SP
Type	Residual Current Device	Miniature Circuit Breaker
Features	• True IP2X finger-safe design (front) • For applications in which AC and pulsating DC fault currents are likely to appear, nonselective and non-delayed • Designed to prevent unwanted tripping caused by switching electronic circuit devices • Auxiliary and Signal contacts may be added	• True IP2X finger-safe design (front) • Energy Limiting Design protects downstream components better than conventional breakers during short circuits • Field mountable options for selective applications • AC and DC voltage ratings in one convenient device • Superior shock and vibration resistance capabilities • Mounts on hut (DIN) rail
Number of Poles	2 pole (1 + N) 4 pole (3 + N)	1, 2, 3 pole 1 pole + neutral, 3 pole + neutral
Rated voltage	230V AC (1+N), 400V AC (3+N)	230/400V AC, 240/415V AC
Tripping characteristic reference temperature	—	30 °C
Rated tripping current	30, 100, 300, 500 mA	—
Sensitivity	AC and pulsating DC	—
Rated short circuit capability	10 kA with 63 A gG/gL back-up fuse for up to 63 A 10 kA with 80 A gG/gL back-up fuse for 80 A	10 kA
Max. back-up fuse for short circuit protection	63 A gG/gL for up to 63 A 80 A gG/gL for 80 A	100 A gG/gL
Maximum back-up fuse for overload protection	25 A gG/gL (25 A and 40 A devices) 40 A gG/gL (63 A devices) 50 A gG/gL (80 A devices)	—
Degree of protection	IP20	IP20
Mechanical life	≥10000 changeovers	≥6000 changeovers
Mounting	35 mm hut (DIN) rail	35 mm hut (DIN) rail
Operating temperature	-5°C...+40°C	-5°C...+40°C (reduction factors are required for higher temperatures)
Wire size	1.5...35 mm ²	1...25 mm ²
Terminal torque	2.4 N.m ≤40 A, 3.0 N.m ≥63 A	2.4 N.m
Standards and Approvals	IEC/EN 61008 VDE, CE	IEC/EN 60889 CE, VDE, UL 1077, CSA 22.2 No. 235
Product Selection	Page 169	Page 171

Circuit Protection
Product Line Overview

Device Selection

						
Bulletin			1492-FB			
Type			For Class CC Fuse	For Class J Fuse		For Midget Fuse
			30 A	30 A	60 A	30 A
Features			• EN/IEC 60529 Finger Protection — Dead Front Construction • The Patented Handle Design Isolates the Fuse from Power When Handle is Opened for Fuse Insertion or Removal • Optional Blown Fuse Indicators — Allow for Easy Troubleshooting of Electrical Circuits • Easy Insertion/Removal of Fuses, No Special Tools Required • Mounts on Standard 35 mm DIN Rail (A-B p/n 199-DR1)			
Certifications			CE, ULus, CSA		CE, URus, CSA	
Maximum Voltage Rating			600V AC/DC			
Fuse Withstand Rating			200 kA		100 kA	
Fuse Reject Feature			Yes	Yes	No	
Insulation Temperature Range			-40...+295 °F (-40...+140 °C)			
Housing Material			UL 94V-O			
With Indicator	Working Voltage	Neon	95...600V AC, 115...660V DC			
	Working Voltage	LED	12...24V DC or 35...48V DC			
	Leakage Current	Neon	0.8 ma Max @ 600V			
	Leakage Current	LED	10 ma @ 24V DC or 48V DC			
Wire Size			2.5...16 mm ² / #14...6 AWG Cu			
Terminal Torque			1.7 N•m (15 lb•in)	3.9 N•m (35 lb•in)	5.0 N•m (45 lb•in)	1.7 N•m (15 lb•in)
Product Selection			Page 177			

					
Bulletin		140F			
Type		MCS Fuse Holders			
Features		• Available for UL Class CC or Midget Fuses, with or without blown fuse indication • Lockable in the open position • Compatible with 140M accessories • Compact busbar and connectors of contactors 100C and 100M • 1 NO/ 1 NC Auxiliary Contact, early break NC • Provides capability for dropping out contactor before breaking current on fuse • Late make NO provides positive indication that power circuit is open			
Product Selection		Page 178			

Residual Current Devices Bulletin 1492-RCD

Earth Leakage Detectors for IEC Applications

The Bulletin 1492-RCD line includes Residual Current Devices for earth leakage detection to IEC standards. These devices are used in association with miniature circuit breakers (1492-SP).



1492-RCD2



1492-RCD4

- True IP2X finger-safe design (front)
- Undelayed tripping time
- Line-voltage independent tripping (suitable for residual current & additional protection)
- Rated tripping current: 30, 100, 300, 500 mA
- For applications in which AC and pulsating DC fault currents are likely to appear, nonselective and non-delayed
- Designed to prevent unwanted tripping caused by switching electronic circuit devices
- Mounts on DIN Rail
- Busbar position on top or bottom
- Conditionally surge current proof 250 A
- Rated Short-Circuit strength: 10 kA with 63 A gG/gL back-up fuse, 10 kA with 80 A gG/gL back-up fuse for 80 A device

Standard Versions

Operating Voltage, Nominal [V]	Rated Tripping Current [mA]	Rated Operational Current [A]	2 poles (1 pole + neutral)			4 poles (3 poles + neutral)		
			Cat. No.		PGC	Cat. No.		PGC
230/400V 50 Hz	30	16	1492-RCD2A16		T1R1	—		—
		25	1492-RCD2A25		T1R1	1492-RCD4A25		T1R1
		40	1492-RCD2A40		T1R1	1492-RCD4A40		T1R1
		63	—		—	1492-RCD4A63		T1R1
		80	—		—	1492-RCD4A80		T1R1
	100	25	1492-RCD2B25		T1R1	1492-RCD4B25		T1R1
		40	1492-RCD2B40		T1R1	1492-RCD4B40		T1R1
		63	—		—	1492-RCD4B63		T1R1
	300	16	—		—	1492-RCD4C16		T1R1
		25	1492-RCD2C25		T1R1	1492-RCD4C25		T1R1
		40	1492-RCD2C40		T1R1	1492-RCD4C40		T1R1
		63	—		—	1492-RCD4C63		T1R1
		80	—		—	1492-RCD4C80		T1R1
	500	16	—		—	1492-RCD4D16		T1R1
		25	—		—	1492-RCD4D25		T1R1
		40	—		—	1492-RCD4D40		T1R1
		63	—		—	1492-RCD4D63		T1R1
		80	—		—	1492-RCD4D80		T1R1

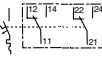
Discount Group MAC

Versions for Use with Variable Frequency Drives

Operating Voltage, Nominal	Rated Tripping Current	Rated Operational Current	4 poles (3 poles + neutral)		
[V]	[mA]	[A]	Cat. No.		PGC
230/400V 50 Hz	100	40	1492-RCD4B40D		T1R1
		63	1492-RCD4B63D		T1R1
	300	40	1492-RCD4C40D		T1R1
		63	1492-RCD4C63D		T1R1

Discount Group MAC

Accessories 1492-RCD

	Description	Diagram	Cat. No.		PGC
	Dual Auxiliary Contact Module Switches when protective device is operated manually or tripped electrically 2 N.O. – 2 N.C. 2 Form C Contact		1492-ASPHH3		T1R
	Auxiliary/Signal Alarm Contact Module 1 Auxiliary Contact switches when protective device is operated manually or tripped electrically 1 N.O. – 1 N.C. Form C Contact 1 Signal Contact switches when protective device is tripped electrically 1 N.O. – 1 N.C. Form C Contact		1492-ASPHS3		T1R

Discount Group MAC

Miniature Circuit Breakers Bulletin 1492-SP



1492-SP1



1492-SP2



1492-SP3



1492-SP1...-N



1492-SP3...-N

- Energy Limiting Design - Protects Downstream Components Better than Conventional Breakers During Short Circuits
- Field Mountable Options for Selective Applications
- IP2x Finger-Protection (Front)
- International Approvals - CE Marked, and Meets UL, CSA, and IEC (VDE, GL) Standards for Worldwide Acceptance
- Ratings to 480Y/277V AC @ 240/415V AC - 10 000 A Interrupt Rating
- AC and DC Voltage Ratings - in One Convenient Device
- A Positively Trip-Free Mechanism (Breaker Operation Cannot be Defeated by Holding the Handle in the ON Position)
- 3 Trip Curves: B, C, and D
- Time Delay (D Characteristic) for High Inrush Currents During Inductive Start-Ups Such as Transformers and Power Supplies
- Superior Shock and Vibration Resistance Capabilities — Helps to Prevent Nuisance Tripping
- Mounts on DIN Rail

Miniature Circuit Breakers, 1-Pole

Tripping Characteristics		Trip Curve B Resistive or Slightly Inductive		Trip Curve C Inductive		Trip Curve D Highly Inductive		
		3...5 /n		5...10 /n		10...20 /n		
Number of Poles	Continuous Current Rating (/n) Ampere							PGC
		Cat. No.		Cat. No.		Cat. No.		
 1 2	1	1492-SP1B010		1492-SP1C010		1492-SP1D010		T1R
	2	1492-SP1B020		1492-SP1C020		1492-SP1D020		
	4	1492-SP1B040		1492-SP1C040		1492-SP1D040		
	6	1492-SP1B060		1492-SP1C060		1492-SP1D060		
	10	1492-SP1B100		1492-SP1C100		1492-SP1D100		
	13	1492-SP1B130		1492-SP1C130		1492-SP1D130		
	16	1492-SP1B160		1492-SP1C160		1492-SP1D160		
	20	1492-SP1B200		1492-SP1C200		1492-SP1D200		
	25	1492-SP1B250		1492-SP1C250		1492-SP1D250		
	32	1492-SP1B320		1492-SP1C320		1492-SP1D320		
	40	1492-SP1B400		1492-SP1C400		1492-SP1D400		
	50	1492-SP1B500		1492-SP1C500		—		
63	1492-SP1B630		1492-SP1C630		—			

Package Quantity = 2
Discount Group MAC

Bulletin 1492-SP

Miniature Circuit Breakers

Product Selection

Miniature Circuit Breakers, 2-Poles

Tripping Characteristics		Trip Curve B Resistive or Slightly Inductive		Trip Curve C Inductive		Trip Curve D Highly Inductive		
		3...5 /n		5...10 /n		10...20 /n		
Number of Poles	Continuous Current Rating (/n) Ampere	Cat. No.		Cat. No.		Cat. No.		PGC
	1	1492-SP2B010		1492-SP2C010		1492-SP2D010		T1R
	2	1492-SP2B020		1492-SP2C020		1492-SP2D020		
	4	1492-SP2B040		1492-SP2C040		1492-SP2D040		
	6	1492-SP2B060		1492-SP2C060		1492-SP2D060		
	10	1492-SP2B100		1492-SP2C100		1492-SP2D100		
	13	1492-SP2B130		1492-SP2C130		1492-SP2D130		
	16	1492-SP2B160		1492-SP2C160		1492-SP2D160		
	20	1492-SP2B200		1492-SP2C200		1492-SP2D200		
	25	1492-SP2B250		1492-SP2C250		1492-SP2D250		
	32	1492-SP2B320		1492-SP2C320		1492-SP2D320		
	40	1492-SP2B400		1492-SP2C400		1492-SP2D400		
	50	1492-SP2B500		1492-SP2C500		—		
63	1492-SP2B630		1492-SP2C630		—			

Discount Group MAC

Miniature Circuit Breakers, 3-Poles

Tripping Characteristics		Trip Curve B Resistive or Slightly Inductive		Trip Curve C Inductive		Trip Curve D Highly Inductive		
		3...5 /n		5...10 /n		10...20 /n		
Number of Poles	Continuous Current Rating (/n) Ampere	Cat. No.		Cat. No.		Cat. No.		PGC
	1	1492-SP3B010		1492-SP3C010		1492-SP3D010		T1R
	2	1492-SP3B020		1492-SP3C020		1492-SP3D020		
	4	1492-SP3B040		1492-SP3C040		1492-SP3D040		
	6	1492-SP3B060		1492-SP3C060		1492-SP3D060		
	10	1492-SP3B100		1492-SP3C100		1492-SP3D100		
	13	1492-SP3B130		1492-SP3C130		1492-SP3D130		
	16	1492-SP3B160		1492-SP3C160		1492-SP3D160		
	20	1492-SP3B200		1492-SP3C200		1492-SP3D200		
	25	1492-SP3B250		1492-SP3C250		1492-SP3D250		
	32	1492-SP3B320		1492-SP3C320		1492-SP3D320		
	40	1492-SP3B400		1492-SP3C400		1492-SP3D400		
	50	1492-SP3B500		1492-SP3C500		—		
	63	1492-SP3B630		1492-SP3C630		—		

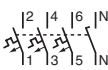
Discount Group MAC

Miniature Circuit Breakers, 1-Pole + Neutral Module

Tripping Characteristics		Trip Curve B Resistive or Slightly Inductive		Trip Curve C Inductive		Trip Curve D Highly Inductive		PGC
		3...5 /n		5...10 /n		10...20 /n		
Number of Poles	Continuous Current Rating (/n) Ampere	Cat. No.		Cat. No.		Cat. No.		
	1	1492-SP1B010-N		1492-SP1C010-N		1492-SP1D010-N		T1R
	2	1492-SP1B020-N		1492-SP1C020-N		1492-SP1D020-N		
	4	1492-SP1B040-N		1492-SP1C040-N		1492-SP1D040-N		
	6	1492-SP1B060-N		1492-SP1C060-N		1492-SP1D060-N		
	10	1492-SP1B100-N		1492-SP1C100-N		1492-SP1D100-N		
	13	1492-SP1B130-N		1492-SP1C130-N		1492-SP1D130-N		
	16	1492-SP1B160-N		1492-SP1C160-N		1492-SP1D160-N		
	20	1492-SP1B200-N		1492-SP1C200-N		1492-SP1D200-N		
	25	1492-SP1B250-N		1492-SP1C250-N		1492-SP1D250-N		
	32	1492-SP1B320-N		1492-SP1C320-N		1492-SP1D320-N		
	40	1492-SP1B400-N		1492-SP1C400-N		1492-SP1D400-N		
	50	1492-SP1B500-N		1492-SP1C500-N		—		
63	1492-SP1B630-N		1492-SP1C630-N		—			

Discount Group MAC

Miniature Circuit Breakers, 3-Poles + Neutral Module

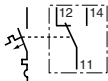
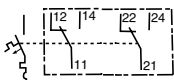
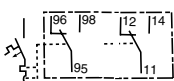
Tripping Characteristics		Trip Curve B Resistive or Slightly Inductive		Trip Curve C Inductive		Trip Curve D Highly Inductive		PGC
		3...5 /n		5...10 /n		10...20 /n		
Number of Poles	Continuous Current Rating (/n) Ampere	Cat. No.		Cat. No.		Cat. No.		T1R
	1	1492-SP3B010-N		1492-SP3C010-N		1492-SP3D010-N		
	2	1492-SP3B020-N		1492-SP3C020-N		1492-SP3D020-N		
	4	1492-SP3B040-N		1492-SP3C040-N		1492-SP3D040-N		
	6	1492-SP3B060-N		1492-SP3C060-N		1492-SP3D060-N		
	10	1492-SP3B100-N		1492-SP3C100-N		1492-SP3D100-N		
	13	1492-SP3B130-N		1492-SP3C130-N		1492-SP3D130-N		
	16	1492-SP3B160-N		1492-SP3C160-N		1492-SP3D160-N		
	20	1492-SP3B200-N		1492-SP3C200-N		1492-SP3D200-N		
	25	1492-SP3B250-N		1492-SP3C250-N		1492-SP3D250-N		
	32	1492-SP3B320-N		1492-SP3C320-N		1492-SP3D320-N		
	40	1492-SP3B400-N		1492-SP3C400-N		1492-SP3D400-N		
	50	1492-SP3B500-N		1492-SP3C500-N		—		
	63	1492-SP3B630-N		1492-SP3C630-N		—		

Discount Group MAC

Bulletin 1492-SP

Miniature Circuit Breakers

Accessories

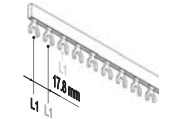
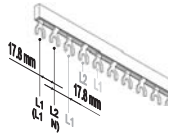
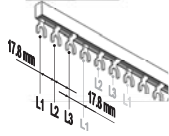
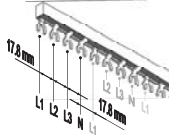
	Description	Diagram	PQ	Cat. No.		PGC
	Auxiliary Contact Module Switches when protective device is operated manually or tripped electrically 1 N.O. – 1 N.C. Form C Contact		1	1492-ASPH3		T1R
	Dual Auxiliary Contact Module Switches when protective device is operated manually or tripped electrically 2 N.O. – 2 N.C. 2 Form C Contact		1	1492-ASPHH3		T1R
	Auxiliary/Signal Alarm Contact Module 1 Auxiliary Contact switches when protective device is operated manually or tripped electrically 1 N.O. – 1 N.C. Form C Contact 1 Signal Contact switches when protective device is tripped electrically 1 N.O. – 1 N.C. Form C Contact		1	1492-ASPHS3		T1R
	Undervoltage Release Module Use the Undervoltage Release Module to trip the adjacent breaker poles when the applied voltage is less than the nominal voltage. Undervoltage trip is often used when loss of power and eventual restoration of power creates an unsafe or unknown set of condition.		50...115V AC	1	1492-ASPU115	T1R
			110...240V AC	1	1492-ASPU230	T1R
	Shunt Trip Module Use the Shunt Trip Module to trip the adjacent breaker poles from a remote location. The module is actuated by applying a voltage (Pickup Voltage) to the trip terminals. Shunt Trip Modules are often used in emergency shutdown circuits where multiple power circuits must be switched off from a single location.		110...415V AC (110...230V DC)	1	1492-ASPA1	T1R
			12...110V AC (12...60V DC)	1	1492-ASPA2	T1R
	Mounting Rails DIN (#3) Symmetrical Rail 35 mm x 7.5 mm x 1 m long Order must be for 10 rails or multiples of 10.		10	199-DR1		W9S1
	DIN Hi-Rise Symmetrical Rail, 1 m 35 mm x 7.5 mm, 57.4 mm (2.26") high Copper-Free Aluminum		2	1492-DR6		T1J
	DIN Angled Hi-Rise Symmetrical Rail, 1 m 35 mm x 7.5 mm, 71.0 mm (2.80") high Zinc-Plated, Chromated Steel		2	1492-DR7		T1J
	End Anchor		10	1492-EAH35		T1J
	Lockout Attachment		10	1492-ASPLOA		T1R

PQ = Package Quantity
Discount Group MAC, Discount Group NLP (199-DR1), Discount Group CTT (1492-DR6, 1492-DR7, 1492-EAH35)

	Description	No. of 1492-SP	Rated Operational Current (I_o) [A]	PQ	Cat. No.		PGC
Incoming Terminals for fork style commoning links, IP20 protection (Not for use in North American installations)							
	For max 25 mm ² wire			1	1492-ASPCLT25		T1R
	For max 35 mm ² wire			1	1492-ASPCLT35		T1R

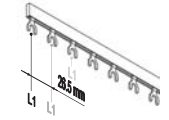
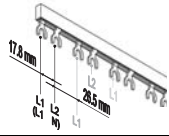
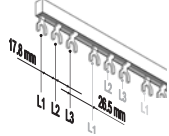
Fork Style Commoning Links

for 1492-SP without Auxiliary Contact Module (may not be cut)

	1 pole	2	63	1	1492-ASPCL102		T1R
	1 pole	6	63	1	1492-ASPCL106		T1R
	1 pole	12	63	1	1492-ASPCL112		T1R
	2 poles (1p + N)	2	63	1	1492-ASPCL204		T1R
	2 poles (1p + N)	3	63	1	1492-ASPCL206		T1R
	2 poles (1p + N)	6	63	1	1492-ASPCL212		T1R
	3 poles	2	63	1	1492-ASPCL306		T1R
	3 poles	4	63	1	1492-ASPCL312		T1R
	4 poles	2	63	1	1492-ASPCL408		T1R
	4 poles	3	63	1	1492-ASPCL412		T1R

Fork Style Commoning Links

for 1492-SP with an Auxiliary Contact Module or Auxiliary/Signal Alarm Contact Module

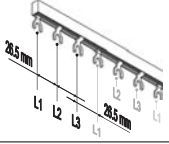
	1 pole	2	63	20	1492-ASPCL1A02		T1R
	1 pole	6	63	20	1492-ASPCL1A06		T1R
	1 pole	9	63	20	1492-ASPCL1A09		T1R
	2 poles (1p + N)	2	63	10	1492-ASPCL2A04		T1R
	2 poles (1p + N)	3	63	10	1492-ASPCL2A06		T1R
	2 poles (1p + N)	5	63	10	1492-ASPCL2A10		T1R
	3 poles	2	63	10	1492-ASPCL3A06		T1R
	3 poles	4	63	10	1492-ASPCL3A12		T1R

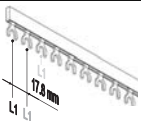
PQ = Package Quantity
Discount Group MAC

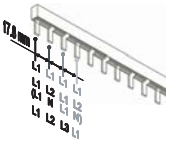
Bulletin 1492-SP

Miniature Circuit Breakers

Accessories

	Description	No. of 1492-SP	Rated Operational Current (I_e) [A]	PQ	Cat. No.		PGC
Fork Style Commoning Links for multiple single pole 1492-SP, each with 1 Auxiliary Contact or 1 Auxiliary/Signal Alarm Contact Module							
		2x3 (1p)	63	10	1492-ASPCL3AP06		T1R
		2x3 (1p)+2 (1p)	63	10	1492-ASPCL3AP08		T1R
		3x3 (1p)	63	10	1492-ASPCL3AP09		T1R
	Protective cover for unused fork termination			5	1492-ASPCLPS		T1R

Fork Style Commoning Links (may be cut to length, not for use with accessories)							
	1 pole	1 m (56 devices/m)	63	1	1492-ASPCL1		T1R
	3 poles	1 m (19 devices/m)	63	1	1492-ASPCL3		T1R
	End Cap (for 1 and 3 poles)			10	1492-ASPEC1		T1R

Pin Style Commoning Links (may be cut to length, not for use with accessories)							
	1 pole	1 m (56 devices/m)	40	1	1492-ACBCL1		T1R
	2 poles (1p + N)	1 m (26 devices/m)	30	1	1492-ACBCL2		T1R
	3 poles	1 m (16 devices/m)	30	1	1492-ACBCL3		T1R
	End Cap (for 2 and 3 poles)			10	1492-ACBEC1		T1R

PQ = Package Quantity
Discount Group MAC, Discount Group NLP (1492-ACB...)

DIN Rail Mounting Fuse Holders 1492-FB

- EN/IEC 60529 Finger Protection — Dead Front Construction
- The Patented Handle Design Isolates the Fuse from Power When Handle is Opened for Fuse Insertion or Removal
- Optional Blown Fuse Indicators — Allow for Easy Troubleshooting of Electrical Circuits
- Easy Insertion/Removal of Fuses, No Special Tools Required
- Mounts on Standard 35 mm DIN Rail (A-B p/n 199-DR1)



DIN Rail Mounting Fuse Holders for Class CC / Midget Fuse

		PQ	For Class CC Fuse			For Midget Fuse		
			30 A *			30 A		
			Cat. No.		PGC	Cat. No.		PGC
1-Pole	Without Blown Fuse Indicator	6	1492-FB1C30		T1Q	1492-FB1M30		T1Q
	With Blown Fuse Indicator (neon)	6	1492-FB1C30-L		T1Q	1492-FB1M30-L		T1Q
	With Blown Fuse Indicator (LED) 24V DC	6	1492-FB1C30-D1		T1Q	1492-FB1M30-D1		T1Q
	With Blown Fuse Indicator (LED) 48V DC	6	1492-FB1C30-D2		T1Q	1492-FB1M30-D2		T1Q
2-Poles	Without Blown Fuse Indicator	3	1492-FB2C30		T1Q	1492-FB2M30		T1Q
	With Blown Fuse Indicator (neon)	3	1492-FB2C30-L		T1Q	1492-FB2M30-L		T1Q
3-Poles	Without Blown Fuse Indicator	2	1492-FB3C30		T1Q	1492-FB3M30		T1Q
	With Blown Fuse Indicator (neon)	2	1492-FB3C30-L		T1Q	1492-FB3M30-L		T1Q

* 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:

Ferraz Shamut ATQR 1.25 I = 0.42 A max.

Ferraz Shamut ATQR 1.40 I = 0.47 A max.

PQ = Package Quantity

Discount Group MAC

DIN Rail Mounting Fuse Holders for Class J Fuse

		PQ	For Class J Fuse					
			30 A			60 A		
			Cat. No.		PGC	Cat. No.		PGC
1-Pole	Without Blown Fuse Indicator	6	1492-FB1J30		T1Q	1492-FB1J60		T1Q
	With Blown Fuse Indicator (neon)	6	1492-FB1J30-L		T1Q	1492-FB1J60-L		T1Q
2-Poles	Without Blown Fuse Indicator	3	1492-FB2J30		T1Q	1492-FB2J60		T1Q
	With Blown Fuse Indicator (neon)	3	1492-FB2J30-L		T1Q	1492-FB2J60-L		T1Q
3-Poles	Without Blown Fuse Indicator	2	1492-FB3J30		T1Q	1492-FB3J60		T1Q
	With Blown Fuse Indicator (neon)	2	1492-FB3J30-L		T1Q	1492-FB3J60-L		T1Q

PQ = Package Quantity

Discount Group MAC

Bulletin 140F

MCS Fuse Holders

Product Selection

MCS Fuse Holders 140F

- Available for UL Class CC or Midget Fuses and IEC 10 x 38 mm fuses, with or without blown fuse indication
- Lockable in the open position
- Compatible with 140M accessories
- Compact busbar and connectors of contactors 100C and 100M
- 1 NO/ 1 NC Auxiliary Contact, early break NC
- Provides capability for dropping out contactor before breaking current on fuse
- Late make NO provides positive indication that power circuit is open



Description	Approvals				Cat. No.		PGC
	IEC	CE Mark	UL	CSA			
MCS Fuse Holder, CC - 30A	Yes	Yes	Yes	Yes	140F-D3C-C30		W9G8
MCS Fuse Holder with Blown Fuse Indication, CC - 30A	Yes	Yes	Yes	Yes	140F-D3C-C30L		W9G8
MCS Fuse Holder, Midget - 30A	Yes	Yes	Yes	Yes	140F-D3M-C30		W9G8
MCS Fuse Holder with Blown Fuse Indication, Midget - 30A	Yes	Yes	Yes	Yes	140F-D3M-C30L		W9G8
MCS Fuse Holder, gG - 32A	Yes	Yes	No	No	140F-D3F-C30		W9G8
MCS Fuse Holder with Blown Fuse Indication, gG - 32A	Yes	Yes	No	No	140F-D3F-C30L		W9G8
Auxiliary Contact for MCS Fuse Holder (1 NO Late Make + 1 NC Early Break)	Yes	Yes	Yes	Yes	140F-C-AFA11		W9G8

Discount Group MAC

For additional accessories refer to contactors 100M/100-C and circuit breakers 140M.

Switch Selection

		
Bulletin	194C	194L
Type	Control Switches up to 10 A	Control and Load Switches 12 A...40 A
Features	- Rated current up to 10 A - Wide choice of functions and switch positions - Standard installation grids of 16 mm and 22 mm (for combining with Bulletin 800E control and indicating units) - Finger-proof switch body per IP20 - Water spray and dust-proof actuators per IP65 - Easily accessible terminals - Clearly marked terminals	12 A, 16 A, 20 A, 25 A, 40 A - Inductive Load-Rated control and load switch - UL, CSA ratings "Suitable as At-Motor Disconnect" 1 to 6 pole switch control configurations for OFF-ON, Change-over, Star-Delta (Wye- Delta), Reversing, Ammeter, Voltmeter, and Step Switch applications - Front/Door or Base/DIN rail mounting - Made of environmentally friendly materials
Handles	- Uniformly styled handles available in selector knob and key-operated versions (IP65) - Legend plates available in O-I international markings and text styles	- Uniformly styled handles available in selector knob, disk-style, rectangular-style and key-operated versions (Type 1/12/3R, IP66) - Handle colours in grey/black or red/yellow and padlockable versions - Legend plates available in O-I international markings and text styles
Open Switch or Enclosed	—	Available as open switch or in IP66 thermoplastic enclosure
UL CSA Electrical Ratings		
Rated Voltage U_o [V AC]	300V	600V
Rated Current I_o [A]	10 A @ 600V	12...40 A @ 600V
Short Circuit Ratings [A]		5 kA
Switching Rate [ops/h]	2000	120
Mechanical Life [ops]	1 million	1 million
Protection Class Acc. to IEC 529	Switch Bodies IP20 Handles IP65	Switch Bodies IP20 Handles IP66
Protection Class Acc. to UL CSA		Handles UL Type 1/12 (selector style) and UL 1/3/3R/12 (disc style)
Optional Accessories	—	Multi-length shafts and shaft extension kits, terminal covers
Standards/Approvals	UL, CSA Recognized, CE	UL 508, CSA C22.2 No. 14, IEC 947-3 Low Voltage Switch gear and Control gear part 3, CE
Product Selection	Page 181	Pages 183, 193

Bulletin 194C, 194L, 194E

Control and Load Switches

Product Line Overview

Switch Selection

		
Bulletin	194E	194E
Type	Load Switch 16 A...100 A	Load Switch 125 A...315 A
Features	• 16 A, 25 A, 32 A, 40 A, 63 A, 80 A, 100 A • Inductive Load-Rated load switch • UL, CSA ratings “Suitable as At-Motor Disconnect” • 3 or 6 pole switch configurations for OFF-ON or Change-over applications • Front/Door or Base/DIN rail mounting • Made of environmentally friendly materials	• 125 A, 160 A, 250 A, 315 A • Inductive Load-Rated load switch • UL, CSA ratings “Suitable as At-Motor Disconnect” • 3 or 4 pole switch configurations for OFF-ON applications • Front/Door or Base/DIN rail mounting • Made of environmentally friendly materials
Handles	• Uses 194L handles for standardization among line, available in selector-knob, disk-style, rectangular-style and key-operated versions (Type 1/12/3R, IP66) • Handle colours in grey/black or red/yellow and padlockable versions • Legend plates available in O-I international markings and text styles	• Uses larger 194E handles available in selector knob, disk-style, (Type 1/12/3R, IP66) • Handle colours in grey/black or red/yellow and padlockable versions • Legend plates available in O-I international markings and text styles
Open Switch or Enclosed	Available as open switch or in IP66 thermoplastic enclosure	Available as open switch
UL CSA Electrical Ratings		
Rated Voltage U_b [V AC]	600V	600V
Rated Current I_n [A]	16...100 A @ 600V	125...315 A @ 600V
Short Circuit Ratings [A]	5 kA	5 kA
Switching Rate [ops/h]	120	120
Mechanical Life [ops]	0.2 million	0.1 million (125 A and 160 A) 0.075 million (250 A and 315 A)
Protection Class Acc. to IEC 529	Switch Bodies IP20 Handles IP66	Switch Bodies IP20 Handles IP66
Protection Class Acc. to UL CSA	Handles UL Type 1/12 (selector style) and UL 1/3/3R/12 (disc style)	Handles UL Type 1/12 (selector style) and UL 1/3/3R/12 (disc style)
Optional Accessories	Multi-length shafts and shaft extension kits, auxiliary contacts, power poles, grounding poles, terminal covers	Multi-length shafts and shaft extension kits, auxiliary contacts, power poles, grounding poles, terminal covers
Standards/Approvals	UL 508, CSA C22.2 No. 14, IEC 947-3 Low Voltage Switch gear and Control gear part 3, CE	UL 508, CSA C22.2 No. 14, IEC 947-3 Low Voltage Switch gear and Control gear part 3, CE
Product Selection	Pages 190, 191, 193	Pages 190, 191, 193

Control Switches 194C

- Rated Current up to 10 A
- Standard installation grids of 16 mm and 22 mm
- Finger-proof switch body per IP20



Switch Bodies for 194C, Front Mounting

Function	<i>I</i> AC-21A [A]	Poles	Cat. No.		PGC	Actuator Combinations	
						Legend Plate No.	Actuator Type 194C-HC
ON-OFF Switches							
	10 A	1	194C-C10-1751		W9Q1	001 175	B, D* A, C*
		2	194C-C10-1752		W9Q1		
		3	194C-C10-1753		W9Q1		
		4	194C-C10-1754		W9Q1		
Changeover Switches							
	10 A	1	194C-C10-2501		W9Q1	001 250	B A
		2	194C-C10-2502		W9Q1		
		3	194C-C10-2503		W9Q1		
		4	194C-C10-2504		W9Q1		
	10 A	1	194C-C10-3501		W9Q1	001 350	B, D* C*
		2	194C-C10-3502		W9Q1		
		3	194C-C10-3503		W9Q1		
		4	194C-C10-3504		W9Q1		
Step Switches							
	10 A	1	194C-C10-4501		W9Q1	001 450	B, D* A
		2	194C-C10-4502		W9Q1		
		3	194C-C10-4503		W9Q1		
	10 A	1	194C-C10-4511		W9Q1	001 450	B, D* A
		2	194C-C10-4512		W9Q1		
		3	194C-C10-4513		W9Q1		
Voltmeter Selector Switches							
	10 A	—	194C-C10-8251		W9Q1	001 450	B, D* A
Ammeter Selector Switches							
	10 A	1	194C-C10-8751		W9Q1	001 450	B, D* A
		2	194C-C10-8752		W9Q1		

Ordering Examples: 194C-C10-1751 Switch Body; 194C-HC3A-175 Actuator Type A with Legend Plate.

* Control Knob Position see Page 182.

Discount Group PRO

Bulletin 194C

Control and Load Switches

Product Selection

Actuators for 194C

For Front Mounting with Central Fixture ø 16 mm, ø 22 mm, Protection Class IP65

With Legend Plate



Standard Version, type A
Black front frame 30 x 30 mm, silver-grey legend plate, black knob 30 x 30 mm



Lock Actuator, type C
Black front frame 30 x 30 mm, silver-grey legend plate 30 x 30 mm with KABA lock no. EG 0021

Control Knob Position	Actuator Type A			Actuator Type C		
	Cat. No.		PGC	Cat. No.		PGC
	194C-HC3A-xxx		W9U1			
				194C-HC3CA-xxx		W9U1
				194C-HC3CB-xxx		W9U1
				194C-HC3CF-xxx		W9U1
				194C-HC3CG-xxx		W9U1

xxx Legend Plates and Actuator Combinations see Page 181.
Discount Group PRO

Without Legend Plate



Standard Version, type B
Black front ring ø 29,5 mm, without legend plate, black knob



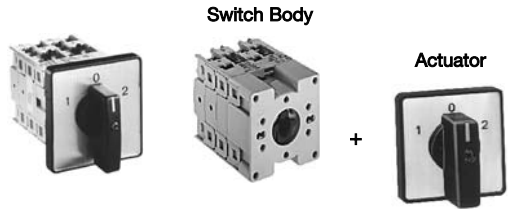
Lock Actuator, type D
Black front ring ø 29,5 mm, without legend plate with KABA lock no. EG 0021

Control Knob Position	Actuator Type B			Actuator Type D		
	Cat. No.		PGC	Cat. No.		PGC
	194C-HCB-001		W9U1			
				194C-HCDA-001		W9U1
				194C-HCDB-001		W9U1
				194C-HCDF-001		W9U1
				194C-HCDG-001		W9U1

Other Legend Plates and Actuator Combinations see Page 181.
Discount Group PRO

Control and Load Switches 194L

- Rated current up to 40 A
- Large selection of functions and switching positions
- Screws and central fixture ø 22 mm
- Front- or base mounting
- Finger-proof switch bodies per IP20
- Water spray and dust-proof actuator per IP65
- Easily accessible terminals
- Clearly marked terminals



Switch Bodies for Bulletin 194L, Front/Base Mounting

Function	I AC- 21A [A]	Poles	Front/Door Mounting			Base/DIN Rail Mounting			Combinations		
			Cat. No.		PGC	Cat. No.		PGC	Actuator / Legend Plate		
									Size	Type	No.
ON-OFF Switches											
	12 A	1	194L-E12-1501		W9Q2				4, 6 4 6	194L-HE ... A, E A, E, I A, E, I	001 150 150
		2	194L-E12-1502		W9Q2						
		3	194L-E12-1503		W9Q2						
	16 A	1	194L-E16-1501		W9Q2				4	194L-HC ... B, D* A, C*	001 150
		2	194L-E16-1502		W9Q2						
		3	194L-E16-1503		W9Q2						
	12 A	1	194L-E12-1751		W9Q2	194L-A12-1751		W9Q2	4, 6 4 6 4 6	194L-HE ... A, E A, E, I, P, S A, E, G*, I, L, N*, S 194L-HC ... B, D* A, C*, E, I, L G*, N*	001 175 175 001 175 175
		2	194L-E12-1752		W9Q2	194L-A12-1752		W9Q2			
		3	194L-E12-1753		W9Q2	194L-A12-1753		W9Q2			
		4	194L-E12-1754		W9Q2	194L-A12-1754		W9Q2			
		6	194L-E12-1756		W9Q2	194L-A12-1756		W9Q2			
	16 A	1	194L-E16-1751		W9Q2	194L-A16-1751		W9Q2			
		2	194L-E16-1752		W9Q2	194L-A16-1752		W9Q2			
		3	194L-E16-1753		W9Q2	194L-A16-1753		W9Q2			
		4	194L-E16-1754		W9Q2	194L-A16-1754		W9Q2			
		6	194L-E16-1756		W9Q2	194L-A16-1756		W9Q2			
	20 A	1	194L-E20-1751		W9Q2	194L-A20-1751		W9Q2			
		2	194L-E20-1752		W9Q2	194L-A20-1752		W9Q2			
		3	194L-E20-1753		W9Q2	194L-A20-1753		W9Q2			
		4	194L-E20-1754		W9Q2	194L-A20-1754		W9Q2			
		6	194L-E20-1756		W9Q2	194L-A20-1756		W9Q2			
	25 A	1	194L-E25-1751		W9Q2	194L-A25-1751		W9Q2			
		2	194L-E25-1752		W9Q2	194L-A25-1752		W9Q2			
		3	194L-E25-1753		W9Q2	194L-A25-1753		W9Q2			
		4	194L-E25-1754		W9Q2	194L-A25-1754		W9Q2			
		6	194L-E25-1756		W9Q2	194L-A25-1756		W9Q2			
	40 A	3	194L-E40-1753		W9Q2	194L-A40-1753		W9Q2			
		4	194L-E40-1754		W9Q2	194L-A40-1754		W9Q2			
		6	194L-E40-1756		W9Q2	194L-A40-1756		W9Q2			

Ordering Example: Switch Body: 194L-E12-1501; Actuator for Screw Fixture Type A: 194L-HE4A-175

* Key out position see page 189.

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

Discount Group PRO

Bulletin 194L
Control and Load Switches
Product Selection

Switch Bodies for Bulletin 194L, Front/Base Mounting, continued

Function	I AC- 21A [A]	Poles	Front/Door Mounting			Base/DIN Rail Mounting			Combinations		
			Cat. No.		PGC	Cat. No.		PGC	Actuator / Legend Plate		
									Size	Type	No.
ON-OFF Switches											
	12 A	2	194L-E12-1782		W9Q2	194L-A12-1782		W9Q2	4, 6 4 6	194L-HE ... A, E A, E A, E, G*, N*	001 178 178
		3	194L-E12-1783		W9Q2	194L-A12-1783		W9Q2			
		4	194L-E12-1784		W9Q2	194L-A12-1784		W9Q2			
	16 A	2	194L-E16-1782		W9Q2	194L-A16-1782		W9Q2	4	194L-HC ... B, D* A, C*	001 178
		3	194L-E16-1783		W9Q2	194L-A16-1783		W9Q2			
		4	194L-E16-1784		W9Q2	194L-A16-1784		W9Q2			
	12 A	1	194L-E12-9001		W9Q2	194L-A12-9001		W9Q2	4, 6 4 6	194L-HE ... A, E A, E A, E	001 900 900
									4	194L-HC ... B, D* A	001 900
	12 A	1	194L-E12-9751		W9Q2	194L-A12-9751		W9Q2	4, 6 4 6	194L-HE ... A, E A, E G*, N*	001 975 975
									4	194L-HC ... B, D* A	001 975
Changeover Switches											
	12 A	1	194L-E12-2501		W9Q2				4, 6 4 6	194L-HE ... A A A	001 250 250
		2	194L-E12-2502		W9Q2						
		3	194L-E12-2503		W9Q2						
	16 A	1	194L-E16-2501		W9Q2				4	194L-HC ... B A, C*	001 250
		2	194L-E16-2502		W9Q2						
		3	194L-E16-2503		W9Q2						
	20 A	1	194L-E20-2501		W9Q2				4		
		2	194L-E20-2502		W9Q2						
		3	194L-E20-2503		W9Q2						
	25 A	1	194L-E25-2501		W9Q2						
		2	194L-E25-2502		W9Q2						
		3	194L-E25-2503		W9Q2						

Ordering Example: Switch Body: 194L-E12-1782; Actuator for Central Fixture Type A: 194L-HC4A-178.

* Key out position see page 189.
* With both 0-1 and OFF/ON inscriptions.
Discount Group PRO

Switch Bodies for Bulletin 194L, Front/Base Mounting, continued

Function	I AC- 21A [A]	Poles	Front/Door Mounting			Base/DIN Rail Mounting			Combinations			
			Cat. No.		PGC	Cat. No.		PGC	Actuator / Legend Plate			
									Size	Type	No.	
Changeover Switches												
	12 A	1	194L-E12-3251		W9Q2	194L-A12-3251		W9Q2	4, 6 4 6	194L-HE ... A A, P, S A, S	001 325 325	
		2	194L-E12-3252		W9Q2	194L-A12-3252		W9Q2				
		3	194L-E12-3253		W9Q2	194L-A12-3253		W9Q2				
		4	194L-E12-3254		W9Q2	194L-A12-3254		W9Q2				
	16 A	1	194L-E16-3251		W9Q2	194L-A16-3251		W9Q2				
		2	194L-E16-3252		W9Q2	194L-A16-3252		W9Q2				
		3	194L-E16-3253		W9Q2	194L-A16-3253		W9Q2				
		4	194L-E16-3254		W9Q2	194L-A16-3254		W9Q2				
	20 A	1	194L-E20-3251		W9Q2	194L-A20-3251		W9Q2				
		2	194L-E20-3252		W9Q2	194L-A20-3252		W9Q2				
		3	194L-E20-3253		W9Q2	194L-A20-3253		W9Q2				
		4	194L-E20-3254		W9Q2	194L-A20-3254		W9Q2				
	25 A	1	194L-E25-3251		W9Q2	194L-A25-3251		W9Q2				
		2	194L-E25-3252		W9Q2	194L-A25-3252		W9Q2				
		3	194L-E25-3253		W9Q2	194L-A25-3253		W9Q2				
		4	194L-E25-3254		W9Q2	194L-A25-3254		W9Q2				
	32 A	3	194L-E32-3253		W9Q2	194L-A32-3253		W9Q2				
		4	194L-E32-3254		W9Q2	194L-A32-3254		W9Q2				
	40 A	3	194L-E40-3253		W9Q2	194L-A40-3253		W9Q2				
		4	194L-E40-3254		W9Q2	194L-A40-3254		W9Q2				
	12 A	1	194L-E12-3501		W9Q2				4, 6 4 6	194L-HE ... A A A	001 350 350	
		2	194L-E12-3502		W9Q2							
		3	194L-E12-3503		W9Q2							
		4	194L-E12-3504		W9Q2							
	16 A	1	194L-E16-3501		W9Q2							
		2	194L-E16-3502		W9Q2							
		3	194L-E16-3503		W9Q2							
		4	194L-E16-3504		W9Q2							
	20 A	1	194L-E20-3501		W9Q2					4	194L-HC ... B, D* A, C*	001 350
		2	194L-E20-3502		W9Q2							
		3	194L-E20-3503		W9Q2							
		4	194L-E20-3504		W9Q2							
	25 A	1	194L-E25-3501		W9Q2							
		2	194L-E25-3502		W9Q2							
		3	194L-E25-3503		W9Q2							
		4	194L-E25-3504		W9Q2							
	12 A	1	194L-E12-3751		W9Q2				4, 6 4 6	194L-HE ... A A A	001 375 375	
									4	194L-HC ... B, D* A, C*	001 375	

Ordering Example: Switch Body: **194L-E12-3251**; Actuator for Central Fixture Type A: **194L-HC4A-325**.

* Key out position see page 189.

Discount Group PRO

Bulletin 194L

Control and Load Switches

Product Selection

Switch Bodies for Bulletin 194L, Front/Base Mounting, continued

Function	I AC- 21A [A]	Poles	Front/Door Mounting			Base/DIN Rail Mounting			Combinations		
			Cat. No.		PGC	Cat. No.		PGC	Actuator / Legend Plate		
									Size	Type	No.
Step Switches											
	12 A	1	194L-E12-4251		W9Q2	194L-A12-4251		W9Q2	4, 6 4 6	194L-HE ... A A A	001 425 425
		2	194L-E12-4252		W9Q2						
		3	194L-E12-4253		W9Q2						
	16 A	1	194L-E16-4251		W9Q2	194L-A16-4251		W9Q2	6	194L-HC ... B, D* A, C*	001 425
		2	194L-E16-4252		W9Q2						
		3	194L-E16-4253		W9Q2						
	20 A	1	194L-E20-4251		W9Q2	194L-A20-4251		W9Q2	4		
		2	194L-E20-4252		W9Q2						
		3	194L-E20-4253		W9Q2						
	12 A	1	194L-E12-4261		W9Q2				4, 6 4 6	194L-HE ... A A A	001 426 426
									194L-HC ... B, D* A, C*	001 426	
											4
	12 A	1	194L-E12-4271		W9Q2				4, 6 4 6	194L-HE ... A A A	001 427 427
									194L-HC ... B, D* A, C*	001 427	
											4
	12 A	1	194L-E12-4501		W9Q2				4, 6 4 6	194L-HE ... A A A	001 450 450
		2	194L-E12-4502		W9Q2						
		3	194L-E12-4503		W9Q2						
	16 A	1	194L-E16-4501		W9Q2				6	194L-HC ... B, D* A, C*	001 450
		2	194L-E16-4502		W9Q2						
		3	194L-E16-4503		W9Q2						
	20 A	1	194L-E20-4501		W9Q2				4		
		2	194L-E20-4502		W9Q2						
		3	194L-E20-4503		W9Q2						
	12 A	1	194L-E12-5251		W9Q2				4, 6 4 6	194L-HE ... A A A	001 525 525
		2	194L-E12-5252		W9Q2						
		3	194L-E12-5253		W9Q2						
										4	194L-HC ... B, D* A, C*

Ordering Example: Switch Body: 194L-E12-4251; Actuator for Central Fixture Type B: 194L-HC4B-425.

* Key out position see page 189.

Discount Group PRO

Switch Bodies for Bulletin 194L, Front/Base Mounting, continued

Function	I AC- 21A [A]	Poles	Front/Door Mounting		Base/DIN Rail Mounting			Combinations			
			Cat. No.	PGC	Cat. No.	PGC	Actuator / Legend Plate				
							Size	Type	No.		
Step Switches											
	12 A	1	194L-E12-4511		W9Q2				4, 6 4 6	194L-HE ... A A A	001 451 451
	12 A	2	194L-E12-4512		W9Q2						
	12 A	3	194L-E12-4513		W9Q2						
	16 A	1	194L-E16-4511		W9Q2						
	16 A	2	194L-E16-4512		W9Q2						
	16 A	3	194L-E16-4513		W9Q2				4	194L-HC ... B, D* A	001 451
	20 A	1	194L-E20-4511		W9Q2						
	20 A	2	194L-E20-4512		W9Q2						
	20 A	3	194L-E20-4513		W9Q2						
	12 A	1	194L-E12-5261		W9Q2				4, 6 4 6	194L-HE ... A A A	001 526 526
								4	194L-HC ... B, D* A, C*	001 526	
Reversing Switches											
	12 A	3	194L-E12-7303		W9Q2	194L-A12-7303		W9Q2	4, 6 4 6	194L-HE ... A A, S A, S	001 325 325
	16 A		194L-E16-7303		W9Q2	194L-A16-7303		W9Q2			
	20 A		194L-E20-7303		W9Q2	194L-A20-7303		W9Q2			
	25 A		194L-E25-7303		W9Q2	194L-A25-7303		W9Q2			
	40 A		194L-E40-7303		W9Q2	194L-A40-7303		W9Q2	4	194L-HC ... B, D* A, C*	001 325

Ordering Example: Switch Body: **194L-E12-7303**; Actuator for Central Fixture Type A: **194L-HC4A-325**.

* Key out position see page 189.

Discount Group PRO

Bulletin 194L
Control and Load Switches
Product Selection

Switch Bodies for Bulletin 194L, Front/Base Mounting, continued

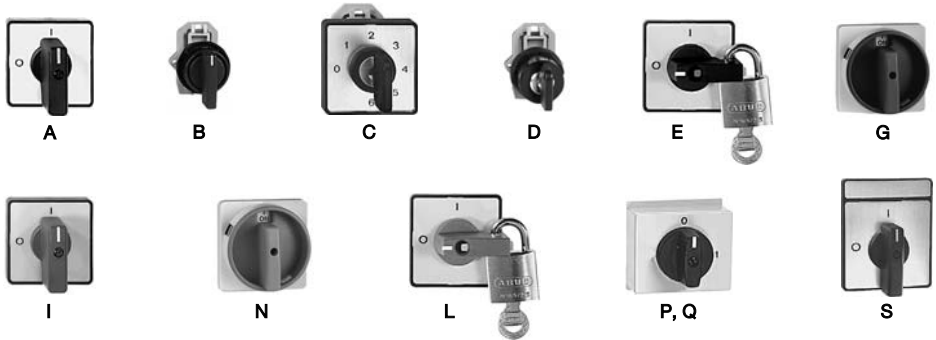
Function	I AC- 21A [A]	Poles	Front/Door Mounting			Base/DIN Rail Mounting			Combinations		
			Cat. No.		PGC	Cat. No.		PGC	Actuator / Legend Plate		
									Size	Type	No.
Voltmeter Selector Switches											
	12 A	1	194L-E12-8251		W9Q2	194L-A12-8251		W9Q2	4, 6 4 6	194L-HE ... A A, P A	001 825 825
									4	194L-HC ... B, D* A	001 825
	12 A	1	194L-E12-8271		W9Q2	194L-A12-8271		W9Q2	4, 6 4 6	194L-HE ... A A A	001 827 827
									4	194L-HC ... B, D* A	001 827
	12 A	1	194L-E12-8291		W9Q2	194L-A12-8291		W9Q2	4, 6 4 6	194L-HE ... A A A	001 829 829
									4	194L-HC ... B, D* A	001 829
Ammeter Selector Switches											
	12 A	1	194L-E12-8751		W9Q2	194L-A12-8751		W9Q2	4, 6 4 6	194L-HE ... A A, P A	001 875 875
									4	194L-HC ... B, D* A	001 875
	12 A	1	194L-E12-8761		W9Q2	194L-A12-8761		W9Q2	4, 6 4 6	194L-HE ... A A A	001 876 876
									4	194L-HC ... B, D* A	001 876

Ordering Example: Switch Body: 194L-E12-8751; Actuator for Central Fixture Type A: 194L-HC4A-875.

* Key out position see page 189.

Discount Group PRO

Actuators for 194L



Actuators with Central Fixture ø 22,5 mm

Type	Key Out Position	With Legend Plate 48 x 48 mm			Without Legend Plate		
		Cat. No.		PGC	Cat. No.		PGC
A Standard Switch		194L-HC4A-xxx		W9U2			
B without Legend Plate					194L-HCB-001		W9U2
C or D with Key Operator		194L-HC4CC-xxx		W9U2	194L-HCDC-001		W9U2
		194L-HC4CD-xxx		W9U2	194L-HCDD-001		W9U2
		194L-HC4CG-xxx		W9U2	194L-HCDG-001		W9U2
		194L-HC4CH-xxx		W9U2	194L-HCDH-001		W9U2
		194L-HC4CK-xxx		W9U2	194L-HCDK-001		W9U2
E Disconnect Switch		194L-HC4E-xxx		W9U2			
I Emergency Stop		194L-HC4I-xxx		W9U2			
L Main Switch/Emergency		194L-HC4L-xxx		W9U2			

xxx Legend plates and actuator combinations see page 183.
Discount Group PRO

Actuators for Front or Base Mounting

Type	With Legend Plate 48 x 48 mm			With Legend Plate 67 x 67 mm		
	Cat. No.		PGC	Cat. No.		PGC
A Standard Switch	194L-HE4A-xxx		W9U2	194L-HE6A-xxx		W9U2
E Disconnect Switch (1 padlock)	194L-HE4E-xxx		W9U2	194L-HE6E-xxx		W9U2
I Emergency Stop (1 padlock)	194L-HE4I-xxx		W9U2	194L-HE6I-xxx		W9U2
L Main Switch/Emergency	194L-HE4L-xxx		W9U2	194L-HE6L-xxx		W9U2
S With legend plate	194L-HE4S-xxx		W9U2	194L-HE6S-xxx		W9U2
G Disconnect Switch (3 padlocks)	194E-HE4G-xxx		W9U4	194L-HE6G-xxx		W9U2
N Main Switch/Emergency (3 padlocks)	194E-HE4N-xxx		W9U4	194L-HE6N-xxx		W9U2
P With DIN 45 mm Panel Cut-out	194L-HE4P-xxx		W9U2			

xxx Legend plates and actuator combinations see page 183.
Discount Group PRO

Bulletin 194E

Control and Load Switches

Product Selection

Control and Load Switches 194E

- Front- and base mounting
- Finger-proof switch body per IP20
- Water spray and dust-proof per IP65
- Easily accessible terminals
- Clearly marked terminals
- Wide range of accessories



194E (16 A...100 A)



194E (125 A ...315 A)

Switch Bodies for 194E (16...100 A), Front/Base Mounting

Function	I AC- 21A [A]	Poles	Front/Door Mounting	Base/DIN Rail Mounting		PGC	Combinations		
			Cat. No.		Cat. No.		Actuator / Legend Plate		
			Cat. No.		Cat. No.		Size	Type	No.
ON-OFF Switches									
	25 A	3	194E-E25-1753		194E-A25-1753	W9Q3	4	194L-HE...	175
	32 A		194E-E32-1753		194E-A32-1753	W9Q3	6	A, E, G*, I, L, N*	175
	40 A		194E-E40-1753		194E-A40-1753	W9Q3	8	A, G*, I, N*	175
	63 A		194E-E63-1753		194E-A63-1753	W9Q3			
	80 A		194E-E80-1753		194E-A80-1753	W9Q3			
	100 A		194E-E100-1753		194E-A100-1753	W9Q3	4	194L-HC...	175
							6	A, E, G*, I, L, N*	175

Changeover Switches

	25 A	3	194E-E25-3753		194E-A25-3753	W9Q3	4	194L-HE	375
	32 A	3	194E-E32-3753		194E-A32-3753	W9Q3	6	A, E	375
	40 A	3	194E-E40-3753		194E-A40-3753	W9Q3	8	A, E	375
	63 A	3	194E-E63-3753		194E-A63-3753	W9Q3		A	375
	80 A	3	194E-E80-3753		194E-A80-3753	W9Q3	4	194L-HC	375
	100 A	3	194E-E100-3753		194E-A100-3753	W9Q3	6	A, E, I, L	375

Ordering Example: Switch Body: 194E-E25-1753; Actuator for Screw Fixture Type A: 194L-HE4A-175.

Switch Bodies for 194E (125...315 A), Base Mounting

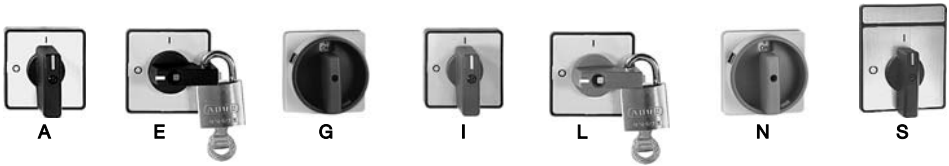
Function	I AC-21A [A]	I AC-23A [A]	Poles	Cat. No.	PGC	Combinations		
						Actuator / Legend Plate		
				Cat. No.		Size	Type	No.
ON-OFF Switches								
	125 A	45	3	194E-A125-1753	W9Q4	8 13	194E-HE...	175
	160 A	55		194E-A160-1753	W9Q4			
	250 A	90		194E-A250-1753	W9Q4			
	315 A	110		194E-A315-1753	W9Q4			
	125 A	45	4	194E-A125-1754	W9Q4			
	160 A	55		194E-A160-1754	W9Q4			
	250 A	90		194E-A250-1754	W9Q4			
	315 A	110		194E-A315-1754	W9Q4			

Ordering Example: Switch Body: 194E-A125-1753; Actuator for Screw Fixture Type A: 194E-HE8A-175.

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

Discount Group PRO

Actuators for Bulletin 194E



Actuators with Central Fixture $\varnothing$ 22,5 mm

Type	With Legend Plate 48 x 48 mm		With Legend Plate 67 x 67 mm		Without Legend Plate		PGC
	Cat. No.		Cat. No.		Cat. No.		
A Standard Switch	194L-HC4A-175				194L-HC4A-001		W9U2
E Disconnect Switch	194L-HC4E-175				194L-HC4E-001		W9U2
G Disconnect Switch			194L-HC6G-175				W9U2
I Emergency Stop	194L-HC4I-175						W9U2
L Disconnect Switch/ Emergency Stop	194L-HC4L-175						W9U2
N Disconnect Switch/ Emergency Stop			194L-HC6N-175				W9U2

Actuators for Front or Base Mounting (16...100 A)

Type	With Legend Plate 0-1, 48 x 48 mm		With Legend Plate 0-1, 67 x 67 mm		With Legend Plate 0-1, 88 x 88 mm		PGC
	Cat. No.		Cat. No.		Cat. No.		
A Standard Switch	194L-HE4A-175		194L-HE6A-175		194L-HE8A-175		W9U2
E Disconnect Switch	194L-HE4E-175		194L-HE6E-175				W9U2
G Disconnect Switch	194E-HE4G-175		194L-HE6G-175		194L-HE8G-175		W9U4 W9U2
I Emergency Stop	194L-HE4I-175		194L-HE6I-175				W9U2
L Disconnect Switch/ Emergency Stop	194L-HE4L-175		194L-HE6L-175				W9U2
N Disconnect Switch/ Emergency Stop	194E-HE4N-175		194L-HE6N-175		194E-HE4N-175		W9U4 W9U2
S Standard Switch with Label S	194L-HE4S-175		194L-HE6S-175				W9U2

Actuators for Front or Base Mounting (125...315 A)

Type	With Legend Plate 0-1, 88 x 88 mm		With Legend Plate 0-1, 130 x 130 mm		PGC
	Cat. No.		Cat. No.		
A Standard Switch	194E-HE8A-175		194E-HE13A-175		W9U4
G Disconnect Switch	194E-HE8G-175		194E-HE13G-175		W9U4
I Emergency Stop	194E-HE8I-175		194E-HE13I-175		W9U4
N Disconnect Switch/Emergency Stop	194E-HE8N-175		194E-HE13N-175		W9U4

For other Legend Plates and Actuator Combinations see Page 190.
 Discount Group PRO

194E Load Switches in Enclosure, Complete Switches



- IP65

Metric Conduit Openings

Poles	AC-21A/ 500V	AC-23A/ 400V	Main Switches/Emergency Red/Yellow		PGC	Disconnect Switch Black/Grey		PGC
								
	[A]	[kW]	Cat. No.			Cat. No.		
3	16	7.5	194E-Y16M-1753-4N		W9R3	194E-Y16M-1753-4G		W9R3
	25	11	194E-Y25M-1753-6N		W9R3	194E-Y25M-1753-6G		W9R3
	32	15	194E-Y32M-1753-6N		W9R3	194E-Y32M-1753-6G		W9R3
	40	18.5	194E-Y40M-1753-6N		W9R3	194E-Y40M-1753-6G		W9R3
	63	22	194E-Y63M-1753-6N		W9R3	194E-Y63M-1753-6G		W9R3
	80	37	194E-Y80M-1753-6N		W9R3	194E-Y80M-1753-6G		W9R3
	100	45	194E-Y100M-1753-6N		W9R3	194E-Y100M-1753-6G		W9R3
6	16	7.5	194E-Y16M-1756-6N		W9R3	194E-Y16M-1756-6G		W9R3
	25	11	194E-Y25M-1756-6N		W9R3	194E-Y25M-1756-6G		W9R3
	32	15	194E-Y32M-1756-6N		W9R3	194E-Y32M-1756-6G		W9R3
	40	18.5	194E-Y40M-1756-6N		W9R3	194E-Y40M-1756-6G		W9R3
	63	22	194E-Y63M-1756-6N		W9R3	194E-Y63M-1756-6G		W9R3

Poles	AC-21A/ 500V	AC-23A/ 400V	Standard Switch O-I		PGC
	[A]	[kW]			
3	16	7.5	194E-Y16M-1753-4A		W9R3
	25	11	194E-Y25M-1753-6A		W9R3
	32	15	194E-Y32M-1753-6A		W9R3
	40	18.5	194E-Y40M-1753-6A		W9R3
	63	22	194E-Y63M-1753-6A		W9R3
	80	37	194E-Y80M-1753-6A		W9R3
	100	45	194E-Y100M-1753-6A		W9R3
6	16	7.5	194E-Y16M-1756-6A		W9R3
	25	11	194E-Y25M-1756-6A		W9R3
	32	15	194E-Y32M-1756-6A		W9R3
	40	18.5	194E-Y40M-1756-6A		W9R3
	63	22	194E-Y63M-1756-6A		W9R3

Discount Group PRO

Accessories for Bulletin 194L and 194E

	Description	For type	Cat. No.	PQ		PGC
	Plastic Shafts: Length 44 mm Length 52 mm Length 57 mm	194L-A, 194E-A	194L-G2830 194L-G3194 194L-G3195	5		W9U2 W9U2 W9U2
	Shaft Extensions (Max. 4 pieces) Length 24 mm	194L-A, 194E-A	194L-G2853	10		W9U2
	Metal Shaft Extensions Locking possibility with provision for locking in position «0» Length 110...235 mm Length 230...350 mm	194L-A, 194E-A	194L-G3393 194L-G3394	1		W9U2 W9U2
	Inserts For modifying Bulletin 194L-G3393 and 194L-G3394 metalshaft extensions with switch position: I-0 90°. Provision for padlock in position «0».	194L-A	194L-G3398	10		W9U2
	Additional Nameplates For actuators: 48 x 48, 64 x 64 and 67 x 67 mm	194L-H...	194L-G3667	10		W9U2
	88 x 88, 90 x 90, 130 x 130 and 135 x 135 mm		194L-G3515			W9U2
	Terminal Covers 3/4 poles	194L-E12/16	194L-E12-C34	10		W9U2
		194L-E20/25	194L-E20-C34			W9Q2
		194L-A12/16	194L-A12-C34			W9U2
		194L-A20/25	194L-A20-C34			W9U2
	Terminal Covers 3 poles	194E-16	194E-16-C3	2		W9U3
		194E-25/32	194E-25-C3			W9U3
		194E-40/63	194E-40-C3			W9U3
		194E-80/100	194E-80-C3			W9U3
	Terminal Covers 4 poles	194E-16 *	194E-16-C1	2		W9U3
		194E-25/32	194E-25-C4			W9U3
		194E-40/63	194E-40-C4			W9U3
		194E-80/100	194E-80-C4			W9U3

* 1-pole cover to add to 194E-16-C3

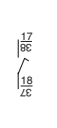
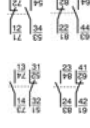
PQ = Package Quantity

Discount Group PRO

Control and Load Switches

Accessories

Accessories for Bulletin 194E (up to 100 A)

	Description	For Use With	Cat. No.		PGC
 	Auxiliary Contact Blocks 1 N.O.+ 1 N.C. for left- or right-side mounting	194E-E25...100	194E-E-P11		W9U3
		194E-A25...100	194E-A-P11		W9U3
 	Auxiliary Contact Blocks 1 early-make and 1 late-break contact for left- or right-side mounting	194E-E25...100	194E-E-PL11		W9U3
		194E-A25...100	194E-A-PL11		W9U3
 	Auxiliary Contact Blocks 1 early-break contact for left- or right-side mounting.	194E-E16	194E-E16-PD10		W9U3
		194E-E25...100	194E-E-PD10		W9U3
		194E-A16	194E-A16-PD10		W9U3
		194E-A25...100	194E-A-PD10		W9U3
 	Auxiliary Contact Blocks 2 N.O.+ 2 N.C. for left- or right-side mounting	194E-E25...100	194E-E-P22		W9U3
		194E-A25...100	194E-A-P22		W9U3
 	Neutral Terminal	194E-E16	194E-E16-TN		W9U3
		194E-E25/32	194E-E32-TN		W9U3
		194E-E40/63	194E-E63-TN		W9U3
		194E-E80/100	194E-E100-TN		W9U3
		194E-A16	194E-A16-TN		W9U3
		194E-A25/32	194E-A32-TN		W9U3
		194E-A40/63	194E-A63-TN		W9U3
		194E-A80/100	194E-A100-TN		W9U3
 	Earth Terminal	194E-E16	194E-E16-PE		W9U3
		194E-E25/32	194E-E32-PE		W9U3
		194E-E40/63	194E-E63-PE		W9U3
		194E-E80/100	194E-E100-PE		W9U3
		194E-A16	194E-A16-PE		W9U3
		194E-A25/32	194E-A32-PE		W9U3
		194E-A40/63	194E-A63-PE		W9U3
		194E-A80/100	194E-A100-PE		W9U3
 	Fourth Poles early-make contact	194E-E16	194E-E16-NP		W9U3
		194E-E25	194E-E25-NP		W9U3
		194E-E32	194E-E32-NP		W9U3
		194E-E40	194E-E40-NP		W9U3
		194E-E63	194E-E63-NP		W9U3
		194E-E80	194E-E80-NP		W9U3
		194E-E100	194E-E100-NP		W9U3
		194E-A16	194E-A16-NP		W9U3
		194E-A25	194E-A25-NP		W9U3
		194E-A32	194E-A32-NP		W9U3
		194E-A40	194E-A40-NP		W9U3
		194E-A63	194E-A63-NP		W9U3
		194E-A80	194E-A80-NP		W9U3
		194E-A100	194E-A100-NP		W9U3

Accessories for Bulletin 194E (125 A...315 A)

	Description	For Use With	Cat. No.		PGC
	Terminal Cover 1 pole Box lugs	194E-125...160	194E-AE125-C1		W9U4
		194E-250...315	194E-AE250-C1		W9U4
	Terminal Cover 1 pole Bolt-on wiring	194E-125...160	194E-BF125-C1		W9U4
		194E-250	194E-BF250-C1		W9U4
	Metal Shaft Extension Length 200...400 mm	194E-125...315	194E-AB40		W9U4
	Auxiliary Contact Blocks 2 NA + 1 NC for left- or right-side mounting. Base Mounting	194E-125...160	194E-AB-P21-160		W9U4
		194E-250...315	194E-AB-P21-315		W9U4
	Front Mounting	194E-125...160	194E-EF-P21-160		W9U4
		194E-250...315	194E-EF-P21-315		W9U4
 N N	Neutral Terminals Right-side mounting Base mounting and front mounting Box lugs	194E-125...160	194E-AE160-TN		W9U4
		194E-250...315	194E-AE315-PE		W9U4
 PE PE	Earth Terminals Left-side mounting Base mounting and front mounting Bolt-on wiring	194E-125...160	194E-AE160-PE		W9U4
		194E-250...315	194E-AE315-PE		W9U4

Discount Group PRO

Control and Indicating Units

Product Line Overview

					
Bulletin	800F	800F	800F	800F	800F
Type	Push Buttons	Emergency Stop Operators	Selector Switches	Pilot Lights	Contact Blocks
Mounting Hole Size	22.5 mm	22.5 mm	22.5 mm	22.5 mm	For Use with 800F 22.5 mm
Features	- Flush, Extended, Guarded, Mushroom & Jumbo Mushroom, and Legended Versions - Illuminated, Non-Illuminated	- Push-Pull & Twist-to-Release - Illuminated, Non-Illuminated & Keyed Operators	Illuminated, Non-Illuminated & Keyed Operators	- Standard Diffuser, Optically Enhanced, Integrated LED - LED and Incandescent Lamps	- Standard (10 A), Low Voltage (2.5...10 A), Self-Monitoring (10 A) - IP2X Finger Safe, Color Coded by Circuit Type
Mounting Method	Back of Panel Mtg. Ring	Back of Panel Mtg. Ring	Back of Panel Mtg. Ring	Back of Panel Mtg. Ring	3-Across: Snap-Mounted on Latch
Material & Degree of Protection	800FM: Metal, Type 4/13, IP65/66 800FP: Plastic, Type 4/4X/13, IP65/66	800FM: Metal, Type 4/13, IP65/66 800FP: Plastic, Type 4/4X/13, IP65/66	800FM: Metal, Type 4/13, IP65/66 800FP: Plastic, Type 4/4X/13, IP65/66	800FM: Metal, Type 4/13, IP65/66 800FP: Plastic, Type 4/4X/13, IP65/66	Silver or Gold Contacts
Maximum # of Circuits	Illum: 3-Across - 4 Circuits Non-Illum: 6 Circuits	Illum: 3-Across - 4 Circuits Non-Illum: 6 Circuits	Illum: 3-Across - 4 Circuits Non-Illum: 6 Circuits	—	Single Circuit Contact Blocks: 3-Across, Side by Side Mounting, 2 Levels Deep (6 circuits max) Dual Circuit Contact Blocks: 3-Across, Side by Side Mounting, 1 Level Deep (6 circuits max)
Approvals	UL, UR, CSA, CCC, CE				
Operating Temperature	-25...+70 °C				
Design Life	10 M Mechanical Cycles	100 K Mechanical Cycles	300 K Mechanical Cycles	Incandescent: 5K-20K Hrs. LED: 100K Hrs.	Standard: AC15, DC13, A600, Q600 Low voltage: AC15, DC13, C300, R150
Contact Block & Power Module Assembly	Field Assembly	Field Assembly	Field Assembly	Field Assembly	N/A
Product Selection	Pages 201, 203	Pages 202, 219	Pages 202, 210	Pages 201, 209	Page 226

Control and Indicating Units

Product Line Overview

				
Bulletin	855P	855PC	855PS	855PB
Type	Panel Mount Sounder	Panel Mount Sounder with LED	Panel Mount Strobe	Panel Mount Selectable Steady or Flashing LED
Mounting Hole Size	22.5 mm or 30.5 mm with Hole Adapter Kit	22.5 mm or 30.5 mm with Hole Adapter Kit	22.5 mm or 30.5 mm with Hole Adapter Kit	22.5 mm or 30.5 mm with Hole Adapter Kit
Environmental Ratings	UL Type 4/4X/14, IP65	UL Type 4/4X/14, IP65	UL Type 4/4X/14, IP65	UL Type 4/4X/14, IP65
Voltages Available	12...24V AC/DC, 120V AC, 240V AC	12V AC/DC, 24V AC/DC, 120V AC, 240V AC	12V AC/DC, 24V AC/DC, 120V AC, 240V AC	12V AC/DC, 24V AC/DC, 120V AC, 240V AC
Illumination Type	—	LED (Flashing or Continuous)	Strobe	LED (Flashing or Continuous)
Lens Color Available	—	Green, Red, Amber, Blue, Yellow, Clear	Green, Red, Amber, Blue, Yellow, Clear	Green, Red, Amber, Blue, Yellow, Clear
Operating Temperature	−25...+60 °C	−25...+60 °C	−25...+60 °C	−25...+60 °C
Sound Output	80dB, 100dB or 105dB	98dB or 103dB	—	—
Sound Type	Continuous, Pulsing, or Wobble (LE)	Continuous, Pulsing, or Wobble (LE)	—	—
Minimum sound level	<85dB	<85dB	—	—
Steady State Current	20 mA...57 mA	35 mA...73 mA	20 mA...75 mA	10 mA...150 mA
Diameter	30 mm, 45 mm, & 65 mm	45 mm, & 65 mm	30 mm, 45 mm, & 65 mm	30 mm, 45 mm, & 65 mm
Material	Polycarbonate	Polycarbonate	Polycarbonate	Polycarbonate
Certification	cULus listed, CE Marked	cULus listed, CE Marked	cULus listed, CE Marked	cULus listed, CE Marked
Product Selection	Page 234	Page 235	Page 236	Page 237

Control and Indicating Units

Product Line Overview

		
Bulletin	855T	855E
Type	Control Tower™ Stack Lights 70 mm	Control Tower™ Stack Lights 50 mm
Environmental Ratings	- UL Type 4/4X/13 on all bases, lights peizo style sound and caps (sound and light with sound combo modules are UL Type 12, IP54) - Indoor and outdoor use - IP65	- UL Type 4/4X/13 on all bases, lights and caps sound modules - Indoor and outdoor use - IP65
Ease of Assembly, Base Wiring and Lamp Changes	No-tools assembly and maintenance, "Twist-off" lenses for easy lamp changes, Top-mounted terminal block for easy base wiring	No-tools assembly and maintenance, "Twist-off" lenses for easy lamp changes, Top-mounted terminal block for easy base wiring
Illumination Types	Illumination types include incandescent, socket-mount LED, or strobe	Illumination types include incandescent, socket-mount LED, or strobe
Lens Colors	Available in 6 colours (Green, Red, Amber, Blue, Yellow, Clear)	Available in 6 colours (Green, Red, Amber, Blue, Yellow, Clear)
Pole-Mount Base Options	Pole-mount bases are available in 10 cm, 25 cm, 40 cm, 60 cm and 80 cm – Aluminium or Stainless Steel	Pole-mount bases are available in 10 cm, 25 cm, 40 cm, 60 cm and 80 cm
Other Base Mounting Options	Surface-mount bases (surface-mount bases also feature 1/2NPT, PG16 threading options) Vertical-mount bases	Surface-mount bases (surface-mount bases also feature 1/2NPT, PG16 and M20 threading options) Vertical-mount bases
Base Colors	Available in black or gray base housing	Available in black or gray base housing
Sound Options	Transducer style or Piezo style sound modules available in single or dual tone (sound modules are UL Type 12, IP54), Piezo Styles and modules also available in 4/4X	Piezo style sound modules in single and dual tone
Network Connectivity	Available in standard or DeviceNet connectivity	Available in standard connectivity
Voltage Options	All modules available in: 12V AC/DC, 24V AC/DC, 120V AC, 240V AC as standard offerings	All modules available in: 12V AC/DC, 24V AC/DC, 120V AC, 240V AC as standard offerings
Junction Box	Surface, Vertical, and Magnetic Mount	—
Certifications	UL, cUL and CE on all components	UL, cUL and CE on all components
Operating Temperature	-25 °C ... +70 °C	-25 °C ... +50 °C
Materials		
Bases, Cap, Lens Cover, Sound Module Housing	Polycarbonate	Polycarbonate (no sound module)
Lenses	Polycarbonate	Polycarbonate
Lamp Socket	Polycarbonate	Polycarbonate
Product Selection	Page 238	See Publication 855E-BR002-EN-P

Control and Indicating Units

Product Line Overview

				
Bulletin	855H	855B	855BM	855BL
Type	Industrial Horns with Beacons	Square Beacons	Round Beacons	
Voltages Available	10-30V DC, 24V AC 50/60 Hz, 110V AC 50/60 Hz, 230V AC 50/60 Hz	12V AC/DC, 24V AC/DC, 110V AC 50/60Hz, 230V AC 50/60 Hz	12V AC/DC, 24V AC/DC, 120V AC 50/60Hz, 240V AC 50/60Hz	
Voltages Available (Horn w/Beacon)	12V DC, 24V DC, 24V AC 50/60 Hz, 110V AC 50/60 Hz, 230V AC 50/60 Hz	—	—	—
Illumination Type	Strobe 5 Joule	Strobe 5 Joule	15J or 35W Halogen	31J or 50W Halogen
Flash Rate	—	1 Hz	1Hz Strobe	
Lens Colors Available	Red, Green, Amber, Blue, Yellow, Clear	Red, Green, Amber, Blue, Yellow, Clear	Red, Green, Amber, Blue, Yellow, Clear	
Environmental Rating	IP56/Type 13 &13R	IP66/Type 13	UL Type 4/4X/13, IP65	UL Type 4/4X/13, IP65
Environmental Rating (Horn w/Beacon)	IP56/Type 13	—	—	—
Operating Temp Range	-25 ... +55 °C	-25 ... +55 °C	-25 to...+60 °C except Rotating is -25...+50 °C	-25 to...+60 °C except Rotating and steady Halogen is -25...+50 °C
Steady State Current	—	12V AC/DC (400/500mA), 24V AC/DC (365/250 mA), 110V AC (100mA), 230V AC (50 mA)	0.15 A ... 3.2 A	0.21 A...4.2 A
Sound Output Level	100 dB – 126 dB	—	—	—
Range	10 Tones Range A Horn 32 Tones Range B & C Horn 45 Tones Range D & E	—	—	—
Volume Adjustable	16 dB from max. Range A, B, C 6 dB from max. Range D, E	—	Strobe, Rotating, steady or Flashing Halogen	
Circuits Available	Range A – 2 on DC units, 1 on AC units Range B, C, D, E - 3 on all units	—	—	—
Materials				
Horn Cover and Base	Polycarbonate	Polycarbonate	Polycarbonate	Polycarbonate
Beacon Housing and Lens	Polycarbonate	Polycarbonate	Polycarbonate	Polycarbonate
Certifications	cULus, CE	cULus, CE	cULus, CE	cULus, CE
Product Selection	Page 243	Page 245	Page 246	Page 247

Complete Units *

Non-Illuminated Push Buttons, Momentary (Screw Terminal Connections)

	Description	Type of Contact		Color	Construction	Cat. No.		PGC
		N.O.	N.C.					
	Flush	1	—	Green	Plastic Operator / Plastic Latch	800FP-F3PX10		A3T
				Black		800FP-F2PX10		A3T
				Green	Metal Operator / Metal Latch	800FM-F3MX10		A3T
				Black		800FM-F2MX10		A3T
	Extended	—	1	Red	Plastic Operator / Plastic Latch	800FP-E4PX01		A3T
					Metal Operator / Metal Latch	800FM-E4MX01		A3T

Discount Group PBN

Pilot Lights with Integrated LED Modules (Screw Terminal Connections)

	Voltage	Type	Construction	Cat. No.		PGC
	24V AC/DC	Green	Plastic Operator / Plastic Latch	800FP-P3PN3G		A3T
		Red		800FP-P4PN3R		A3T
		Yellow		800FP-P5PN3Y		A3T
		Blue		800FP-P6PN3B		A3T
		White		800FP-P7PN3W		A3T
	240V AC	Green		800FP-P3PN7G		A3T
		Red		800FP-P4PN7R		A3T
		Yellow		800FP-P5PN7Y		A3T
		Blue		800FP-P6PN7B		A3T
		White		800FP-P7PN7W		A3T

* For complete units not listed and configuration assistance, consult your local Rockwell Automation distributor.
Discount Group PBN

Bulletin 800F

Control and Indicating Units

Product Selection

Complete Units *

Non-Illuminated Selector Switches (Screw Terminal Connections)

	Description	Type of Contact		Type	Construction	Cat. No.		PGC
		N.O.	N.C.					
	Standard Lever, Black	1	—	2 position — maintained	Plastic Operator / Plastic Latch	800FP-SM22PX10		A3T
		1	1	2 position — maintained	Plastic Operator / Plastic Latch	800FP-SM22PX11		A3T
		1	—	2 position — maintained	Metal Operator / Metal Latch	800FM-SM22MX10		A3T
		1	1	2 position — maintained	Metal Operator / Metal Latch	800FM-SM22MX11		A3T
		2	—	3 position — maintained	Plastic Operator / Plastic Latch	800FP-SM32PX20		A3T
		2	—	3 position — maintained	Metal Operator / Metal Latch	800FM-SM32MX20		A3T

Non-Illuminated Momentary Multi-Function Operator (Screw Terminal Connections)

	Description	Type of Contact		Color	Construction	Cat. No.		PGC
		N.O.	N.C.					
	Multi-Function (Flush / Extended)	1	1	Green/ Red	Plastic Operator / Plastic Latch	800FP-U2E4F3PX11		A3T
					Metal Operator / Metal Latch	800FM-U2E4F3MX11		A3T
				Green I/ Red 0	Plastic Operator / Plastic Latch	800FP-U2EFFEPX11		A3T
					Metal Operator / Metal Latch	800FM-U2EFFEMX11		A3T

Emergency Stop Operators Non-Illuminated, Ø40 mm, Red (Screw Terminal Connections)

	Description	Type of Contact*		Construction	Cat. No.		PGC
		N.O.	N.C.				
	Twist-to-Release	—	1	Plastic Operator / Plastic Latch	800FP-MT44PX01S		A3T
		—	1	Metal Operator / Metal Latch	800FM-MT44MX01S		A3T
		1	1	Plastic Operator / Plastic Latch	800FP-MT44PX11S		A3T
		1	1	Metal Operator / Metal Latch	800FM-MT44MX11S		A3T

* For complete units not listed and configuration assistance, see RAISE product selection software.
* Self-monitoring contact block included when N.C. is specified.
Discount Group PBN

Momentary Push Button Operators, Non-Illuminated — Flush, Extended, Guarded



Flush Operator



Extended Operator



Guarded Operator

	Flush				Extended				
	Plastic		Metal		Plastic		Metal		
Color	Cat. No.		Cat. No.		Cat. No.		Cat. No.		PGC
Black	800FP-F2		800FM-F2		800FP-E2		800FM-E2		A3T
Green	800FP-F3		800FM-F3		800FP-E3		800FM-E3		A3T
Red	800FP-F4		800FM-F4		800FP-E4		800FM-E4		A3T

Discount Group PBN

$$800F \frac{P}{a} - \frac{F}{b} \frac{3}{c} - \frac{\quad}{d}$$

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Description
F	Flush
E	Extended
G	Guarded

C

Color Cap	
Code	Color
1	White
2	Black
3	Green
4	Red
5	Yellow
6	Blue
9	No cap
X	Assortment pack*

d

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* Assortment pack contains one cap of each color, not available in BP packaging.

Bulletin 800F

Control and Indicating Units

Product Selection

Momentary Push Button Operators, Non-Illuminated — With Two-Color Molded Legend Caps *



Flush Operator

Button Color	Text Color	Legend	Flush				PGC
			Plastic		Metal		
			Cat. No.		Cat. No.		
Green	White	START	800FP-F301		800FM-F301		A3T
		I	800FP-F306		800FM-F306		A3T
Red	White	STOP	—		—		—
		O	—		—		—
Black	White	→	800FP-F208		800FM-F208		A3T

Discount Group PBN

Button Color	Text Color	Legend	Extended				PGC
			Plastic		Metal		
			Cat. No.		Cat. No.		
Green	White	START	—		—		—
		I	—		—		—
Red	White	STOP	800FP-E402		800FM-E402		A3T
		O	800FP-E405		800FM-E405		A3T
Black	White	→	800FP-E208		800FM-E208		A3T

Discount Group PBN

800F

P

 -

F

3

01

 -

--

a *b* *c* *d* *e*

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Description
F	Flush
E	Extended

C

Color Cap	
Code	Color
1	White
2	Black
3	Green
4	Red
5	Yellow
6	Blue

d

Legend Text ¶	
Code	Legend Text
01	START
02	STOP
05	O
06	I
08	→\$
11	R

$$e$$

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* For custom laser-engraved legend cap, order "no cap" option plus custom laser-engraved cap, see publication 800F-SG001 -EN-P

* White and yellow caps have black text. All other color caps have white text.

± Valid color cap/legend text codes include, see publication 800F-SG001 -EN-P.

§ Legend button cap supplied loose for customer installation →, ↓, ←, ↑.

Bulletin 800F

Control and Indicating Units

Product Selection

Momentary Push Button Operators, Illuminated — Flush, Extended, Guarded *



Flush Operator



Extended Operator



Guarded Operator

Color	Flush				Extended				PGC
	Plastic		Metal		Plastic		Metal		
	Cat. No.		Cat. No.		Cat. No.		Cat. No.		
Green	800FP-LF3		800FM-LF3		800FP-LE3		800FM-LE3		A3T
Red	800FP-LF4		800FM-LF4		800FP-LE4		800FM-LE4		A3T
Yellow	800FP-LF5		800FM-LF5		800FP-LE5		800FM-LE5		A3T
Clear	800FP-LF7		800FM-LF7		800FP-LE7		800FM-LE7		A3T

Discount Group PBN

800F **P** - **LE** **3** -

a *b* *c* *d*

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Standard	
Code	Description
LF	Flush
LE	Extended
LG	Guarded

c

Lens Cap Color	
Code	Color
3	Green
4	Red
5	Yellow
6	Blue
7	Clear
9	No lens

d

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* For custom laser-engraved operator, order operator with applicable lens cap color plus custom laser-engraved diffuser, see publication 800F-SG001_-EN-P.

Alternate Action Operators, Non-Illuminated



Flush Operator

800F

M

a

-

FA

b

3

c

a	
Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b	
Operator Type*	
Code	Description
FA	Non-illuminated, Flush, Alternate Action

c	
Color Cap	
Code	Color
1	White
2	Black
3	Green
4	Red
5	Yellow
6	Blue
9	No cap
X	Assortment pack

* Must use N.O.E.M. or N.C. Contacts.

Alternate Action Operators, Illuminated



Flush Operator

800F

P

a

-

LFA

b

3

c

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type*⌘	
Code	Description
LFA	Illuminated, Flush, Alternate Action

c

Color Cap	
Code	Color
3	Green
4	Red
5	Yellow
6	Blue
7	Clear
9	No lens

* Must use N.O.E.M. or N.C. Contacts.
⌘ LED module required for illumination, can not use incandescent module.

Pilot Lights *



Plastic Pilot Light



Metal Pilot Light

Color	Plastic		Metal		PGC
	Cat. No.		Cat. No.		
Green	800FP-P3		800FM-P3		A3T
Red	800FP-P4		800FM-P4		A3T
Yellow	800FP-P5		800FM-P5		A3T

Discount Group PBN

800F **P** **-** **P** **3** **-**
a *b* *c* *d*

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Description
P	Diffuser

c

Lens Cap Color	
Code	Color
3	Green
4	Red
5	Yellow
6	Blue
7	Clear
9	No lens

d

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* For custom laser-engraved pilot light, order pilot light with applicable lens cap color plus custom laser-engraved diffuser, see publication 800F-SG001_-EN-P.

Bulletin 800F

Control and Indicating Units

Product Selection

Non-Illuminated Selector Switches, 2-Positions



Standard Knob



Knob Lever

Target Table and Operator Position *			
Switching Angle	Contact Type		
	N.O.	O	X
	N.C.	X	O

Note: X = Closed/O = Open

Color	Operator Type		Standard Knob				PGC
			Plastic		Metal		
			Cat. No.		Cat. No.		
Black with White Insert			800FP-SM22		800FM-SM22		A3T

Discount Group PBN

800F **P** - **S** **M2** **2** - - **f**

a *b* *c* *d* *e* *f*

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Type
S	Standard knob
H	Knob lever ‡

c

Operator Type	
Code	Type
M2	Maintained (Switching angle 60°)
L2	Spring return from left (Switching angle 60°)
R2	Spring return from right (Switching angle 60°)

d

Knob/Insert Color		
Code	Knob Color	Insert Color
2	Black	White

e

Orientation	
Code	Description
(blank)	Standard
N	90° offset ‡

f

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* Target table for spring return from left is reversed from what is shown in the table.
‡ 30 mm hole spacing will not work if knob lever is used.
‡ For use in vertical mount enclosures.

Illuminated Selector Switch Operators, 2 Positions ❄



Standard Knob

Target Table and Operator Position *			
Switching Angle	Contact Type		
	N.O.	O	X
	N.C.	X	O

Note: X = Closed/O = Open

Color	Operator Type 	Standard Knob			
		Plastic		Metal	
		Cat. No.		Cat. No.	PGC
Green		800FP-LSM23		800FM-LSM23	A3T
Red		800FP-LSM24		800FM-LSM24	A3T
Yellow		800FP-LSM25		800FM-LSM25	A3T

Discount Group PBN

800F **P** - **LS** **M2** **3** - **f**

a *b* *c* *d* *e* *f*

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Type
LS	Standard knob

c

Operator Type	
Code	Type
M2	Maintained (Switching angle 60°)
L2	Spring return from left (Switching angle 60°)
R2	Spring return from right (Switching angle 60°)

Knob/Insert Color		
Code	Knob Color	Insert Color
3	Green	White
4	Red	White
5	Yellow	Black
6	Blue	White
7	Clear	Black

e

Orientation	
Code	Description
(blank)	Standard
N	90° offset†

f

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* Target table for spring return from left is reversed from what is shown in the table.

❄ LED module required for illumination.

† For use in vertical mount enclosures.

Bulletin 800F

Control and Indicating Units

Product Selection

Non-Illuminated Selector Switches, 3 Positions



Standard Knob



Knob Lever

Target Table and Operator Position
(Switching angle 60°), see publication 800F-SG001_-EN-P.

Color	Operator Type	Standard Knob				PGC
	  	Plastic		Metal		
		Cat. No.		Cat. No.		
Black with White Insert		800FP-SM32		800FM-SM32		A3T
		800FP-SB32		800FM-SB32		A3T

Discount Group PBN

Color	Operator Type	Knob Lever				PGC
	  	Plastic		Metal		
		Cat. No.		Cat. No.		
Black with White Insert		800FP-HM32		800FM-HM32		A3T
		800FP-HB32		800FM-HB32		A3T

Discount Group PBN

$$800F \quad \frac{P}{a} - \frac{S}{b} \quad \frac{M3}{c} \quad \frac{3}{d} \quad \frac{\quad}{e} - \frac{\quad}{f}$$

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Type
S	Standard knob
H	Knob lever *

C

Operator Function	
Code	Type
M3	Maintained
L3	Spring return from left
R3	Spring return from right
B3	Spring return from left and right

d

Knob/Insert Color		
Code	Knob Color	Insert Color
2	Black	White

e

Orientation	
Code	Description
(blank)	Standard
N	90° offset *

 f

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* 30 mm hole spacing will not work if knob lever is used.

❄ For use in vertical mount enclosures.

Bulletin 800F

Control and Indicating Units

Product Selection

Illuminated Selector Switch Operators, 3 Positions *



Standard Knob

Target Table and Operator Position
(Switching angle 60°), see publication 800F-SG001_-EN-P.

Operator Type			Green				PGC
			Plastic		Metal		
			Cat. No.		Cat. No.		
			800FP-LSM33		800FM-LSM33		A3T
			800FP-LSR33		800FM-LSR33		A3T
			800FP-LSL33		800FM-LSL33		A3T
			800FP-LSB33		800FM-LSB33		A3T

Operator Type			Red				PGC		
			Plastic		Metal				
			Cat. No.		Cat. No.				
			800FP-LSM34		800FM-LSM34		A3T		
			800FP-LSR34		800FM-LSR34		A3T		
			800FP-LSL34		800FM-LSL34		A3T		
			800FP-LSB34		800FM-LSB34		A3T		

Operator Type			Yellow				PGC
			Plastic		Metal		
			Cat. No.		Cat. No.		
			800FP-LSM35		800FM-LSM35		A3T
			800FP-LSR35		800FM-LSR35		A3T
			800FP-LSL35		800FM-LSL35		A3T
			800FP-LSB35		800FM-LSB35		A3T

Discount Group PBN

* LED module required for illumination.

$$800F \quad \frac{P}{a} - \frac{LS}{b} \quad \frac{M3}{c} \quad \frac{3}{d} \quad \frac{\quad}{e} - \frac{\quad}{f}$$

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Type
LS	Standard knob

C

Operator Function	
Code	Type
M3	Maintained
L3	Spring return from left
R3	Spring return from right
B3	Spring return from left and right

d

Knob/Insert Color		
Code	Knob Color	Insert Color
3	Green	White
4	Red	White
5	Yellow	Black
6	Blue	White
7	Clear	Black

e

Orientation	
Code	Description
(blank)	Standard
N	90° offset ⌘

$$f$$

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

❄ For use in vertical mount enclosures.

Bulletin 800F

Control and Indicating Units

Product Selection

Key Operated Selector Switches, 2 Positions, Non-Illuminated *❄



Target Table and Operator Position ‡			
Switching Angle	Contact Type		
	N.O.	O	X
	N.C.	X	O

Note: X = Closed/O = Open

Key Removal Position	Operator Type	Key Selector Switch Operators			
			Plastic		PGC
			Cat. No.		
Left			800FP-KM21		A3T
Both			800FP-KM23		A3T

Note: For Ronis replacement keys, see publication 800F-SG001_EN-P.
Discount Group PBN

800F **M** - **KM2** **1** - - -

a *b* *c* *d* *e*

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/13)
M	Round metal operator (IP66, Type 4/13)

b

Type of Contact		
Code	Type	
KM2	Maintained (Switching angle 60°)	
KL2	Spring return from left (Switching angle 60°)	
KR2	Spring return from right (Switching angle 60°)	

c

Key Removal Position §		
Code	Description	
1	Left	
2	Right	
3	Both	

d

See page 218 for optional key codes

e

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* Keyed operators are IP66, Type 4/13.
❄ Not intended for high security applications. Interoperability is possible with certain key/cylinder lock combinations. Please consult your local sales office for interoperability information.
‡ Target table for spring return from left is reversed from what is shown in the table.
§ Key removal in maintained positions only.

Key Operated Selector Switches, 3 Positions, Non-Illuminated *❖



Key Selector Switch

Key Selector Switch

Target Table and Operator Position
(Switching angle 60°), see publication 800F-SG001_-EN-P.

Key Removal Position	Operator Position	Key Selector Switch Operators				PGC
	  	Plastic		Metal		
	Cat. No.		Cat. No.			
Left		800FP-KM31		800FM-KM31		A3T
All		800FP-KM33		800FM-KM33		A3T
Center		800FP-KM34		800FM-KM34		A3T
Center		800FP-KB34		800FM-KB34		A3T

Note: For Ronis replacement keys, see publication 800F-SG001_-EN-P.
Discount Group PBN

800F **M** - **KM3** **2** -

a *b* *c* *d* *e*

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/13)
M	Round metal operator (IP66, Type 4/13)

b

Type of Contact		
Code	Type	
KM3	Maintained	
KR3	Spring return from right	
KL3	Spring return from left	
KB3	Spring return from both	

c

Key Removal Position ‡		
Code	Description	
1	Left	
3	All	
4	Center	
5	Left/center	

d

See page 218 for optional key codes

e

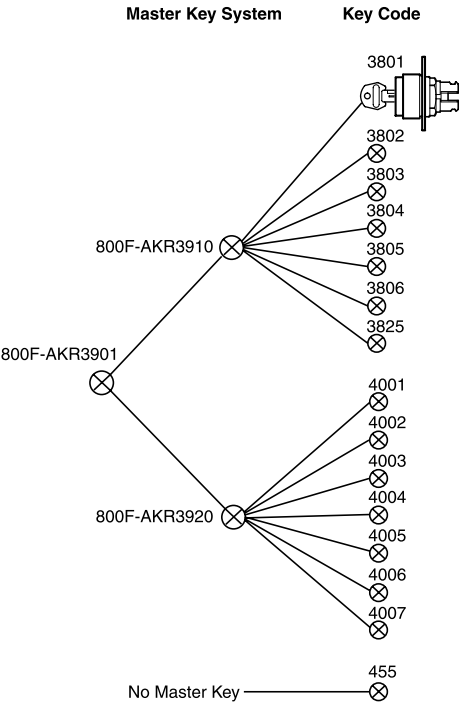
Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* Keyed operators are IP66, Type 4/13.

❖ Not intended for high security applications. Interoperability is possible with certain key/cylinder lock combinations.
Please consult your local sales office for interoperability information.

‡ Key removal in maintained positions only.

Optional Key Codes



d

Optional Key Lock	
Ronis Key Lock	
Code	Key No.
Blank	3825 (Standard)
R	455
01R	3801
02R	3802
03R	3803
04R	3804
05R	3805
06R	3806
27R	4001
28R	4002
29R	4003
30R	4004
31R	4005
32R	4006
33R	4007

Emergency Stop Operators *

Non-Illuminated

Twist-to-Release, Push-Pull



*Emergency Stop 60 mm,
Non-Illuminated, Twist-to-Release*



*Emergency Stop 40 mm,
Non-Illuminated, Push-Pull*

Color	Size	Twist-to-Release (Trigger Action)				PGC
		Plastic		Metal		
		Cat. No.		Cat. No.		
Red	30 mm	800FP-MT34		800FM-MT34		A3T
	40 mm	800FP-MT44		800FM-MT44		A3T
	60 mm	800FP-MT64		800FM-MT64		A3T

Discount Group PBN

Color	Size	Push-Pull (Trigger Action)				PGC
		Plastic		Metal		
		Cat. No.		Cat. No.		
Red	30 mm	—		—		—
	40 mm	800FP-MP44		800FM-MP44		A3T
	60 mm	—		—		—

Discount Group PBN

Key Release



*Emergency Stop 40 mm,
Non-Illuminated, Key Release*

Color	Size	Ronis Key Lock (Trigger Action)				PGC
		Plastic		Metal		
		Cat. No.		Cat. No.		
Red	40 mm	800FP-MK44		800FM-MK44		A3T

* All emergency stop operators are EN 418 compliant.

Discount Group PBN

Emergency Stop Operators, continued *

Illuminated

Twist-to-Release, Push-Pull ‡



Emergency Stop 40 mm,
Illuminated, Twist-to-Release

Color	Size	Twist-to-Release (Trigger Action)				PGC
		Plastic		Metal		
		Cat. No.		Cat. No.		
Red	30 mm	—		—		—
	40 mm	800FP-LMT44		800FM-LMT44		A3T
	60 mm	800FP-LMT64		800FM-LMT64		A3T

Discount Group PBN

Color	Size	Push-Pull (Trigger Action)				PGC
		Plastic		Metal		
		Cat. No.		Cat. No.		
Red	30 mm	800FP-LMP34		800FM-LMP34		A3T
	40 mm	800FP-LMP44		800FM-LMP44		A3T
	60 mm	800FP-LMP64		800FM-LMP64		A3T

* All emergency stop operators are EN 418 compliant.

‡ LED module required for illumination.

Discount Group PBN

Momentary Push Button Operators, Non-Illuminated — Mushroom *



60 mm Jumbo Mushroom



40 mm Mushroom

Color	40 mm Mushroom				PGC
	Plastic		Metal		
	Cat. No.		Cat. No.		
Black	800FP-MM42		800FM-MM42		A3T
Green	800FP-MM43		800FM-MM43		A3T
Red	800FP-MM44		800FM-MM44		A3T
Yellow	800FP-MM45		800FM-MM45		A3T

Discount Group PBN

$$800F \frac{P}{a} - \frac{MM4}{b} \frac{3}{c} - \frac{\quad}{d}$$

a

Operator Construction	
Code	Description
P	Round plastic operator (IP65, Type 4/4X/13)
M	Round metal operator (IP65, Type 4/13)

b

Size and Operator Type	
Mushroom	
Code	Type
MM4	40 mm momentary
MM6	60 mm momentary

C

Color Cap	
Code	Color
2	Black
3	Green
4	Red
5	Yellow
6	Blue

d

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* Momentary mushroom operators are IP65 rated.

40 mm Mushroom

Color	40 mm Mushroom				PGC
	Plastic		Metal		
	Cat. No.		Cat. No.		
Green	800FP-LMM43		800FM-LMM43		A3T
Red	800FP-LMM44		800FM-LMM44		A3T
Yellow	800FP-LMM45		800FM-LMM45		A3T

$$800F \frac{P}{a} - \frac{LMM4}{b} \frac{3}{c} - \frac{\quad}{d}$$

a

Operator Construction	
Code	Description
P	Round plastic operator (IP65, Type 4/4X/13)
M	Round metal operator (IP65, Type 4/13)

b

Size and Operator Type	
Mushroom	
Code	Type
LMM4	40 mm momentary

C

Lens Cap Color	
Code	Color
3	Green
4	Red
5	Yellow
6	Blue
7	Clear

d

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

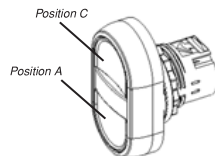
Rockwell Automation

2-Function Momentary Multi-Operator, Non-Illuminated *



2-Function Momentary Multi-Operator, Non-Illuminated

Position 1 of the latch (left position when viewed from the back) corresponds to position C of the operator. Position 2 of the latch (right position when viewed from the back) corresponds to position A of the operator.



Position A			Position C			2-Function Multi-Operator		PGC
Color	Type	Text	Color	Type	Text	Cat. No.		
Red	Extended	Blank	Green	Flush	Blank	800FP-U2E4F3		A3T
		O			I	800FP-U2EFFE		A3T
		STOP			START	800FP-U2EBFA		A3T

Discount Group PBN

800 F P - U2 E 4 F 3 -
a b c d e f g
a
d & f

Operator Construction	
Code	Description
P	Plastic operator (IP66, Type 4/4X)
M	Metal operator (IP66, Type 4)

b

Operator Type	
Code	Description
U2	Two-function

c

Operator Type — Position A	
Code	Description
F	Flush
E	Extended
X	No caps (all positions) ‡

e

Operator Type — Position C	
Code	Description
F	Flush
E	Extended

Operator Color Cap/Text — Position A ‡	
Code	Description
1	White
2	Black
3	Green
4	Red
5	Yellow
6	Blue
A	Green with "Start" text
B	Red with "Stop" text
C	White with "Start" text
D	Black with "Stop" text
E	Green with "I" text
F	Red with "O" text
G	White with "I" text
H	Black with "O" text

g

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* No Type 13 rating.

‡ For custom engraved caps, order "no caps" option plus custom engraved caps, see publ. 800F-SG001_-EN-P.

‡ Valid color cap/legend text codes include, see publication 800F-SG001_-EN-P.

Bulletin 800F

Control and Indicating Units

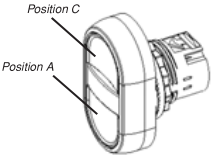
Product Selection

2-Function Momentary Multi-Operator, Illuminated *❄



2-Function Momentary
Multi-Operator Illuminated

Position 1 of the latch (left position when viewed from the back) corresponds to position C of the operator.
Position 2 of the latch (right position when viewed from the back) corresponds to position A of the operator.
Position 3 of the latch (center position) is reserved for the power module.



Position A			Position B	Position C			2-Function Multi-Operator		PGC
Color	Type	Text	Type	Color	Type	Text	Cat. No.		
Red	Extended	Blank	White Pilot Lights	Green	Flush	Blank	800FP-LU2E4F3		A3T
		O				I	800FP-LU2EFFE		A3T
		STOP				START	800FP-LU2EBFA		A3T

Discount Group PBN

800F P - LU2 E 4 F 3 -

a *b* *c* *d* *e* *f* *g*

a

Operator Construction	
Code	Description
P	Plastic operator (IP66, Type 4/4X)
M	Metal operator (IP66, Type 4)

b

Operator Type	
Code	Description
LU2	Two-function Illuminated

c

Operator Type — Position A	
Code	Description
F	Flush
E	Extended
X	No caps (all positions) ‡

e

Operator Type — Position C	
Code	Description
F	Flush
E	Extended

d & f

Operator Color Cap/Text — Position A §	
Code	Description
1	White
2	Black
3	Green
4	Red
5	Yellow
6	Blue
A	Green with “Start” text
B	Red with “Stop” text
C	White with “Start” text
D	Black with “Stop” text
E	Green with “I” text
F	Red with “O” text
G	White with “I” text
H	Black with “O” text

g

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

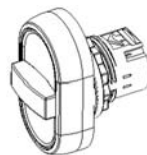
* No Type 13 rating.
❄ LED module required for illumination.
‡ For custom engraved caps, order “no caps” option plus custom engraved caps, see publ. 800F-SG001_-EN-P.
§ Valid color cap/legend text codes include, see publication 800F-SG001_-EN-P.

3-Function Momentary Multi-Operator, Non-Illuminated *



3-Function Momentary Multi-Operator Non-Illuminated

Position 1 of the latch (left position when viewed from the back) corresponds to position C of the operator.
Position 2 of the latch (right position when viewed from the back) corresponds to position A of the operator.
Position 3 of the latch (center position) corresponds to position B of the operator.



Position A			Position B			Position C			3-Function Multi-Operator		PGC
Color	Type	Text	Color	Type	Text	Color	Type	Text	Cat. No.		
Green	Flush	Blank	Red	Extended	Blank	Green	Flush	Blank	800FP-U3F3F34		A3T

800F **P** – **U3** **E** **4** **F** **3** **4** – **h**

a *b* *c* *d* *e* *f* *g*

a

Operator Construction	
Code	Description
P	Plastic operator (IP66, Type 4/4X)
M	Metal operator (IP66, Type 4)

b

Operator Type	
Code	Description
U3	Three-function

c

Operator Type — Position A	
Code	Description
F	Flush
E	Extended
X	No caps (all positions) *‡

e

Operator Type — Position C §	
Code	Description
F	Flush
E	Extended

d & f

Operator Color Cap/Text — Position A §	
Code	Description
1	White
2	Black
3	Green
4	Red
5	Yellow
6	Blue
A	Green with "Start" text
B	Red with "Stop" text
C	White with "Start" text
D	Black with "Stop" text
E	Green with "I" text
F	Red with "O" text
G	White with "I" text
H	Black with "O" text

g

Operator Color Cap/Text — Position B	
Code	Description
4	Red
B	Red with "Stop" text
F	Red with "O" text

h

Packaging	
Code	Description
(blank)	1 per package
BP	10 per package

* No Type 13 rating.

* For custom engraved caps, order "no caps" option plus custom engraved caps, see publ. 800F-SG001_-EN-P.

‡ For "no caps" option, (position B) center cap available as red, no text only.

§ Valid color cap/legend text codes include, see publication 800F-SG001_-EN-P.

Bulletin 800F

Control and Indicating Units

Product Selection

Back-of-Panel Combinations

Contact Blocks *



Contact Block



Plastic Latch

800F –

P	X	0	1	
a	b	c	d	e

a

Type	
Code	Description
P	Plastic latch
M	Metal latch

b

Contact Block(s) Termination Style	
Code	Description
X	Screw termination
Q	Spring-clamp termination ‡

c

N.O. (Normally Open) Circuits	
Code	Description
0	No contact
1	1 N.O.
2	2 N.O.
3	3 N.O.
4	4 N.O.
5	5 N.O.
6	6 N.O.

d

N.C. (Normally Closed) Circuits	
Code	Description
0	No contact
1	1 N.C.
2	2 N.C.
3	3 N.C.
4	4 N.C.
5	5 N.C.
6	6 N.C.

e

Specialty Contact Block(s)	
Code	Description
(blank)	Standard Contact blocks
V	Low voltage — QuadCONNECT™
E	N.O. early make
L	N.C. late break
S	N.C. self-monitoring

* Six circuits maximum allowable.

‡ Spring-clamp terminations only available in N.O. and N.C. contact blocks. Specialty contact blocks not available.

Back-of-Panel Combinations

Power Modules



Power Module



Plastic Latch

800F –

M
<i>a</i>

N
<i>b</i>

3
<i>c</i>

G
<i>d</i>

a

Type	
Code	Description
P	Plastic latch
M	Metal latch

b

Power Module Type *	
Code	Description
D	Incandescent module, screw termination
N	Integrated LED module, screw termination
Q	Integrated LED module, spring-clamp termination

c

Voltage	
Code	Description
0	No bulb *
1	6V AC/DC *
2	12V AC/DC *
3	24V AC/DC
4	48V AC/DC *
5	120V AC
7	240V AC ‡

d

Lamp Color §	
Code	Description
C	Incandescent
R	Red LED
G	Green LED
Y	Yellow LED
W	White LED
B	Blue LED

* LED modules for use with all illuminated operators. Incandescent module for use with pilot lights, push buttons, and momentary mushroom operators only.

* Only available for incandescent module.

‡ Only available for integrated LED module.

§ For best illumination results, LED should match lens color.

Bulletin 800F

Control and Indicating Units

Product Selection

Back-of-Panel Combinations

Power Modules with Contact Blocks *

800F –

P	N	5	R	X	1	0	
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>

a

Type	
Code	Description
P	Plastic latch
M	Metal latch

b

Power Module Type *	
Code	Description
D	Incandescent module, screw termination
N	Integrated LED module, screw termination
Q	Integrated LED module, spring-clamp termination

c

Voltage	
Code	Description
0	No bulb ‡
1	6V AC/DC ‡
2	12V AC/DC ‡
3	24V AC/DC
4	48V AC/DC ‡
5	120V AC
7	240V AC §

d

Lamp Color ♣	
Code	Description
C	Incandescent
R	Red LED
G	Green LED
Y	Yellow LED
W	White LED
B	Blue LED

e

Contact Block(s) Termination Style	
Code	Description
X	Screw termination
Q	Spring-clamp termination ➤

f

N.O. (Normally Open) Circuits	
Code	Description
0	No contact
1	1 N.O.
2	2 N.O.
3	3 N.O.
4	4 N.O.

g

N.C. (Normally Closed) Circuits	
Code	Description
0	No contact
1	1 N.C.
2	2 N.C.
3	3 N.C.
4	4 N.C.

h

Specialty Contact Block(s)	
Code	Description
(blank)	Standard blocks
V	Low voltage — QuadCONNECT™
E	N.O. early make
L	N.C. late break
S	N.C. self-monitoring

* Four circuits maximum allowable when power module is used. Do not stack contact block on power module.

✱ LED modules for use with all illuminated operators. Incandescent module for use with pilot lights, push buttons, and momentary mushroom operators only.

‡ Only available for incandescent module.

§ Only available for integrated LED module.

♣ For best illuminated results, LED should match lens color.

➤ Spring-clamp terminations only available in N.O. and N.C. contact blocks. Specialty contact blocks not available.

Back-of-Panel Components

	Description	PQ	Cat. No.		PGC
	Metal Mounting Latch These are zinc-plated, metal die cast mounting latches. Note: Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.	10	800F-ALM		A3T
	Note: Sold only in multiples of 100. Order (quantity of) 100 to receive one package of 100 pieces.	100	800F-ALM-BP		A3T
	Plastic Mounting Latch Note: Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.	10	800F-ALP		A3T
	Note: Sold only in multiples of 100. Order (quantity of) 100 to receive one package of 100 pieces.	100	800F-ALP-BP		A3T
		Contact Type			
	Contact Block Note: Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.	N.O.	800F-X10		A3T
		N.C.	800F-X01		A3T
		N.O.E.M.	800F-X10E		A3T
		N.C.L.B.	800F-X01L		A3T
		Self-Monitoring	800F-X01S		A3T
		— QuadCONNECT™N.O. low voltage	800F-X10V		A3T
		— QuadCONNECT™N.C. low voltage	800F-X01V		A3T
		Dual circuit of 2 N.O.	800F-X20D		A3T
		Dual circuit of 2 N.C.	800F-X02D		A3T
		Dual circuit of 1 N.O. - 1 N.C.	800F-X11D		A3T
		N.O. with stab terminals	800F-X10T		A3T
		N.C. with stab terminals	800F-X01T		A3T
		N.O. spring-clamp	800F-Q10		A3T
		N.C. spring-clamp	800F-Q01		A3T
	Note: Sold only in multiples of 100. Order (quantity of) 100 to receive one package of 100 pieces. Latch not included.	N.O.	800F-X10-BP		A3T
		N.C.	800F-X01-BP		A3T
	Clear Silicone Protective Boot used on Illuminated and Non-Illuminated, flush and extended operators. Note: Sold in multiples of 10. Order (quantity of) 10 to received one package of 10 pieces.	Flush Push Button	800F-AB7		A3T
		Extended Push Button	800F-ABE7		A3T
		3-Position Multi-Function	800F-AUB1		A3T
		2-Position Multi-Function	800F-AUB2		A3T

Discount Group PBN

Back-of-Panel Components

	Description		Cat. No.		PGC
	Incandescent Module For use with pilot lights, push buttons, and momentary mushroom operators. Note: Sold in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces. Latch not included.	No bulb	800F-D0C		A3T
		6V AC/DC	800F-D1C		A3T
		12V AC/DC	800F-D2C		A3T
		24V AC/DC	800F-D3C		A3T
		48V AC/DC	800F-D4C		A3T
		120V AC/DC	800F-D5C		A3T
	Integrated LED Module For use with all illuminated devices. For best results, LED should match lens color. Note: Sold in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces. Latch not included.	24V AC/DC	* 800F-N3x		A3T
		120V AC	* 800F-N5x		A3T
		240V AC	* 800F-N7x		A3T
		24V AC/DC spring-clamp	* 800F-Q3x		A3T
		120V AC spring-clamp	* 800F-Q5x		A3T
		240V AC spring-clamp	* 800F-Q7x		A3T
	Base Mounted Contact Block Base mounted contact blocks can be used in plastic or metal enclosures. Note: Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.	N.O.	800F-BX10		A3T
		N.C.	800F-BX01		A3T
		N.O.E.M.	800F-BX10E		A3T
		N.C.L.B.	800F-BX01L		A3T
		— QuadCONNECT™N.O. low voltage	800F-BX10V		A3T
		— QuadCONNECT™N.C. low voltage	800F-BX01V		A3T
		N.O. spring-clamp	800F-BQ10		A3T
		N.C. spring-clamp	800F-BQ01		A3T
	Base Mounted Integrated LED Module Base mounted modules can be used in plastic or metal enclosures. For best illumination results, LED should match lens color. Note: Sold in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.	24V AC/DC	* 800F-BN3x		A3T
		120V AC	* 800F-BN5x		A3T
		240V AC	* 800F-BN7x		A3T
		24V AC/DC spring-clamp	* 800F-BQ3x		A3T
		120V AC spring-clamp	* 800F-BQ5x		A3T
		240V AC spring-clamp	* 800F-BQ7x		A3T

* To complete the cat. no., replace the x with one of the following letters for the desired color:
Y = Yellow, R = Red, G = Green, B = Blue, W = White.

Discount Group PBN

Replacement Lamps

Lamp	Type	Typical Current	Voltage	ANSI No.	PQ	Cat. No.		PGC
	Full Voltage Incandescent	150 mA	6V AC/DC	755	10	800F-N65		A3T
		80 mA	12V AC/DC	756	10	800F-N141		A3T
		70 mA	24V AC/DC	757	10	800F-N157		A3T
		50 mA	48V AC/DC	1835	10	800F-N48		A3T
		22 mA	130V AC/DC	949	10	800F-N130		A3T
	Neon	22 mA	240V AC	—	10	800F-N240		A3T

PQ = Package Quantity
Discount Group PBN

Plastic and Metal Enclosures



Plastic Enclosure



Metal Enclosure



Pendant Station

Plastic Enclosures (Latch or Base Mounting)

- Feed-through design
- Accepts two-piece snap-in legends
- One-hole enclosure accepts 60 mm emergency stop legends
- UL Listed, CSA Certified

Metal Enclosures (Latch or Base Mounting)

- Feed-through design, supplied with closing plug
- Accepts two-piece snap-in legends

Pendant Stations

- Blank legend cap marking
- Connector not included. For ordering information, see accessories in publication 800F-SG001_-EN-P.

Type	Enclosures								PGC
	Plastic (IP66, 4/4X/13)				Metal — Die Cast (IP66, 4/13)				
	PG Knockouts		Metric Knockouts		PG Knockouts		Metric Knockouts		
	Cat. No.		Cat. No.		Cat. No.		Cat. No.		
1 hole	800F-1PP		800F-1PM		800F-1MP		800F-1MM		A3T
2 hole	800F-2PP		800F-2PM		800F-2MP		800F-2MM		A3T
3 hole	800F-3PP		800F-3PM		800F-3MP		800F-3MM		A3T
4 hole	800F-4PP		800F-4PM		—		—		A3T
5 hole	—		—		800F-5MP		800F-5MM		A3T
6 hole	800F-6PP		800F-6PM		—		—		A3T
(Yellow)1 hole	800F-1YP		800F-1YM		—		—		A3T

Discount Group PBN

Type	Pendants		PGC
	Yellow Plastic (IP66, 4/4X/13)		
	Cat. No.		
1 hole in face	800F-P15		A3T
2 holes in face	800F-P25		A3T
1 hole in bottom	800F-P35		A3T
1 hole in face / 1 hole in bottom	800F-P45		A3T

Discount Group PBN

Bulletin 800F

Control and Indicating Units

Product Selection

Assembled Stations



1-Hole Plastic Enclosure
with E-Stop Operator
Cat. No. 800F-1YP4

1-Hole Plastic Yellow Enclosure, Metric Knockouts						
Contact Configuration	Twist-To Release Operator			Key Release Operator		
	Cat. No.		PGC	Cat. No.		PGC
1 N.C.	800F-1YM1		A3T	800F-1YM4		A3T
1 N.O. / 1 N.C.	800F-1YM2		A3T	800F-1YM5		A3T
2 N.C.	800F-1YM3		A3T	800F-1YM6		A3T

Discount Group PBN

1-Hole Metal Enclosure						
Contact Configuration	Twist-To Release Operator			Key Release Operator		
	Cat. No.		PGC	Cat. No.		PGC
1 N.C.	800F-1MM1		A3T	800F-1MM4		A3T
1 N.O. / 1 N.C.	800F-1MM2		A3T	800F-1MM5		A3T
2 N.C.	800F-1MM3		A3T	800F-1MM6		A3T

Discount Group PBN

1-Hole Plastic Gray Enclosure with Options and 1 NO Contact						
Options				Cat. No.		PGC
Black Push Button - No Text				800F-1PP1		A3T
"0-1" 2-Position Selector Switch				800F-1PP2		A3T

Discount Group PBN

2-Hole Plastic Gray Enclosure with Options and 1 N.O./1 N.C. Contact						
Options				Cat. No.		PGC
START and STOP Push Buttons				800F-2PP1		A3T

Discount Group PBN

Legend Plates *

Emergency Stop Legend Plates

800F – **15** **Y** **E112**
 a *b* *c*



a

Size	
Code	Description
15	60 mm round
16	90 mm round

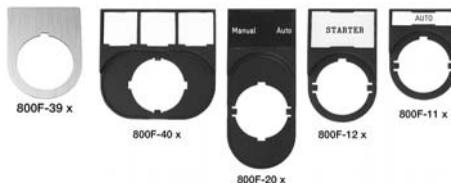
b

Color	
Code	Description
Y	Yellow

c

Text	
Code	Description
E112	EMERGENCY STOP
F112	ARRÊT D'URGENCE
G112	NOT AUS
T112	ARRESTO EMERGENZA
S112	PARADA DE EMERGENCIA
B112	EMERGENCY STOP, ARRÊT D'URGENCE, PARADA DE EMERGENCIA
M112	NOT AUS, ARRESTO EMERGENZA, ARRÊT D'URGENCE
D112	NOODSTOPP
N112	NÖDSTOPP, EMERGENCY STOP
W112	NÖDSTOPP, EMERGENCY STOP
A112	NØSTOP
L112	NEYÐARSTOPP, NEYÐARSTOPP
H112	NÖD-STOP, HÄTÄ-SEIS, NÖD-STOP

Legend Plates and Frames



Type	Description	Cat. No. (Blank)		PGC
30 x 40 mm 2-piece snap-in plate and frame	Black with White Text	800F-11BE100		A3T
30 x 50 mm 2-piece snap-in plate and frame	Black with White Text	800F-12BE100		A3T
30 x 40 mm snap-in plate only	Black with White Text	800F-17BE100		A3T
30 x 50 mm snap-in plate only	Black with White Text	800F-18BE100		A3T

Legend Plate Frame — 2-Piece Snap-In *

Type	Cat. No.		PGC	Type	Cat. No.		PGC
30 x 40 mm	800F-110		A3T	30 x 60 mm	800F-200		A3T
30 x 50 mm	800F-120		A3T	Special multifunction	800F-400		A3T

* Sold only multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.

* Blank legends and frames sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.

Legends with standard text/symbols or custom text are packaged in quantities of 1.

See Publication 800F-SG001_-EN-P for complete product information.

Bulletin 855P

Control and Indicating Units

Product Selection

Panel Mount Sounder



30 mm Panel Mount Sounder



45 mm Panel Mount Sounder



65 mm Panel Mount Sounder

Housing Color	Voltage	Size	Cat. No.		PGC
Black	12...24V AC/DC	30 mm	855P-B30SE22		A3R1
		45 mm	855P-B30ME22		A3R1
		65 mm	855P-B30LE22		A3R1
	240V AC	30 mm	855P-B20SE22		A3R1
		45 mm	855P-B20ME22		A3R1
		65 mm	855P-B20LE22		A3R1

Discount Group RAA

855P –

B

30

SE

22

a

b

c

d

a

Housing Color	
Code	Description
B	Black

b

Voltage	
Code	Description
30	12...24V AC/DC
10	120V AC
20	240V AC

c

Size	
Code	Description
SE	30 mm
ME	45 mm
LE	65 mm

d

Mounting Hole	
Code	Description
22	22.5 mm

Panel Mount Sounder with LED



45 mm Panel Mount Sounder with LED



65 mm Panel Mount Sounder with LED

Housing Color	Voltage	Size	Lens Color	Cat. No.		PGC
Black	24V AC/DC	45 mm	Green	855PC-B24ME322		A3R1
			Red	855PC-B24ME422		A3R1
		65 mm	Green	855PC-B24LE322		A3R1
			Red	855PC-B24LE422		A3R1
	240V AC	45 mm	Green	855PC-B20ME322		A3R1
			Red	855PC-B20ME422		A3R1
		65 mm	Green	855PC-B20LE322		A3R1
			Red	855PC-B20LE422		A3R1

Discount Group RAA

855PC – **B** **12** **ME** **4** **22**
 a *b* *c* *d* *e*

a

Housing Color	
Code	Description
B	Black

b

Voltage	
Code	Description
12	12V AC/DC
24	24V AC/DC
10	120V AC
20	240V AC

c

Size	
Code	Description
ME	45 mm
LE	65 mm

d

Lens Color	
Code	Description
3	Green
4	Red
5	Amber
6	Blue
7	Clear
8	Yellow

e

Mounting Hole	
Code	Description
22	22.5 mm

Bulletin 855P

Control and Indicating Units

Product Selection

Panel Mount Strobe



30 mm Panel Mount Strobe



45 mm Panel Mount Strobe



65 mm Panel Mount Strobe

Housing Color	Voltage	Size	Lens Color	Cat. No.		PGC
Black	24V AC/DC	30 mm	Green	855PS-B24SE322		A3R1
			Red	855PS-B24SE422		A3R1
		45 mm	Green	855PS-B30ME322		A3R1
			Red	855PS-B30ME422		A3R1
		65 mm	Green	855PS-B30LE322		A3R1
			Red	855PS-B30LE422		A3R1

Discount Group RAA

855PS –

B	12	SE	7	22
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>

a

Housing Color	
Code	Description
B	Black

b

Voltage	
Code	Description
12	12V AC/DC
24	24V AC/DC
10	120V AC
20	240V AC
30	12...24V AC/DC

c

Size	
Code	Description
SE	30 mm *
ME	45 mm ‡
LE	65 mm ‡

d

Lens Color	
Code	Description
3	Green
4	Red
5	Amber
6	Blue
7	Clear
8	Yellow

e

Mounting Hole	
Code	Description
22	22.5 mm

* Only available in 12V AC/DC, 24V AC/DC, 120V AC, or 240V AC.
‡ Only available in 12...24V AC/DC, 120V AC, or 240V AC.

Panel Mount Selectable Steady or Flashing LED



30 mm Panel Mount LED



45 mm Panel Mount LED



65 mm Panel Mount LED

Housing Color	Voltage	Size	Lens Color	Cat. No.		PGC
Black	24V AC/DC	30 mm	Green	855PB-B24SE322		A3R1
			Red	855PB-B24SE422		A3R1
		45 mm	Green	855PB-B24ME322		A3R1
			Red	855PB-B24ME422		A3R1
		65 mm	Green	855PB-B24LE322		A3R1
			Red	855PB-B24LE422		A3R1

Discount Group RAA

855PB – **B** **12** **SE** **3** **22**
a b c d e

a

Housing Color	
Code	Description
B	Black

b

Voltage	
Code	Description
12	12V AC/DC
24	24V AC/DC
10	120V AC
20	240V AC

c

Size	
Code	Description
SE	30 mm
ME	45 mm
LE	65 mm

d

Lens Color	
Code	Description
3	Green
4	Red
5	Amber
6	Blue
7	Clear
8	Yellow

e

Mounting Hole	
Code	Description
22	22.5 mm

Accessories

Description	Cat. No.		PGC
30.5 mm to 22.5 mm Hole Size Adapter This adapter allows a 22.5 mm push button operator to be installed in a panel with existing 30.5 mm mounting holes.	800F-AHA1		A3T

Control Tower™ Stack Lights
Light Modules

Voltage	Color	Illumination Type	Black Housing Color		
			Cat. No. *		PGC
24V AC/DC Full Voltage	Green	Steady Incandescent	855T-B24DN3		A3N
		Flashing Incandescent	855T-B24FN3		A3N
		Steady LED	855T-B24TL3		A3N
	Red	Steady Incandescent	855T-B24DN4		A3N
		Flashing Incandescent	855T-B24FN4		A3N
		Strobe	855T-B24BR4		A3N
	Amber	Steady Incandescent	855T-B24DN5		A3N
		Flashing Incandescent	855T-B24FN5		A3N
		Steady LED	855T-B24TL5		A3N
240V AC Full Voltage	Green	Steady Incandescent	855T-B20DN3		A3N
		Flashing Incandescent	855T-B20FN3		A3N
		Steady LED	855T-B20TL3		A3N
	Red	Steady Incandescent	855T-B20DN4		A3N
		Flashing Incandescent	855T-B20FN4		A3N
		Strobe	855T-B20BR4		A3N
	Amber	Steady Incandescent	855T-B20DN5		A3N
		Flashing Incandescent	855T-B20FN5		A3N
		Steady LED	855T-B20TL5		A3N

* Refer to configurator options for additional selections.
Discount Group CTT

855T - B 10 FN 4
a b c d



Red Flashing Incandescent (Black Housing)
240V AC Full Voltage
Cat. No. 855T-B20FN4

a Housing Color		c Module Type		d Lens Color	
Code	Description	Code	Description	Code	Description
B	Black	XN	Steady No-Lamp (Use only with Voltage Code 00)	3	Green
G	Gray	DN	Steady Incandescent	4	Red
		FN	Flashing Incandescent	5	Amber
		TL	Steady LED	6	Blue
		GL	Flashing LED	7	Clear
		BR	Strobe	8	Yellow

b Voltage	
Code	Description
00	0...250V AC/DC (Use only with Module Code XN)
12	12V AC/DC Full Voltage
24	24V AC/DC Full Voltage
10	120V AC Full Voltage
20	240V AC Full Voltage

Single-Circuit Light Modules/with Sound *

Description

All modules contain a selected light option with a sound device that operates simultaneously. The sound module can be switched to pulsing or continuous with a dip switch located inside of the module. Volume is 92...107dB. UL Type 4/4X/13, IP65.

Voltage	Illumination Type	Lamp Color	Black Housing Color	PGC
			Cat. No. ✱	
24V AC/DC Full Voltage	Steady Incandescent	Green	855T-B24DC3	A3N
	Flashing Incandescent		855T-B24FC3	A3N
	Steady LED		855T-B24TC3	A3N
	Steady Incandescent	Red	855T-B24DC4	A3N
	Flashing Incandescent		855T-B24FC4	A3N
	Strobe		855T-B24BC4	A3N
	Steady Incandescent	Amber	855T-B24DC5	A3N
	Flashing Incandescent		855T-B24FC5	A3N
	Steady LED		855T-B24TC5	A3N
240V AC Full Voltage	Steady Incandescent	Green	855T-B20DC3	A3N
	Flashing Incandescent		855T-B20FC3	A3N
	Steady LED		855T-B20TC3	A3N
	Steady Incandescent	Red	855T-B20DC4	A3N
	Flashing Incandescent		855T-B20FC4	A3N
	Strobe		855T-B20BC4	A3N
	Steady Incandescent	Amber	855T-B20DC5	A3N
	Flashing Incandescent		855T-B20FC5	A3N
	Steady LED		855T-B20TC5	A3N

* The light/with sound module uses one circuit in a stack. It can be used with a maximum of four light modules and must be placed in the top position of a stack.

✱ Refer to configurator options for additional selections.

855T – **B** **10** **BC** **4**
 a *b* *c* *d*



*Red Strobe/Sound Combination
Module (Black Housing)
240V AC Full Voltage
Cat. No. 855T-B20BC4*

a

Housing Color	
Code	Description
B	Black
G	Gray

b

Voltage	
Code	Description
12	12V AC/DC Full Voltage
24	24V AC/DC Full Voltage
10	120V AC Full Voltage
20	240V AC Full Voltage

c

Module Type	
Code	Description
DC	Steady Incandescent/with Sound
FC	Flashing Incandescent/with Sound
TC	Steady LED/with Sound
GC	Flashing LED/with Sound
BC	Strobe/with Sound

d

Lens Color	
Code	Description
3	Green
4	Red
5	Amber
6	Blue
7	Clear
8	Yellow

Bulletin 855T

Control and Indicating Units

Product Selection

Transducer Style Sound Modules

UL Type 12, IP54. Volume is 80...103dB.

Voltage	Module Type	Tone	Black Housing Color		
			Cat. No. ‡		PGC
24V AC/DC Full Voltage	Single Tone Transducer Style	Preset as Triangle Tone	855T-B24SA1		A3N
	Dual Tone Transducer Style	Preset as Triangle Tone/Continuous Tone	855T-B24TA1		A3N
240V AC Full Voltage	Single Tone Transducer Style	Preset as Triangle Tone	855T-B20SA1		A3N
	Dual Tone Transducer Style	Preset as Triangle Tone/Continuous Tone	855T-B20TA1		A3N

Discount Group CTT

855T

-

B

a

24

b

SA1

c



Transducer Style Single Tone/Single Circuit
Sound Module (Black Housing)
24V AC/DC Full Voltage
Cat. No. 855T-B24SA1

a

Housing Color	
Code	Description
B	Black
G	Gray

b

Voltage	
Code	Description
12	12V AC/DC Full Voltage
24	24V AC/DC Full Voltage
10	120V AC Full Voltage
20	240V AC Full Voltage

c

Module Type	
Code	Description
SA1	Single Tone Sound Module with 13 different tones *
TA1	Dual Tone sound Module with 15 sets of dual tone combinations *

* This module uses one circuit in a stack. It can be used with maximum of any four light modules and must be placed on top of stack.

※ This module uses two circuits in a stack. It can be used with a maximum of any three light modules and must be placed on top of stack.

‡ Refer to configurator options for additional selections.

Standard Stack Light Bases IP65



Surface Mount —
PG16 Conduit Mount
with Cap (Black)
Cat. No. 855T-BSBC



Vertical Mount Base with
Cap (Gray)
Cat. No. 855T-GVMC



25 cm Aluminum
Pole Mount Base (Gray)
Cat. No. 855T-BPM25



40 cm Pole Mount
Base (Black)
Cat. No. 855T-BPM40

Housing Color	Base Type	With Cap Option		Without Cap Option		PGC
		Cat. No.		Cat. No.		
Black	Surface Mount — PG16 Conduit Mount	855T-BSBC		855T-BSB		A3N
	Vertical Mount	855T-BVMC		855T-BVM		A3N
	10 cm Aluminum Pole Mount	855T-BPM10C		855T-BPM10		A3N
	25 cm Aluminum Pole Mount	855T-BPM25C		855T-BPM25		A3N
	40 cm Aluminum Pole Mount	855T-BPM40C		855T-BPM40		A3N

Discount Group CTT

855T – B SB C
a *b* *c*

a

Housing Color	
Code	Description
B	Black
G	Gray

c

Cap Option	
Code	Description
(blank)	Without cap
C	Cap included

b

Base Type	
Code	Description
SB	Surface Mount — PG16 Conduit Mount
VM	Vertical Mount
PM10	10 cm Aluminum Pole Mount
PM25	25 cm Aluminum Pole Mount
PM40	40 cm Aluminum Pole Mount
PM50	50 cm Aluminum Pole Mount

Bulletin 855T

Control and Indicating Units

Accessories

Accessories for 855T

	Description		Cat. No.		PGC
	Incandescent Lamps				
	12V AC/DC		855T-L12		A3N
	24V AC/DC		855T-L24		A3N
	120V AC		855T-L10		A3N
	240V AC		855T-L20		A3N
		Color			
	LED Lamps for Socket-Mounted Modules		Red	855E-LL24R	A3N
			Green	855E-LL24G	A3N
			Yellow	855E-LL24Y	A3N
	24V AC/DC	Amber	855E-LL24A		A3N
		Blue	855E-LL24B		A3N
		White *	855E-LL24W		A3N
	240V AC	Red	855E-LL20R		A3N
		Green	855E-LL20G		A3N
		Yellow	855E-LL20Y		A3N
		Amber	855E-LL20A		A3N
		Blue	855E-LL20B		A3N
		White *	855E-LL20W		A3N
		Caps		855T-ABCAP	
The cap is installed to the top of the uppermost light module. No cap is needed if the top module is a sound module, or a light/with sound module.					

* White LED lamps are not to be used with a lens option of Clear
Discount Group CTT

Industrial Electronic Horns with Attached Strobe Beacons

Multi-circuit, selectable tone horns with strobe beacon light for use in general signaling applications.



*Range "A" Horn with Beacon
 230V AC 50/60 Hz
 Red Strobe Beacon
 Cat. No. 855H-BCA20ADR4*



*Range "C" Horn with Beacon
 24V DC
 Amber Strobe Beacon
 Cat. No. 855H-BCD24CDR5*



*Range "E" Horn with Beacon
 230V AC 50/60 Hz
 Green Strobe Beacon
 Cat. No. 855H-BCA20EDR3*

Base Color	Sound Output	Voltage	Beacon Lens Color	Cat. No.		PGC
Gray	100 dB max. at 1 meter 2 circuit AC or DC, 1 circuit AC 10 selectable tones	24V DC	Green	855H-BCD24ADR3		A3R
			Red	855H-BCD24ADR4		A3R
			Amber	855H-BCD24ADR5		A3R
		230V 50/60 Hz	Green	855H-BCA20ADR3		A3R
			Red	855H-BCA20ADR4		A3R
			Amber	855H-BCA20ADR5		A3R
	104 dB max. at 1 meter 3 circuit AC or DC 32 selectable tones	24V DC	Green	855H-BCD24BDR3		A3R
			Red	855H-BCD24BDR4		A3R
			Amber	855H-BCD24BDR5		A3R
		230V 50/60 Hz	Green	855H-BCA20BDR3		A3R
			Red	855H-BCA20BDR4		A3R
			Amber	855H-BCA20BDR5		A3R
	112 dB max. at 1 meter 3 circuit AC or DC 32 selectable tones	24V DC	Green	855H-BCD24CDR3		A3R
			Red	855H-BCD24CDR4		A3R
			Amber	855H-BCD24CDR5		A3R
		230V 50/60 Hz	Green	855H-BCA20CDR3		A3R
			Red	855H-BCA20CDR4		A3R
			Amber	855H-BCA20CDR5		A3R
	119 dB max. at 1 meter 3 circuit AC or DC 45 selectable tones	24V DC	Green	855H-BCD24DDR3		A3R
			Red	855H-BCD24DDR4		A3R
			Amber	855H-BCD24DDR5		A3R
		230V 50/60 Hz	Green	855H-BCA20DDR3		A3R
			Red	855H-BCA20DDR4		A3R
			Amber	855H-BCA20DDR5		A3R
	126 dB max. at 1 meter 3 circuit AC or DC 45 selectable tones	24V DC	Green	855H-BCD24EDR3		A3R
			Red	855H-BCD24EDR4		A3R
			Amber	855H-BCD24EDR5		A3R
		230V 50/60 Hz	Green	855H-BCA20EDR3		A3R
			Red	855H-BCA20EDR4		A3R
			Amber	855H-BCA20EDR5		A3R

Discount Group CTT

855H –

BC	D24	C	D	R	5
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>

a

Product Type	
Code	Description
BC	Horn with Beacon

b

Voltage	
Code	Description
D12	12V DC
D24	24V DC
A24	24V AC 50/60 Hz
A10	115V AC 50/60 Hz
A20	230V AC 50/60 Hz

c

Horn Type	
Code	Description
A	100 dB/10 Tone Gray (DC)
	100 dB/10 Tone Gray (AC)
B	104 dB/32 Tone Gray (DC)
	104 dB/32 Tone Gray (AC)
C	112 dB/32 Tone Gray (DC)
	112 dB/32 Tone Gray (AC)
D	119 dB/45 Tone Gray (DC)
	119 dB/45 Tone Gray (AC)
E	126 dB/45 Tone Gray (DC)
	126 dB/45 Tone Gray (AC)

d

Mount Option	
Code	Description
D	Standard Base/Thin-Wall Conduit Feed

e

Illuminated Function	
Code	Description
R	5J Strobe

f

Lens Color	
Code	Description
3	Green
4	Red
5	Amber
6	Blue
7	Clear
8	Yellow

Mini Square Beacons

Mini square 5 Joule strobe beacons for general signaling applications. Bases accept conduit connections in side and back of enclosure.

Base Color	Supply Voltage	Lens Color	Cat. No.		PGC
Gray	24V AC/DC	Green	855B-GMS24R3		A3R
	230V 50/60 Hz		855B-GMS20R3		A3R
	24V AC/DC	Red	855B-GMS24R4		A3R
	230V 50/60 Hz		855B-GMS20R4		A3R
	24V AC/DC	Amber	855B-GMS24R5		A3R
	230V 50/60 Hz		855B-GMS20R5		A3R
	24V AC/DC	Blue	855B-GMS24R6		A3R
	230V 50/60 Hz		855B-GMS20R6		A3R
	24V AC/DC	Clear	855B-GMS24R7		A3R
	230V 50/60 Hz		855B-GMS20R7		A3R
	24V AC/DC	Yellow	855B-GMS24R8		A3R
	230V 50/60 Hz		855B-GMS20R8		A3R

855B – **G** **MS** **24** **R** **4**
a b c d e



*Mini Square Strobe Beacon
24V AC/DC
Red Lens
Cat. No. 855B-GMS24R4*



*Mini Square Strobe Beacon
230V AC 50/60 Hz
Amber Lens
Cat. No. 855B-GMS20R5*

a

Housing/Color	
Code	Description
G	Gray

b

Beacon Type	
Code	Description
MS	Mini-Square Beacon

c

Voltage	
Code	Description
12	12V AC/DC
24	24V AC/DC
10	115V AC 50/60 Hz
20	230V AC 50/60 Hz

d

Illumination Type	
Code	Description
R	5J Strobe

e

Lens Color	
Code	Description
3	Green
4	Red
5	Amber
6	Blue
7	Clear
8	Yellow

Bulletin 855B

Control and Indicating Units

Product Selection

120 mm Beacons



Base Type	Voltage	Function	Lens Color	Cat. No.		PGC
*Surface Mount	24V AC/DC	Steady Halogen	Red	855BM-S24DH4		A3R1
			Green	855BM-S24DH3		A3R1
		Rotating Halogen	Red	855BM-S24RH4		A3R1
			Green	855BM-S24RH3		A3R1
		Strobe	Red	855BM-S24BR4		A3R1
			Green	855BM-S24BR3		A3R1

Discount Group RAA

855BM – S b 10 d 4

a *c* *e*

a

Base Type	
Code	Description
S	Surface Mount *
N	1/2 in NPT Conduit Mount
T	25 mm Tube Mount

b

Network Options	
Code	Description
Blank	Standard

c

Voltage	
Code	Description
12	12V AC/DC
24	24V AC/DC
10	120V AC
20	240V AC

d

Function	
Code	Description
DH	Steady Halogen
FH	Flashing Halogen
RH	Rotating Halogen
BR	Strobe *

e

Lens Color	
Code	Description
3	Green
4	Red
5	Amber
6	Blue
7	Clear
8	Yellow

* Surface Mount Base must be installed with Rough Wall Plate for UL Type 4/4X/13 rating.
* Not available in 12V AC/DC, 120V AC or 240V AC.

160 mm Beacons



Base Type	Voltage	Function	Color	Cat. No.	PGC
Surface Mount*	24V AC/DC	Steady Halogen	Red	855BL-S24DH4	A3R1
			Green	855BL-S24DH3	A3R1
		Rotating Halogen	Red	855BL-S24RH4	A3R1
			Green	855BL-S24RH3	A3R1
		Strobe	Red	855BL-S24BR4	A3R1
			Green	855BL-S24BR3	A3R1
30 mm Tube Mount	24V AC/DC	Steady Halogen	Red	855BL-T24DH4	A3R1
			Green	855BL-T24DH3	A3R1
		Rotating Halogen	Red	855BL-T24RH4	A3R1
			Green	855BL-T24RH3	A3R1
		Strobe	Red	855BL-T24BR4	A3R1
			Green	855BL-T24BR3	A3R1

Discount Group RAA

855BL – **N** **24** **DH** **5**
a *b* *c* *d* *e*

a

Base Type	
Code	Description
S	Surface Mount*
N	1 in NPT Conduit Mount
T	30 mm Tube Mount

d

Function	
Code	Description
DH	Steady Halogen
FH	Flashing Halogen
RH	Rotating Halogen
BR	Strobe*

b

Network Options	
Code	Description
Blank	Standard

e

Lens Color	
Code	Description
3	Green
4	Red
5	Amber
6	Blue
7	Clear
8	Yellow

c

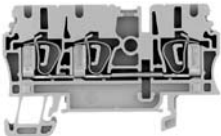
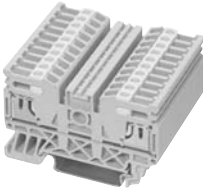
Voltage	
Code	Description
12	12V AC/DC
24	24V AC/DC
10	120V AC
20	240V AC

* Surface Mount Base must be installed with Rough Wall Plate for UL Type 4/4X/13 rating.

* Not available in 12V AC/DC.

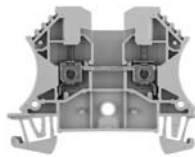
Terminal Blocks
Product Line Overview

Terminal Block Selection

			
Bulletin	1492-J	1492-L	1492-K
Type	Screw Type Terminal Blocks	Spring-Clamp Terminal Blocks	Insulation Displacement (IDC) Terminal Blocks
Features	• Mini terminal blocks for 15 mm DIN rail • Terminals for 35 mm DIN rail • Two level terminal blocks — with diode — in forward bias or in reverse bias — with selectable resistor — with MOV • Two pole thermocouple blocks	• Terminals for 35 mm DIN rail • Single circuit terminal blocks available in 8 colours • Component blocks — with a diode — in forward bias or in reverse bias — Resistor selectable — with MOV	• Reliable and Secure Connection IDC (Insulation Displacement Connection) is a termination technology in which a metal blade pierces the wire insulation; an electrical connection is made through the cutting surface and the wire is held in place by a powerful spring force. Long used in the telecommunications and electronics industries
Approvals	UR, CSA, IEC	UR, CSA, IEC	UL recognized, CSA, IEC, CE
Accessories	Test Plugs/Test Plug Adapters, End Anchors, End Barriers, Partition Plates, Side Jumpers, Centre Jumper Bars, Centre Jumper Covers, Neutral Connecting Blocks, Commoning Bus Bars, Warning Plates, Group Marking Carriers	End Retainers/Group Marking Carriers, Terminal Covers, Centre Jumpers, Centre Jumper Links, QuickClamp Insulation Stops, Marker Card Adapters	Fuse Plugs, Test Plugs, Wire Cutters, Markers, Marker Adapters, End Barriers, Centre Jumpers, Protective Stops
Product Selection	Page 250	Page 253	Page 256

	
Type	1492-Fast Track™ Printer
Description	Uses ink-jet technology to print markers permanently, quickly, and with excellent clarity.
Product Selection	Page 258

Screw Type Terminal Blocks



Feed-Through Terminal Blocks 2.5...4 mm²

Type		2.5 mm²			4 mm²		
		Cat. No.	PQ	PGC	Cat. No.	PQ	PGC
Terminal Block	Gray	1492-J3	100	T1V1	1492-J4	100	T1V1
	Blue	1492-J3-B	100	T1V1	1492-J4-B	100	T1V1

Accessories

Marking Systems: Marker card	1492-M5X12 (144/card)	5		T1V2	1492-M6X12 (120/card)	5		T1V2
End barrier	Gray 1492-EBJ3	50		T1V2	1492-EBJ3	50		T1V2
Screw centre jumper (10 pole)	1492-CJJ5-10	20		T1V2	1492-CJJ6-10	20		T1V2
Screw centre jumper (2 pole)	1492-CJJ5-2	50		T1V2	1492-CJJ6-2	50		T1V2
Partition Plates	1492-EBJ16	20		T1V2	1492-EBJ16	20		T1V2

Discount Group CTT

Feed-Through Terminal Blocks 6...10 mm²

Type		6 mm²			10 mm²		
		Cat. No.	PQ	PGC	Cat. No.	PQ	PGC
Terminal Block	Gray	1492-J6	100	T1V1	1492-J10	50	T1V1
	Blue	1492-J6-B	100	T1V1	1492-J10-B	50	T1V1

Accessories

Marking Systems: Marker card	1492-M7X12 (108/card)	5		T1V2	1492-M7X12 (108/card)	5		T1V2
End barrier	Gray 1492-EBJ3	50		T1V2	1492-EBJ3	50		T1V2
Screw centre jumper (10 pole)	1492-CJJ8-10	20		T1V2	1492-CJJ10-10	20		T1V2
Screw centre jumper (2 pole)	1492-CJJ8-2	50		T1V2	1492-CJJ10-2	50		T1V2
Partition Plates	1492-EBJ16	20		T1V2	1492-EBJ16	20		T1V2

Discount Group CTT

Feed-Through Terminal Blocks 16...35 mm²

Type		16 mm²			35 mm²		
		Cat. No.	PQ	PGC	Cat. No.	PQ	PGC
Terminal Block	Gray	1492-J16	50	T1V1	1492-J35	40	T1V1
	Blue	1492-J16-B	50	T1V1	1492-J35-B	40	T1V1

Accessories

Marking Systems: Marker card	1492-M7X12 (108/card)	5		T1V2	1492-M7X12 (108/card)	5		T1V2
End barrier	Gray 1492-EBJ16	20		T1V2	1492-EBJ16	20		T1V2
Screw centre jumper (10 pole)	1492-CJJ12-10	10		T1V2	1492-CJJ16-10	10		T1V2
Screw centre jumper (2 pole)	1492-CJJ12-2	20		T1V2	1492-CJJ16-2	20		T1V2
Partition Plates	1492-PPJD3	20		T1V2	1492-PPJD3	20		T1V2

PQ = Package Quantity

Discount Group CTT

See Publication 1492-SG008A-EN-P for complete product information.

Screw Type Terminal Blocks



Feed-Through Terminal Blocks 50...70 mm²

Type		50 mm ²				70 mm ²			
		Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Block	Gray	1492-J50	10		T1V1	1492-J70	10		T1V1
	Blue	1492-J50-B	10		T1V1	1492-J70-B	10		T1V1
Accessories									
Marking Systems: Marker card		1492-M7X12 (108/card)	5		T1V2	1492-M7X12 (108/card)	5		T1V2
End barrier		Not Required	—		—	Not Required	—		—
End Anchor									
DIN Rail - Normal Duty		1492-EAHJ35	50		T1V2	1492-EAHJ35	50		T1V2
Jumpers									
Screw centre jumper (4 pole)		1492-CJJ18-4	10		T1V2	1492-CJJ20-4	5		T1V2
Screw centre jumper (3 pole)		1492-CJJ18-3	10		T1V2	1492-CJJ20-3	5		T1V2
Screw centre jumper (2 pole)		1492-CJJ18-2	10		T1V2	1492-CJJ20-2	5		T1V2

PQ = Package Quantity

Discount Group CTT

Other sizes up to 240 mm² available.

See Publication 1492-SG008A-EN-P for complete product information.

Screw Type Terminal Blocks



Feed-Through Ground Blocks 4...6 mm²

Type	4 mm²				6 mm²			
	Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks Green/Yellow	1492-JG4	100		T1V1	1492-JG6	50		T1V1
Accessories								
Marking Systems: Marker card	1492-M6X12 (120/card)	5		T1V2	1492-M7X12 (108/card)	5		T1V2
End Anchors								
DIN Rail - Normal Duty	1492-EAJ35	100		T1V2	1492-EAJ35	100		T1V2
DIN Rail - Heavy Duty	1492-EAHJ35	50		T1V2	1492-EAHJ35	50		T1V2

Discount Group CTT

Feed-Through Ground Blocks 10...16 mm²

Type	10 mm²				16 mm²			
	Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks Green/Yellow	1492-JG10	50		T1V1	1492-JG16	50		T1V1
Accessories								
Marking Systems: Marker card	1492-M7X12 (108/card)	5		T1V2	1492-M7X12 (108/card)	5		T1V2
End Anchors								
DIN Rail - Normal Duty	1492-EAJ35	100		T1V2				
DIN Rail - Heavy Duty	1492-EAHJ35	50		T1V2	1492-EAHJ35	50		T1V2

Discount Group CTT

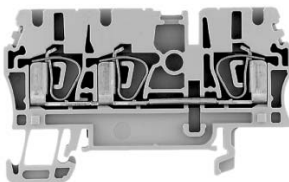
Feed-Through Ground Blocks 35 mm²

Type	35 mm²			
	Cat. No.	PQ		PGC
Terminal Blocks Green/Yellow	1492-JG35	25		T1V1
Accessories				
Marking Systems: Marker card	1492-M7X12 (108/card)	5		T1V2
End Anchors				
DIN Rail - Heavy Duty	1492-EAHJ35	50		T1V2

PQ = Package Quantity
Marker Material see Page 255
Discount Group CTT

See Publication 1492-SG008A-EN-P for complete product information.

Spring-Clamp Terminal Blocks



Feed-Through Terminal Blocks 2.5...4 mm²

Type		2.5 mm ²				4 mm ²			
		Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks	Gray	1492-L3	100		T1V1	1492-L4	50		T1V1
	Blue	1492-L3-B	100		T1V1	1492-L4-B	50		T1V1
Accessories									
End barrier	Gray	1492-EBL3	50		T1V2	1492-EBL3	50		T1V2
Centre jumper with Plug (10 pole)		1492-CJK5-10	20		T1T	1492-CJK6-10	20		T1T
Centre jumper with Plug (2 pole)		1492-CJK5-2	60		T1T	1492-CJK6-2	60		T1T
Reducing Sleeves 0.25...0.5 mm ² (#22...#20 AWG)	Gray	1492-PSL3-5	100		T1V2	1492-PSL4-5	100		T1V2
Marking Systems: Marker card		1492-M5X10 (144/card)	5		T1V2	1492-M6X10 (120/card)	5		T1V2

Discount Group CTT

Feed-Through Terminal Blocks 6...10 mm²

Type		6 mm ²				10 mm ²			
		Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks	Gray	1492-L6	50		T1V1	1492-L10	25		T1V1
	Blue	1492-L6-B	50		T1V1	1492-L10-B	25		T1V1
Accessories									
End barrier	Gray	1492-EBL6	50		T1V2	1492-EBL10	20		T1V2
Centre jumper with Plug (2 pole)		1492-CJL8-2	60		T1V2	1492-CJL10-2	25		T1V2
Marking Systems: Marker card		1492-M6X12 (120/card)	5		T1V2	1492-M6X12 (120/card)	5		T1V2

Discount Group CTT

Feed-Through Terminal Blocks 16 mm²

Type		16 mm ²			
		Cat. No.	PQ		PGC
Terminal Blocks	Gray	1492-L16	25		T1V1
	Blue	1492-L16-B	25		T1V1
Accessories					
End barrier	Gray	1492-EBL16	20		T1V2
Marking Systems: Marker card		1492-M7X12 (108/card)	5		T1V2

PQ = Package Quantity

Discount Group CTT

Bulletin 1492-L

Terminal Blocks

Product Selection

Spring-Clamp Terminal Blocks

Feed-Through Ground Blocks 2.5...4 mm²

Type		2.5 mm²				4 mm²			
		Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks	Green/Yellow	1492-LG3	100		T1V1	1492-LG4	50		T1V1
Accessories									
End barrier	Yellow	1492-EBL3-Y	50		T1V2	1492-EBL4-Y	50		T1V2
Reducing Sleeves 0.25...0.5 mm² (#22...#20 AWG)	Gray	1492-PSL3-5	100		T1V2	1492-PSL4-5	100		T1V2
Marking Systems: Marker card		1492-M5X10 (144/card)	5		T1V2	1492-M5X10 (120/card)	5		T1V2

Discount Group CTT

Feed-Through Ground Blocks 6...10 mm²

Type		6 mm²				10 mm²			
		Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks	Green/Yellow	1492-LG6	50		T1V1	1492-LG10	25		T1V1
Accessories									
End barrier	Yellow	1492-EBL6-Y	50		T1V2	1492-EBL10-Y	20		T1V2
Marking Systems: Marker card		1492-M6X12 (120/card)	5		T1V2	1492-M6X12 (120/card)	5		T1V2

Discount Group CTT

Feed-Through Ground Blocks 16 mm²

Type		16 mm²			
		Cat. No.	PQ		PGC
Terminal Blocks	Green/Yellow	1492-LG16	25		T1V1
Accessories					
End barrier	Yellow	1492-EBL16-Y	20		T1V2
Marking Systems: Marker card		1492-M7X12 (108/card)	5		T1V2

PQ = Package Quantity
Discount Group CTT

See Publication 1492-SG008A-EN-P for complete product information.

Spring-Clamp Terminal Blocks



Single Circuit Fuse Terminal Block 4 mm²

Type		4 mm ²			
		Cat. No.	PQ		PGC
Blown Fuse Indication	Black with 10...57V LED	1492-RFB424	25		T1K
	Black with 85...264V Glow Lamp	1492-RFB4250	25		T1K
Accessories					
Spring clamp-End Anchor		1492-ERL35	20		T1V2
Marking Systems: Marker card		1492-MS6X9 (80/card)	5		T1V2

Discount Group CTT

See Publication 1492-SG008A-EN-P for complete product information.

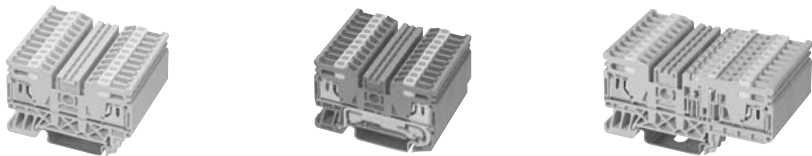
Marker cards for 1492-J, 1492-L

	For Type	Labels per Card	Color	Cat. No.	PQ		PGC
	1492-J, -L	144	White	1492-M5X10	5		T1V2
	1492-J, -L	144	White	1492-M5X12			T1V2
	1492-J, -L	120	White	1492-M6X10			T1V2
	1492-J, -L	120	White	1492-M6X12			T1V2
	1492-J, -L	108	White	1492-M7X12			T1V2

PQ = Package Quantity

Discount Group CTT

Insulation Displacement Terminal Blocks



Single Circuit Feed-Through 1.5...2.5 mm²

Type		1.5 mm ²				2.5 mm ²			
		Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks	Gray	1492-K2	50		T1T	1492-K3	50		T1T
	Blue	1492-K2-B	50		T1T	1492-K3-B	50		T1T
Accessories									
End Barriers	Gray	1492-EBK2	50		T1T	1492-EBK3	50		T1T
	Blue	1492-EBK2-B	50		T1T	1492-EBK3-B	50		T1T
Centre jumper		1492-CJK5-10	20		T1T	1492-CJK6-10	20		T1T
Marking Systems: Marker card		1492-SM5X10 (144/card)	5		T1J	1492-SM6X10 (120/card)	5		T1J

Discount Group CTT

Single Circuit Grounding 1.5...2.5 mm²

Type		1.5 mm ²				2.5 mm ²			
		Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks	Green/Yellow w	1492-KG2	50		T1T	1492-KG3	50		T1T
Accessories									
End Barriers		1492-EBK2-Y	50		T1T	1492-EBK3-Y	50		T1T
Marking Systems: Marker card		1492-SM5X10 (144/card)	5		T1J	1492-SM6X10 (120/card)	5		T1J

Discount Group CTT

Knife Disconnect IDC Terminal Blocks 1.5...2.5 mm²

Type		1.5 mm ²				2.5 mm ²			
		Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks	Gray	1492-K2KD	50		T1T	1492-K3KD	50		T1T
Accessories									
End Barriers		1492-EBK2T	50		T1T	1492-EBK3T	50		T1T
Centre jumper		1492-CJK5-10	20		T1T	1492-CJK6-10	20		T1T
Marking Systems: Marker card		1492-SM5X10 (144/card)	5		T1J	1492-SM6X10 (120/card)	5		T1J

PQ = Package Quantity
Discount Group CTT

See Publication 1492-SG008A-EN-P for complete product information.

Insulation Displacement Terminal Blocks

Hybrid (IDC/ Screw) Feedthrough Terminal Blocks 1.5...2.5 mm²



Type		1.5 mm ²				2.5 mm ²			
		Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks	Gray	1492-KW2	50		T1T	1492-KW3	50		T1T
	Blue	1492-KW2-B	50		T1T	1492-KW3-B	50		T1T
Accessories									
End Barriers	Gray	1492-EBK2	50		T1T	1492-EBK3	50		T1T
	Blue	1492-EBK2-B	50		T1T	1492-EBK3-B	50		T1T
Centre jumper		1492-CJK5-10	20		T1T	1492-CJK6-10	20		T1T
Marking Systems: Marker card		1492-SM5X10 (144/card)	5		T1J	1492-SM6X10 (120/card)	5		T1J

Discount Group CTT

Hybrid (IDC/ Screw) Ground Terminal Blocks 1.5...2.5 mm²

Type		1.5 mm ²				2.5 mm ²			
		Cat. No.	PQ		PGC	Cat. No.	PQ		PGC
Terminal Blocks	Green/Yellow w	1492-KWG2	50		T1T	1492-KWG3	50		T1T
Accessories									
End Barriers	Yellow	1492-EBK2-Y	50		T1T	1492-EBK3-Y	50		T1T
Marking Systems: Marker card		1492-SM5X10 (144/card)	5		T1J	1492-SM6X10 (120/card)	5		T1J

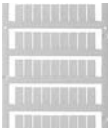
Discount Group CTT

Accessories for 1492-K

Description	Cat. No.	PQ		PGC
End Anchor for Hut (DIN) rail 35 mm	1492-ER35	50		T1L
End Anchor for Hut (DIN) rail 45 mm	1492-EAH35	10		T1J
Protective Stops	1492-PSK2	100		T1T

Discount Group CTT

Marker card for 1492-K

	For Type	Labels per Card	Color	Cat. No.	PQ		PGC
	1492-K	144	White	1492-SM5X10	5		T1J
	1492-K	120	White	1492-SM6X10			T1J

PQ = Package Quantity
Discount Group CTT

Terminal Blocks

Accessories

IEC Marking System

Computer System Requirements

- Personal computer with at least an 80486 processor
- Microsoft® Windows® 98 or later
- CD driver
- Hard drive with at least 18 MB space available
- Windows®-compatible mouse
- Screen resolution of 640 x 480, 800 x 600 or 1024 x 768
- One open parallel communication port

	Description	Cat. No.		PGC
	Markers — Used for terminal identification	1492-PRTKIT220V		n/a
	CD used to install AB Print software	1492-PRTSOFT		n/a
	Ink Cartridge used with the printer to hold the permanent ink	1492-PRTINKCART		n/a
	Cleaning Cartridge used with the printer to clean the printer head	1492-PRTCLEAN		n/a
	Marker Carrier feeds multiple marker cards into the printer	1492-PRTMARKCAR		n/a

Discount Group NT

Programmable Controllers

Product Line Overview

			
Bulletin	1761	1763	1762
Type	MicroLogix 1000	MicroLogix 1100	MicroLogix 1200
Memory			
User Program/Data Space	1K	4K / 4K	4K / 2K (max) configurable
Data Logging / Recipe Storage	—	128k bytes / 64k bytes	—
EEPROM Back-up	✓	✓	✓
Battery Back-up	—	✓	✓
Back-up Memory Module	Only through hand-held programmer	✓	✓
I/O			
Up to 32	Embedded	Embedded w/local 1762 I/O	Embedded
Up to 128	—	Embedded w/local 1762 I/O up to 80 I/O	Embedded w/Loc. Exp.
Additional Functionality			
Analog	Embedded	Embedded 2 Analog Inputs 0...10V / Exp.	Expansion
Trim Potentiometers	—	2 (Digital)	2
PID	—	✓	✓
High-Speed I/O	1 @ 6.6 kHz	4 @ 20 kHz	4 @ 20 kHz
Real Time Clock	—	Embedded	✓
Simple Motion: Pulse Width Modulated/Pulse Train Outp.	—	2 @ 20 kHz	1 @ 20 kHz
Single Axis Servo Control	—	Through emb. PTO	Through emb. PTO
Data Access Tool	—	Through emb. LCD Display / Key	—
Data Logging	—	128k bytes	—
Recipe Storage	—	64k bytes out of the 128k bytes Data Logging	—
Floating Point Math	—	✓	✓
Programming Software			
Windows® - RSLogix 500 & RSLogix 500 Starter	✓	✓	✓
Communications			
RS-232 Ports	(1) - 8-pin Mini DIN	RS 232 / RS 485 Combo (1) - 8-pin Mini DIN (1) RJ45 EtherNet Port	(1) - 8-pin Mini DIN (1) - 8-pin Mini DIN (R)
DeviceNet Peer to Peer/Slave	w/ 1761-NET-DNI	w/ 1761-NET-DNI	w/ 1761-NET-DNI
Ethernet	w/ 1761-NET-ENI	Built-in 10/100 Mbps EtherNet/IP Port	w/ 1761-NET-ENI
DH-485	w/ 1761-NET-AIC	w/ 1761-NET-AIC	w/ 1761-NET-AIC
DF1 Half-Duplex Master/Slave	Slave only	✓	✓
SCADA RTU - Modbus RTU	—	Master/Slave	Master/Slave
ASCII	—	✓	✓
Operating Power			
120/240V AC / 24V DC	✓	✓	✓
Standards/Approvals	UL, CSA or C-UL, CE, Class I Div. 2		
Product Selection	Page 263	Page 264	Page 265

Programmable Controllers

Product Line Overview



Bulletin	1764-LSP	1764-LRP
Type	MicroLogix 1500	
Memory		
User Program/Data Space	3.6K / 4K (max) configurable	10K / 4K (max) configurable
Data Logging / Recipe Storage	Recipe only (User Program)	48K bytes
Battery Back-up	✓	✓
Back-up Memory Module	✓	✓
I/O		
Up to 32	Embedded w/Local Expansion	
Up to 128	Embedded w/Local Expansion	
Up to 256	Embedded w/Local Expansion	
> 256	Local & Networked Expansion using 1769-SDN	
Additional Functionality		
Analog	Expansion	
Trim Potentiometers	2	2
PID	✓	✓
High-Speed I/O	4 (AC Version) or 8 (DC) @ 20 kHz	
Real Time Clock	✓	✓
Simple Motion: Pulse Width Modulated/Pulse Train Outp.	2 @ 20 kHz	
Single Axis Servo Control	Through embedded PTO	
Data Access Tool	✓	✓
Data Logging	—	Up to 48K bytes
Recipe Storage	Uses User Program Memory	Program Memory or 48K Data Logging Memory
Floating Point Math	✓	✓
Programming Software		
Windows® - RSLogix 500 & RSLogix 500 Starter	✓	✓
Communications		
RS-232 Ports	(1) - 8-pin Mini DIN	(1) - 8-pin Mini DIN & (1) - isolated 9 pin D-shell
DeviceNet Peer to Peer/Slave	w/ 1761-NET-DNI or 1769-SDN	
DeviceNet Scanner	w/ 1769-SDN	
Ethernet	w/ 1761-NET-ENI	
DH-485	w/ 1761-NET-AIC	
DF1 Half-Duplex Master/Slave	✓	✓
SCADA RTU - Modbus RTU	Master/Slave	
ASCII	✓	✓
Operating Power		
120/240V AC / 24V DC	✓	✓
Standards/Approvals		
UL, CSA or C-UL, CE, Class I Div. 2		
Product Selection		
Page 267		Page 267

Programmable Controllers

Product Line Overview

			
Bulletin	1769	1790D	1791D
Type	Compact I/O Expansion I/O for MicroLogix 1500	CompactBlock LDX Distributed I/O	CompactBlock I/O for DeviceNet
Features	- Unique, compact, modular, rackless design allowing front insertion and removal of the modules on DIN rail with easy to operate latches - Easy change-out of modules due to unique patented bus connector - Removable terminal blocks with finger-safe covers - Individual point diagnostic LED's for ease of troubleshooting - Software keying to prevent incorrect placing of module within the system - DeviceNet network adapter supporting AutoBaud and Auto Device replacement - ODVA conformance ensures high level of interoperability with other DeviceNet products - DeviceNet scanner for cost effective OEM solutions	- Wide breadth of I/O types that can handle diverse applications - Expandable up to 3 digital expansion blocks (64 I/O's) - Universal sink/source inputs reduces the number of components to stock and allows flexibility of input types - Selectable termination types (D-shell or screw) - Easy to connect and configure using modular EDS files - ODVA conformance ensures high level of interoperability with other DeviceNet products - Analog DeviceNet bases for current, voltage, PT100 and thermocouple execution - CompactBlock LDX I/O are also available for other network 24V DC, 120V AC and relay discrete blocks with built-in DeviceNet adapter - Cyclic and change-of-state messaging increases network throughput, increases productivity - Auto baud rate detection	10 - 30V DC device power accommodates a broad range of applications - IEC/NEMA Type 3+ inputs offers widest range of compatible sensors - Removable terminal blocks reduces maintenance cost - Output short-circuit protection - Hardware watchdog function - Includes DeviceLogix Smart Component Technology enabling localized, simple control functions - Compact size of I/O block - Autobaud detection - Rotary node address switches - Selectable input filters - Change-of-state operation - ODVA conformance ensures high level of interoperability with other DeviceNet products - RIO and other network bases are also available
I/O	Wide selection of I/O's Up to 30 modules per node	Up to 64 I/O with discrete bases and up to 36 I/O with analog bases	Up to 32 I/O with expansion block
Analog Inputs/Outputs	4/2/6 (Voltage & current, RTD, Thermocouple)	4 & 2 (Voltage/Current/RTD/ Thermocouple)	4/2 (Voltage/Current)
Software	RSNetworx for DeviceNet	RSNetworx for DeviceNet	RSNetworx for DeviceNet
Mounting	Horizontal Panel or DIN rail mounted	Horizontal / Vertical Panel or DIN rail mounted	Horizontal / Vertical Panel or DIN rail mounted
Operating Power	120V AC / 240V AC / 24V DC	120V AC / 24V DC	24V DC
Standards/Approvals	UL/cUL Listed, CE certified	UL/cUL Listed, CE certified	UL/cUL Listed, CE certified
Product Selection	Page 269	Page 275	Page 278

Programmable Controllers

Product Line Overview

		
Bulletin	1760	1760
Type	Pico Controllers	Pico GFX-70 Controllers
Features	• Simplicity, performs basic PLC functions, such as logic, timing and counting • Any user can write simple programs or make data adjustments • Intelligent relay replacement, Changing system functions is a simple matter of reprogramming Pico. No rewiring necessary! • Real-time clock functionality • Analog inputs • Programs are stored in non-volatile EEPROM memory • Commissioning status display • View the real-time analysis of the logic circuit • Relay outputs, reduce panel space and system cost with high current relay outputs that eliminate interposing relays	The Pico GFX-70 multi-function system features an integrated control device and its graphical HMI displays allows users to create their own screens or to use elements out of an existing library. Beside all of the Pico controllers well known functions the following additional features are available: • Expandable up to 272 I/O points with the use of the existing Pico expansion I/O modules and the interconnecting peer to peer controller network up to 8 controllers • Analog and digital expansion I/O modules • Panel or DIN rail mounted (only controller) • 70 mm graphic display • Control with P, PI and PID functionality • Simple, tool-free installation with 22.5 mm mounting holes (same diameter as for standard push buttons) • Backlit display and push buttons for easy readability
Memory	EEPROM	EEPROM
I/O	Up to 38 I/O with expansion module	Up to 36 I/O local with expansion module
Network	—	Up to 8 processors can be intraconnected with Pico-Link
Analog Inputs/Outputs	2 x 0...10V (Input)	4 x 0...10V (Input) 1 x 0...10V (Output)
Real Time Clock	✓	✓
Programming Software	PicoSoft™ configuration software or via the LCD and Keypad	PicoSoft Pro Programming Software
Mounting	DIN-rail or panel mounted	DIN-rail or panel mounted
Operating Power	120V/240V AC/12V and 24V DC	120V/240V AC and 24V DC
Standards/Approvals	UL/cUL Listed, CE certified	UL/cUL Listed, CE certified
Product Selection	Page 280	Page 282

MicroLogix 1000

- Memory Size and Type:
1 K EEPROM (approximately 737 instruction words, 437 data words)
- Data Elements:
512 internal bits, 40 timers, 32 counters, 16 control files, 105 integer files, 33 diagnostic status
- Throughput:
1.5 ms (for a typical 500-instruction program)



Controller Power and I/O Configuration

Line Power	Inputs	Outputs	High Speed I/O	Cat. No.		PGC
120/240V ac	(10) 120V ac	(6) Relay	N/A	1761-L16AWA		MC1
120/240V ac	(20) 120V ac	(12) Relay	N/A	1761-L32AWA		MC1
120/240V ac	(12) 120V ac, (4) Analog	(8) Relay, (1) Analog	N/A	1761-L20AWA-5A		MC1
120/240V ac	(6) 24V dc	(4) Relay	(1) 6.6 kHz input	1761-L10BWA		MC5
120/240V ac	(10) 24V dc	(6) Relay	(1) 6.6 kHz input	1761-L16BWA		MC1
120/240V ac	(12) 24V dc, (4) Analog	(8) Relay, (1) Analog	(1) 6.6 kHz input	1761-L20BWA-5A		MC1
120/240V ac	(20) 24V dc	(12) Relay	(1) 6.6 kHz input	1761-L32BWA		MC1
120/240V ac	(20) 120V ac	(10) Triac, (2) Relay*	N/A	1761-L32AAA		MC1
120/240V ac	(10) 24V ac or dc	(6) Relay	N/A	1761-L16NWA		MC1
24V dc	(6) 24V dc	(4) Relay	(1) 6.6 kHz input	1761-L10BWB		MC5
24V dc	(10) 24V dc	(6) Relay	(1) 6.6 kHz input	1761-L16BWB		MC1
24V dc	(12) 24V dc, (4) Analog	(8) Relay, (1) Analog	(1) 6.6 kHz input	1761-L20BWB-5A		MC1
24V dc	(20) 24V dc	(12) Relay	(1) 6.6 kHz input	1761-L32BWB		MC1
24V dc	(6) 24V dc	(2) MOSFET sourcing, (2) Relay*	(1) 6.6 kHz input	1761-L10BXB		MC5
24V dc	(10) 24V dc	(4) MOSFET sourcing, (2) Relay*	(1) 6.6 kHz input	1761-L16BBB		MC1
24V dc	(20) 24V dc	(10) MOSFET sourcing, (2) Relay*	(1) 6.6 kHz input	1761-L32BBB		MC1
24V dc	(10) 24V ac or dc	(6) Relay	N/A	1761-L16NWB		MC1

* Two isolated relays per unit.

Discount Group MC

Hand-Held Programmer and Connecting Cable

The HHP allows you to create, edit, monitor, and troubleshoot Instruction List (Boolean) programs for your MicroLogix 1000 controller. This device also allows you to store programs and to transfer programs through the use of an optional removable memory module.

Description	Cat. No.		PGC
Hand-Held Programmer	1761-HHP-B30		MC1
Connecting Cable, 2 m	1761-CBL-HM02		MC1

Discount Group MC

Programming software, network interface devices and cables see page 273.

See Publication 1761-SO001_-US-P, Publication 1761-TD001_-EN-P for complete product information.

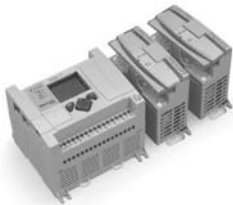
Bulletin 1763

Programmable Controllers

Product Selection

MicroLogix 1100

- Memory Size and Type:
 - 8K flash memory: 4K user program, 4K user data
 - 64K recipe memory out of the 128K data logging
- Embedded LCD display with navigation keys and embedded RTC:
 - 4 x 12 Text display
- 2 Communication port:
 - 1 RS232/485 port
 - 1 RJ45 EtherNet IP port for peer to peer messaging
- Throughput:
 - 2 ms (for a typical 1 K word user program)
- Online Editing / Programming
- 2 Analog Inputs 0-10 Volts, 10 bit embedded
- Expandable up to 80 I/O's with 1762 I/O modules



Controller Power and I/O Configuration

Line Power	Inputs	Outputs	High Speed I/O	Comm. Ports	Cat. No.		PGC
120/240V AC	(10) 120V AC	(6) Relay	N/A	2	1763-L16AWA		MC7
120/240V AC	(6) Standard 24V DC (4) Fast 24V DC	(6) Relay	(4) 20 kHz Inputs	2	1763-L16BWA		MC7
24V DC	(6) Standard 24V DC (4) Fast 24V DC	(2) Relay (2) Standard 24V DC (2) Fast 24V DC FET	(4) 20 kHz Inputs (2) 20 kHz Outputs	2	1763-L16BBB		MC7

Discount Group MC

Memory Module

- User program and data back-up
- Program compare
- Data file protection
- Memory module write protection
- Removal/insertion under power



Description	Cat. No.		PGC
MicroLogix 1100 Memory Module	1763-MM1		MC7

Discount Group MC

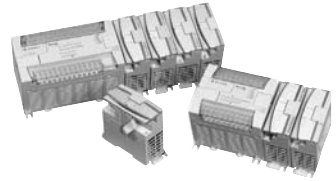
Network Cable for MicroLogix 1100

Description	Connectors	Length	Cat. No.		PGC
Used on Communication Channel 0 to provide daisy chain connection for DH-485 and Modbus RTU Master/Slave networks	8-pin Mini DIN to DH-485 Phoenix Connector	0.5 m	1763-NC01		MC7

Discount Group MC

MicroLogix 1200

- Memory Size and Type:
6K flash memory: 4K user program, 2K user data
- Data Elements:
Configurable, user-defined file structure, 2K max. data size
- Throughput:
2 ms (for a typical 1K word user program)



Controller Power and I/O Configuration

Line Power	Inputs	Outputs	High Speed I/O	Comm. Ports	Cat. No.		PGC
120/240V ac	(14) 120V ac	(10) Relay	N/A	1	1762-L24AWA		MC3
				2	1762-L24AWAR		MC3
120/240V ac	(24) 120V ac	(16) Relay	N/A	1	1762-L40AWA		MC3
				2	1762-L40AWAR		MC3
120/240V ac	(10) Standard 24V dc (4) Fast 24V dc	(10) Relay	(4) 20 kHz input	1	1762-L24BWA		MC3
				2	1762-L24BWAR		MC3
120/240V ac	(20) Standard 24V dc (4) Fast 24V dc	(16) Relay	(4) 20 kHz input	1	1762-L40BWA		MC3
				2	1762-L40BWAR		MC3
24V dc	(10) Standard 24V dc (4) Fast 24V dc	(5) Relay (4) Standard 24V dc FET (1) Fast 24V dc FET	(4) 20 kHz input (1) 20 kHz output	1	1762-L24BXB		MC3
				2	1762-L24BXBR		MC3
24V dc	(20) Standard 24V dc (4) Fast 24V dc	(8) Relay (7) Standard 24V dc FET (1) Fast 24V dc FET	(4) 20 kHz input (1) 20 kHz output	1	1762-L40BXB		MC3
				2	1762-L40BXBR		MC3

Discount Group MC

Memory and Real-Time Clock Modules

- User program and data back-up
- Program compare
- Data file protection
- Memory module write protection
- Removal/insertion under power
- Memory back-up and real-time clock combination module



Description	Cat. No.		PGC
Memory Module	1762-MM1		MC3
Memory and Real-Time Clock Module	1762-MM1RTC		MC3
Real-Time Clock Module	1762-RTC		MC3

Discount Group MC

Bulletin 1762

Programmable Controllers

Product Selection

Expansion I/O Modules

Description	Cat. No.		PGC
Digital:			
8-Point 120V ac Input Module	1762-IA8		MC3
8-Point Sink/Source 24V dc Input Module	1762-IQ8		MC3
16-Point Sink/Source 24V dc Input Module	1762-IQ16		MC3
8-Point 120/240V ac Triac Output Module	1762-OA8		MC3
8-Point Sourcing 24V dc Output Module	1762-OB8		MC3
16-Point Sourcing 24V dc Output Module	1762-OB16		MC3
8-Point AC/DC Relay Output Module	1762-OW8		MC3
16-Point AC/DC Relay Output Module	1762-OW16		MC3
6-Point Isolated AC/DC Relay Output Module	1762-OX6I		MC3
Analog:			
4-Channel Voltage/Current Analog Input Module	1762-IF4		MC3
4-Channel Voltage/Current Analog Output Module	1762-OF4		MC3
Combination 2-Channel Input 2-Channel Output Voltage/Current Analog Module	1762-IF2OF2		MC3
Temperature:			
4-Channel RTD/Resistance Input Module	1762-IR4		MC3
4-Channel Thermocouple/mV Input Module	1762-IT4		MC3

Discount Group MC

Programming software, network interface devices and cables see page 273.

See publication 1762-SO001_-US-P or 1762-TD001_-EN-P for complete product information.

MicroLogix 1500

- **Memory Size and Type:**
 If using 1764-LSP processor: 7K user memory (total user program plus data). If using 1764-LRP processor: 14K user memory (total user program plus data)
- **Data Elements:**
 Configurable, user-defined file structure, 4K max. data size
- **Throughput:**
 1 ms (for a typical 1K word user program)
- **Base Unit with embedded I/O and Communication Port**
 RS 232 (8-pin Mini DIN)



Base Units: Controller Power and I/O Configuration

Line Power	Inputs	Outputs *	High Speed I/O	Cat. No.		PGC
120/240V ac	(12) 120V ac	(12) Relay	N/A	1764-24AWA		MC2
120/240V ac	(8) Standard 24V dc (4) Fast 24V dc	(12) Relay	(4) 20 kHz input	1764-24BWA		MC2
24V dc	(8) Standard 24V dc (8) Fast 24V dc	(6) Relay (4) Standard 24V dc FET (2) Fast 24V dc FET	(8) 20 kHz input (2) 20 kHz output	1764-28BXB		MC2

* Two isolated relays per unit
 Discount Group MC

Processors

Description	Cat. No.		PGC
Processor Unit with 14K User and 48K Data Logging Memory and 2nd Comms port (9-pin D-Shell)	1764-LRP		MC2
Processor Unit with 7K User Memory	1764-LSP		MC2

Discount Group MC

Bulletin 1764

Programmable Controllers

Product Selection

Memory and Real-Time Clock Modules

- User programs and data to be stored as backup
- Transport programs for use with other controllers
- Safety/security for press control and other critical applications
- Auto recovery, through a power cycle, after a controller fault
- Comparison of programs
- Data file and memory module write protection



Description	Memory size		Cat. No.		PGC
Real-Time Clock	not applicable		1764-RTC		MC2
Memory Module	8K		1764-MM1		MC2
Memory Module and Real-Time Clock	8K		1764-MM1RTC		MC2
Memory Module	16K	*	1764-MM2		MC2
Memory Module and Real-Time Clock	16K	*	1764-MM2RTC		MC2

* For the 1764-LRP processor to support larger program and data requirements.
Discount Group MC

Data Access Tool

Description	Cat. No.		PGC
 • Direct access to 48 bit elements • Direct access to 48 integer elements • Two function keys • Display of controller faults • Removal/Insertion under Power	1764-DAT		MC2

Discount Group MC

Programming software, network interface devices and cables see page 273

See publication 1764-SO001_-US-P or 1764-TD001_-EN-P for complete product information.

Compact I/O Expansion I/O for MicroLogix 1500



Expansion I/O Modules for MicroLogix 1500

Compact Digital AC Input Modules*

Number of Inputs	Voltage Category	Commons per Module	Bus Current Draw (max.)	Cat. No.		PGC
8	100 or 120V ac	8	90 mA at 5V DC	1769-IA8I		CX3
16		1	115 mA at 5V DC	1769-IA16		CX3
12	200 or 240V ac	1	100 mA at 5V DC	1769-IM12		CX3

Discount Group CX

Compact Digital AC Output Modules*

Number of Outputs	Voltage Category	Commons per Module	Max. Current per Output	Max. Current per Module	Bus Current Draw (max.)	Cat. No.		PGC
8	100...240V ac	2	0.25 A at 60 °C 0.5 A at 30 °C	2.0 A at 60 °C 4.0 A at 30 °C	145 mA at 5V DC	1769-OA8		CX3
16				4.0 A at 60 °C 8.0 A at 30 °C	225 mA at 5V DC	1769-OA16		CX3

Discount Group MC

Compact Digital DC Input Modules*

Number of Inputs	Voltage Category/Type, Input	Commons per Module	Bus Current Draw (max.)	Cat. No.		PGC
16	24V dc, sinking or sourcing	2	115 mA at 5V DC	1769-IQ16		CX3
16 high-speed		2	100 mA at 5V DC	1769-IQ16F		CX3
32		4	170 mA at 5V DC	1769-IQ32		CX3

Discount Group CX

Compact Digital DC Output Modules*

Number of Outputs	Voltage Category/ Type, Output	Commons per Module	Max. Current per Output	Max. Current per Module	Bus Current Draw (max.)	Cat. No.		PGC
8	24V dc, sourcing	2	0.5 A @ 60 °C 1.0 A @ 30 °C	2.0 A @ 60 °C	145 mA at 5V DC	1769-OB8		CX3
16		1		4.0 A @ 60 °C	200 mA at 5V DC	1769-OB16		CX3
16		1		8.0 A @ 30 °C	160 mA at 5V DC	1769-OB16P		CX3
32	24V dc, sinking	2	0.5 A @ 60 °C 1.0 A @ 30 °C	8.0 A @ 60 °C 16.0 A @ 30 °C	300 mA at 5V DC	1769-OB32		CX3
16		1		4.0 A @ 60 °C 8.0 A @ 30 °C	200 mA at 5V DC	1769-OV16		CX3

* Power Supply Distance Rating = 8 . The maximum distance an I/O module may be located from the power supply is 8 modules. (Exception for 1769-OB32 the Power Supply Distance Rating = 6)

Discount Group CX

Compact I/O Expansion I/O for MicroLogix 1500, continued

Compact Relay Output Modules *

Number of Outputs	Voltage Category/T type, Output	Max. Current per Output	Max. Current per Module	Bus Current Draw (max.)		Cat. No.		PGC
				at 5V DC	at 24V DC			
8	5...265V ac 5...125V dc	0.5 A @ 60 °C	16 A	125 mA	100 mA	1769-OW8		CX3
8		1.0 A @ 30 °C	16 A	125 mA	100 mA	1769-OW8I		CX3
16		2.5 A	20 A	205 mA	180 mA	1769-OW16		CX3

Discount Group CX

Combination Input and Output Modules *

Description	Voltage Category	Number of I/O	Commons per Module	Max. Current per Output	Max. Current per Module	Bus Current Draw (max.)		Cat. No.		PGC
						at 5V DC	at 24V DC			
DC (sink/source) inputs	24V DC	6 inputs	1	N/A	N/A	105 mA	50 mA	1769-IQ6XOW4		CX3
AC/DC Relay outputs	5...265V AC 5...125V DC	4 outputs	1	2.5 A	8 A					

Discount Group CX

Analog I/O Modules *

Description	Input Channels per Module	Output Channels per Module	Bus Current Draw (max.)		Cat. No.		PGC
			at 5V DC	at 24V DC			
14 bit current/voltage input module	4 differential or single-ended	N/A	105 mA	60 mA*	1769-IF4		CX3
	8 differential or single-ended	N/A	120 mA	70 mA	1769-IF8		CX3
14 bit current/voltage output module	N/A	2 single-ended	120 mA	120 mA*	1769-OF2		CX3
16 bit current output module		8 single-ended	145 mA	160 mA*	1769-OF8C		CX3
16 bit voltage output module		8 single-ended	145 mA	125 mA*	1769-OF8V		CX3
8 bit combination input/output module	4 differential or single-ended	2 single-ended	120 mA	160 mA	1769-IF4XOF2		CX3

* Power Supply Distance Rating = 8 . The maximum distance an I/O module may be located from the power supply is 8 modules.
Discount Group CX

See publication 1769-SG002_-EN-P or 1769-TD001_-EN-P for complete product information.

Compact I/O Expansion I/O for MicroLogix 1500, continued

Temperature and PT100 Input Modules *

Description	Input Channels per Module	Bus Current Draw (max.)	Cat. No.		PGC
Supports thermocouple and millivolt signal measurement	6 input channels plus 2 CJC sensors	100 mA at 5V DC 40 mA at 24V DC	1769-IT6		CX3
Supports RTD and direct resistance signal measurement	6 input channels	100 mA at 5V DC 45 mA at 24V DC	1769-IR6		CX3

Discount Group CX

High-Speed Counter Module *

Description	Input Channels per Module	Output Channels per Module	Bus Current Draw (max.)	Cat. No.		PGC
1 MHz High-Speed Counter/Encoder Module	(4) single-input counters, or (2) quadrature (ABZ) differential inputs -30 to +30V DC	(4) 5 to 30V DC sourcing outputs	425 mA at 5V DC	1769-HSC		CX3

Discount Group CX

Communication Modules *

Description	Bus Current Draw (max.)	Cat. No.		PGC
Compact DeviceNet Scanner Module	440 mA at 5V DC	1769-SDN		CX3
Compact DeviceNet Adapter Module ‡	500 mA at 5V DC	1769-ADN		CX3

* Power Supply Distance Rating = 8 . The maximum distance an I/O module may be located from the power supply is 8 modules.

* Power Supply Distance Rating = 4. The maximum distance an I/O module may be located from the power supply is 4 modules.

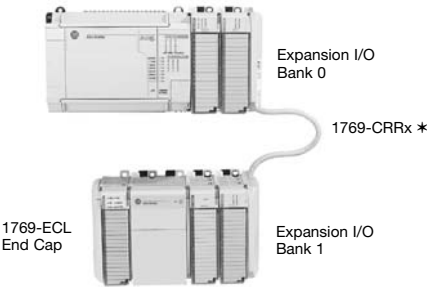
‡ The series A 1769-ADN adapter does not support the 1769-OA16, 1769-OW16, 1769-IF4XOF2, or 1769-HSC modules.

Discount Group CX

See publication 1769-SG002_-EN-P or 1769-TD001_-EN-P for complete product information.

Compact I/O Expansion I/O for MicroLogix 1500, continued

Vertical Orientation



Horizontal Orientation



* The x in this catalog number can be either a 1 or a 3 representing the length of the cable: 1 = 305 mm and 3 = 1 meter.

Power Supplies

Power Supply Voltage	Nominal Input Voltage	Output Bus Current Capacity (0 °...55 °C)	Cat. No.		PGC
85 to 265V AC (no jumper DIP switch required) 47 to 63 Hz	120V or 240V AC	2 A @ 5V DC 0.8 A @ 24V DC	1769-PA2		CX3
19.2 to 31.2V DC	24V DC		1769-PB2		CX3
85 to 132V AC (170 to 265 or switch selectable)	120V or 240V AC	4 A @ 5V DC 2 A @ 24V DC	1769-PA4		CX3
19.2 to 31.2V DC	24V DC		1769-PB4		CX3

Discount Group CX

Expansion Cables

Cable Type	Length	Cat. No.		PGC
Right bank-to-right bank	305 mm	1769-CRR1		CX3
Right bank-to-right bank	1 m	1769-CRR3		CX3
Right bank-to-left bank	305 mm	1769-CRL1		CX3
Right bank-to-left bank	1 m	1769-CRL3		CX3

Discount Group CX

End Caps

Description	Cat. No.		PGC
Right end cap	1769-ECR		CX3
Left end cap	1769-ECL		CX3

Discount Group CX

See publication 1769-SG002_-EN-P or 1769-TD001_-EN-P for complete product information.

Accessories for MicroLogix 1000, 1100, 1200 and 1500

Programming Software

The RSLogix 500 ladder logic programming package helps you maximize performance, save project development time, and improve productivity. This product has been developed to operate on Windows 98 and above operating system. RSLogix 500 can be used for programming both the SLC 500 and MicroLogix controller families.

Description	Cat. No.		PGC
RSLogix 500 Starter Edition Progr. Software for MicroLogix controller families. (CD-ROM)	9324-RL0100ENE		n/a
RSLogix 500 Standard Edition Programming Software for SLC 500 and MicroLogix controller families. (CD-ROM)	9324-RL0300ENE		n/a
RSLogix 500 Professional Edition. CD-ROM also includes RSLogix Emulate 500, RSNetworx for DeviceNet and RSNetworx for ControlNet.	9324-RL0700NXENE		n/a

Discount Group PG

Programming Cable for MicroLogix 1000, 1100, 1200, and 1500 Channel 0 (8-pin Mini DIN)

Description	Length	Cable Type	Cat. No.		PGC
Cable to connect MicroLogix controller to an IBM compatible PC	2 m	8-pin Mini DIN to 9-pin D Shell	1761-CBL-PM02		MC1

Discount Group MC

Programming Cable for MicroLogix 1500 with 1764-LRP Processor, Channel 1 (9-pin RS-232)

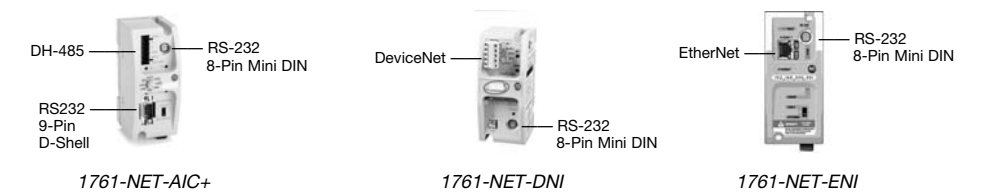
Description	Length	Cable Type	Cat. No.		PGC
Cable to connect port 1 to the 9-Pin DTE port of a personal computer	3 m	9-pin D Shell to 9-pin D Shell	1747-CP3		SC1
Cable to connect the MicroLogix 1500 base port to an IBM compatible PC	2 m	9-pin D Shell to 8-pin Mini DIN	1761-CBL-PM02		MC1

Note: Only cables of series C or later can be used with MicroLogix 1100

Discount Group SC, MC

Accessories for MicroLogix 1000, 1100, 1200 and 1500, continued

Network Interface Devices



Description	Cat. No.		PGC
AIC+ Advanced Interface Converter: The AIC+ provides an interface to DH-485 networks from an RS-232 port. It can be used with all MicroLogix controllers, SLC 5/03 and higher, and a number of PanelView terminals.	1761-NET-AIC		MC1
DNI DeviceNet Interface: Peer-to-peer messaging between MicroLogix controllers and other devices using the DF1 Full-Duplex protocol (real time communications – no polling required)	1761-NET-DNI		MC1
ENI Ethernet Interface: The ENI provides Ethernet/IP connectivity for all MicroLogix controllers and other DF1 Full-Duplex devices: The ENI provides also a basic level of Web Server functionality including: • Ability to display dynamically updated data values • Ability to label data values • Ability to modify data values (password protected)	1761-NET-ENI		MC1
	1761-NET-ENIW		MC1

Note: External power is required for the network interface. The MicroLogix 1100 RS232/485 port does not provide any power for connected devices.
Discount Group MC

Network Cable

Use the communication cables listed below with MicroLogix 1000, 1200 and 1500 controllers. Cables come in several lengths and connector styles to provide connectivity between MicroLogix controllers and other devices.

Description	Connectors	Length	Cat. No.		PGC
Used to connect MicroLogix controller to Port 2 of 1761-NET-AIC+ or 1761-NET-DNI or 1761-HHP or PanelView	8-pin Mini DIN to 8-pin Mini DIN	0.5 m	1761-CBL-AM00		MC1
		2 m	1761-CBL-HM02		MC1
		5 m	2711-CBL-HM05		OI4
		10 m	2711-CBL-HM10		OI4
Used to connect MicroLogix 1500 Processor (LRP) or Port 1 of 1761-NET-AIC+ to 9-pin DTE of Personal Computer	9-pin D Shell to 9-pin D Shell	0.5 m	1761-CBL-AC00		MC1
		3 m	1747-CP3		SC1
Used to connect MicroLogix controller to Port 1 of 1761-NET-AIC+ or MicroLogix controller to PC or PanelView's to MicroLogix controller	8-pin Mini DIN to 9-pin D Shell	0.5 m	1761-CBL-AP00		MC1
		2 m	1761-CBL-PM02		MC1
		5 m	2711-CBL-PM05		OI4
		10 m	2711-CBL-PM10		OI4

Note: Do not connect a MicroLogix 1100 controller to another MicroLogix family controller such as MicroLogix 1000, 1200 or 1500 using a 1761-CBL-AM00 (8-pin Mini DIN to 8-pin Mini DIN) cable or equivalent. This type connection will cause damage to the RS-232/485 communication port (Channel 0) of the MicroLogix 1100 and/or the controller itself.
Discount Group MC

CompactBlock LDX I/O Blocks

- Small, easy expandable block I/O products with universal sink/source inputs
- Digital bases support up to 3 discrete expansion blocks (64 I/O's) and analog bases support up to 2 discrete expansion blocks
- Cost-effective I/O product line for light industrial and commercial automation
- Selectable terminations (D-shell or screw terminations)
- Wide breadth of I/O's including discrete, analog, thermocouple and RTD bases for different networks and discrete expansion blocks



Discrete I/O

DeviceNet Bases

Description	Cat. No.		PGC
DNet LDX, 16 sourcing output base, D-shell connector	1790D-0B16		DI2
DNet LDX, 24V DC, 16 sinking output base, D-shell connector	1790D-0V16		DI2
DNet LDX, 6 relay output base, D-shell connector	1790D-0W6		DI2
DNet LDX, 24V DC, 16 universal input base, D-shell	1790D-16BV0		DI2
DNet LDX, 24V DC, 8 univ In/8 source output base, D-shell	1790D-8BV8B		DI2
DNet LDX, 24V DC, 8 univ In/8 sink output base, D-shell	1790D-8BV8V		DI2
DNet LDX, 120V AC, 6 output base, terminal block	1790D-T0A6		DI2
DNet LDX, 24V DC, 16 source output base, terminal block	1790D-T0B16		DI2
DNet LDX, 24V DC, 16 sinking output base, terminal block	1790D-T0V16		DI2
DNet LDX, 6 relay output base, terminal block	1790D-T0W6		DI2
DNet LDX, 24V DC, 16 universal input base, terminal block	1790D-T16BV0		DI2
DNet LDX, 120V AC, 8 input base, terminal block	1790D-T8A0		DI2
DNet LDX, 24V DC, 8 univ in/8 source output base, terminal block	1790D-T8BV8B		DI2
DNet LDX, 24V DC, 8 univ in/8 sink output base, terminal block	1790D-T8BV8V		DI2

Discount Group DI

PROFIBUS Bases

Description	Cat. No.		PGC
PROFIBUS, 6 relay out base, terminal block	1790P-T0W6		DI2
PROFIBUS, 24V DC, 8 univ in/8 sink out base, terminal block	1790P-T8BV8V		DI2
PROFIBUS, 24V DC, 8 univ in/8 source out base, terminal block	1790P-T8BV8B		DI2

Discount Group DI

See publication 1790-PP002_-EN-P or 1790D-TD001_-EN-P for complete product information.

CompactBlock LDX I/O Blocks, continued

Expansion Block I/O

Description	Cat. No.		PGC
LDX I/O, 24V DC, 16 source out expansion, D-shell	1790-0B16X		DI2
LDX I/O, 24V DC, 16 sink out expansion, D-shell	1790-0V16X		DI2
LDX I/O, 8 relay out, expansion, D-shell	1790-0W8X		DI2
LDX I/O, 24V DC, 16 universal in expansion, D-shell	1790-16BV0X		DI2
LDX I/O, 24V DC, 8 univ in/8 source out expansion, D-shell	1790-8BV8BX		DI2
LDX I/O, 24V DC, 8 univ in/8 sink out expansion, D-shell	1790-8BV8VX		DI2
LDX I/O,120V AC, 8 output expansion module, terminal block	1790-T0A8X		DI2
LDX I/O, 24V DC, 16 source out expansion, terminal block	1790-T0B16X		DI2
LDX I/O, 24V DC, 16 sink out expansion, terminal block	1790-T0V16X		DI2
LDX I/O, 8 relay out, expansion, terminal block	1790-T0W8X		DI2
LDX I/O, 24V DC, 16 universal in expansion, terminal block	1790-T16BV0X		DI2
LDX I/O,120V AC, 8 input expansion module, terminal block	1790-T8A0X		DI2
LDX I/O, 24V DC, 8 univ in/8 source out expansion, terminal block	1790-T8BV8BX		DI2
LDX I/O, 24V DC, 8 univ in/8 sink out expansion, terminal block	1790-T8BV8VX		DI2

Discount Group DI

See publication 1790-PP002_-EN-P or 1790D-TD001_-EN-P for complete product information.

CompactBlock LDX I/O Blocks, continued

Analog I/O

DeviceNet Bases

Description	Cat. No.		PGC
DNet LDX, 4 input RTD base, D-shell connector	1790D-4R0		DI2
DNet LDX, 4 input thermocouple base, D-shell connector	1790D-4T0		DI2
DNet LDX, 2 output analog current base, D-shell connector	1790D-N0C2		DI2
DNet LDX, 2 output voltage analog base, D-shell connector	1790D-N0V2		DI2
DNet LDX, 4 input analog current base, D-shell connector	1790D-N4C0		DI2
DNet LDX, 4 input voltage analog base, D-shell connector	1790D-N4V0		DI2
DNet LDX, 4 input RTD base, terminal block	1790D-T4R0		DI2
DNet LDX, 4 input thermocouple base, terminal block	1790D-T4T0		DI2
DNet LDX, 2 output analog current base, terminal block	1790D-TN0C2		DI2
DNet LDX, 2 output voltage analog base, terminal block	1790D-TN0V2		DI2
DNet LDX, 4 input analog current base, terminal block	1790D-TN4C0		DI2
DNet LDX, 4 input voltage analog base, terminal block	1790D-TN4V0		DI2

Discount Group DI

PROFIBUS Bases

Description	Cat. No.		PGC
PROFIBUS, 4 input RTD base, terminal block	1790P-T4R0		DI2
PROFIBUS, 4 input thermocouple base, terminal block	1790P-T4T0		DI2
PROFIBUS, 2 output analog current base, terminal block	1790P-TN0C2		DI2
PROFIBUS, 4 input analog current base, terminal block	1790P-TN4C0		DI2

Discount Group DI

Optional Components

Description	Cat. No.		PGC
LDX I/O replacement ribbon cable, 7cm (lots of 5)	1790-7CMCBL		DI2
LDX I/O longer ribbon cable, 15cm (lots of 5)	1790-15CMCBL		DI2
5-position open style plug for DNet	1799-DNETCON		DI1
5-position open style plug/locking screws for DNet	1799-DNETSCON		DI1
DNet 5-position open plug to 5-pin micro male connector, straight (lots of 5)	1799-DNC5MMS		DI1

Discount Group DI

See publication 1790-PP002_-EN-P or 1790D-TD001_-EN-P for complete product information.

CompactBlock I/O for DeviceNet

- Low Cost, Compact size
- Accommodates a broad range of I/O applications up to 32 I/O including analog expansion blocks
- Easy to install and use
- Removable terminal blocks to save maintenance cost
- Output short-circuit protection
- No software is needed to configure RIO blocks, done via DIP switches
- Includes DeviceLogix™ Smart Component Technology enabling localized, simple control functions for faster sense-to-actuation times



Discrete I/O

DeviceNet Bases

Description	Cat. No.		PGC
DNet, 24V DC CompactBlock I/O, 16 out source, base	1791D-0B16P		DI2
DNet, 24V DC CompactBlock I/O, 8 out source, base	1791D-0B8P		DI2
DNet, 24V DC CompactBlock I/O, 16 out sink, base	1791D-0V16P		DI2
DNet, 24V DC CompactBlock I/O, 16 in sink, base	1791D-16B0		DI2
DNet, 24V DC CompactBlock I/O, 16 in source, base	1791D-16V0		DI2
DNet, 24V DC CompactBlock I/O, 4 in sink (not expandable)	1791D-4B0		DI2
DNet, 24V DC CompactBlock I/O, 4 in sink/4 out source, base	1791D-4B4P		DI2
DNet, 24V DC CompactBlock I/O, 8 in sink/8 out source, base	1791D-8B8P		DI2
DNet, 24V DC CompactBlock I/O, 8 in source/8 out sink, base	1791D-8V8P		DI2

Discount Group DI

Remote I/O Bases (RIO)

Description	Cat. No.		PGC
RIO, 24V DC CompactBlock I/O, 16 out source, base	1791R-0B16P		DI1
RIO, 24V DC CompactBlock I/O, 16 in sinking, base	1791R-16B0		DI1
RIO, 24V DC CompactBlock I/O, 4 in sink/4 out source, base	1791R-4B4P		DI1
RIO, 24V DC CompactBlock I/O, 8 in sink/8 out source, base	1791R-8B8P		DI1
RIO, 24V DC CompactBlock I/O, 8 in source/8 out sink, base	1791R-8V8P		DI1

Discount Group DI

See publication 1791D-PP002_-EN-P or 1791D-TD001_-EN-P for complete product information.

CompactBlock I/O for DeviceNet, continued

PROFIBUS Bases

Description	Cat. No.		PGC
PROFIBUS, 24V DC CompactBlock I/O, 16 out sourcing, base	1791P-0B16P		DI1
PROFIBUS, 24V DC CompactBlock I/O, 16 in sinking, base	1791P-16B0		DI1
PROFIBUS, 24V DC CompactBlock I/O, 4 in sink/4 out source, base	1791P-4B4P		DI1
PROFIBUS, 24V DC CompactBlock I/O, 8 in sink/8 out source, base	1791P-8B8P		DI1
PROFIBUS, 24V DC CompactBlock I/O, 8 in source/8 out sink, base	1791P-8V8P		DI1

Discount Group DI

Universal Expansion Blocks*

Description	Cat. No.		PGC
24V DC CompactBlock I/O Expansion, 16 out source	1791D-0B16PX		DI2
24V DC CompactBlock I/O Expansion, 16 out sink	1791D-0V16PX		DI2
24V DC CompactBlock I/O Expansion, 16 in sink	1791D-16B0X		DI2
24V DC CompactBlock I/O Expansion, 16 in source	1791D-16V0X		DI2
Analog CompactBlock I/O Expansion, 4 inputs, 2 outputs	1791D-N4CV2X		DI2

Discount Group DI

Optional Components

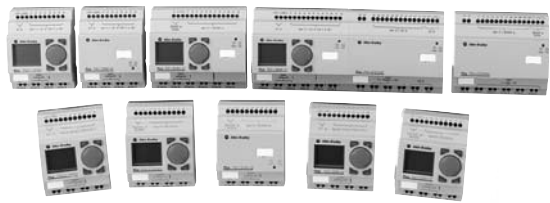
Description	Cat. No.		PGC
24V DC Block I/O longer ribbon cable, 15 cm	1791D-15CMCBL		DI2
24V DC Block I/O replacement ribbon cable, 4 cm	1791D-4CMCBL		DI2
Block I/O replacement terminal block, 21-pin NEMA	1791D-RTBN21		DI2
RIO 6-position connector, lock screws	1791R-RIOSCON		DI2

* Universal expansion blocks function with DeviceNet, RIO and PROFIBUS Bases – 1 expansion per base block.

Discount Group DI

See publication 1791D-PP002_-EN-P or 1791D-TD001_-EN-P for complete product information.

Pico Controllers



Controllers

Line Power	Inputs	Outputs	Analog Inputs	Real-Time Clock	Display and Keypad		Cat. No.		PGC		
120/240V AC	8 (120/240V AC)	4 (relay) ‡	No	Yes	Yes		1760-L12AWA		MC6		
				No	Yes		1760-L12AWA-NC		MC6		
				Yes	No		1760-L12AWA-ND		MC4		
	8 (24V AC/24 V DC)	4 (relay)	No	Yes	Yes		1760-L12NWA		MC4		
				Yes	No		1760-L12NWA-ND		MC4		
	12 (120/240V AC)	6 (relay) ‡	No	Yes	Yes	♣	1760-L18AWA-EX		MC6		
				Yes	No	♣	1760-L18AWA-EXND		MC4		
	12 (24V AC/24 V DC)	6 (relay)	No	Yes	Yes	♣	1760-L18NWA-EX		MC4		
				Yes	No	♣	1760-L18NWA-EXND		MC4		
12V DC	8 * (12V DC)	4 (relay)	2 (0...10V DC) §	Yes	Yes		1760-L12DWD		MC4		
				Yes	No		1760-L12DWD-ND		MC4		
	12 * (12V DC)	4 (relay)	2 (0...10V DC) §	Yes	Yes	♣	1760-L18DWD-EX		MC4		
		4 (relay) ‡		Yes	No	♣	1760-L18DWD-EXND		MC4		
24V DC	8 * (24V DC)	4 (transistor)	2 (0...10V DC) §	Yes	Yes		1760-L12BBB		MC4		
		4 (transistor)		Yes	No		1760-L12BBB-ND		MC4		
	8 * (24V DC) ※	4 (relay) ‡	2 (0...10V DC) §	Yes	Yes		1760-L12BWB		MC6		
	8 * (24V DC)			No	Yes		1760-L12BWB-NC		MC4		
				Yes	No		1760-L12BWB-ND		MC4		
	12 * (24V DC)	6 (relay) ‡		Yes	Yes	♣	1760-L18BWB-EX		MC6		
		6 (relay)		Yes	No	♣	1760-L18BWB-EXND		MC4		
		8 (transistor)		Yes	Yes	♣	1760-L20BBB-EX		MC4		
			Yes	No	♣	1760-L20BBB-EXND		MC4			

* Two of the digital dc inputs can alternately be used as 0 to 10V dc analog inputs. These inputs can be used as either digital or analog, not both. For example, you could use 2 analog inputs plus 10 digital inputs on the 1760-L18DWD-EX.

※ Current sinking.

‡ Isolated.

§ Two digital inputs maybe used for analog.

♣ EX = suitable for use with expansion modules.

Discount Group MC

Expansion Modules

Line Power	Inputs	Outputs		Cat. No.		PGC
120/240V AC	12 (120/240V AC)	6 (relay) ※	§	1760-IA12XOW6I		MC4
24V DC	12 (24V DC) *	8 (transistor) ‡	♣	1760-IB12XOB8		MC4

* Current sinking.

※ Isolated.

‡ Current sourcing.

§ May be used with either: 1760-L18AWA-EX or 1760-L18BWB-EX.

Discount Group MC

Memory Modules

Description	Cat. No.		PGC
8K memory module for 12-point controllers	1760-MM1		MC4
16K memory module for 18-point controllers	1760-MM2		MC4
32K memory module	1760-MM2B		MC6

Discount Group MC

Programming Software

Description	Cat. No.		PGC
Configuration software included with processor	1760-PICOSOFT		MC4

Discount Group MC

Accessories

Description	Cat. No.		PGC
Programming cable to be used with 1760-PICOSOFT configuration software	1760-CBL-PM02		MC4
Replacement connector for expansion I/O module	1760-RPLCONN		MC4

Discount Group MC

Bulletin 1760

Programmable Controllers

Product Selection

Pico GFX-70 Controllers

GFX I/O Modules



Input Voltage Category	Number of Inputs (Digital)	Number of Outputs	Analog Capability	Cat. No.	PGC
120/240V AC	12	4 (relay)	none	1760-IA12XOW4I	MC6
24V DC	12 *	4 (relay)	Input (4)	1760-IB12XOW4IF	MC6
24V DC	12 *	4 (relay)	Input (4) and output (1)	1760-IB12XOW4IOF	MC6
24V DC	12 *	4 (transistor)	Input (4)	1760-IB12XOB4IF	MC6
24V DC	12 *	4 (transistor)	Input (1) and output (4)	1760-IB12XOB4IOF	MC6

* Four of the digital dc inputs can alternately be used as 0 to 10V dc analog inputs.
Discount Group MC

Pico Expansion I/O Modules

Input Voltage Category	Number of Inputs (Digital)	Number of Outputs	Cat. No.	PGC
120/240V AC	12 (120/240V AC)	6 (relay) ‡	1760-IA12XOW6I	MC4
24V DC	12 (24V DC) ✱	8 (transistor) §	1760-IB12XOB8	MC4
24V DC	12 (24V DC) ✱	6 (isolated relay)	1760-IB12XOW6I	MC6
N/A	—	2 (relay)	1760-OW2	MC4

✱ Current sinking.
‡ Isolated.
§ Current sourcing.
Discount Group MC

Processor Units

Description	Line Power	Cat. No.	PGC
GFX-70 DC processor unit	12V DC	1760-LDF	MC6
GFX-70 AC processor unit	120/240V AC	1760-LDFA	MC6
GFX-70 DC processor unit with pico-link terminal	24V DC	1760-LDFC	MC6
GFX-70 AC processor unit with pico-link terminal	120/240V AC	1760-LDFCA	MC6

Discount Group MC

Programming Software

Description	Cat. No.	PGC
PicoSoft Pro Programming Software ♣	1760-PICOSOFTPRO	MC6
Programming Cable, PC to Processor	1760-CBLPC02	MC6
PicoSoft Pro Software and Cable Kit (includes 1760-PICOSOFTPRO and 1760-CBL-PC02)	1760-PICOPROPC02	MC6

♣ PicoSoft Pro allows to program both Pico and Pico GFX controllers.
Discount Group MC

See publication 1760-SG001_-EN-P for complete product information.

Pico GFX-70 Controllers, continued

Display Units

Description	Cat. No.		PGC
Display Unit with Keypad	1760-DUB		MC6
Display Unit without Keypad	1760-DU		MC6

Discount Group MC

Memory Modules

Description	Cat. No.		PGC
256k Memory Module	1760-MM3		MC6

Discount Group MC

Power Supply

Description	Cat. No.		PGC
Power Supply	1606-XLP30E		A8A2

Discount Group MC

Point-to-Point Serial Interface Cables

Description	Cat. No.		PGC
Point-to-Point Serial Interface Cable, 2m	1760-CBL-2M		MC6
Point-to-Point Serial Interface Cable, 5m	1760-CBL-5M		MC6

Discount Group MC

Cables for Pico-Link between Processors

Description	Cat. No.		PGC
Pico-Link Cable, 0.3m	1760-CBL-INT01		MC6
Pico-Link Cable 0.8m	1760-CBL-INT03		MC6
Pico-Link Cable 1.5 m	1760-CBL-INT05		MC6
Pico-Link Cable, non-terminated, 100 m	1760-CBL-INT300		MC6
Connectors for Pico-Link Cable	1760-CONN-RJ45		MC6
Network Termination Resistor	1760-TERM1		MC6

Discount Group MC

Accessories for Pico GFX-70 Controllers

Description	PQ	Cat. No.		PGC
Cover Protect Display	8	1760-NDC		MC6
Membrane Protect Display	8	1760-NDM		MC6
Mounting Feet (for panel mounting processors and I/O modules)	8	1760-NMF		MC6
Screwdriver	8	1492-N90		T1J
Wire Cutter — Mounts on 1492-N90 screwdriver	8	1492-KWC		T1T

PQ = Package Quantity

Discount Group MC

See Publication 1760-SG001_-EN-P for complete product information.

Programmable Controllers

Notes

InView Message Displays

					
Bulletin	2706-P22R	2706-P43R 2706-P43C	2706-P42R/C * 2706-P44R/C *	2706-P72CN2 * 2706-P74CN2 *	2706-P92C * 2706-P94C *
Display					
Display Type	LED matrix: Red (R)	LED matrix: Red (R) or Tri-Color (C)	LED matrix: Red (R) or Tri-Color (C)	LED matrix: Tri-Color (C)	LED matrix: Tri-Color (C)
Display Size (W x H)	30 x 5 cm	173 x 10.2 cm	81.4 x 12.2 cm * 182 x 12.2 cm *	91.4 x 18.3 cm * 152.4 x 18.3 cm *	91.4 x 24.4 cm 182.9 x 24.4 cm
Display Array	120 x 7 pixels		120 x 16 or 240 x 16 pixels	120 x 24 or 200 x 24 pixels	120 x 32 or 240 x 32 pixels
Center to Center Pixel Spacing	0.25 cm	1.4 cm	0.76 cm		
Number of Lines	2	1	1 or 2	1 up to 4	1 up to 5
Lines of Text/Character Height/ Minimum Characters per Line	2 lines/1.8 cm/20 char	1 line/10.2 cm/20 char	1 line/12.2 cm/12 * or 24 * 2 lines/5.3 cm/20 * or 40 *	1 line/18.3 cm/12 * or 20 * 2 lines/7.6 cm/20 * or 33 * 3 lines/5.3 cm/20 * or 33 * 4 lines/3.8 cm/24 * or 40 *	1 line/24.4 cm/13 * or 26 * 2 lines/11.4 cm/13 * or 26 * 3 lines/7.6 cm/13 * or 26 * 4 lines/5.3 cm/20 * or 40 * 5 lines/3.8 cm/24 * or 48 *
Character Set	Standard and Extended ASCII				
Approximate Viewing Distance	7.6 m	60 m	60 m	100 m	137 m
Electrical & Environmental					
Input Voltage	24V DC	120...240V AC; 50/60 Hz	120...240V AC; 50/60 Hz		
Operating Temperature	0...55 °C	0...50 °C			
Humidity	5...95 % non condensing				
Ratings	NEMA Type 12	NEMA 4, 4X (indoor use)			NEMA Type 12, 13
Certifications	UL, CE and C-Tick	ETL approved; CE marked			UL, CE and C-Tick
Mechanical					
Enclosure Approximate Weight	0.85 kg	18 kg	12.7 kg or 22.7 kg	27.2 kg or 36.3 kg	32 kg or 64 kg
Enclosure Dimensions (W x D x H)	11 x 6 x 36 cm	182.7 x 13.97 x 20 cm	102.57 x 13.97 x 20 cm 194 x 13.97 x 20 cm	107.32 x 15.24 x 34.93 cm 168.28 x 15.24 x 34.93 cm	40 x 13 x 105 cm 14 x 13 x 196 cm
Product Selection	Page 287	Page 287	Page 287	Page 287	Page 287

* Display is available in short format (91.44 cm).

* Display is available in long format (182.88 cm).

Operator Interface

Product Line Overview

PanelView

					
Bulletin	2711-M	2711-K	2711P	2711P	2711P
Type	PanelView 300 Micro Terminal	PanelView 300 Keypad Terminal	PanelView Plus 400	PanelView Plus 600 Grayscale	PanelView Plus 600 Colour
Display					
Type	Monochrome transfective LCD with integral LED backlight		Monochrome Passive Matrix, Film Compensated Super-Twist Nematic (FSTN)		
Size	73 x 42 mm		78 x 59 mm	111 x 84 mm	
Resolution	128 x 64 pixels		320 x 240, 32 level, grayscale		320 x 240, 18 bit colour graphics
Replaceable Backlight	100,000 hour LED backlight life		No	No	
Operator Input	Keypad		Keypad	Keypad, Analog Touch, or Combination	
Function Keys	4 Function Keys, F1-F4	8 Function Keys, F1-F8	8 Function Keys, F1-F8	10 Function Keys, F1-F10	
Real time Clock	Battery-backed time clock timestamps critical data. Accuracy +/-2 minutes per month				
Memory Options Available Flash/RAM	170 K application runtime 240 K Flash		Standard 32 MB/64 MB, Not Expandable		
Electrical					
Communication Port	RS-232 (DH-485 protocol) DF1 (8-pin Mini DIN)	DeviceNet, DH-485 or RS-232 (DH-485 protocol), DF1	RS-232 and (1) USB Only or Ethernet, RS-232, (1) USB, plus optional DH-485, DH+, or Remote I/O modules		
Power Requirements	11-33V DC (0.105 A @ 24V DC)	18-32V DC (0.42 A @ 24V DC)	18-32V DC or 85-264V AC @ 47-63 Hz		
Power Consumption	2.5 Watts max.	10 Watts max.	DC Power: 25 Watts max. (1.0A @ 24V DC) AC Power: 60VA max.		
Programming	PanelBuilder32 (Window based)		RSView Studio for Machine Edition or Enterprise Series		
Environmental					
Operating Temperature	0...55 °C				
Ratings	NEMA 12, 13, 4X (indoor only), IP54, IP65				
Certifications	cUL certified, Class 1, Div 2, Groups A, B, C, D; Class 1 Zone 2; CE marked, Demko; C-Tick		cUL certified; UL listed; Class 1, Div 2, Groups A, B, C, D; Class 2, Div 2, Groups F, G; Class 3, Div 1; CE marked; C-Tick		
Mechanical					
Weight Keypad or Keypad/Touch	0.284 kg	0.673 kg	0.562 kg	0.789 kg	
Dimensions Overall (H x W x D)	111x133x48 mm	197x140x82 mm	Keypad: 152x185x90 mm	Keypad or Keypad/Touch: 167x266x98 mm Touch Only: 152x185x98mm	
Cutout Dimensions	92 x 102 mm	178 x 109 mm	Keypad: 123x156 mm	Keypad or Keypad/Touch: 142x241 mm Touch Only: 123x156 mm	
Product Selection	Page 289	Page 289	Pages 291, 294	Pages 292, 294	Pages 293, 294

InView Message Displays

- Array of communication options for easy integration into new and existing network architectures.
- Onboard memory makes message triggering easy.
- Dynamic messaging, with the use of embedded variables, for real-time information.
- Develop and test messages with the easy-to-use configuration software package.
- Use ActiveX control, with any ActiveX container such as RSVIEW32 software, to enhance graphical HMI messaging.



Display Type	Number of Lines	Number of Characters Per Line		Cat. No.		PGC
LED Matrix Red	2	20	DeviceNet, ControlNet, EtherNet/IP, Remote I/O, DH+, DH-485	2706-P22R		OI2
LED Matrix Red	1 or 2	12 or 20		2706-P42R		OI2
LED Matrix Tri-color	1 or 2	12 or 20		2706-P42C		OI2
LED Matrix Red	1 or 2	24 or 40		2706-P44R		OI2
LED Matrix Tri-color	1 or 2	24 or 40		2706-P44C		OI2
LED Matrix Tri-color	1...4	12...24		2706-P72CN2		OI2
LED Matrix Tri-color	1...4	20...40		2706-P74CN2		OI2
LED Matrix Tri-color	1...4	12...24		2706-P72CN1		OI2
LED Matrix Tri-color	1...4	20...40		2706-P74CN1		OI2
LED Matrix Tri-color	1...5	13...24		2706-P92C		OI2
LED Matrix Tri-color	1...5	26...48		2706-P94C		OI2

Discount Group OI

Bulletin 2706-P

Operator Interface

Accessories

InView Software

Description	Cat. No.	PGC
InView Messaging Software	2706-PSW1	OI2

Discount Group OI

InView Communication Modules

Description	For Use With	DIN Rail	Cat. No.	PGC
InView DeviceNet	P22R, 24V DC	DIN Rail	2706-PDNETP	OI2
	P4...	Back of Display	2706-PDNETM	OI2
	P7.../P9...	Inside Display	2706-PDNETK	OI2

InView ControlNet	P22R, 24V DC	DIN Rail	2706-PCNETP	OI2
	P4...	Back of Display	2706-PCNETM	OI2
	P7.../P9...	Inside Display	2706-PCNETK	OI2

InView EtherNet/IP	P22R, 24V DC	DIN Rail	2706-PENETP	OI2
	P4...	Back of Display	2706-PENETM	OI2
	P7.../P9...	Inside Display	2706-PENETK	OI2

InView Remote I/O	P22R, 24V DC	DIN Rail	2706-PRIOP	OI2
	P4...	Back of Display	2706-PRIOM	OI2
	P7.../P9...	Inside Display	2706-PRIOK	OI2

InView DH+	P22R, 24V DC	DIN Rail	2706-PDHPP	OI2
	P4...	Back of Display	2706-PDHPM	OI2
	P7.../P9...	Inside Display	2706-PDHPK	OI2

InView DH-485	P22R, 24V DC	DIN Rail	2706-PDH485P	OI2
	P4...	Back of Display	2706-PDH485M	OI2
	P7.../P9...	Inside Display	2706-PDH485K	OI2

InView Ethernet TCP/IP	2706-PENET1	OI2
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InView Program/Download Cable	2706-PCABLE1	OI2
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Discount Group OI

PanelView 300

- 128 x 64
- 4 Function Keys
- 4 Navigation Buttons
- 240 K Flash Memory



- 128 x 64
- 8 Function Keys, Numerical and Navigation Buttons
- 240 K Flash Memory



PanelView 300 Micro Monochrome Terminals — Keypad Only

Description	Keypad Terminal ✱		
	Cat. No.		PGC
PanelView 300 Micro, RS-232 (DF1) Communication Port (8-pin mini-DIN)*	2711-M3A18L1		OI4
PanelView 300 Micro, RS-232 (DH-485) Communication Port (8-pin mini-DIN)*	2711-M3A19L1		OI4

Discount Group OI

PanelView 300 Monochrome Terminals — Keypad Only

Description	Keypad Terminal ✱		
	Cat. No.		PGC
PanelView 300 Monochrome, DH-485 Communication Ports*	2711-K3A2L1		OI4
PanelView 300 Monochrome, RS-232 (DH-485) Communication Port*	2711-K3A5L1		OI4
PanelView 300 Monochrome, DeviceNet Communication & RS-232 Printer Port	2711-K3A10L1		OI4
PanelView 300 Monochrome, RS-232 (DF1) Communication*	2711-K3A17L1		OI4

* PanelView Standard terminals with DH-485 communication (2711-xxA2, -xxA5, -xxA19) or no RS-232 printer port (2711-xxA17, -xxA18, -xxA19) require application file uploads/downloads through the comm port. The RS-232 printer port on these terminals is for printing only.

✱ PanelView 300 and 300 Micro terminals are 24V dc only.

Discount Group OI

Accessories for PanelView 300 see page 294

Bulletin 2711-K, 2711-M

Operator Interface

Product Selection

Accessories for PanelView 300

Software	Cat. No.		PGC
PanelBuilder32 Configuration Software for PanelView Standard Terminals (English)	2711-ND3		OI3

Discount Group OI

Cables/Interface Modules/Remote Keypress Port	Cat. No.		PGC
RS-232 Operating Cable, 8-Pin Mini DIN to 8-Pin Mini DIN (PanelView 300 Micro to MicroLogix), 5 m (16.4 ft)*	2711-CBL-HM05		OI4
RS-232 Operating Cable, 8-Pin Mini DIN to 8-Pin Mini DIN (PanelView 300 Micro to MicroLogix), 10 m (32.7 ft)*	2711-CBL-HM10		OI4
RS-232 Operating/Programming Cable, 9-Pin D Shell to 8-Pin Mini DIN (PanelView 300 Micro to SLC or PLC), 5 m (16.4 ft)*	2711-CBL-PM05		OI4
RS-232 Operating/Programming Cable, 9-Pin D Shell to 8-Pin Mini DIN (PanelView 300 Micro to SLC or PLC), 10 m (32.7 ft)*	2711-CBL-PM10		OI4

- * Utilizable with programmable controller MicroLogix
⌘ Utilizable with programmable controller SLC and Panel/View upload/download file
Discount Group OI

PanelView Plus 400

- 320 x 240, 32 level, grayscale
- 8 Function Keys
- Operator Input: Keypad
- 32 MB/64 MB Memory



Description	Interface	Supply	Cat. No.		PGC
Keypad	RS232 Only	DC Power	2711P-K4M5D		OI12
		AC Power	2711P-K4M5A		OI12
	Ethernet, RS232, and Modular Communication Interface	DC Power	2711P-K4M20D		OI12
		AC Power	2711P-K4M20A		OI12
	Ethernet, RS232, and DH485 Modular Communications	DC Power	2711P-K4M3D		OI12
		AC Power	2711P-K4M3A		OI12

Discount Group OI

Accessories for PanelView Plus 400 see page 294

PanelView Plus 600 Grayscale

- 320 x 240, 32 level, grayscale
- 10 Function Keys
- Operator Input: Keypad, Analog Touch, or Combination
- 32 MB/64 MB Memory



Description	Interface	Supply	Cat. No.		PGC
Keypad	RS232 Only	DC Power	2711P-K6M5D		OI13
		AC Power	2711P-K6M5A		OI13
	Ethernet, RS232, and Modular Communication Interface	DC Power	2711P-K6M20D		OI13
		AC Power	2711P-K6M20A		OI13
	Ethernet, RS232, and DH485 Modular Communications	DC Power	2711P-K6M3D		OI13
		AC Power	2711P-K6M3A		OI13
	Ethernet, RS232, & DH+ Modular Communications	DC Power	2711P-K6M8D		OI13
		AC Power	2711P-K6M8A		OI13
	Ethernet, RS232, & RIO Modular Communications	DC Power	2711P-K6M1D		OI13
		AC Power	2711P-K6M1A		OI13
Touch	RS232 Only	DC Power	2711P-T6M5D		OI13
		AC Power	2711P-T6M5A		OI13
	Ethernet, RS232, and Modular Communication Interface	DC Power	2711P-T6M20D		OI13
		AC Power	2711P-T6M20A		OI13
	Ethernet, RS232, and DH485 Modular Communications	DC Power	2711P-T6M3D		OI13
		AC Power	2711P-T6M3A		OI13
	Ethernet, RS232, & DH+ Modular Communications	DC Power	2711P-T6M8D		OI13
		AC Power	2711P-T6M8A		OI13
	Ethernet, RS232, & RIO Modular Communications	DC Power	2711P-T6M1D		OI13
		AC Power	2711P-T6M1A		OI13
Keypad/Touch	RS232 Only	DC Power	2711P-B6M5D		OI13
		AC Power	2711P-B6M5A		OI13
	Ethernet, RS232, and Modular Communication Interface	DC Power	2711P-B6M20D		OI13
		AC Power	2711P-B6M20A		OI13
	Ethernet, RS232, and DH485 Modular Communications	DC Power	2711P-B6M3D		OI13
		AC Power	2711P-B6M3A		OI13
	Ethernet, RS232, & DH+ Modular Communications	DC Power	2711P-B6M8D		OI13
		AC Power	2711P-B6M8A		OI13
	Ethernet, RS232, & RIO Modular Communications	DC Power	2711P-B6M1D		OI13
		AC Power	2711P-B6M1A		OI13

Discount Group OI

Accessories for PanelView Plus 600 see page 294

PanelView Plus 600 Colour

- 320 x 240, 18 bit colour graphics
- 10 Function Keys
- Operator Input: Keypad, Analog Touch, or Combination
- 32 MB/64 MB Memory



Description	Interface	Supply	Cat. No.		PGC
Keypad	RS232 Only	DC Power	2711P-K6C5D		OI14
		AC Power	2711P-K6C5A		OI14
	Ethernet, RS232, and Modular Communication Interface	DC Power	2711P-K6C20D		OI14
		AC Power	2711P-K6C20A		OI14
	Ethernet, RS232, and DH485 Modular Communications	DC Power	2711P-K6C3D		OI14
		AC Power	2711P-K6C3A		OI14
	Ethernet, RS232, & DH+ Modular Communications	DC Power	2711P-K6C8D		OI14
		AC Power	2711P-K6C8A		OI14
	Ethernet, RS232, & RIO Modular Communications	DC Power	2711P-K6C1D		OI14
		AC Power	2711P-K6C1A		OI14
Touch	RS232 Only	DC Power	2711P-T6C5D		OI14
		AC Power	2711P-T6C5A		OI14
	Ethernet, RS232, and Modular Communication Interface	DC Power	2711P-T6C20D		OI14
		AC Power	2711P-T6C20A		OI14
	Ethernet, RS232, and DH485 Modular Communications	DC Power	2711P-T6C3D		OI14
		AC Power	2711P-T6C3A		OI14
	Ethernet, RS232, & DH+ Modular Communications	DC Power	2711P-T6C8D		OI14
		AC Power	2711P-T6C8A		OI14
	Ethernet, RS232, & RIO Modular Communications	DC Power	2711P-T6C1D		OI14
		AC Power	2711P-T6C1A		OI14
Keypad/Touch	RS232 Only	DC Power	2711P-B6C5D		OI14
		AC Power	2711P-B6C5A		OI14
	Ethernet, RS232, and Modular Communication Interface	DC Power	2711P-B6C20D		OI14
		AC Power	2711P-B6C20A		OI14
	Ethernet, RS232, and DH485 Modular Communications	DC Power	2711P-B6C3D		OI14
		AC Power	2711P-B6C3A		OI14
	Ethernet, RS232, & DH+ Modular Communications	DC Power	2711P-B6C8D		OI14
		AC Power	2711P-B6C8A		OI14
	Ethernet, RS232, & RIO Modular Communications	DC Power	2711P-B6C1D		OI14
		AC Power	2711P-B6C1A		OI14

Discount Group OI

Accessories for PanelView Plus 600 see page 294

Bulletin 2711P

Operator Interface

Accessories

Accessories for PanelView Plus 400 and 600

Software

Description	For Use With	Cat. No.		PGC
Development Software for PanelView Plus Operator Terminals English (RSVIEW Studio ME)	PanelView Plus 400 and 600	9701-VWSTMENE		n/a

Cables

Description	Length	For Use With	Cat. No.		PGC
RS-232 Upload/Download Cable (9-pin to 9-pin)	5 m	PanelView Plus 400 and 600	2711-NC13		OI3
	10 m		2711-NC14		OI3
RS-232 Operating Cable	5 m		2711-NC21		OI3
RS-232 Operating Cable (RS-232 D-Shell to Mini DIN) for MicroLogix	15 m		2711-NC22		OI3
Ethernet CAT5 crossover cable (industrial grade)	4.3 m		2711P-CBL-EX04		OI21
Remote RS232 Serial Cable			2711-NC17		OI3
DH-485 Network Interface Cable (SDL AMP to RJ4-5)			1747-C10		SC1
			1747-C11		SC1
			1747-C20		SC1
DH-485 Network Interface Cable (6-pin Phoenix to RJ45)			1761-CBL-AS03		MC1
			1761-CBL-AS09		MC1

Protective Antiglare Overlays

Description	For Use With	Cat. No.		PGC
For PanelView Plus 400 Keypad	PanelView Plus 400	2711P-RGK4		OI21
For PanelView Plus 600 Keypad or Key/Touch	PanelView Plus 600	2711P-RGK6		OI21
For PanelView Plus 600 Touch		2711P-RGT6		OI21

Function Key Legend Inserts

Description	For Use With	Cat. No.		PGC
PanelView Plus 600 Replacement Legend Strips including Printable Blank Legends and SW	PanelView Plus 600	2711P-RFK6		OI21

Miscellaneous

Description	For Use With	PQ	Cat. No.		PGC
Replacement Mounting Levers	PanelView Plus 400 and 600	8	2711P-RTFC		OI21
Replacement AC Power Terminal Block		10	2711P-RVAC		OI21
Replacement DC Power Terminal Block		10	2711-TBDC		OI3

PQ = Package Quantity

Sensors and Safety (440G, 440N, 440E)

				
Bulletin	440P	440R	440L	440K
Type	Safety Limit Switches	Safety Relays	GuardShield Safety Light Curtains	Tongue Operated Switches
Features	• Large selection of actuator heads • Positive operation, forced disconnection of contacts • Snap-acting, slow make before break or slow break before make contacts • Selection of contact configurations	• Monitors multiple inputs in one base controller e.g. interlocks, light curtains, safety mats • Safety category 4, stop category 0 • Interconnecting system offers input units, output units, controller and display module • Removable terminal options • 24V DC only	• 14 mm or 30 mm object sensitivity • 320 mm to 1760 mm protective field in 160 mm increments • Range up to 18 m • PNP outputs (2 N.O. Safety + 1 N.O. Non Safety)	• Selection of actuators available • Versions available with quick disconnect (QD) • GD2 versions offer increased robustness
Approvals	—	CE marked for all applicable directives and approved by UL, BG and TUV where relevant	CE marked for all applicable directives and approved by TUV where relevant	CE marked for all applicable directives and approved by cULus and TUV where relevant
Standards	Conforms to EN 1088, EN 60947-5-1, EN 292 and EN 60204-1	Conform to EN 954-1, EN 292, EN 60204-1	Conform to relevant standards EN 61496 parts 1 and 2, EN 50100	Conform to standards EN 60947-5-1, EN 1088 (ISO14119), EN 292 (ISO 12100), EN 60204-1
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Sensors and Safety
Product Line Overview

Sensors and Safety (42EF, 42CA, 872C)

			
Bulletin	440G	440N	440E
Type	Guard Locking Switches	Coded Non Contact Interlock Switches	Cable (Rope) Pull Switches
Features	• Selection of actuators available • Versions available with quick disconnect (QD) • Ideal for use in applications with machine run-down, ensuring the guard remains closed until hazardous motion has ceased	• Coded magnetic operation—resistant to defeat • Plastic or stainless steel housing options • Pre-wired or quick disconnect options (QD) • Sensor, controller and contactor monitoring • Selection of control units available • Ideal for medium to high risk applications	• Switches up to 125m span • Switch lockout on cable pulled and cable slack • Cable-status indicator on switch lid • Unique cable grip system
Approvals	CE marked for all applicable directives and approved by cULus and TUV where relevant	CE marked for all applicable directives and approved by cULus and TUV where relevant	CE marked for all applicable directives and approved by cULus, BG and TUV where relevant
Standards	Conform to standards EN 60947-5-1, EN 1088 (ISO 14119), EN 292 (ISO 12100), EN 60204-1	Conform to standards EN 60947-5-1, EN 1088 (ISO14119), EN 292 (ISO 12100), EN 60204-1	Conform to standards EN 418 (ISO 13850), EN 292 (ISO 12100), EN 60947-5-1, BS 5304
Product Selection	Page 308	Page 309	Page 310

Sensors and Safety (440P, 440R, 440L, 440K)

			
Bulletin	42EF	42CA	872C
Type	Photoelectric Sensors RightSight™	Photoelectric Sensors General Purpose Proximity Sensors WorldProx™ Inductive	Photoelectric Sensors General Purpose Proximity Sensors WorldProx™ Inductive
Features	• Compact right angle housing • 360 ° visible LED Indicators • Flexible 18 mm mounting options • 1200 psi washdown rating • No user adjustments • Reverse polarity protection • Short-circuit protected outputs • Fast 1 ms response time (DC) • False pulse protection	• 18 mm industry standard package • Wide selection of sensing modes • 30V DC operation • NPN or PNP outputs • Fast response time • Variety of connection types	• Smooth or threaded nickel-plated brass barrel • 360 ° visible LED • Cable or quick-disconnect styles • Short circuit protection • Overload protection • Transient noise protection • False pulse protection • Reverse polarity protection
Connection Type	Cables, Connector M12 and M8	Micro M12 Connector	Mini, Micro, Pico Style Connector
Sensing Mode	Polarized Retroreflective, Standard Diffuse, Background Suppression, Transmitted Beam, Infrared Fibre Optic, Sharp Cutoff Diffuse	Retroreflective, Polarized Retroreflective, Standard Diffuse, Background, Suppression, Transmitted Beam	—
Approvals	UL listed, c-UL listed, and CE marked for all applicable directives	CE marked for all applicable directives	UL listed, c-UL listed, and CE marked for all applicable directives
Standards	—	—	—
Product Selection	Page 311	Page 315	Page 318

440P Safety Limit Switches



440P Senator in Plastic Housing — EN50047

Description		Safety Contacts	Auxiliary Contacts	Contact Type *	Cat. No.		PGC
M20 Conduit Style	Roller Plunger	1 N.C.	1 N.O.	Snap Acting	440P-CRPS11B		GPA
	Roller Plunger	2 N.C.	1 N.O.	BBM	440P-CRPB12B		GPA
	Dome Plunger	1 N.C.	1 N.O.	Snap Acting	440P-CDPS11B		GPA
	Dome Plunger	2 N.C.	1 N.O.	BBM	440P-CDPB12B		GPA
	Short Lever	1 N.C.	1 N.O.	Snap Acting	440P-CSLS11B		GPA
	Short Lever	2 N.C.	1 N.O.	BBM	440P-CSLB12B		GPA
	Adjustable Lever	1 N.C.	1 N.O.	Snap Acting	440P-CALS11B		GPA
QD Style	Adjustable Lever	2 N.C.	1 N.O.	BBM	440P-CALB12B		GPA
	Roller Plunger	1 N.C.	1 N.O.	Snap Acting	440P-CRPS11D4		GPA
	Roller Plunger	2 N.C.	1 N.O.	BBM	440P-CRPB12R6		GPA
	Dome Plunger	1 N.C.	1 N.O.	Snap Acting	440P-CDPS11D4		GPA
	Dome Plunger	2 N.C.	1 N.O.	BBM	440P-CDPB12R6		GPA
	Short Lever	1 N.C.	1 N.O.	Snap Acting	440P-CSLS11D4		GPA
	Short Lever	2 N.C.	1 N.O.	BBM	440P-CSLB12R6		GPA
	Adjustable Lever	1 N.C.	1 N.O.	Snap Acting	440P-CALS11D4		GPA
	Adjustable Lever	2 N.C.	1 N.O.	BBM	440P-CALB12R6		GPA
	Recommended Mating Cable for 1 N.C.+1 N.O. - 2 m	—	—	—	889D-F4AC-2		G1B
	Recommended Mating Cable for 2 N.C.+1 N.O. - 2 m	—	—	—	889R-F6ACA-2		G1B

Other contact configurations and actuator types are available.
* SA = Snap Acting contact operation. BBM = Break Before Make contact operation. MBB = Make Before Break contact operation.
Discount Group GP, Discount Group G1 (889D, 889R)

See publication S115-CA001_-EN-P for complete product information.

440P Safety Limit Switches



440P Senator in Metal Housing — EN50041

Description		Safety Contacts	Auxiliary Contacts	Contact Type *	Cat. No.		PGC
M20 Conduit Style	Roller Plunger	1 N.C.	1 N.O.	Snap Acting	440P-MRPS11B		GPA
	Roller Plunger	2 N.C.	2 N.O.	MBB	440P-MRPB22B		GPA
	Dome Plunger	1 N.C.	1 N.O.	Snap Acting	440P-MDPS11B		GPA
	Dome Plunger	2 N.C.	2 N.O.	MBB	440P-MDPB22B		GPA
	Short Lever	1 N.C.	1 N.O.	Snap Acting	440P-MSLS11B		GPA
	Short Lever	2 N.C.	2 N.O.	MBB	440P-MSLB22B		GPA
	Adjustable Lever	1 N.C.	1 N.O.	Snap Acting	440P-MALS11B		GPA
	Adjustable Lever	2 N.C.	2 N.O.	MBB	440P-MALB22B		GPA
QD Style	Roller Plunger	1 N.C.	1 N.O.	Snap Acting	440P-MRPS11N5		GPA
	Roller Plunger	2 N.C.	2 N.O.	MBB	440P-MRPB22M9		GPA
	Dome Plunger	1 N.C.	1 N.O.	Snap Acting	440P-MDPS11N5		GPA
	Dome Plunger	2 N.C.	2 N.O.	MBB	440P-MDPB22M9		GPA
	Short Lever	1 N.C.	1 N.O.	Snap Acting	440P-MSLS11N5		GPA
	Short Lever	2 N.C.	2 N.O.	MBB	440P-MSLB22M9		GPA
	Adjustable Lever	1 N.C.	1 N.O.	Snap Acting	440P-MALS11N5		GPA
	Adjustable Lever	2 N.C.	2 N.O.	MBB	440P-MALB22M9		GPA
	Recommended Mating Cable for 1 N.C.+1 N.O. - 2 m	—	—	—	889N-F5AE-6F		G1B
	Recommended Mating Cable for 2 N.C.+1 N.O. - 2 m	—	—	—	889M-F12X9AE-2		G1B

Other contact configurations and actuator types are available.

* SA = Snap Acting contact operation. BBM = Break Before Make contact operation. MBB = Make Before Break contact operation.

Discount Group GP, Discount Group G1 (889N, 889M)

See publication S115-CA001_-EN-P for complete product information.

440R Safety Relays

Features

- Category 4 per EN954-1
- Removable or Fixed Terminals
- Monitored Manual or Automatic Reset

Model Key

- T = Automatic / Manual Reset
- R = Monitored Manual Reset
- P = Removable Terminals

Approvals

- C-Tick, CE, cULus, BG



Stop Category 0 Relays

Inputs	Safety Outputs	Auxiliary Outputs	Terminals	Supply Voltage	Model	Cat. No.		PGC	
1 N.C.	3 N.O.	1 N.C.	Fixed	24V AC/DC	MSR5T	440R-B23020		GQA	
Light Curtain or Single Channel (MSR126T)	2 N.O.	None	Fixed	24V AC/DC	MSR126T	440R-N23117		GRA	
				110V AC	MSR126T	440R-N23116		GRA	
				230V AC	MSR126T	440R-N23115		GRA	
				24V AC/DC	MSR126R	440R-N23123		GRA	
				110V AC	MSR126R	440R-N23122		GRA	
				230V AC	MSR126R	440R-N23121		GRA	
Dual Channel (MSR126.IT)	2 N.O.	None	Fixed	24V AC/DC	MSR126.1T	440R-N23114		GRA	
				110V AC	MSR126.1T	440R-N23113		GRA	
				230V AC	MSR126.1T	440R-N23112		GRA	
				24V AC/DC	MSR126.1R	440R-N23120		GRA	
				110V AC	MSR126.1R	440R-N23119		GRA	
				230V AC	MSR126.1R	440R-N23118		GRA	
1 N.C., 2 N.C. or Light Curtain	3 N.O.	1 N.C.	Fixed	24V AC/DC	MSR127T	440R-N23126		GQA	
				110V AC	MSR127T	440R-N23125		GQA	
				230V AC	MSR127T	440R-N23124		GRA	
				24V AC/DC	MSR127R	440R-N23129		GQA	
				110V AC	MSR127R	440R-N23128		GQA	
				230V AC	MSR127R	440R-N23127		GRA	
			Removable	24V AC/DC	MSR127TP	440R-N23132		GQA	
				110V AC	MSR127TP	440R-N23131		GRA	
				230V AC	MSR127TP	440R-N23130		GQA	
				24V AC/DC	MSR127RP	440R-N23135		GQA	
	5 N.O.		Fixed	110V AC	MSR127RP	440R-N23134		GQA	
				230V AC	MSR127RP	440R-N23133		GMR	
				24V AC/DC	MSR124RT	440R-G23110		GRA	
				110V AC	MSR124RT	440R-G23108		GRA	
230V AC		MSR124RT	440R-G23107		GRA				
Light Curtain or Safety Mat	3 N.O.	2 N.C., 2 PNP Solid State	Removable	24V AC/DC	MSR131RTP	440R-C23139		GQA	
				110V AC	MSR131RTP	440R-C23137		GQA	
				230V AC	MSR131RTP	440R-C23136		GRA	

Discount Group GQ

440R Safety Relays with Delayed Outputs

Features

- Category 4/3 per EN954-1
- Removable Terminals
- Monitored Manual or Automatic Reset
- Can take 1NC, 2NC or Light Curtain Input

Model Key

- T = Automatic / Manual Reset
- R = Monitored Manual Reset
- P = Removable Terminals
- D = Delayed Outputs
- E = Expander

Approvals

- C-Tick, CE, cULus, BG



MSR138



MSR132E

Stop Category 1 Relays

Instant Safety Outputs	Delayed Safety Outputs	Time Range	Supply Voltage	Model	Cat. No.		PGC
2 N.O.	3 N.O.	0.15...3 seconds	24V AC/DC	MSR138DP	440R-M23143		GMR1
			110V AC	MSR138DP	440R-M23141		GMR1
			230V AC	MSR138DP	440R-M23140		GRA
		0.5...10 seconds	24V AC/DC	MSR138DP	440R-M23147		GRA
			110V AC	MSR138DP	440R-M23145		GRA
			230V AC	MSR138DP	440R-M23144		GRA
		1.5...30 seconds	24V AC/DC	MSR138DP	440R-M23151		GRA
			110V AC	MSR138DP	440R-M23149		GMR1
			230V AC	MSR138DP	440R-M23148		GRA
	2 N.O. + 1 N.C.	0.15...3 seconds	24V AC/DC	MSR138.1DP	440R-M23084		GRA
			110V AC	MSR138.1DP	440R-M23082		GRA
			230V AC	MSR138.1DP	440R-M23081		GRA
		0.5...10 seconds	24V AC/DC	MSR138.1DP	440R-M23088		GRA
			110V AC	MSR138.1DP	440R-M23086		GRA
			230V AC	MSR138.1DP	440R-M23085		GRA
		1.5...30 seconds	24V AC/DC	MSR138.1DP	440R-M23092		GRA
			110V AC	MSR138.1DP	440R-M23090		GMR1
			230V AC	MSR138.1DP	440R-M23089		GRA

Discount Group GQ

See publication S115-CA001_-EN-P for complete product information.

440R Safety Relays with Delayed Outputs, Continued
22.5 mm wide Output expander unit for use with Safety Relays

Safety Outputs	Auxiliary Outputs	Time Delay	Terminals	Supply Voltage	Model	Cat. No.		PGC
4 N.O.	2 N.C.	0 seconds	Fixed	24V AC/DC	MSR132E	440R-E23191		GRA
		0.5 seconds		24V DC	MSR132ED	440R-E23192		GRA
		1 second			MSR132ED	440R-E23193		GRA
		2 seconds			MSR132ED	440R-E23194		GRA
		3 seconds			MSR132ED	440R-E23195		GRA
		0 seconds	Removable	24V AC/DC	MSR132EP	440R-E23097		GRA
		0.5 seconds		24V DC	MSR132EDP	440R-E23159		GRA
		1 second			MSR132EDP	440R-E23160		GRA
		2 seconds			MSR132EDP	440R-E23098		GRA
		3 seconds			MSR132EDP	440R-E23161		GRA
		4 seconds			MSR132EDP	440R-E23162		GRA

Discount Group GQ

See publication S115-CA001_-EN-P for complete product information.

440R Safety Relays with Solid State Outputs

Features

- Category 4/3 per EN954-1
- Removable or Fixed Terminals
- Monitored Manual or Automatic Reset
- Solid State Outputs
- 24V DC Supply

Model Key

- T = Automatic / Manual Reset
- R = Monitored Manual Reset
- P = Removable Terminals
- D = Delayed Outputs

Approvals

- C-Tick, CE, cULus, BG



MSR30, 33, 35, 38



MSR125HP

Inputs	Safety Outputs	Auxiliary Outputs	Terminals	Model	Cat. No.		PGC
1 N.C., 2 N.C. or Safety Mat	2 N.O. Solid State	1 N.O. Solid State	Fixed	MSR30RT	440R-N23197		GRA
1 N.C., 2 N.C. or Safety Mat	2 N.O. Solid State	1 N.O. Solid State	Removable	MSR30RTP	440R-N23198		GRA
1 N.C. + 1 N.O.	2 N.O. Solid State	1 N.O. Solid State	Fixed	MSR33RT	440R-F23199		GRA
1 N.C. + 1 N.O.	2 N.O. Solid State	1 N.O.	Removable	MSR33RTP	440R-F23200		GRA
Two-Hand Control	2 N.O. Solid State	1 N.C.	Fixed	MSR35H	440R-D23201		GRA
Two-Hand Control	2 N.O. Solid State	1 N.C.	Removable	MSR35HP	440R-D23202		GRA
1 N.C. or 2 N.C. or Safety Mat	2 N.O. Solid State *	1 N.C. Solid State	Fixed	MSR38D	440R-M23203		GRA
1 N.C. or 2 N.C. or Safety Mat	2 N.O. Solid State *	1 N.C. Solid State	Removable	MSR38DP	440R-M23204		GRA

* Time delay 0.5...300 seconds in 24 steps

Discount Group GQ

440R Two Hand Control Relay to EN574 Category IIIC

Input Buttons	Safety Outputs	Terminals	Model	Supply Voltage	Cat. No.		PGC
Mechanical or Bulletin 800Z	2 N.O.	Fixed	MSR125H	24V DC	440R-D23166		GRA
				110V AC	440R-D23164		GRA
				230V AC	440R-D23163		GRA
				24V DC	440R-D23171		GRA
				110V AC	440R-D23169		GRA
				230V AC	440R-D23168		GRA

Discount Group GQ

See publication S115-CA001_-EN-P for complete product information.

440R Safety Relays with Communications



GT = Gate
ES = E-Stop
SM = Safety Mat
LC = Light Curtain

MSR200 Series Safety Relays

Type	Application	Description	Supply Voltage	Cat. No.		PGC
MSR210P	GT, ES, SM	MatGuard Control Unit, DIN Rail Mounted	24V DC	440R-H23176		GRA
MSR211P	GT, ES, LC			440R-H23177		GQA
MSR220P	GT, ES, SM	MatGuard Control Unit, DIN Rail Mounted	24V DC	440R-H23178		GRA
MSR221P	GT, ES, LC			440R-H23179		GRA
MSR230P	- -	Output extension module	24V DC	440R-H23180		GRA
MSR238P	- -			440R-H23196		GRA
MSR240P	- -	RS232 interface	24V DC	440R-H23181		GRA
MSR240P	- -	RS485 interface		440R-H23182		GRA
MSR240P	- -	RS232 + RS485 interface		440R-H23183		GRA
MSR245P	- -	Display Module	24V DC	440R-H23184		GQA

Discount Group GQ

See publication S115-CA001_-EN-P for complete product information.

440L GuardShield Safety Light Curtains

Features

- Safety category — Type 4
- PNP Outputs (2 N.O. Safety + 1 N.O. Aux.)
- 14 mm or 30 mm objects sensitivity
- Fixed blanking — teachable
- Floating blanking — one or two beams
- Beam coding
- External device monitoring (EDM)
- Start/restart interlock
- TUV approved



GuardShield Safety Category Type 4

Resolution - 14 mm				
Protected Height (mm)	Response Time	Cat. No.		PGC
160	20 ms	440L-P4J0160YD		GLB
320	20 ms	440L-P4J0320YD		GLB
480	20 ms	440L-P4J0480YD		GLB
640	20 ms	440L-P4J0640YD		GLB
800	20 ms	440L-P4J0800YD		GLB
960	20 ms	440L-P4J0960YD		GLB
1120	20 ms	440L-P4J1120YD		GLB
1280	20 ms	440L-P4J1280YD		GLB
1440	20 ms	440L-P4J1440YD		GLB
1600	25 ms	440L-P4J1600YD		GLB
1760	25 ms	440L-P4J1760YD		GLB
Transmitter Cable: 4 pin Straight, 5 m		889D-F4AC-5		G1B
Receiver Cable: 8 pin Straight, 5 m		889D-F8AB-5		G1B

Discount Group GL, Discount Group G1 (889D)

GuardShield Safety Category Type 4, Continued

Resolution - 30 mm				
Protected Height (mm)	Response Time	Cat. No.		PGC
160	20 ms	440L-P4K0160YD		GLB
320	20 ms	440L-P4K0320YD		GLB
480	20 ms	440L-P4K0480YD		GLB
640	20 ms	440L-P4K0640YD		GLB
800	20 ms	440L-P4K0800YD		GLB
960	20 ms	440L-P4K0960YD		GLB
1120	20 ms	440L-P4K1120YD		GLB
1280	20 ms	440L-P4K1280YD		GLB
1440	20 ms	440L-P4K1440YD		GLB
1600	20 ms	440L-P4K1600YD		GLB
1760	20 ms	440L-P4K1760YD		GLB
Transmitter Cable: 4 pin Straight, 5 m		889D-F4AC-5		G1B
Receiver Cable: 8 pin Straight, 5 m		889D-F8AB-5		G1B

Discount Group GL, Discount Group G1 (889D)

See publication S115-CA001_-EN-P for complete product information.

440L GuardShield Safety Light Curtains, Continued

GuardShield Safety Category Type 2

Automatic Restart					
Protected Height (mm)	Response Time	Resolution	Cat. No.		PGC
160 mm	20 ms	30 mm	440L-P2KA0160YD		GLB
320 mm	20 ms		440L-P2KA0320YD		GLB
480 mm	20 ms		440L-P2KA0480YD		GLB
640 mm	20 ms		440L-P2KA0640YD		GLB
800 mm	20 ms		440L-P2KA0800YD		GLB
960 mm	20 ms		440L-P2KA0960YD		GLB
1120 mm	20 ms		440L-P2KA1120YD		GLB
1280 mm	20 ms		440L-P2KA1280YD		GLB
1440 mm	20 ms		440L-P2KA1440YD		GLB
1600 mm	25 ms		440L-P2KA1600YD		GLB
1760 mm	25 ms		440L-P2KA1760YD		GLB
Transmitter Cable: 4 pin Straight, 5 m		—	889D-F4AC-5		G1B
Receiver Cable: 8 pin Straight, 5 m		—	889D-F8AB-5		G1B

Discount Group GL, Discount Group G1 (889D)

GuardShield Safety Category Type 2, Continued

Manual Restart EDM					
Protected Height (mm)	Response Time	Resolution	Cat. No.		PGC
160 mm	20 ms	30 mm	440L-P2KD0160YD		GLB
320 mm	20 ms		440L-P2KD0320YD		GLB
480 mm	20 ms		440L-P2KD0480YD		GLB
640 mm	20 ms		440L-P2KD0640YD		GLB
800 mm	20 ms		440L-P2KD0800YD		GLB
960 mm	20 ms		440L-P2KD0960YD		GLB
1120 mm	20 ms		440L-P2KD1120YD		GLB
1280 mm	20 ms		440L-P2KD1280YD		GLB
1440 mm	20 ms		440L-P2KD1440YD		GLB
1600 mm	25 ms		440L-P2KD1600YD		GLB
1760 mm	25 ms		440L-P2KD1760YD		GLB
Transmitter Cable: 4 pin Straight, 5 m		—	889D-F4AC-5		G1B
Receiver Cable: 8 pin Straight, 5 m		—	889D-F8AB-5		G1B

Discount Group GL, Discount Group G1 (889D)

See publication S115-CA001_-EN-P for complete product information.

440K Tongue Operated Switches

Features

- Conform to EN1088, EN292, EN60947-5-1 and EN60204-1
- Metal and Plastic Bodies
- GD2 offer stainless steel heads for demanding applications
- All complete with actuator

Approvals

- CE, cULus, TUV



Cadet 3



Trojan T15



MT GD2



Trojan 5

Model	Safety Contacts	Auxiliary Contacts	Housing Material	Conduit Entry	Comment	Cat. No.		PGC
Cadet 3	2 N.C.	1 N.O.	UL approved glass filled polyester	1 x M16	DIN 50047	440K-C21061		GJB
Cadet 3	3 N.C.	—	UL approved glass filled polyester	1 x M16	DIN 50047	440K-C21097		GJB
Trojan T15	1 N.C. direct opening action	1 N.O.	UL approved glass filled P.B.T.	3 x M20		440K-T11305		GJB
Trojan T15	2 N.C. direct opening action	—	UL approved glass filled P.B.T.	3 x M20 / 1/2 in Adaptor		440K-T11267		GJB
Trojan T15 GD2	1 N.C. direct opening action	1 N.O.	UL approved glass filled P.B.T.	3 x M20	GD2	440K-T11398		GJB
Trojan T15 GD2	2 N.C. direct opening action	—	UL approved glass filled P.B.T.	3 x M20	GD2	440K-T11463		GJB
Trojan 5	2 N.C. direct opening action	1 N.O.	UL approved glass filled P.B.T.	3 x M20		440K-T11090		GJB
Trojan 5 GD2	2 N.C. direct opening action	1 N.O.	UL approved glass filled P.B.T.	3 x M20	GD2	440K-T11336		GJB
MT-GD2	2 N.C.	2 N.O.	Painted Zinc	1 x M20	DIN 50041	440K-MT55076		GJB
MT-GD2	3 N.C.	1 N.O.	Painted Zinc	1 x M20	DIN 50041	440K-MT55074		GJB

Discount Group GJ

See publication S115-CA001_-EN-P for complete product information.

440G Guard Locking Switches



440G-MT



TLS-GD2



Atlas 5

Features

- Locks guard shut until open signal is given to interlock
- Conform to EN1088, EN292, EN60947-5-1 and EN60204-1
- Metal and Plastic Bodies
- LED Status Indication

Approvals

- CE, cULus, TUV

Holding Force	Supply Voltage	Material	Safety Contacts	Auxiliary Contacts	Model	Cat. No.		PGC
1600 N (360 lb)	24V AC/DC	Painted Zinc Alloy	3 N.C.	1 N.O.	440G-MT	440G-MT47037		GMG
1600 N (360 lb)	110V AC	Painted Zinc Alloy	3 N.C.	1 N.O.	440G-MT	440G-MT47070		GMG
1600 N (360 lb)	230V AC	Painted Zinc Alloy	3 N.C.	1 N.O.	440G-MT	440G-MT47112		GMG
1600 N (360 lb)	24V AC/DC	Painted Zinc Alloy	2 N.C.	2 N.O.	440G-MT	440G-MT47044		GMG
1600 N (360 lb)	110V AC	Painted Zinc Alloy	2 N.C.	2 N.O.	440G-MT	440G-MT47077		GMG
1600 N (360 lb)	230V AC	Painted Zinc Alloy	2 N.C.	2 N.O.	440G-MT	440G-MT47113		GMG
2000 N (450 lb)	24V AC/DC	UL approved glass filled polyester	2 N.C.	1 N.O.	TLS-1 GD2 Power to Release	440G-T27251		GMG
2000 N (450 lb)	110V AC	UL approved glass filled polyester	2 N.C.	1 N.O.	TLS-1 GD2 Power to Release	440G-T27253		GMG
2000 N (450 lb)	230V AC	UL approved glass filled polyester	2 N.C.	1 N.O.	TLS-1 GD2 Power to Release	440G-T27123		GMG
2000 N (450 lb)	24V AC/DC	UL approved glass filled polyester	2 N.C.	1 N.O.	TLS-3 GD2 Power to Release	440G-T27259		GMG
2000 N (450 lb)	110V AC	UL approved glass filled polyester	2 N.C.	1 N.O.	TLS-3 GD2 Power to Release	440G-T27261		GMG
2000 N (450 lb)	230V AC	UL approved glass filled polyester	2 N.C.	1 N.O.	TLS-3 GD2 Power to Release	440G-T27136		GMG
5500 N (1236 lb)	24V AC/DC	Die cast alloy	2 N.C.	2 N.O.	Standard	440G-L07264		GMG
5500 N (1236 lb)	110V AC	Die cast alloy	2 N.C.	2 N.O.	Standard	440G-L07263		GMG
5500 N (1236 lb)	230V AC	Die cast alloy	2 N.C.	2 N.O.	Standard	440G-L07262		GMG

Discount Group GM

See publication S115-CA001_-EN-P for complete product information.

440N Coded Non Contact Interlock Switches



Sipa Control Units



Sipa Sensors

Features

- Choice of heads — multiple sensors can be connected to one controller
- Mechanical switches with 1 N.O. + 1 N.C. contacts can be included in the circuit
- Magnetically coded system
- Conform to EN1088 and EN60947-5-1
- Ideal for hygiene applications
- Controller doubles up as the safety relay

Approvals

- CE, cULus, TUV

Head Style	Cable Length	Auxiliary Contacts	Material	Cat. No.		PGC
	3 m	None	Moulded ABS	440N-S32014		GNB
	10 m	None	Moulded ABS	440N-S32016		GNB
	3 m	1 N.C.	Moulded ABS	440N-S32022		GNB
	10 m	1 N.C.	Moulded ABS	440N-S32032		GNB
	3 m	1 N.O.	Moulded ABS	440N-S32037		GNB
	10 m	1 N.O.	Moulded ABS	440N-S32036		GNB
	3 m	None	Polyester	440N-S32015		GNB
	10 m	None	Polyester	440N-S32017		GNB
	3 m	1 N.C.	Polyester	440N-S32023		GNB
	10 m	1 N.C.	Polyester	440N-S32033		GNB
	3 m	1 N.O.	Polyester	440N-S32038		GNB
	10 m	1 N.O.	Polyester	440N-S32039		GNB

Discount Group GN

Controllers

Type	Supply Voltage	Safety Outputs	Auxiliary Outputs	Case Size	Cat. No.		PGC
Control Unit 1	24V AC/DC	1 N.O.	1 N.C. Solid State	22.5 mm	440N-S32013		GNB
Control Unit 2	24V AC/DC 110/230V AC	2 N.O.	1 N.C.	45 mm	440N-S32021		GNB
Sipa 6		2 N.O. + 1 N.O. delayed	1 N.C.	90 mm	440N-S32052		GNB

Discount Group GN

See publication S115-CA001_-EN-P for complete product information.

440E Cable (Rope) Pull Switches

Features

- Unique cable grip system
- Can be installed and commissioned in approximately 3 minutes
- Up to 300 mm of cable adjustment
- Cable tidy incorporated into grippers
- Easy to install
- Conform to EN418 (ISO 13850), EN60947-5-5 and EN292



System Length	Safety Contacts	Auxiliary Contacts	Model	Cat. No.		PGC
≤ 30 m	2 N.C.	2 N.O.	LRS3	440E-D13118		GKA
≤ 30 m	3 N.C.	1 N.O.	LRS3	440E-D13112		GKA
≤ 75 m	2 N.C.	2 N.O.	LRS4	440E-L13137		GKA
≤ 75 m	3 N.C.	1 N.O.	LRS4	440E-L13042		GKA
75...125 m	2 N.C.	2 N.O.	LRS4	440E-L13153		GKA
75...125 m	3 N.C.	1 N.O.	LRS4	440E-L13150		GKA

Discount Group GK

LRTS Installation Kits

Description	Length	Cat. No.		PGC
LRTS 10 meter Installation Kit - Comprises: 1 x length of cable (rope), 2 x grippers, 1 x tensioner and quantity of eyebolts.	10 m	440E-A13080		GKA
	20 m	440E-A13082		GKA
	30 m	440E-A13083		GKA
	50 m	440E-A13084		GKA
	75 m	440E-A13085		GKA

Discount Group GK

See publication S115-CA001_-EN-P for complete product information.

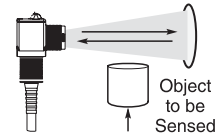
42EF RightSight™ Photoelectric Sensors

Features

- RightSight™ Photoelectric Sensors offer high-performance general purpose sensing in a compact, flexible package
- Designed for applications where simplified installation and maintenance are required
- Suitable for general purpose environments, these sensors can also be used in areas where a rugged photoelectric sensor is required



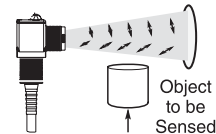
RightSight™ Retroreflective, Standard ON/OFF



Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Current Capacity, Max. Response Time	Leakage Current, Max.	Connection Type	Cat. No.		PGC
10.8...30V DC 35 mA	25 mm...4.5 m	Dark Operate	PNP and NPN 100 mA 1 ms	0.1 mA	2 m 300V cable	42EF-U2KBB-A2		GGP
					4-pin DC micro-M12-QD	42EF-U2KBB-F4		GGP
21.6...264V AC/DC 15 mA			N-MOSFET 100 mA 8.3 ms	0.4 mA	2 m 300V cable	42EF-U2SCB-A2		GGP
					4-pin AC micro-M12-QD	42EF-U2SCB-G4		GGP

Discount Group GG

RightSight™ Polarized Retroreflective, Standard ON/OFF



Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Current Capacity, Max. Response Time	Leakage Current, Max.	Connection Type	Cat. No.		PGC
10.8...30V DC 35 mA	25 mm...3 m	Complementary Light / Dark Outputs	PNP 100 mA 1 ms	0.1 mA	2 m 300V cable	42EF-P2MPB-A2		GGP
					4-pin DC micro-M12-QD	42EF-P2MPB-F4		GGP
21.6...264V AC/DC 15 mA		Dark Operate	N-MOSFET 100 mA 8.3 ms	0.4 mA	2 m 300V cable	42EF-P2SCB-A2		GGP
					4-pin AC micro-M12-QD	42EF-P2SCB-G4		GGP

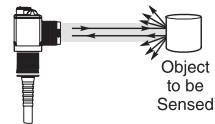
Discount Group GG

Bulletin 42EF

Sensors and Safety

Product Selection

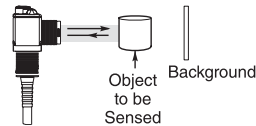
RightSight™ Standard Diffuse, Standard ON/OFF



Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Current Capacity, Max. Response Time	Leakage Current, Max.	Connection Type	Cat. No.	PGC
10.8...30V DC 35 mA	25...500 mm	Complementary Light / Dark Outputs	PNP and NPN 100 mA 1 ms	0.1 mA	2 m 300V cable	42EF-D1MPAK-A2	GGP
					4-pin DC micro-M12-QD	42EF-D1MPAK-F4	GGP
21.6...264V AC/DC 15 mA		Light Operate	N-MOSFET 100 mA 8.3 ms	0.4 mA	2 m 300V cable	42EF-D1RCAK-A2	GGP
					4-pin AC micro-M12-QD	42EF-D1RCAK-G4	GGP

Discount Group GG

RightSight™ Background Suppression, Standard ON/OFF

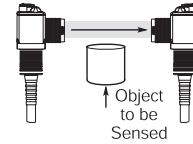


Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Current Capacity, Max. Response Time	Leakage Current, Max.	Connection Type	Cat. No.		PGC	
10.8...30V DC 35 mA	3...50 mm	Compleme ntary Light / Dark Outputs	PNP 100 mA 1 ms	0.1 mA	2 m 300V cable	42EF-B1MPBC-A2		GGP	
					4-pin DC micro-M12-QD	42EF-B1MPBC-F4		GGP	
	3...100 mm				2 m 300V cable	42EF-B1MPBE-A2		GGP	
					4-pin DC micro-M12-QD	42EF-B1MPBE-F4		GGP	
21.6...264 V AC/DC 15 mA		Light Operate	N-MOSFET 100 mA 8.3 ms	0.4 mA	2 m 300V cable	42EF-B1RCBE-A2		GGP	
					4-pin AC micro-M12-QD	42EF-B1RCBE-G4		GGP	

Discount Group GG

Additional QD cordsets see page 326.
See publication C114-CA001_-EN-P for complete product information.

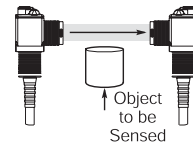
RightSight™ Transmitted Beam Light Source, Standard ON/OFF



Operating Voltage Supply Current	Max. Sensing Distance	Connection Type	Cat. No.		PGC	
10.8...30V DC 35 mA	Depends on Receiver	2 m 300V cable	42EF-E1EZB-A2		GGP	
		4-pin DC micro-M12-QD	42EF-E1EZB-F4		GGP	
21.6...264V AC/DC 15 mA				2 m 300V cable	42EF-E1QZB-A2	GGP
				4-pin AC micro-M12-QD	42EF-E1QZB-G4	GGP

Discount Group GG

RightSight™ Transmitted Beam Receivers, Standard ON/OFF



Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Current Capacity, Max. Response Time	Leakage Current, Max.	Connection Type	Cat. No.		PGC	
10.8...30V DC 25 mA	4 m	Complementary Light / Dark Outputs	PNP 100 mA 4 ms	0.1 mA	2 m 300V cable	42EF-R9MPBV-A2		GGP	
					4-pin DC micro-M12-QD	42EF-R9MPBV-F4		GGP	
	8 m				2 m 300V cable	42EF-R9MPBT-A2		GGP	
					4-pin DC micro-M12-QD	42EF-R9MPBT-F4		GGP	
					20 m	2 m 300V cable	42EF-R9MPB-A2		GGP
						4-pin DC micro-M12-QD	42EF-R9MPB-F4		GGP
21.6...264V AC/DC 15 mA	20 m	Dark Operate	N-MOSFET 100 mA 8.3 ms	0.4 mA	2 m 300V cable	42EF-R9SCB-A2		GGP	
					4-pin AC micro-M12-QD	42EF-R9SCB-G4		GGP	

Discount Group GG

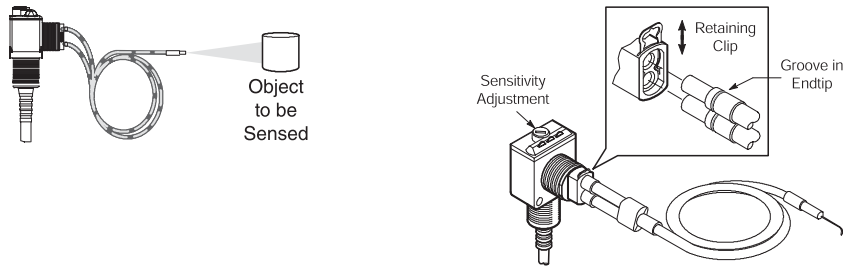
Additional QD cordsets see page 326.
See publication C114-CA001_-EN-P for complete product information.

Bulletin 42EF

Sensors and Safety

Product Selection

RightSight™ Infrared Glass Fiber Optic, Standard ON/OFF



Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Current Capacity, Max. Response Time	Leakage Current, Max.	Connection Type	Cat. No.		PGC
10.8...30V DC 25 mA	Depends on Glass Fiber Optic cable selected	Complementary Light / Dark Outputs	PNP 100 mA 1 ms	0.1 mA	2 m 300V cable	42EF-G1MPA-A2		GGP
					4-pin DC micro-M12- QD	42EF-G1MPA-F4		GGP
21.6...264V AC/DC 15 mA		Dark Operate	N-MOSFET 100 mA 8.3 ms	0.4 mA	2 m 300V cable	42EF-G1SCA-A2		GGP
					4-pin AC micro-M12- QD	42EF-G1SCA-G4		GGP

Discount Group GG

Additional QD cordsets see page 326.
See publication C114-CA001_EN-P for complete product information.

42CA General Purpose Photoelectric Sensors — 18 mm Cylindrical Style

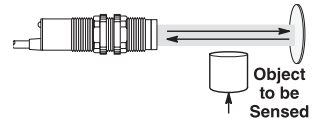
Features

- The 42CA is a family of general purpose photoelectric sensors intended for light to medium duty industrial applications
- Packaged in an industry standard 18 mm cylindrical housing
- Five possible modes of sensing include transmitted beam, diffuse, retroreflective, polarized retroreflective, and background suppression



42CA Retroreflective

- Leakage Current max. <10 μ A

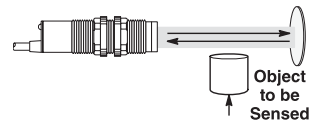


Operating Voltage Supply Current	@ 2x MarginSensing Distance	Output Energized	Output Type Current Capacity, Max. Response Time	Connection Type	Cordset Catalog Number	Cat. No.		PGC
10...30V DC 30 mA	3 mm...4 m	Light	PNP 100 mA 4 ms	2 m 300V cable	—	42CA-U1JPB-A2		GGF
				4-pin DC micro QD	889D-F4AC-2	42CA-U1JPB-D4		GGF
		Dark		2 m 300V cable	—	42CA-U1KPB-A2		GGF
				4-pin DC micro QD	889D-F4AC-2	42CA-U1KPB-D4		GGF

Discount Group GG

42CA Polarized Retroreflective

- Leakage Current max. <10 μ A



Operating Voltage Supply Current	Sensing Distance @ 2x Margin	Output Energized	Output Type Current Capacity, Max. Response Time	Connection Type	Cordset Catalog Number	Cat. No.		PGC
10...30V DC 30 mA	3 mm...4 m	Light	PNP 100 mA 2 ms	2 m 300V cable	—	42CA-P2JPB-A2		GGF
				4-pin DC micro QD	889D-F4AC-2	42CA-P2JPB-D4		GGF
		Dark		2 m 300V cable	—	42CA-P2KPB-A2		GGF
				4-pin DC micro QD	889D-F4AC-2	42CA-P2KPB-D4		GGF

Discount Group GG

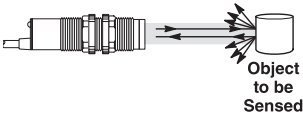
Additional QD cordsets see page 326.

See publication C114-CA001_-EN-P for complete product information.

General Purpose Photoelectric Sensors

42CA Standard Diffuse

- Leakage Current max. <10 µA



Operating Voltage Supply Current	Sensing Distance @ 1x Margin	Output Energized	Output Type Current Capacity, Max. Response Time	Connection Type	Cordset Catalog Number	Cat. No.	PGC
10...30V DC 30 mA	0...100 mm	Light	PNP 100 mA 4 ms	2 m 300V cable	—	42CA-D1JPAE-A2	GGF
				4-pin DC micro QD	889D-F4AC-2	42CA-D1JPAE-D4	GGF
		Dark		2 m 300V cable	—	42CA-D1KPAE-A2	GGF
				4-pin DC micro QD	889D-F4AC-2	42CA-D1KPAE-D4	GGF
	0...400 mm	Light	PNP 100 mA 2 ms	2 m 300V cable	—	42CA-D1JPAJ-A2	GGF
				4-pin DC micro QD	889D-F4AC-2	42CA-D1JPAJ-D4	GGF
		Dark		2 m 300V cable	—	42CA-D1KPAJ-A2	GGF
				4-pin DC micro QD	889D-F4AC-2	42CA-D1KPAJ-D4	GGF

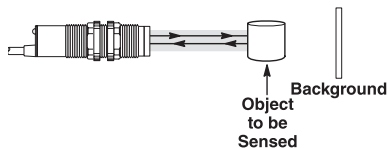
Discount Group GG

Additional QD cordsets see page 326.
See publication C114-CA001_-EN-P for complete product information.

General Purpose Photoelectric Sensors

42CA Background Suppression

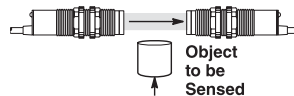
- Leakage Current max. <10 μ A



Operating Voltage Supply Current	Sensing Distance @ 1x Margin	Output Energized	Output Type Current Capacity, Max. Response Time	Connection Type	Cordset Catalog Number	Cat. No.	PGC
10...30V DC 30 mA	50 mm	Light Operate/Dark Operate Selectable	PNP 100 mA 0.5 ms	2 m 300V cable	—	42CA-B2LPBC-A2	GGF
				4-pin DC micro QD	889D-F4AC-2	42CA-B2LPBC-D4	GGF
	100 mm	Light Operate/Dark Operate Selectable	PNP 100 mA 0.5 ms	2 m 300V cable	—	42CA-B2LPBE-A2	GGF
				4-pin DC micro QD	889D-F4AC-2	42CA-B2LPBE-D4	GGF

Discount Group GG

42CA Transmitted Beam



Light Sources

Operating Voltage Supply Current	Sensing Distance	Connection Type	Cordset Catalog Number	Cat. No.	PGC
10...30V DC 25 mA	3 mm...8 m	2 m 300V cable	—	42CA-E1EZB-A2	GGF
		4-pin DC micro QD	889D-F4AC-2	42CA-E1EZB-D4	GGF

Discount Group GG

Receivers

Operating Voltage Supply Current	Photoelectric Output Energized	Output Type Current Capacity, Max. Response Time	Leakage Current, Max.	Connection Type	Cordset Catalog Number	Cat. No.	PGC
10...30V DC 25 mA	Light Operate/Dark Operate Selectable	PNP 100 mA 2 ms	0.1 μ A	2 m 300V cable	—	42CA-R1LPA-A2	GGF
10...30V DC 25 mA	Light Operate/Dark Operate Selectable	PNP 100 mA 2 ms	0.1 μ A	4-pin DC micro QD	889D-F4AC-2	42CA-R1LPA-D4	GGF

Discount Group GG

Additional QD cordsets see page 326.

See publication C114-CA001_-EN-P for complete product information.

Bulletin 872C

Sensors and Safety

Product Selection

872C WorldProx™ 2-Wire AC

Plastic Face/Threaded Nickel-Plated Brass Barrel

Features

- 2-wire operation
- 3-conductor or 3-pin connection
- 20-250V AC
- Normally open or normally closed output
- False pulse and transient noise protection
- Extended sensing distance on 18 mm unshielded models
- CE marked for all applicable directives



872C AC
Cable Style



872C AC Micro
Quick-Disconnect Style

Sensor Type	Barrel Diameter	Nominal Sensing Distance (mm)	Shielded	Output Config.	Switching Frequency (Hz)	Corset Catalog Number	Cat. No.		PGC
Cable Style	12mm	2	Yes	N.O.	15	—	872C-A2N12-A2		G4K
				N.C.			872C-A2C12-A2		G4K
		4	No	N.O.			872C-A4N12-A2		G4K
				N.C.			872C-A4C12-A2		G4K
	18 mm	5	Yes	N.O.			872C-A5N18-A2		G4K
				N.C.			872C-A5C18-A2		G4K
		10	No	N.O.			872C-A10N18-A2		G4K
				N.C.			872C-A10C18-A2		G4K
	30 mm	10	Yes	N.O.			872C-A10N30-A2		G4K
				N.C.			872C-A10C30-A2		G4K
		15	No	N.O.			872C-A15N30-A2		G4K
				N.C.			872C-A15C30-A2		G4K
Micro QD Style	12 mm	2	Yes	N.O.	15	889R-F3ACA-2	872C-A2N12-R3		G4K
				N.C.			872C-A2C12-R3		G4K
		4	No	N.O.			872C-A4N12-R3		G4K
				N.C.			872C-A4C12-R3		G4K
	18 mm	5	Yes	N.O.			872C-A5N18-R3		G4K
				N.C.			872C-A5C18-R3		G4K
		10	No	N.O.			872C-A10N18-R3		G4K
				N.C.			872C-A10C18-R3		G4K
	30 mm	10	Yes	N.O.			872C-A10N30-R3		G4K
				N.C.			872C-A10C30-R3		G4K
		15	No	N.O.			872C-A15N30-R3		G4K
				N.C.			872C-A15C30-R3		G4K

Discount Group G4

Additional QD cordsets see page 325.
See publication C114-CA001_-EN-P for complete product information.

872C WorldProx™ 2-Wire DC

Plastic Face/Threaded Nickel-Plated Brass Barrel

Features

- 2-wire operation
- 2-conductor or 4-pin connection
- 10-30V DC
- Normally open or normally closed output
- Reverse polarity, short circuit, overload, false pulse and transient noise protection
- UL listed, c-UL listed and CE marked for all applicable directives



872C DC
Cable Style



872C DC Micro
Quick-Disconnect Style

Sensor Type	Barrel Diameter	Nominal Sensing Distance (mm)	Shielded	Output Config.	Switching Frequency (Hz)	Cordset Catalog Number	Cat. No.		PGC
Cable Style	12 mm	3	Yes	N.O.	2000	—	872C-D3NE12-A2		G4L
				N.C.			872C-D3CE12-A2		G4L
		4	No	N.O.			872C-D4NE12-A2		G4L
				N.C.			872C-D4CE12-A2		G4L
	18 mm	5	Yes	N.O.	1000		872C-D5NE18-A2		G4L
				N.C.			872C-D5CE18-A2		G4L
		8	No	N.O.			872C-D8NE18-A2		G4L
				N.C.			872C-D8CE18-A2		G4L
	30 mm	10	Yes	N.O.	500		872C-D10NE30-A2		G4L
				N.C.			872C-D10CE30-A2		G4L
		15	No	N.O.			872C-D15NE30-A2		G4L
				N.C.			872C-D15CE30-A2		G4L
Micro QD Style	12 mm	3	Yes	N.O.	2000	889D-F4AC-2	872C-D3NE12-D4		G4L
				N.C.			872C-D3CE12-D4		G4L
		4	No	N.O.			872C-D4NE12-D4		G4L
				N.C.			872C-D4CE12-D4		G4L
	18 mm	5	Yes	N.O.	1000		872C-D5NE18-D4		G4L
				N.C.			872C-D5CE18-D4		G4L
		8	No	N.O.			872C-D8NE18-D4		G4L
				N.C.			872C-D8CE18-D4		G4L
	30 mm	10	Yes	N.O.	500		872C-D10NE30-D4		G4L
				N.C.			872C-D10CE30-D4		G4L
		15	No	N.O.			872C-D15NE30-D4		G4L
				N.C.			872C-D15CE30-D4		G4L

Discount Group G4

Additional QD cordsets see page 326.

See publication C114-CA001_-EN-P for complete product information.

Bulletin 872C

Sensors and Safety

Product Selection

872C WorldProx™ 3-Wire DC

Plastic Face/Threaded Nickel-Plated Brass Barrel



872C DC
Cable Style



872C DC Micro
Quick-Disconnect
Style



872C DC Pico
Quick-Disconnect
Style

Features

- 3-wire operation
- 3-conductor, 3- or 4-pin connection
- 10-30V DC
- Normally open or normally closed output
- Reverse polarity, short circuit, overload, false pulse and transient noise protection
- UL listed, c-UL listed and CE marked for all applicable directives

Sensor Type	Barrel Diameter	Sensing Distance (mm)	Shielded	Output Configuration PNP	Cordset Catalog Number	Cat. No.	PGC
Cable Style	8 mm	2	Yes	N.O.	—	872C-D2NP8-E2	G4J
				N.C.		872C-D2CP8-E2	G4J
		3	No	N.O.		872C-D3NP8-E2	G4J
				N.C.		872C-D3CP8-E2	G4J
	12 mm	3	Yes	N.O.		872C-D3NP12-E2	G4L
				N.C.		872C-D3CP12-E2	G4L
		4	No	N.O.		872C-D4NP12-E2	G4L
				N.C.		872C-D4CP12-E2	G4L
	18 mm	5	Yes	N.O.		872C-D5NP18-E2	G4L
				N.C.		872C-D5CP18-E2	G4L
		8	No	N.O.		872C-D8NP18-E2	G4L
				N.C.		872C-D8CP18-E2	G4L
	30 mm	10	Yes	N.O.		872C-D10NP30-E2	G4L
				N.C.		872C-D10CP30-E2	G4L
		15	No	N.O.		872C-D15NP30-E2	G4L
				N.C.		872C-D15CP30-E2	G4L
Micro QD Style	8 mm	2	Yes	N.O.	889D-F3AC-2	872C-D2NP8-D4	G4J
				N.C.		872C-D2CP8-D4	G4J
		3	No	N.O.		872C-D3NP8-D4	G4J
				N.C.		872C-D3CP8-D4	G4J
	12 mm	3	Yes	N.O.		872C-D3NP12-D4	G4L
				N.C.		872C-D3CP12-D4	G4L
		4	No	N.O.		872C-D4NP12-D4	G4L
				N.C.		872C-D4CP12-D4	G4L
	18 mm	5	Yes	N.O.		872C-D5NP18-D4	G4L
				N.C.		872C-D5CP18-D4	G4L
		8	No	N.O.		872C-D8NP18-D4	G4L
				N.C.		872C-D8CP18-D4	G4L
	30 mm	10	Yes	N.O.		872C-D10NP30-D4	G4L
				N.C.		872C-D10CP30-D4	G4L
		15	No	N.O.		872C-D15NP30-D4	G4L
				N.C.		872C-D15CP30-D4	G4L
Pico QD Style	8 mm	2	Yes	N.O.	889P-F3AB-2	872C-D2NP8-P3	G4J
				N.C.		872C-D2CP8-P3	G4J
		3	No	N.O.		872C-D3NP8-P3	G4J
				N.C.		872C-D3CP8-P3	G4J

872C WorldProx™ Short Barrel 3-Wire DC

Plastic Face/Threaded Nickel-Plated Brass Barrel

Features

- 3-wire operation
- 3-conductor, 3- or 4-pin connection
- 10-30V DC
- Normally open or normally closed output
- Reverse polarity, short circuit, overload, false pulse and transient noise protection
- UL listed, c-UL listed and CE marked for all applicable directives



872C DC
Cable Style



872C DC Micro
Quick-Disconnect
Style



872C DC Pico
Quick-Disconnect
Style

Sensor Type	Barrel Diameter	Nominal Sensing Distance (mm)	Shielded	Output Configuration PNP	Cordset Catalog Number	Cat. No.		PGC
Cable Style	12 mm	3	Yes	N.O.	—	872C-DH3NP12-E2		G4L
		4	No			872C-DH4NP12-E2		G4L
		3	Yes	N.C.		872C-DH3CP12-E2		G4L
		4	No			872C-DH4CP12-E2		G4L
	18 mm	5	Yes	N.O.		872C-DH5NP18-E2		G4L
		8	No			872C-DH8NP18-E2		G4L
		5	Yes	N.C.		872C-DH5CP18-E2		G4L
		8	No			872C-DH8CP18-E2		G4L
	30 mm	10	Yes	N.O.		872C-DH10NP30-E2		G4L
		15	No			872C-DH15NP30-E2		G4L
		10	Yes	N.C.		872C-DH10CP30-E2		G4L
		15	No			872C-DH15CP30-E2		G4L
Micro QD Style	12 mm	3	Yes	N.O.	889D-F4AC-2	872C-DH3NP12-D4		G4L
		4	No			872C-DH4NP12-D4		G4L
		3	Yes	N.C.		872C-DH3CP12-D4		G4L
		4	No			872C-DH4CP12-D4		G4L
	18 mm	5	Yes	N.O.		872C-DH5NP18-D4		G4L
		8	No			872C-DH8NP18-D4		G4L
		5	Yes	N.C.		872C-DH5CP18-D4		G4L
		8	No			872C-DH8CP18-D4		G4L
	30 mm	10	Yes	N.O.		872C-DH10NP30-D4		G4L
		15	No			872C-DH15NP30-D4		G4L
		10	Yes	N.C.		872C-DH10CP30-D4		G4L
		15	No			872C-DH15CP30-D4		G4L
Pico QD Style	12 mm	3	Yes	N.O.	889P-F3AB-2	872C-DH3NP12-P3		G4L
		4	No			872C-DH4NP12-P3		G4L
		3	Yes	N.C.		872C-DH3CP12-P3		G4L
		4	No			872C-DH4CP12-P3		G4L
	18 mm	5	Yes	N.O.		872C-DH5NP18-P3		G4L
		8	No			872C-DH8NP18-P3		G4L
		5	Yes	N.C.		872C-DH5CP18-P3		G4L
		8	No			872C-DH8CP18-P3		G4L

Discount Group G4

Bulletin 872C

Sensors and Safety

Product Selection

872C WorldProx™ Extended Sensing 3-Wire DC

Plastic Face/Threaded Nickel-Plated Brass Barrel

Features

- 3-wire operation
- 3-conductor, 4-pin connection
- 10-30V DC
- Normally open or normally closed output
- Reverse polarity, short circuit, overload, false pulse and transient noise protection
- UL and c-UL recognized and CE marked for all applicable directives



872C DC
Cable Style



872C DC Micro
Quick-Disconnect Style

Sensor Type	Barrel Diameter	Nominal Sensing Distance (mm)	Shielded	Output Config. PNP	Switching Frequency (Hz)	Cordset Catalog Number	Cat. No.		PGC
Cable Style	12 mm	4	Yes	N.O.	900	—	872C-M4NP12-A2		G4J
				N.C.			872C-M4CP12-A2		G4J
		8	No	N.O.			872C-N8NP12-A2		G4J
				N.C.			872C-N8CP12-A2		G4J
	18 mm	8	Yes	N.O.	300		872C-M8NP18-A2		G4J
				N.C.			872C-M8CP18-A2		G4J
		12	No	N.O.			872C-N12NP18-A2		G4J
				N.C.			872C-N12CP18-A2		G4J
	30 mm	15	Yes	N.O.	150		872C-M15NP30-A2		G4J
				N.C.			872C-M15CP30-A2		G4J
		20	No	N.O.			872C-N20NP30-A2		G4J
				N.C.			872C-N20CP30-A2		G4J
Micro QD Style	12 mm	4	Yes	N.O.	900	889D-F4AC-2	872C-M4NP12-D4		G4J
				N.C.			872C-M4CP12-D4		G4J
		8	No	N.O.			872C-N8NP12-D4		G4J
				N.C.			872C-N8CP12-D4		G4J
	18 mm	8	Yes	N.O.	300		872C-M8NP18-D4		G4J
				N.C.			872C-M8CP18-D4		G4J
		12	No	N.O.			872C-N12NP18-D4		G4J
				N.C.			872C-N12CP18-D4		G4J
	30 mm	15	Yes	N.O.	150		872C-M15NP30-D4		G4J
				N.C.			872C-M15CP30-D4		G4J
		20	No	N.O.			872C-N20NP30-D4		G4J
				N.C.			872C-N20CP30-D4		G4J

Discount Group G4

Additional QD cordsets see page 326.
See publication C114-CA001_-EN-P for complete product information.

872C WorldProx™ QuadroPlex™ 2-Wire DC

Plastic Face/Threaded Nickel-Plated Brass Barrel

Features

- 2-wire operation
- 4-pin connection
- 10-30V DC
- Normally open or normally closed output
- Short circuit, overload, false pulse and transient noise protection
- UL listed, c-UL listed and CE marked for all applicable directives



872C DC Micro Quick-Disconnect Style

Sensor Type	Barrel Diameter	Nominal Sensing Distance (mm)	Shielded	Output Config.	Switching Frequency (Hz)	Cordset Catalog Number	Cat. No.		PGC
Micro QD Style	12 mm	3	Yes	N.O. or N.C.	2000	889D-F4AC-2	872C-M3Q12-D4		G4L
		4	No				872C-N4Q12-D4		G4L
	18 mm	5	Yes		1000		872C-M5Q18-D4		G4L
		8	No				872C-N8Q18-D4		G4L
	30 mm	10	Yes		500		872C-M10Q30-D4		G4L
		15	No				872C-N15Q30-D4		G4L

Discount Group G4

872C WorldProx™ 4-Wire DC Complementary Output

Plastic Face/Threaded Nickel-Plated Brass Barrel

Features

- 4-wire operation
- 4-conductor or 4-pin connection
- 10-30V DC
- Complementary normally open and normally closed output
- Reverse polarity, Short circuit, overload, false pulse and transient noise protection
- UL listed, c-UL certified and CE marked for all applicable directives



872C DC Cable Style



872C DC Micro Quick-Disconnect Style

Sensor Type	Barrel Diameter	Nominal Sensing Distance (mm)	Shielded	Output Config. PNP	Switching Frequency (Hz)	Cordset Catalog Number	Cat. No.		PGC
Cable Style	12 mm	3	Yes	N.O. and N.C.	2000	—	872C-D3BP12-E2		G4L
	18 mm	5			1000		872C-D5BP18-E2		G4L
	30 mm	10			500		872C-D10BP30-E2		G4L
Micro QD Style	12 mm	3			2000	889D-F4AC-2	872C-D3BP12-D4		G4L
	18 mm	5			1000		872C-D5BP18-D4		G4L
	30 mm	10			500		872C-D10BP30-D4		G4L

Discount Group G4

Additional QD cordsets see page 326.

See publication C114-CA001_EN-P for complete product information.

Bulletin 872C

Sensors and Safety

Product Selection

872C WorldProx™ 2-Wire AC/DC Relay Output

Plastic Face/Threaded Nickel-Plated Brass Barrel

Features

- High output current capability up to 3 amps
- N.O. and N.C. contacts in the same unit
- Isolated outputs
- 360 ° LED
- 30 - 132V AC/DC supply voltage
- Reverse polarity protection (DC)
- Circuit protected against industrial noise and transients
- UL listed, c-UL certified and CE marked for all applicable directives



872C AC/DC Cable Style

Sensor Type	Barrel Diameter	Nominal Sensing Distance (mm)	Shielded	Output Configuration	Switching Frequency (Hz)	Cat. No.		PGC
Cable Style	30 mm	10	Yes	SPDT Relay	100	872C-B10BR30-E2		G4K
		15	No			872C-B15BR30-E2		G4K

Discount Group G4

872C WorldProx™ 3-Wire DC

Plastic Face/Small Smooth Nickel-Plated Brass Barrel

Features

- 3-wire operation
- 3-conductor or 3-pin connection
- 10-30V DC
- Normally open and normally closed output
- Reverse polarity, Short circuit, overload, false pulse and transient noise protection
- CE marked for all applicable directives
- Switching Frequency 2000 Hz



872C DC Cable Style



872C DC Pico Quick-Disconnect Style

Sensor Type	Barrel Diameter	Sensing Distance (mm)	Shielded	Output Configuration	Cordset Catalog Number	Cat. No.		PGC
Cable Style	6.5 mm	2	Yes	N.O.	—	872C-MM1NN7-E2		G4J
				PNP		872C-MM1NP7-E2		G4J
				N.C.		872C-MM1CN7-E2		G4J
				PNP		872C-MM1CP7-E2		G4J
Pico QD Style	6.5 mm	2	Yes	N.O.	889P-F3AB-2	872C-MM1NN7-P3		G4J
				PNP		872C-MM1NP7-P3		G4J
				N.C.		872C-MM1CN7-P3		G4J
				PNP		872C-MM1CP7-P3		G4J

Discount Group G4

Additional QD cordsets see page 326.
See publication C114-CA001_-EN-P for complete product information.

AC Micro (Dual Keyway) Style QD Cordsets

Features

- UL recognized and CSA certified
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Heavy-duty re-inforcing braiding (3 and 6 conductor only) can be used as a grounded shield to reduce noise
- Ratcheting coupling nut for vibration resistance



AC Micro Cordset

Female Connector (Sensor End)		Cable			Cat. No.		PGC
Face View of Female	Connector Style	Wire Color	Wire Type/ Wire Rating/ Wire Size	Length			
	Straight	1 Green (GND) 2 Red/Black Tr. 3 Red/White Tr.	Braided 22AWG 300V 3A	2 m	889R-F3ACA-2		G1B
				5 m	889R-F3ACA-5		G1B
				10 m	889R-F3ACA-10		G1B
			— 18AWG 300V 3A	2 m	889R-F3AEA-2		G1B
				5 m	889R-F3AEA-5		G1B
				10 m	889R-F3AEA-10		G1B
	Right Angle	1 Green (GND) 2 Red/Black Tr. 3 Red/White Tr.	Braided 22AWG 300V 3A	2 m	889R-R3ACA-2		G1B
				5 m	889R-R3ACA-5		G1B
				10 m	889R-R3ACA-10		G1B
			— 18AWG 300V 3A	2 m	889R-R3AEA-2		G1B
5 m				889R-R3AEA-5		G1B	
10 m				889R-R3AEA-10		G1B	
	Straight	1 Red/Black Tr. 2 Red/White Tr. 3 Red 4 Green (GND)	— 18AWG 300V 3A	2 m	889R-F4AEA-2		G1B
				5 m	889R-F4AEA-5		G1B
				10 m	889R-F4AEA-10		G1B
	Right Angle			2 m	889R-R4AEA-2		G1B
				5 m	889R-R4AEA-5		G1B
				10 m	889R-R4AEA-10		G1B
	Straight	1 Red/White Tr. 2 Red 4 Red/Yellow Tr. 5 Red/Black Tr.	— 18AWG 300V 3A	2 m	889R-F5AEA-2		G1B
				5 m	889R-F5AEA-5		G1B
				10 m	889R-F5AEA-10		G1B
	Right Angle			2 m	889R-R5AEA-2		G1B
				5 m	889R-R5AEA-5		G1B
				10 m	889R-R5AEA-10		G1B
	Straight	1 Red/White Tr. 2 Red 3 Green 4 Red/Yellow Tr. 5 Red/Black Tr. 6 Red/Blue Tr.	Braided 22AWG 300V 3A	2 m	889R-F6ACA-2		G1B
				5 m	889R-F6ACA-5		G1B
				10 m	889R-F6ACA-10		G1B
	Right Angle			2 m	889R-R6ACA-2		G1B
				5 m	889R-R6ACA-5		G1B
				10 m	889R-R6ACA-10		G1B

Discount Group G1

See Publication C114-CA001_-EN-P for complete product information.

DC Micro Style QD Cordsets

Features

- Ratcheting coupling nut (on 4-pin DC cordsets)
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- UL recognized and CSA certified



DC Micro Cordset

Female Connector (Sensor End)		Cable			Cat. No.		PGC
Face View of Female	Connector Style	Wire Color	Wire Type/ Wire Size/ Wire Rating	Length			
	Straight	1 Brown 2 White 3 Blue 4 Black	22AWG 300V 3A	2 m	889D-F4AC-2		G1B
				5 m	889D-F4AC-5		G1B
				10 m	889D-F4AC-10		G1B
	Right Angle			2 m	889D-R4AC-2		G1B
				5 m	889D-R4AC-5		G1B
				10 m	889D-R4AC-10		G1B
	Straight		18AWG 300V 3A	2 m	889D-F4AE-2		G1B
				5 m	889D-F4AE-5		G1B
				10 m	889D-F4AE-10		G1B
	Straight	1 Brown 2 White 3 Blue 4 Black 5 Gray	22AWG 300V 3A	2 m	889D-F5AC-2		G1B
				5 m	889D-F5AC-5		G1B
				10 m	889D-F5AC-10		G1B
	Right Angle			2 m	889D-R5AC-2		G1B
				5 m	889D-R5AC-5		G1B
				10 m	889D-R5AC-10		G1B

Pico Style QD Cordsets

Features

- Screw tight coupling nut
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- UL recognized and CSA certified



Pico Cordset

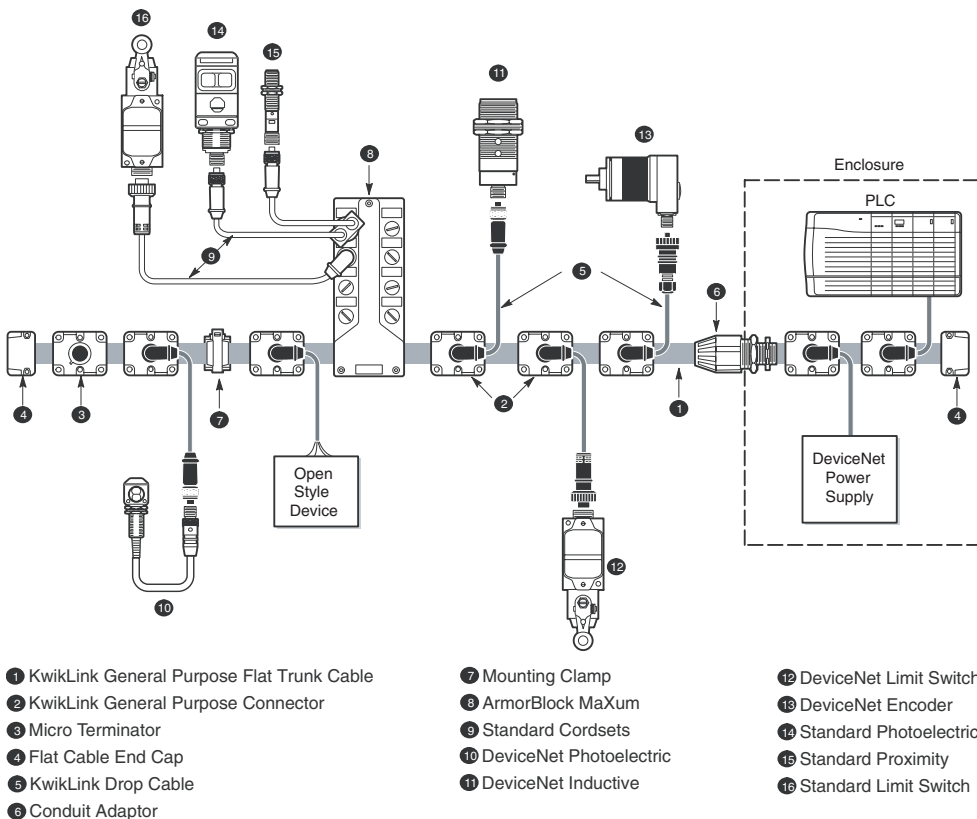
Female Connector (Sensor End)		Cable				
Face View of Female	Connector Style	Wire Color	Wire Type/ Wire Size/ Wire Rating	Length		
	Straight	1 Brown 3 Blue 4 Black	24AWG 300V 3A	2 m	889P-F3AB-2	G1B
				5 m	889P-F3AB-5	G1B
				10 m	889P-F3AB-10	G1B
	Right Angle			2 m	889P-R3AB-2	G1B
				5 m	889P-R3AB-5	G1B
				10 m	889P-R3AB-10	G1B
	Straight	1 Brown 2 White 3 Blue 4 Black	24AWG 300V 3A	2 m	889P-F4AB-2	G1B
				5 m	889P-F4AB-5	G1B
				10 m	889P-F4AB-10	G1B

DeviceNet™ Media

Type	DeviceNet™ Flat Media System—KwikLink™ General Purpose	DeviceNet™ Flat Media System—KwikLink™ Heavy Duty	DeviceNet™ Round Media Thick Trunk System	DeviceNet™ Round Media Thin Trunk System
Product Selection	Page 328	Page 330	Page 332	Page 333

DeviceNet™ Flat Media System — KwikLink™ General Purpose

Typical Configuration



See Publication M115-CA001_-EN-P for complete product information

DeviceNet™ Flat Media System — KwikLink™ General Purpose, continued

KwikLink General Purpose Connector

	Description		Cat. No.		PGC
	KwikLink General Purpose Connector	Micro Style	1485P-K1E4-R5		G2C

Discount Group G2

KwikLink General Purpose Flat Cable Trunk
(Only for use with KwikLink General Purpose connector 1485P-K1E4-R5)

	Description	Spool	Rating	Used	Color	Cat. No.		PGC
	DeviceNet KwikLinkCL2 Trunk Cable	75 m	24V DC, 4 A (Class 2)	Device Net Trunk	Grey (PVC)	1485C-P1K75		G2B
		200 m				1485C-P1K200		G2B
		420 m				1485C-P1K420		G2B

Note: KwikLink General Purpose Flat Cables are not recommended for use with original Heavy Duty KwikLink connectors.

Discount Group G2

KwikLink™ Accessories

In order to support all of the options associated with the flexibility of KwikLink, Allen-Bradley offers an array of accessories including cable mounts, conduit adaptors, flat cable end caps and threaded plugs for sealing unused micro connectors.

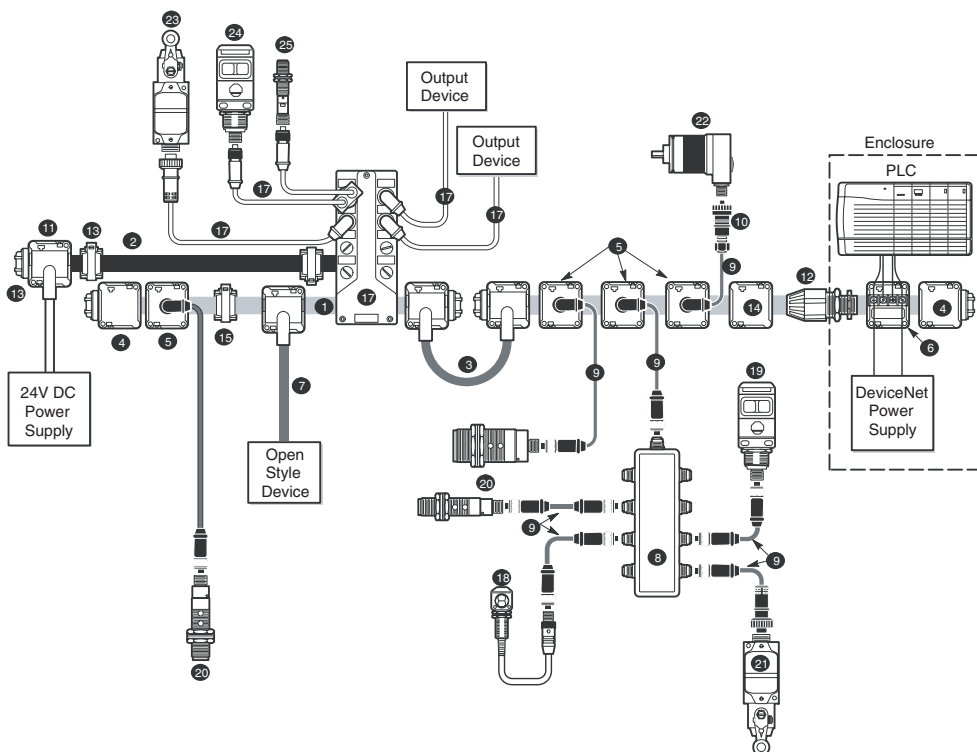
	Description	Cat. No.		PGC
	Flat Cable End Cap	1485A-KCAP		G2B
	Micro Terminator, Male	1485A-T1D5		G2A
	Conduit Adapter	1485A-CAD		G2B
	Flat Cable Mounting Clamp	1485A-FCM		G2B

Discount Group G2

See Publication M115-CA001_-EN-P for complete product information

DeviceNet™ Flat Media System — KwikLink™ Heavy Duty

Typical Configuration



- | | | |
|------------------------------|------------------------|-----------------------------|
| ① Flat Trunk Cable | ⑩ Terminal Chamber | ⑱ DeviceNet RightSight |
| ② Flat Auxiliary Power Cable | ⑪ Auxiliary Power Drop | ⑲ DeviceNet SmartSight 9000 |
| ③ Splice Kit | ⑫ Conduit Adaptor | ⑳ DeviceNet Inductive |
| ④ Terminator | ⑬ Flat Cable End Cap | ㉑ DeviceNet Limit Switch |
| ⑤ Connector IDC | ⑭ Mounting Clamp | ㉒ DeviceNet Encoder |
| ⑥ Open Style IDC | ⑮ Dust Cap | ㉓ Standard Limit Switch |
| ⑦ Class I Drop | ⑯ ArmorBlock MaXum | ㉔ Standard Photoelectric |
| ⑧ DevicePort | ⑰ Standard Cordsets | ㉕ Standard Proximity |
| ⑨ KwikLink Drop Cable | | |

See Publication M115-CA001_-EN-P for complete product information

DeviceNet™ Flat Media System — KwikLink™ Heavy Duty, continued

	Description		Cat. No.		PGC
	KwikLink Insulation Displacement Connectors Quick connection of distributed starters to DeviceNet network Micro M12 connector	*	1485P-P1E4-R5		G2B
	KwikLink Insulation Displacement Connectors Quick connection of distributed starters to DeviceNet network Open Style connector		1485P-P1H4-T4		G2B
	KwikLink Insulation Displacement Connectors Terminator		1485A-T1H4		G2B
	KwikLink Heavy Duty Flat Media Trunk Splice Kit, Sealed, Cable Length 0.3 m		1485P-P1E4-S		G2B

* For connecting drop cables, see table below.
Discount Group G2

KwikLink Flat Cable Trunk (Only for use with KwikLink connector 1485P-P1E4-R5)

	Description	Spool	Rating	Used	Color	Cat. No.		PGC
	DeviceNet KwikLinkCL1 Trunk Cable	75 m	24V DC, 8 A (Class 1)	DeviceNet Trunk	Grey (TPE)	1485C-P1E75		G2B
	DeviceNet KwikLinkCL2 Trunk Cable		24V DC, 4 A (Class 2)		Light grey (PVC)	1485C-P1G75		G2B
	KwikLink Auxiliary Power Cable		24V DC, 8 A (Class 1)	Aux Power Trunk	Black (PVC)	1485C-P1L75		G2B
	DeviceNet KwikLinkCL1 Trunk Cable	200 m	24V DC, 8 A (Class 1)	DeviceNet Trunk	Grey (TPE)	1485C-P1E200		G2B
	DeviceNet KwikLinkCL2 Trunk Cable		24V DC, 4 A (Class 2)		Light grey (PVC)	1485C-P1G200		G2B
	KwikLink Auxiliary Power Cable		24V DC, 8 A (Class 1)	Aux Power Trunk	Black (PVC)	1485C-P1L200		G2B
	DeviceNet KwikLinkCL1 Trunk Cable	420 m	24V DC, 8 A (Class 1)	DeviceNet Trunk	Grey (TPE)	1485C-P1E420		G2B
	DeviceNet KwikLinkCL2 Trunk Cable		24V DC, 4 A (Class 2)		Light grey (PVC)	1485C-P1G420		G2B
	KwikLink Auxiliary Power Cable		24V DC, 8 A (Class 1)	Aux Power Trunk	Black (PVC)	1485C-P1L420		G2B

Discount Group G2
See Publication M115-CA001-EN-P for complete product information

DeviceNet™ Flat Media System — KwikLink™ Heavy Duty, continued

KwikLink™ Accessories

In order to support all of the options associated with the flexibility of KwikLink, Allen-Bradley offers an array of accessories including cable mounts, conduit adaptors, covers for unused nodes, and threaded plugs for sealing unused micro connectors.

	Description	Cat. No.		PGC
	KwikLink Module Dust Cap	1485A-C5E4		G2B
	Conduit Adapter	1485A-CAD		G2B
	Flat Cable Mounting Clamp	1485A-FCM		G2B
	Flat Cable End Cap	1485A-CAP		G2B

Discount Group G2

DeviceNet™ Drop Cable

	Description	Cat. No.		PGC
	KwikLink Right Angle Micro Male to Straight Micro Female 1 m (3.28 ft.)	1485K-P1F5-R5		G2B
	KwikLink Right Angle Micro Male to Straight Micro Female 2 m (6.56 ft.)	1485K-P2F5-R5		G2B
	KwikLink Right Angle Micro Male to Straight Micro Female 3 m (9.84 ft.)	1485K-P3F5-R5		G2B
	KwikLink Right Angle Micro Male to Straight Micro Female 4m (13.1ft)	1485K-P4F5-R5		G2B
	KwikLink Right Angle Micro Male to Straight Micro Female 5m (16.4ft)	1485K-P5F5-R5		G2B
	KwikLink Right Angle Micro Male to Straight Micro Female 6m (19.7ft)	1485K-P6F5-R5		G2B

Note: These drop cables are only for use with the KwikLink flat cable system. They are not suitable for use with standard DeviceNet round cable systems.

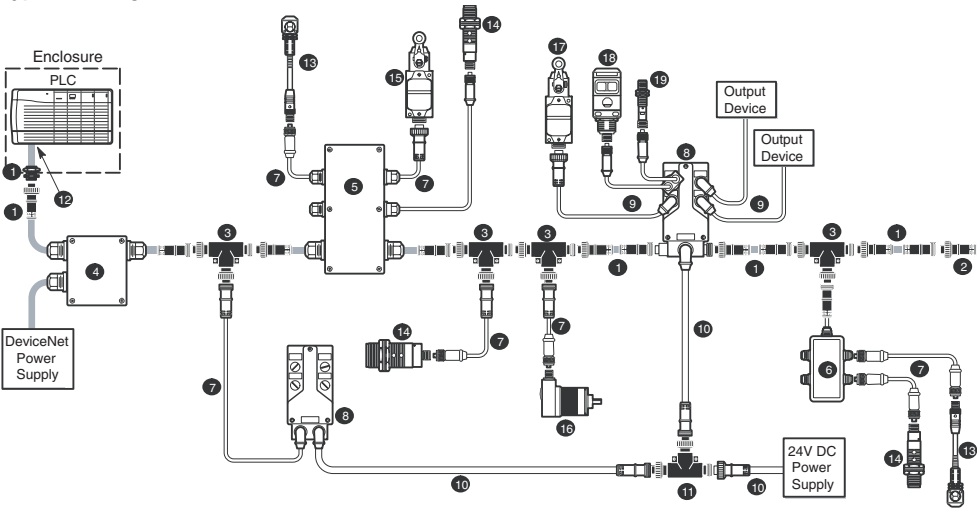
Discount Group G2

See Publication M115-CA001_-EN-P for complete product information

DeviceNet™ Round Media

Thick Trunk System

Typical Configuration



- 1 Thick Trunk Cable

2 Terminator

3 T-Port

4 Power Tap

5 DeviceBox

6 DevicePort
- 7 Thin Drop Cable

8 ArmorBlock MaXum

9 Standard Cordsets

10 Aux Power Cable

11 Aux Power Tee

12 Open Terminator
- 13 DeviceNet Photoelectric

14 DeviceNet Inductive

15 DeviceNet Limit Switch

16 DeviceNet Encoder

17 Standard Limit Switch

18 Standard Photoelectric

19 Standard Proximity

Thick Trunk Cable

Description	Color	Spool	Cat. No.		PGC
DeviceNet Thick Trunk Cable	grey (PVC)	50 m	1485C-P1-A50		G2A
		150 m	1485C-P1-A150		G2A
		300 m	1485C-P1-A300		G2A
		500 m	1485C-P1-A500		G2A

Discount Group G2

See Publication M115-CA001_-EN-P for complete product information

DeviceNet™ Round Media, continued

	Description		Cat. No.		PGC
Thick Trunk System					
	Power Tap (Thick Trunk)	7.5 A Fuse (2 included)	1485T-P2T5-T5		G2A
	2-port DeviceBox Tap (Thick Trunk)	2 Drops	1485P-P2T5-T5		G2A
	4-port DeviceBox Tap (Thick Trunk)	4 Drops	1485P-P4T5-T5		G2A
	8-port DeviceBox Tap (Thick Trunk)	8 Drops	1485P-P8T5-T5		G2A

Thin Trunk System

	Power Tap (Thin Trunk)	3 A Fuse (2 included)	1485T-P2T5-T5C		G2A
	2-port DeviceBox Tap (Thin Trunk).	2 Drops	1485P-P2T5-T5C		G2A
	4-port DeviceBox Tap (Thin Trunk).	4 Drops	1485P-P4T5-T5C		G2A
	8-port DeviceBox Tap (Thin Trunk).	8 Drops	1485P-P8T5-T5C		G2A

Discount Group G2

	Description	Trunk	Drop	Cat. No.		PGC
	4-port DeviceNet Thru-Trunk DevicePort	Mini	Mini Female	1485P-P4N5-MN5		G2A
	6-port DeviceNet Thru-Trunk DevicePort	Mini	Mini Female	1485P-P6N5-MN5		G2A
	4-port DeviceNet Thru-Trunk DevicePort	Mini	Micro Female	1485P-P4R5-MN5		G2A
	6-port DeviceNet Thru-Trunk DevicePort	Mini	Micro Female	1485P-P6R5-MN5		G2A

Discount Group G2

See Publication M115-CA001_-EN-P for complete product information

DeviceNet™ Round Media *, continued

	Description	Trunk	Drop	Cat. No.		PGC
	DeviceNet T-Port with Trunk and Drop connections Left Keyway	Micro	Micro	1485P-P1R5-DR5		G2A
	DeviceNet T-Port with Mini Trunk and Micro Drop connections Right Keyway	Mini	Micro	1485P-P1R5-MN5R1		G2A

Discount Group G2

	Description	Cable	Cat. No.		PGC
	Pre-terminated Thin Cable: Right Angle Micro Male to Straight Micro Female: 1 m (3.3ft)	yellow (CPE)	1485R-P1R5-F5		G2A
	Pre-terminated Thin Cable: Right Angle Micro Male to Straight Micro Female: 2 m (6.5ft)		1485R-P2R5-F5		G2A
	Pre-terminated Thin Cable: Right Angle Micro Male to Straight Micro Female: 3 m (9.8ft)		1485R-P3R5-F5		G2A
	Pre-terminated Thin Cable: Right Angle Micro Male to Straight Micro Female: 4m (13.1ft)		1485R-P4R5-F5		G2A
	Pre-terminated Thin Cable: Right Angle Micro Male to Straight Micro Female: 5m (16.4ft)		1485R-P5R5-F5		G2A
	Pre-terminated Thin Cable: Right Angle Micro Male to Straight Micro Female: 6m (19.8ft)		1485R-P6R5-F5		G2A
	Pre-terminated Thin Cable: Straight Micro Male to Straight Micro Female: 1 m (3.3ft)	yellow (CPE)	1485R-P1R5-D5		G2A
	Pre-terminated Thin Cable: Straight Micro Male to Straight Micro Female: 2 m (6.5ft)		1485R-P2R5-D5		G2A
	Pre-terminated Thin Cable: Straight Micro Male to Straight Micro Female: 3 m (9.8ft)		1485R-P3R5-D5		G2A
	Pre-terminated Thin Cable: Straight Micro Male to Straight Micro Female: 4 m (13.1ft)		1485R-P4R5-D5		G2A
	Pre-terminated Thin Cable: Straight Micro Male to Straight Micro Female: 5m (16.4ft)		1485R-P5R5-D5		G2A
	Pre-terminated Thin Cable: Straight Micro Male to Straight Micro Female: 6m (13.1ft)		1485R-P6R5-D5		G2A

* For use with distributed starters. See publication M115-CA001_-EN-P for complete cable selection information.
Discount Group G2

DeviceNet™ Round Media *, continued

	Description	Trunk	Drop	Cat. No.		PGC
	DeviceNet T-Port with Mini Trunk and Mini Drop connections Left Keyway	Mini	Mini	1485P-P1N5-MN5L1		G2A
	DeviceNet T-Port with Mini Trunk and Mini Drop connections Right Keyway	Mini	Mini	1485P-P1N5-MN5R1		G2A

Discount Group G2

	Description	Cable	Cat. No.		PGC
	DeviceNet Thick Trunk or Drop Cable	grey (PVC)	1485C-P1N5-M5		G2A
	DeviceNet Thick Trunk or Drop Cable		1485C-P3N5-M5		G2A
	DeviceNet Thick Trunk or Drop Cable		1485C-P5N5-M5		G2A
	DeviceNet Thick Trunk Cable		1485C-P10N5-M5		G2A
	DeviceNet Thick Trunk Cable		1485C-P30N5-M5		G2A
	DeviceNet Mini Male to Micro Female 1 m (3.28 ft.)	yellow (CPE)	1485R-P1M5-R5		G2A
	DeviceNet Mini Male to Micro Female 2 m (6.56 ft.)		1485R-P2M5-R5		G2A
	DeviceNet Mini Male to Micro Female 3 m (9.84 ft.)		1485R-P3M5-R5		G2A
	Pre-terminated Thin Cable: Straight Mini Male to Straight Micro Female: 4m (13.1ft)		1485R-P4M5-R5		G2A

* For use with distributed starters. See publication M115-CA001_-EN-P for complete cable selection information.
Discount Group G2

See Publication M115-CA001_-EN-P for complete product information

Other styles (connectors, cordsets and patchcords) and lengths are available, please consult your local Rockwell Automation distributor for details.

DeviceNet™ Round Media, continued

Terminal Chambers

Terminal chambers are passive field-installable connectors. Allen-Bradley 5-pin micro style and 5-pin mini style terminal chambers are designed for use with DeviceNet systems. These connectors contain screw terminals for quick and easy installation and are sized for use with either DeviceNet thick or thin cables.

	Description	Media Use	Connector	Cat. No.		PGC
	5-pin Straight Terminal Chamber	Thick	Straight Mini Male	871A-TS5-NM3		G1A
	5-pin Straight Terminal Chamber		Straight Mini Female	871A-TS5-N3		G1A
	5-pin Straight Terminal Chamber	Thin	Straight Mini Male	871A-TS5-NM1		G1A
	5-pin Straight Terminal Chamber		Straight Mini Female	871A-TS5-N1		G1A
	5-pin Straight Terminal Chamber	Thin	Straight DC Micro Male	871A-TS5-DM1		G1A
	5-pin Straight Terminal Chamber		Straight DC Micro Female	871A-TS5-D1		G1A
	5-pin Right Angle Terminal Chamber	Thin	Right Angle DC Micro Male	871A-TR5-DM1		G1A
	5-pin Right Angle Terminal Chamber		Right Angle DC Micro Female	871A-TR5-D1		G1A

Discount Group G2

Terminators

	Description	Media Use	Cat. No.		PGC
	Micro Terminator, Male	Thick or Thin	1485A-T1M5		G2A
	Micro Terminator, Female		1485A-T1N5		G2A
	Micro Terminator, Male	Thick	1485A-T1D5		G2A
	Micro Terminator, Female		1485A-T1R5		G2A

Discount Group G2

DeviceNet™ Round Media, continued
Open Style Connectors

	Description	Cat. No.		PGC
	Open Style Tap With colour coded double tier terminals	1492-DN3TW		T1J
	5-position, open style plug	1799-DNETCON		DI1
	5-position, open-style plug/locking screws for DeviceNet	1799-DNETSCON		DI1
	Connector for daisy chaining DeviceNet drop cable	1787-PLUG10R		PC5

Thin Trunk System

	Resistor	1485A-C2		G2A
	Kit for DeviceBox	1485A-ACCKIT		G2A

Discount Group G2

Bulkhead Pass-thru

	Description	Media Use	Cat. No.		PGC
	Mini 5-pin	Thick or Thin	1485A-CXN5-M5		G2A
	Micro 5-pin	Thin	1485A-CXR5-D5		G2A

Discount Group G2

See Publication M115-CA001_-EN-P for complete product information

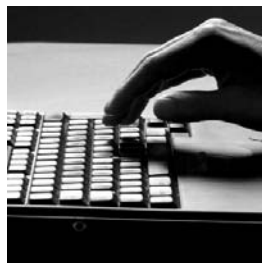
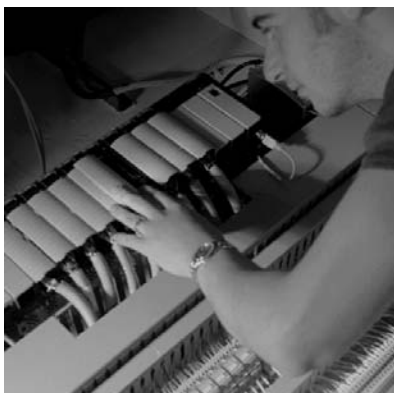
Customer Support

Where you need it, when you need it

Every client requires a different level of support and has their own preference of how to access it. Our Global Manufacturing Solutions group provides as much or as little support as you want, and makes it available in a number of different ways but always quickly and effectively.

We will work with you to:

- Establish exactly the level of support you require
- Decide the best way to provide it
 - by telephone
 - through the Web
 - with our own staff on-site



Our dedicated support team, comprising of experienced and highly trained experts in automation, can call on the resources of our state-of-the-art technology to ensure they deliver the right solution, as quickly as possible, with the aim of maximising your up-time and optimising your productivity.

Solutions and Services

Asset Management

Asset Management

Reducing inventory costs by more than 50%

Using leading edge technology and manufacturing standards, Rockwell Automation's Asset Management Service provides a range of services to help ensure peak performance from your equipment.

Services include:

- Remanufacturing, repair and exchange services for Allen-Bradley and Reliance parts
- Repair of non-Rockwell Automation products
- Acquisition and maintenance of required inventory levels for successful equipment operation
- On-site inventory management



By managing your inventory on-site, our Asset Management service helps to reduce associated costs – in some cases by more than 50%. Efficient inventory management also ensures the right replacement part is always available, thereby helping to significantly increase your machine up-time.

Diagnosis and monitoring

To help prevent problems before they even occur, our Asset Management service includes the integration of Computerised Maintenance Management Software (CMMS) systems into existing or planned control systems, for real-time monitoring. We can provide remote diagnostic services, which have been proven to increase facility up-time and reduce overall labour costs by 10-25%. We can also establish Predictive Maintenance practices within your facility, which have been shown to be 10 times more effective than breakdown maintenance techniques.

Equipment Reliability and Maintenance Management

Maximising up-time

Maintaining a competitive edge demands that you successfully maintain your machinery too. The more equipment up-time you can achieve, the more productive and efficient your facility will be, thus leading to a more successful business.

However, ensuring equipment reliability and reducing down-time may not be your core concerns or strengths, which is why you need to call on the expertise and experience of Rockwell Automation.

Services include:

- Management and deployment of systems to improve plant up-time
- Enterprise Asset Management systems
- Equipment performance and Condition Monitoring systems



Together they can help to keep your manufacturing systems and processes continually functioning at their most efficient.

Training and Human Performance

Providing the knowledge and tools for success

From individual courses to complete customised programmes, we have everything you need to make the investment which achieves the greatest possible returns; technical training for your employees. As well as increasing the productivity and self-sufficiency of your staff in the short to medium term, in the long term, training will help your business to meet the technical demands it's sure to encounter in the future by giving your employees a wider set of skills spanning entire systems.

Rockwell Automation training classes include:

- Scheduled, tailored, closed & on-site courses
- Theoretical guidance
- Hands-on practice
- Real-world simulation
- Assessment tools which measure the skill level attained on training
- Aftercare tools - coaching, retained skills assessments (CD based), job resource guides and Computer-based refresher training to reinforce & retain skills acquired.



More in-depth help is available. We can analyse your training needs, select the most relevant courses and provide the customised training as part of a partnership approach to meet your on-going skills requirements.

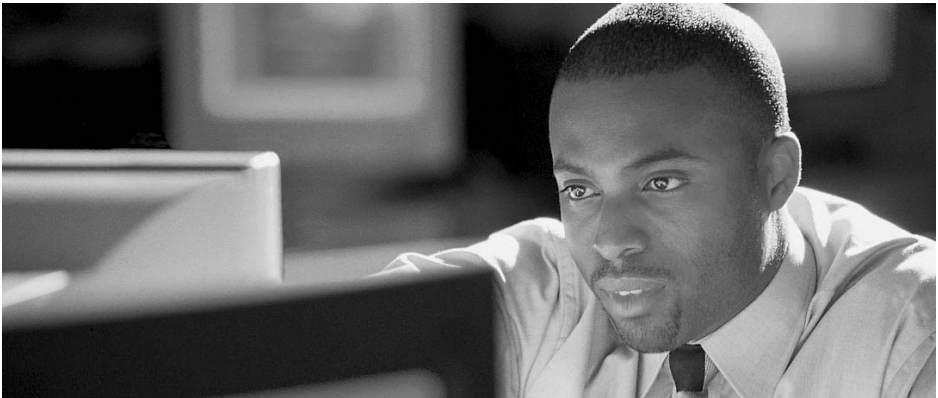
Manufacturing Automation and Engineering

700 engineers at your disposal

More than 700 Rockwell Automation engineers around the world form a global pool of industry expertise in meeting challenges of every kind, in every type of manufacturing situation.

Utilising leading-edge engineering methods, tools and processes, they:

- Integrate information and automation systems
- Ensure optimal system configuration
- Achieve the highest levels of efficiency from engineering to commissioning
- Work to ISO-registered project delivery processes with clear system documentation and documented best practices
- Achieve results to the agreed time-scale and budget



Whatever your industry, they can help you achieve reduced time to market, optimise your manufacturing, improve your plant up-time and drive regulatory compliance.

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