Circuit Breakers

Fuse Blocks and Fuse Holders

Rotary Disconnect Switches

1.1 Circuit Breakers

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Series G Motor Circuit Protectors. V9-T1-8
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1.2 Fuse Blocks and Fuse Holders

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1.3 Rotary Disconnect Switches

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For our complete product offering, see Volume 4—Circuit Protection, CA08100005E and Volume 5—Motor Control and Protection, CA08100006E.

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Product Overview

Circuit Breaker Selection Guide

Description	Series G Molded Case Circuit Breaker		Universal Molded Case Circuit Breakers		QUICKLAG® Type QC Miniature Circuit Breakers
	Page V9-T1-5		Page V9-T1-13		Page V9-T1-19
General Applications					
	Line protection—molded case switch, motor circuit protection (combination tested with Eaton starters and contactors) thermal-magnetic and electronic trip units.		Line protection—feeder and branch thermal-magnetic trip unit.		Used to provide branch circuit protection in cable-in/out panel or DIN-Rail mount applications.
Technical Data					
Maximum current rating	2500A		600A		100A
Maximum voltage—AC	690 Vac		480 Vac		240 Vac
Maximum voltage—DC	250 Vdc		250 Vdc		80 Vdc
Poles	1, 2, 3, 4		1, 2, 3		QC = 1, 2, 3, 4 QCD = 1, 2, 3 QCR/QCF = 1, 2, 3
Max. interrupting capacities See individual catalogs for limitations and back-up protection requirements.	Three-pole at 240V E = 200 kA J = 200 kA L = 200 kA	Three-pole at 480V E = 100 kA J = 200 kA L = 200 kA	Three-pole at 240V G = 25 kA (480/277) F = 25 kA J = 35 kA K = 35 kA L = 35 kA	Three-pole at 480V GI = 14 kA (480/277) GD = 22 kA F = 14 kA J = 20 kA K = 20 kA L = 20 kA	65 kA at 240 Vac 5 kA at 80 Vdc
Approvals					
	UL® 489 IEC 60947-2 CE	CSA® KEMA-KEUR CCC	UL 489CE IEC 60947-2	CE CSA	UL 489 CSA 22.2
Environmental Data					
Humidity	Non-condensing 100% relative humidity		Non-condensing 100% relative humidity		—
Shock	—		—		—
Vibration	—		—		—
Operating temperature	–20° to 70°C (–4° to 158°F) derating applies		–20° to 70°C (–4° to 158°F) derating applies		40°C (104°F)
Dielectric strength	Below 250A 6 kV Above 250A 8 kV		Below 250A 6 kV Above 250A 8 kV		1960 Vac (acc. to UL 489)
Insulation resistance	750 Vac		750 Vac		—
Endurance/life	250A: EG, JG = 8,000 operations 630A: LG = 6,000 operations		250A: Gi = 10,000 operations Fi = 8,000 operations 400A: Ji, Ki, Li = 6,000 operations		>10,000 operations
Approximate weight	E Three-pole—2.88 lbs (1.04 kg) J Three-pole—5.06 lbs (2.30 kg) L Three-pole—12.36 lbs (5.61 kg)		G Three-pole—2.10 lbs (0.95 kg) F Three-pole—4.5 lbs (2.0 kg) J Three-pole—12.50 lbs (5.7 kg) K Three-pole—11.50 lbs (5.2 kg)		QC Single-pole—0.36 lbs (162.8 g) Two-pole—0.61 lbs (274.9 g) Three-pole—1.14 lbs (518.3 g) QCD Single-pole—0.43 lbs (195.3 g) Two-pole—0.89 lbs (401.9 g) Three-pole—1.34 lbs (605.6 g) QCR Single-pole—0.22 lbs (97.9 g) Two-pole—0.48 lbs (215.8 g) Three-pole—0.70 lbs (315.6 g) QCF Single-pole—0.24 lbs (109.9 g) Two-pole—0.50 lbs (225.2 g) Three-pole—0.74 lbs (335.1 g)
Mounting configuration	Backpan, plug-in adapter, DIN-rail (E)		Backpan, DIN-rail (G)		Panel mount, front mount, 35 mm DIN-rail mountable

For our complete product offering, see Volume 4—Circuit Protection, CA08100005E.

Circuit Breaker Selection Guide, continued

Description	WMZ UL 489 Miniature Circuit Breakers	WMZS UL 1077 Miniature Circuit Breakers— Supplementary Protectors
	Page V9-T1-25	**Page V9-T1-27**
General Applications		
	Used to provide branch circuit protection in cable-in/out DIN-Rail mount applications.	Used to provide overcurrent protection where branch protection (for example UL 489 MCCB) is already provided or not required. Replacement for fuses used as supplementary protectors.
Technical Data		
Maximum current rating	40A	63A
Maximum voltage—AC	480/277 Vac (240/415 Vac IEC)	480/277 Vac
Maximum voltage—DC	48 Vdc	65 Vac Single-pole 130 Vac Two-pole
Poles	1, 2, 3	1, 2, 3
Max. interrupting capacities See individual catalogs for limitations and back-up protection requirements.	10 kA UL/CSA; 15 kA IEC/EN 60947-2	IEC 240/415V 10 kA UL/CSA 120V 10 kA 240V 10 kA 277V 6 kA 480V 6 kA
Approvals		
	UL 489 CE; IEC/EN 60947-2 CSA 22.2	UL 1077 CE; IEC/EN 60947-2; IEC/EN 60898 CSA 22.2 235
Environmental Data		
Humidity	Acc. IEC 60068-2 (25° to 55°C/ 77° to 131°F, 90–95% RH)	—
Shock	Acc. IEC 60068-2-27 (40g half sine wave for 10 ms—3 axes) (15g half sine wave for 20 ms—3 axes)	—
Vibration	Acc. to IEC 60068-2-6 5–100 Hz/1.0 mm/0.7g (3 axes)	—
Operating temperature	30°C (86°F)	—
Dielectric strength	1960 Vac (acc. to UL 489)	—
Insulation resistance	100M ohms at 500 Vdc	—
Endurance/life	>20,000 operations	—
Approximate weight	Single-pole—0.27 lbs (121.0g) Two-pole—0.53 lbs (242.0g) Three-pole—0.80 lbs (363.0g)	Single-pole—0.26 lbs (120.0g) Two-pole—0.54 lbs (244.9g) Three-pole—0.83 lbs (376.5g)
Mounting contribution	35 mm DIN rail mountable	35 mm DIN rail mountable

For our complete product offering, see Volume 4—Circuit Protection, CA08100005E.

Circuit Breaker Selection Guide, continued

Description	Series NRX Low Voltage Power Breakers	Magnum Low Voltage Power Breakers
	Page V9-T1-29	**Page V9-T1-32**
General Applications		
	Solution for where space is at a premium or when equipment dimensions are critical when upgrading or retrofitting current systems. Offering the power and performance of a power breaker in the compact size of a molded case breaker. With its reduced weight and compact dimensions, you can mount two times as many feeder breakers and reduce the overall enclosure density up to 50%.	Enables comprehensive solutions to meet and exceed the unique and wide-ranging requirements of today's global power distribution systems. Designed and engineered for ultimate custom configuration and application flexibility in metal enclosed switchgear and power distribution enclosures.
Technical Data		
Maximum current rating	630–1600A	800–6300A
Maximum voltage—AC	220–690 Vac	Up to 690 Vac
Maximum voltage—DC	—	—
Poles	3, 4	3, 4
Max. interrupting capacities See individual catalogs for limitations and back-up protection requirements.	65 kAIC at 480 Vac Max. withstand capacities 42 kAIC	200 kA at 480 Vac Max. withstand capacities 100 kAIC CL fuseless 200 kA at 635 Vac with integral limiters
Approvals		
	UL 1006 Component UL 489 Component IEC 60947-2	UL 1066 IEC 60947-2 KEMA
Environmental Data		
Humidity	—	—
Shock	—	—
Vibration	—	—
Operating temperature	–25° to 70°C	–25° to 70°C
Dielectric strength	—	—
Insulation resistance	—	—
Endurance/life	10,000 electrical operations 20,000 mechanical operations	—
Approximate weight	Three-pole breaker + cassette—85 lbs (39 kg) Three-pole breaker—53 lbs (24 kg) Four-pole breaker + cassette—104 lbs (47 kg) Four-pole breaker—67 lbs (30 kg)	—
Mounting configuration	Rear-connected, front-connected, surface mounting, mounting bracket, fixed, drawout breaker with cassette	Fixed or drawout with cassette rear-connected, front-connected

For our complete product offering, see Volume 4—Circuit Protection, CA08100005E.

Series G Molded Case Circuit Breakers

Features

- Field-fit accessories
- Common accessories through 630A
- Space-saving footprint
- High-performance current limiting designs up to 200 kAIC at 480V
- Global ready: UL, CSA, CE, IEC, KEMA-KEUR listings
- Complete breaker includes frame, trip unit, standard terminals and mounting hardware

Catalog Number Selection

Series G® Molded Case Circuit Breakers

EG Frame

E G H 3 015 FF G

Frame
E

Standard/Application
G = IEC/CE/UL/CSA

Performance	600Y/347	480	415	240
B	—	18	18	25
E	18	25	25	35
S	22	35	40	85
H	25	65	70	100
C	35	100	100	200
K	Molded case switch ①			

Number of Poles
1 = One
2 = Two
3 = Three
4 = Four—Neutral 0% Protected
7 = Four—Neutral 100% Protected

Amperes
016 ②
015
020
025
030
032 ②
035
040
045
050
060
063 ②
070
080
090
100
110
125

Terminations/Hardware	
Terminals	**Mounting Hardware**
M = Metric end caps	Metric
E = Imperial end caps	Imperial
G = Line/load standard	Metric
B = Bolt-on	—

Trip Unit
FF = Fixed fixed
AF = Adjustable thermal fixed magnetic
KS = Molded case switch

Notes

① Available only as 125 and 160A sizes.

② Is not UL rated.

JG Frame

J G S 3 250 FA G C

Frame
J

Standard/Application
G = IEC/CE/UL/CSA

Performance

	600	480	415	240
E	18	25	25	65
S	18	35	40	85
H	25	65	70	100
C	35	100	100	200
U	50	150	150	200
X	50	200	200	200
K	Molded case switch			

Number of Poles
2 = Two
3 = Three
4 = Four—Neutral 0% protected
8 = Four—Neutral 0–60% protected
9 = Four—Neutral 100% protected

Amperes
050
070
080
090
100
125
150
160
175
200
225
250

Trip Unit
AA = Adjustable thermal
Adjustable magnetic
FA = Fixed thermal
Adjustable magnetic
KS = Molded case switch
33 = 310+ electronic LS
32 = 310+ electronic LSI
35 = 310+ electronic LSG
36 = 310+ electronic LSIG
NN = Frame only (no trip)

Terminations/Hardware

Terminals	Mounting Hardware
M = Metric end caps	Metric
E = Imperial end caps	Imperial
G = Line/load standard	Metric

Rating
Blank = 80% rated
C = 100% rated

LG Frame

L G S 3 600 FA G C

Frame
L

Standard/Application
G = IEC/CE/UL/CSA

Performance

	600	480	415	240
E	18	35	35	65
S	25	50	50	85
H	35	65	70	100
C	50	100	100	200
U	65	150	150	200
X	65	200	200	200
K	Molded case switch			

Number of Poles
3 = Three
4 = Four—Neutral 0% protected
6 = Four—Neutral 60% protected
7 = Four—Neutral 100% protected
8 = Four—Neutral 0–60% protected
9 = Four—Neutral 0–100 protected

Amperes
250
300
350
400
500
600
630

Trip Unit ①
AA = Adjustable thermal
Adjustable magnetic
FA = Fixed thermal
Adjustable magnetic
KS = Molded case switch
33 = 310+ electronic LS
32 = 310+ electronic LSI
35 = 310+ electronic LSG
36 = 310+ electronic LSIG
38 = 310+ electronic ALSI
39 = 310+ electronic ALSIG
NN = Frame only (no trip)

Terminations/Hardware

Terminals	Mounting Hardware
M = Metric end caps	Metric
E = Imperial end caps	Imperial
G = Line/load standard	Metric
W = Without terminals	—

Rating
Blank = 80% rated
C = 100% rated

Note

① A = Arc reduction, L = Long, S = Short, I = Instantaneous, G = Ground.

Product Selection

Series G Molded Case Circuit Breakers

Approximate Dimensions are in Inches

EG Frame

Maximum Continuous Amperes at 40°C ①	Three-Pole 3 W x 5.5 H x 2.99 D Fixed Thermal Fixed Magnetic
IC Rating: 25 kAIC at 415 and 480 Vac	
15	**EGE3015FFG**
20	**EGE3020FFG**
25	**EGE3025FFG**
30	**EGE3030FFG**
35	**EGE3035FFG**
40	**EGE3040FFG**
45	**EGE3045FFG**
50	**EGE3050FFG**
60	**EGE3060FFG**
70	**EGE3070FFG**
80	**EGE3080FFG**
90	**EGE3090FFG**
100	**EGE3100FFG**
125	**EGE3125FFG**

Maximum Continuous Amperes at 40°C	Three-Pole 3 W x 5.5 H x 2.99 D Fixed Thermal Fixed Magnetic
IC Rating: 70 kAIC at 415 Vac, 65 kAIC at 480 Vac	
15	**EGH3015FFG**
20	**EGH3020FFG**
25	**EGH3025FFG**
30	**EGH3030FFG**
35	**EGH3035FFG**
40	**EGH3040FFG**
45	**EGH3045FFG**
50	**EGH3050FFG**
60	**EGH3060FFG**
70	**EGH3070FFG**
80	**EGH3080FFG**
90	**EGH3090FFG**
100	**EGH3100FFG**
125	**EGH3125FFG**

JG Frame

Maximum Continuous Amperes	Three-Pole 4.13 W x 7 H x 3.57 D Magnetic Range	Fixed Thermal Adjustable Magnetic
IC Rating: 25 kAIC at 415 and 480 Vac		
70	350–00	**JGE3070FAG**
90	450–900	**JGE3090FAG**
100	500–1000	**JGE3100FAG**
125	625–1250	**JGE3125FAG**
150	750–1550	**JGE3150FAG**
175	875–1750	**JGE3175FAG**
200	1000–2000	**JGE3200FAG**
225	1125–2250	**JGE3225FAG**
250	1250–2500	**JGE3250FAG**

Maximum Continuous Amperes	Three-Pole 4.13 W x 7 H x 3.57 D Magnetic Range	Fixed Thermal Adjustable Magnetic
IC Rating: 70 kAIC at 415 Vac, 65 kAIC at 480 Vac		
70	350–700	**JGH3070FAG**
90	450–900	**JGH3090FAG**
100	500–1000	**JGH3100FAG**
125	625–1250	**JGH3125FAG**
150	750–1550	**JGH3150FAG**
175	875–1750	**JGH3175FAG**
200	1000–2000	**JGH3200FAG**
225	1125–2250	**JGH3225FAG**
250	1250–2500	**JGH3250FAG**

LG Frame

Ampere Rating	Three-Pole 5.48 W x 10.13 H x 4.09 D Fixed Thermal Adjustable Magnetic
IC Rating: 35 kAIC at 415 and 480 Vac	
250	**LGE3250FAG**
300	**LGE3300FAG**
350	**LGE3350FAG**
400	**LGE3400FAG**
500	**LGE3500FAG**
600	**LGE3600FAG**

Ampere Rating	Three-Pole 3 W x 5.5 H x 2.99 D Fixed Thermal Adjustable Magnetic
IC Rating: 70 kAIC at 415 Vac, 65 kAIC at 480 Vac	
250	**LGH3250FAG**
300	**LGH3300FAG**
350	**LGH3350FAG**
400	**LGH3400FAG**
500	**LGH3500FAG**
600	**LGH3600FAG**

Note

① 16, 32, 63A are not UL listed ratings.

1

Series G Motor Circuit Protector

Features

- Instantaneous only protector
- Designed for use in combination with motor starters
- Adjustable to motor FLA
- UL recognized component, File E7819 motor circuit protectors

Product Selection

Series G Motor Circuit Protectors

EG Frame—480 Vac, 600Y/347 Vac Maximum

Continuous Amperes	Cam Setting	Motor Full Load Current Amperes ①	MCP Trip Setting ②	MCP Catalog Number
3	A	0.69–0.91	9	**HMCPE003A0C**
	B	1.1–1.3	15	
	C	1.6–1.7	21	
	D	2.0–2.2	27	
	E	2.3–2.5	30	
	F	2.6–2.8	33	
7	A	1.5–2.0	21	**HMCPE007C0C**
	B	2.6–3.1	35	
	C	3.7–3.9	49	
	D	4.8–5.2	63	
	E	5.3–5.7	70	
	F	5.8–6.1	77	
15	A	3.4–4.5	45	**HMCPE015E0C**
	B	5.7–6.8	75	
	C	8.0–9.1	105	
	D	10.4–11.4	135	
	E	11.5–12.6	150	
	F	12.7–13.0	165	
30	A	3.9–9.1	90	**HMCPE030H1C**
	B	11.5–13.7	150	
	C	16.1–18.3	210	
	D	20.7–22.9	270	
	E	23.0–25.2	300	
	F	25.3–26.1	330	
50	A	11.5–15.2	150	**HMCPE050K2C**
	B	19.2–22.9	250	
	C	26.9–30.6	350	
	D	34.6–38.3	450	
	E	38.4–42.1	500	
	F	42.2–43.5	550	
70	A	16.1–30.6	210	**HMCPE070M2C**
	B	26.9–32.2	350	
	C	37.6–42.9	490	
	D	48.4–53.7	630	
	E	53.8–59.1	700	
	F	59.2–60.9	770	
100	A	23.0–30.6	300	**HMCPE100R3C**
	B	38.4–46.0	500	
	C	53.8–61.4	700	
	D	69.2–76.8	900	
	E	76.9–84.5	1000	
	F	84.6–87.0	1100	
100	A	38.4–46.0	500	**HMCPE100T3C**
	B	57.6–65.2	750	
	C	76.9–84.5	1000	
	D	③	1250	
	E	③	1375	
	F	③	1500	

Notes

① Motor FLA ranges are typical. The corresponding trip setting is at 13 times the minimum FLA value shown. Where a 13 times setting is required for an intermediate FLA value, alternate cam settings and/or MCP ratings should be used.

② For DC applications, actual trip levels are approximately 40% higher than values shown.

③ Settings above 10 x I_n are for special applications, where the ampere rating of the disconnecting means cannot be less than 115% of the motor full load ampere rating.

JG Frame—600 Vac Maximum, 250 Vdc Maximum

Continuous Amperes	MCP Trip Range Amperes	MCP Catalog Number
250	500–1000	**HMCPJ250D5L**
	625–1250	**HMCPJ250F5L**
	750–1500	**HMCPJ250G5L**
	875–1750	**HMCPJ250J5L**
	1000–2000	**HMCPJ250K5L**
	1125–2250	**HMCPJ250L5L**
	1250–2500	**HMCPJ250W5L**

LG Frame—600 Vac Maximum, 250 Vdc Maximum

Continuous Amperes	MCP Trip Range Amperes	MCP Catalog Number
600	1250–2500	**HMCPL600L6G**
	1500–3000	**HMCPL600N6G**
	1750–3500	**HMCPL600R6G**
	2000–4000	**HMCPL600X6G**
	2250–4500	**HMCPL600Y6G**
	2500–5000	**HMCPL600P6G**
	3000–6000	**HMCPL600M6G**

1

Series G Motor Protector Breakers

Features

- Eliminates need for separate overload relay
- Can be used with contactor to eliminate need for overload relay and still create manual motor control
- Meets requirement for motor branch protection, including:
  - Disconnecting means
  - Branch circuit short circuit protection
  - Overload protection
- UL 489 listed, IEC60947-02 rated
- Phase unbalance, phase loss protection and high load alarm
- Optional pre-detection trip relay

Product Selection

Series G Motor Protector Breakers

For pre-trip alarm option, order Style Number 5721B31G02.

JG Frame Motor Protector Circuit Breakers, 250A Maximum Rated Current

Continuous Amperes	35 kAIC Catalog Number	65 kAIC Catalog Number
50	**JGMPS050G**	**JGMPH050G**
100	**JGMPS100G**	**JGMPH100G**
160	**JGMPS160G**	**JGMPH160G**
250	**JGMPS250G**	**JGMPH250G**

LG Frame Motor Protector Circuit Breakers, 630A Maximum Rated Current

Continuous Amperes	50 kAIC Catalog Number	65 kAIC Catalog Number
250	**LGMPS250G**	**LGMPH250G**
400	**LGMPS400G**	**LGMPH400G**
600	**LGMPS600G**	**LGMPH600G**
630 ①	**LGMPS630G**	**LGMPH630G**

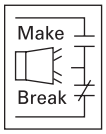
Note

① 630A is not a UL listed rating. 600A is the maximum UL or CSA rating for LG breaker.

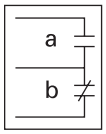
Accessories

Field Fit Kit Catalog Numbers

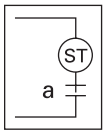
Alarm Lockout



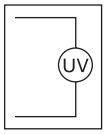
Auxiliary Switch



Shunt Trip



Undervoltage Release Mechanism



Description	Pole Location	Frame—EG, JG and LG
Alarm Lockout		
Make/break	Right	**ALM1M1BEPK** ①
2 make/2 break	Right	**ALM2M2BEPK** ②
Auxiliary Switch		
1A, 1B	Right	**AUX1A1BPK**
2A, 2B	Right	**AUX2A2BPK**
Auxiliary Switch/Alarm Lockout		
—	Right	**AUXALRMEPK** ③
Shunt Trip—Standard		
120 Vac	Left	**SNT120CPK** ④
240 Vac	Left	**SNT120CPK** ④
12 Vdc	Left	**SNT012CPK**
24 Vdc	Left	**SNT060CPK**
48 Vdc	Left	**SNT060CPK**
380–600 Vac	Left	**SNT480CPK** ⑤
Undervoltage Release Mechanism		
110–127 Vac	Left	**UVR120APK**
208–240 Vac	Left	**UVR240APK**
24 Vac	Left	**UVR024APK**
24 Vdc	Left	**UVR024DPK**
48–60 Vdc	Left	**UVR048DPK**
12 Vac/Vdc	Left	**UVR012CPK**
48–60 Vac	Left	**UVR048APK**
120 Vdc	Left	**UVR125DPK**
220–250 Vdc	Left	**UVR250DPK**
380–500 Vac	Left	**UVR480APK**
525–600 Vac	Left	**UVR600APK**

Multiwire Connectors Ordering Information (Package of 3)

High SCCR ratings are available for Power Distribution blocks with Series G MCCBs. See **Tab 63**.

Maximum Amperes	Wires per Terminal	Wire Size Range AWG Cu	Frame	Kit Catalog Number
125	3	14–2	EG	**3TA125E3K**
125	6	14–6	EG	**3TA125E6K**
250	3	14–2	JG	**3TA250FJ3**
250	6	14–6	JG	**3TA250FJ6**

Terminal Shields

Location	Number of Poles	Frame	IP30 Protection Catalog Number
Line	3	EG	**EFTS3K**
Line	4	EG	**EFTS4K**
Line or load	2, 3	JG	**FJTS3K**
Line or load	4	JG	**FJTS4K**

Interphase Barriers (Package of 2)

Number of Poles	Frame	Catalog Number
3 or 4	EG	**EIPBK**
3	JG	**FJIPBK**
4	JG	**FJIPBK4**
3 or 4	LG	**IPB3**

Flex Shaft Handles

Flex Shaft Handle Mechanisms

Breaker Frame	Flexible Shaft Length in ft (m) 4 (1.2) Catalog Number	7 (2.1) Catalog Number
EG	**EHMFS04**	**EHMFS07**
JG	**JHMFS04**	**JHMFS07**
LG	**LHMFS04**	**LHMFS07**

Universal Direct Handle Mechanism

Universal Direct Handle Mechanisms

Frame	With Interlock Catalog Number	Without Interlock Catalog Number
Black Handle Color		
EG	**EHMCCBI**	**EHMCCB**
JG	**JHMCCBI**	**JHMCCB**
LG	**LHMCCBI**	**LHMCCB**
Red Handle Color		
EG	**EHMCCRI**	**EHMCCR**
JG	**JHMCCRI**	**JHMCCR**
LG	**LHMCCRI**	**LHMCCR**

Notes

① Part number for JG and LG is ALM1M1BJPK.
② Part number for JG and LG is ALM2M2BJPK.
③ Part number for JG and LG is AUXALRMJPK.
④ 110–125 Vdc, 50/60 Hz.
⑤ 380–600 Vdc, 50/60 Hz.

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Rotary Handle Mechanisms

High Performance Rotary Handle Mechanisms (Complete Kit Includes Handle, Shaft and Mechanism)

Color	Rating Type UL	IP	EG Frame ① Catalog Number	JG Frame Catalog Number	LG Frame Catalog Number
Black/blue	1/12/3R	20/54/55	**EGHMVD06B**	**JGHMVD06B**	**LGHMVD06B**
			EGHMVD12B	**JGHMVD12B**	**LGHMVD12B**
			EGHMVD24B	**JGHMVD24B**	**LGHMVD24B**
Red/yellow	1/12/3R	20/54/55	**EGHMVD06R**	**JGHMVD06R**	**LGHMVD06R**
			EGHMVD12R	**JGHMVD12R**	**LGHMVD12R**
			EGHMVD24R	**JGHMVD24R**	**LGHMVD24R**
Black/blue	4/4X	66	**EGHMVD06BX**	**JGHMVD06BX**	**LGHMVD06BX**
			EGHMVD12BX	**JGHMVD12BX**	**LGHMVD12BX**
			EGHMVD24BX	**JGHMVD24BX**	**LGHMVD24BX**
Red/yellow	4/4X	66	**EGHMVD06RX**	**JGHMVD06RX**	**LGHMVD06RX**
			EGHMVD12RX	**JGHMVD12RX**	**LGHMVD12RX**
			EGHMVD24RX	**JGHMVD24RX**	**LGHMVD24RX**

External Accessories

Description	Fit Type	Frame EG	JG	LG
Non-padlockable handle block	Field	**EFHB**	—	—
Padlockable handle block	Field	**EFPHB**	—	—
Padlockable handle block off-only	Field	**EFPHBOFF**	**FJPHBOFF**	**LBHPOFF**
Padlockable handle lock hasp	Field	**EFPHL**	**FJPHL**	**LPHL**
Padlockable handle lock hasp off-only	Field	**EFPHLOFF**	**FJPHLOFF**	**LPHLOFF**
Kirk key interlock kit ②③	Field	—	**KYKJG**	**KYKLG**
Castell key interlock kit ③④	Field	—	**CTKJG**	**CTKLG**
Slide bar interlock ⑤	Field	**EFSBI**	**FJSBI**	**LGSBI**
Walking beam interlock	Three-pole	**EG3WBI**	**JG3WBI**	**LG3WBI**
	Four-pole	**EG4WBI**	**JG4WBI**	**LG4WBI**
Electrical operator	120/240 Vac	**MOPEG240C**	**MOPJG240C**	**MOPLG240C**
	125 Vdc	**MOPEG240C**	**MOPJG240C**	**MOPLG240C**
Plug-in adapters	Three-pole	**PAD3E**	**PAD3J**	**PAD3L**
	Four-pole	**PAD4E**	**PAD4J**	**PAD4L**
Rear connecting studs	Field	**EFRCSDL**	**FJRCSDL**	**3P–LRCS3WK**
		EFRCSDS	**FJRCSDS**	**4P–LRCS4WK**
		EFRCSWL	**FJRCSWL**	—
		EFRCSWS	**FJRCSWS**	—

Notes

① Compatible with three-pole and four-pole EG breakers only.
② Provision only.
③ See Volume 4—Circuit Protection, CA08100005E, Tab 25, for bolt projection dimensions.
④ Castell bolt mounting hole must be 10 mm.
⑤ Requires two breakers.

Universal Molded Case Circuit Breakers

Features

- Universal design for both NEMA® (UL 489) and IEC (IEC 947-2) standards
- Suitable for 50°C application
- Factory-sealed thermal magnetic trip unit
- Standard interrupting ratings
- Includes mounting hardware and terminals

Catalog Number Selection

Universal Molded Case Circuit Breakers

Universal Molded Case

Gi 2 070

Frame Size
Gi = G*i* Frame
Fi = F*i* Frame
Ji = J*i* Frame
Ki = K*i* Frame
Li = L*i* Frame

Number of Poles				
G*i* Frame	F*i* Frame	J*i* Frame	K*i* Frame	L*i* Frame
1 = Single-pole **2** = Two-pole **3** = Three-pole	**2** = Two-pole **3** = Three-pole	**3** = Three-pole	**3** = Three-pole	**3** = Three-pole

Ampere Rating				
G*i* Frame	F*i* Frame	J*i* Frame	K*i* Frame	L*i* Frame
015 = 15 amp **020** = 20 amp **030** = 30 amp **040** = 40 amp **050** = 50 amp **060** = 60 amp **070** = 70 amp **080** = 80 amp **100** = 100 amp **125** = 125 amp	**015** = 15 amp **020** = 20 amp **030** = 30 amp **040** = 40 amp **050** = 50 amp **060** = 60 amp **070** = 70 amp **080** = 80 amp **100** = 100 amp **125** = 125 amp **150** = 150 amp **160** = 160 amp **175** = 175 amp **200** = 200 amp **225** = 225 amp	**250** = 250 amp	**300** = 300 amp **350** = 350 amp **400** = 400 amp	**500** = 500 amp **600** = 600 amp **630** = 630 amp

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Product Selection

Universal Molded Case Circuit Breakers

Three-Pole

Approximate Dimensions are in Inches

Universal G Frame

Description	Amperes	Catalog Number ①
3 W x 4-7/8 H x 2-13/16 D (optional DIN-Rail kit available catalog number GDIN, package of ten)	15	**Gi3015**
	20	**Gi3020**
	25	**Gi3025**
	30	**Gi3030**
	35	**Gi3035**
	40	**Gi3040**
	45	**Gi3045**
	50	**Gi3050**
	60	**Gi3060**

Voltage	Interrupting Rating
380–415	18/5K
480/277	14K

Universal F Frame

Description	Amperes	Catalog Number ①
4-1/8 W x 6 H x 3-3/8 D	15	**Fi3015L**
	20	**Fi3020L**
	30	**Fi3030L**
	35	**Fi3035L**
	40	**Fi3040L**
	50	**Fi3050L**
	60	**Fi3060L**
	70	**Fi3070L**
	80	**Fi3080L**
	90	**Fi3090L**
	100	**Fi3100L**
	125	**Fi3125L**
	150	**Fi3150L**
	175	**Fi3175L**
	200	**Fi3200L**
	225	**Fi3225L**

Voltage	Interrupting Rating
415	18/9K
480	20K

Universal J Frame

Description	Amperes	Catalog Number ①
4-1/8 W x 10 H x 4-1/16 D	225	**Ji3225L**
	250	**Ji3250L**

Voltage	Interrupting Rating
415	25/13K
480	20K

Universal K Frame

Description	Amperes	Catalog Number ①
5-1/2 W x 10-1/8 H x 4-1/16 D	300	**Ki3300L**
	350	**Ki3350L**
	400	**Ki3400L**

Voltage	Interrupting Rating
415	25/13K
480	20K

Universal L Frame

Description	Amperes	Catalog Number ①
8-1/4 W x 10-3/4 H x 4.37 D	500	**Li3500**
	600	**Li3600**

Voltage	Interrupting Rating
415	25/13K
480	20K

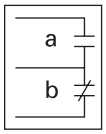
Note

① Metric mounting hardware.

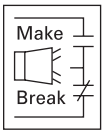
Accessories

Internal Accessories

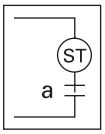
Auxiliary Switch (Right-Pole Mounted)



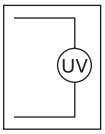
Bell Alarm (Right-Pole Mounted)



Shunt Trip (Left-Pole Mounted)



UVR (Left-Pole Mounted)



Configuration	Add This Suffix to Catalog Number	Configuration	Add This Suffix to Catalog Number	Voltage Range	Add This Suffix to Catalog Number	Voltage Range	Add This Suffix to Catalog Number
Universal G Frame							
1NO/1NC	**A3**	1 make/1 break	**B3**	24 Vac	**S7**	24 Vac 50/60 Hz	**T2**
2NO/2NC	**A6**			120 Vac	**S1**	48 Vac 50/60 Hz	**T3**
If both an auxiliary switch and bell alarm are required, add B13 to the catalog number (right-pole mounted). Auxiliary switch and bell alarm are 240V rated.				240 Vac	**S2**	60 Vac 50/60 Hz	**T4**
				12 Vdc	**S3**	120 Vac 50/60 Hz	**T1**
				24 Vdc	**S4**	240 Vac 50/60 Hz	**T8**
						220 Vac 50 Hz	**T7**
						440 Vac 50 Hz	**T11**
						480 Vac 60 Hz	**T12**
Universal F Frame							
1NO/1NC	**A06**	1 make/1 break	**B06**	12–24 Vac/Vdc	**S02**	12 Vac	**U02**
2NO/2NC	**A13**			48–127 Vac or 48–60 Vdc	**S06**	24 Vac	**U06**
If both an auxiliary switch and bell alarm are required, add C05 to the catalog number (right-pole mounted). Auxiliary switch and bell alarm are 600V rated.						48 Vac/Vdc	**U38**
				208–380 Vac or 110–127 Vdc	**S10**	110–127 Vac	**U14**
						208–240 Vac	**U18**
				415–600 Vac or 220–250 Vdc	**S14**	380–480 Vac	**U22**
						525–600 Vac	**U26**
						12 Vdc	**U30**
						24 Vdc	**U34**
						125 Vdc	**U42**
						220–250 Vdc	**U46**
Universal J Frame							
1NO/1NC	**A06**	1 make/1 break	**B06**	12–24 Vac/Vdc	**S42**	12 Vac	**U06**
2 NO/2NC	**A13**			48–60 Vac/Vdc	**S50**	24 Vac	**U10**
If both an auxiliary switch and bell alarm are required, add C05 to the catalog number (right-pole mounted). Auxiliary switch and bell alarm are 600V rated.				110–240 Vac or 110–125 Vdc	**S10**	48–60 Vac	**U14**
						110–127 Vac	**U18**
				380–440 Vac or 220–50 Vdc	**S14**	208–240 Vac	**U22**
						380–480 Vac	**U26**
				480–600 Vac	**S18**	12 Vdc	**T02**
						24 Vdc	**T06**
						48–60 Vdc	**T10**
						110–125 Vdc	**T14**
						220–250 Vdc	**T18**

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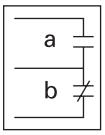
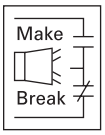
Internal Accessories, continued

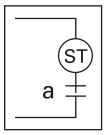
Auxiliary Switch (Right-Pole Mounted)



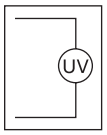
Bell Alarm (Right-Pole Mounted)



Shunt Trip (Left-Pole Mounted)



UVR (Left-Pole Mounted)



Configuration	Add This Suffix to Catalog Number	Configuration	Add This Suffix to Catalog Number	Voltage Range	Add This Suffix to Catalog Number	Voltage Range	Add This Suffix to Catalog Number
Universal K Frame							
1NO/1NC	**A06**	1 make/1 break	**B06**	12–24 Vac/Vdc	**S42**	12 Vac	**U06**
2NO/2NC	**A13**			48–60 Vac/Vdc	**S50**	24 Vac	**U10**
If both an auxiliary switch and bell alarm are required, add CO5 to the catalog number (right-pole mounted). Auxiliary switch and bell alarm are 600V rated.				110–240 Vac or 110–125 Vdc	**S10**	48–60 Vac	**U14**
						110–127 Vac	**U18**
				380–440 Vac or 220–250 Vdc	**S14**	208–240 Vac	**U22**
						380–480 Vac	**U26**
				480–600 Vac	**S18**	12 Vdc	**T02**
						24 Vdc	**T06**
						48–60 Vdc	**T10**
						110–125 Vdc	**T14**
						220–250 Vdc	**T18**
Universal L Frame							
1NO/1NC	**A06**	1 make/1 break	**B06**	12–24 Vac/Vdc	**S02**	12 Vac	**U06**
2NO/2NC	**A13**			48–60 Vdc	**S06**	24 Vac	**U10**
If both an auxiliary switch and bell alarm are required, add CO5 to the catalog number (right-pole mounted). Auxiliary switch and bell alarm are 600V rated.				48–60 Vac	**S86**	48–60 Vac	**U14**
				110–240 Vac	**S10**	110–127 Vac	**U18**
				110–125 Vdc	**S42**	208–240 Vac	**U22**
				380–440 Vac or 220–250 Vdc	**S14**	380–480 Vac	**U26**
						12 Vdc	**T02**
				480–600 Vac	**S18**	24 Vdc	**T06**
						48–60 Vdc	**T10**
						110–125 Vdc	**T14**
						220–250 Vdc	**T18**

Handle Mechanisms

Handle Mechanisms

Type 1/12 Universal Rotary

Ordering Information ①

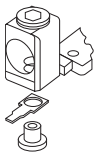
Shaft Length in Inches (mm)	Handle Color	Complete Catalog Number	Flange Flex Shaft Type 1, 3R, 12 Versions
Universal G Frame			
6 (152.4)	Black	**GHMVD06B**	3-ft length; order **F0S03C**
12 (304.8)	Black	**GHMVD12B**	4-ft length; order **F0S04C**
6 (152.4)	Red	**GHMVD06R**	5-ft length; order **F0S05C**
12 (304.8)	Red	**GHMVD12R**	6-ft length; order **F0S06C**
Universal F Frame			
6 (152.4)	Black	**FHMVD06B**	3-ft length; order **F1S03C**
12 (304.8)	Black	**FHMVD12B**	4-ft length; order **F1S04C**
6 (152.4)	Red	**FHMVD06R**	5-ft length; order **F1S05C**
12 (304.8)	Red	**FHMVD12R**	6-ft length; order **F1S06C**
			7-ft length; order **F1S07C**
			8-ft length; order **F1S08C**
			9-ft length; order **F1S09C**
			10-ft length; order **F1S10C**
Universal J Frame			
6 (152.4)	Black	**JHMVD06B**	3-ft length; order **F2S03C**
12 (304.8)	Black	**JHMVD12B**	4-ft length; order **F2S04C**
6 (152.4)	Red	**JHMVD06R**	5-ft length; order **F2S05C**
12 (304.8)	Red	**JHMVD12R**	6-ft length; order **F2S06C**
			7-ft length; order **F2S07C**
			8-ft length; order **F2S08C**
			9-ft length; order **F2S09C**
			10-ft length; order **F2S10C**
Universal K Frame			
6 (152.4)	Black	**KHMVD06B**	3-ft length; order **F3S03C**
12 (304.8)	Black	**KHMVD12B**	4-ft length; order **F3S04C**
6 (152.4)	Red	**KHMVD06R**	5-ft length; order **F3S05C**
12 (304.8)	Red	**KHMVD12R**	6-ft length; order **F3S06C**
			7-ft length; order **F3S07C**
			8-ft length; order **F3S08C**
			9-ft length; order **F3S09C**
			10-ft length; order **F3S10C**

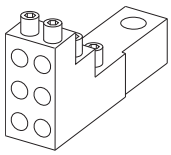
Note

① Only available as complete handle mechanism. Parts not sold separately.

Terminals and Termination Accessory Devices

Terminal/Termination Devices





Universal G Frame

Terminals (Included with Breaker)		Optional Multiwire Lugs (Load End Only)	
15–20 A	**25–100A**	**Three-Hole Version**	**Six-Hole Version**
14–2 AWG Cu/Al	10–1/0 AWG Cu/Al	(3) 14–2 AWG Order **3TA100G3K**	(6) 14–6 AWG Order **3TA100G6K**
2.5–4 mm² Cu/Al	4–50 mm² Cu/Al		

Universal F Frame

Terminals (Included with Breaker)			Optional Multiwire Lugs (Load End Only)	
10–20A	**25–100A**	**110–225A**	**Three-Hole Version**	**Six-Hole Version**
14–10 AWG Cu/Al	14–1/0 AWG Cu/Al	4–4/0 AWG Cu/Al	(3) 14–2 AWG Order **3TA150F3K**	(6) 14–6 AWG Order 3TA150F6K
2.5–4 mm² Cu/Al	2.5–50 mm² Cu/Al	25–95 mm² Cu/Al		

Universal J Frame

Terminals (Included with Breaker)	Optional Multiwire Lugs (Load End Only)	
70–250A	**Three-Hole Version**	**Six-Hole Version**
4–350 MCM AWG Cu/Al	(3) 14–2 AWG Order **3TA250J3K**	(6) 14–6 AWG Order **3TA250J6K**
25–150 mm² Cu/Al		

Universal K Frame

Terminals (Included with Breaker)		Optional Multiwire Lugs (Load End Only)	
300–350A	**400A**	**Three-Hole Version**	**Six-Hole Version**
250–500 MCM AWG Cu/Al	3/0–200 (2) AWG Cu/Al	(3) 12–2/0 AWG Order **3TA400K3K**	(6) 14–2/0 AWG Order **3TA400K6K**
120–240 mm² Cu/Al	95–120 mm² Cu/Al		

Universal L Frame

Terminals (Included with Breaker)		Optional Multiwire Lugs (Load End Only)	
500A	**600A**	**Three-Hole Version**	**Six-Hole Version**
(2) 250–300 MCM Cu/Al	(2) 400–500 MCM Cu/Al	—	—
120–150 mm² Cu/Al	185–250 mm² Cu/Al		

QUICKLAG Type QC Miniature Circuit Breakers—Cable-In/Cable-Out Type QC

Features

For Cable-In/Cable-Out Panel Mount Applications

- Single-, two-, three- and four-pole options
- Built and listed to UL 489
- All products UL and CSA listed
- All products 10–100A are HACR rated

Catalog Number Selection

QUICKLAG Type QC Miniature Circuit Breakers—Cable-In/Cable-Out Type QC

Type QC Miniature Circuit Breakers

QC 3 020 H

Ampere Rating	Number of Poles	Ampere Rating		Construction
QC = QC breaker	**1** = Single-pole **2** = Two-pole **3** = Three-pole **4** = Four-pole	**010** = 10 amp **015** = 15 amp **020** = 20 amp **025** = 25 amp **030** = 30 amp **035** = 35 amp **040** = 40 amp **045** = 45 amp	**050** = 50 amp **055** = 55 amp **060** = 60 amp **070** = 70 amp **080** = 80 amp **090** = 90 amp **100** = 100 amp	**H** = 240V (two-, three- and four-pole only)

Product Selection

QUICKLAG Type QC 10,000 Ampere I.C. Thermal-Magnetic Breakers

Note: For non-automatic switches, see Volume 4—Circuit Protection, CA08100005E, Tab 24.

Continuous Ampere Rating at 40°C	Single-Pole, 120/240 Vac Catalog Number	Two-Pole, 120/240 Vac Catalog Number	Three-Pole, 240 Vac Catalog Number
10	**QC1010**	**QC2010**	—
15	**QC1015** ①②	**QC2015**	**QC3015H**
20	**QC1020** ①②	**QC2020**	**QC3020H**
30	**QC1030**	**QC2030**	**QC3030H**
40	**QC1040**	**QC2040**	**QC3040H**
50	**QC1050**	**QC2050**	**QC3050H**
60	—	**QC2060**	**QC3060H**
70	—	**QC2070**	**QC3070H**
100	**QC1100**	**QC2100**	**QC3100H**

Notes

① Switching duty rated for 120 Vac fluorescent light applications only.
② For special low-magnetic breaker, order QC1015L1 or QC1020L1.

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QUICKLAG Type QC Miniature Circuit Breakers—Cable-In/Cable-Out Type QCD

Features

For Cable-In/Cable-Out DIN-Rail Mount HVAC Applications

- Single-, two- and three-pole options
- Modular construction
- DIN mounted (symmetrical rail 35 in x 7.5 in DIN/EN 50 022)
- Flexible power feed connection: wire size, position
- Same breaker size for entire rating range
- Field-mountable accessories: finger-shroud proof, quick connect terminals, jumper units

Catalog Number Selection

QUICKLAG Type QC Miniature Circuit Breakers—Cable-In/Cable-Out Type QCD

QCD 3 020 H

Breaker Type
QCD = QCD breaker

Number of Poles
1 = Single-pole
2 = Two-pole
3 = Three-pole

Ampere Rating

010 = 10 amp	**050** = 50 amp
015 = 15 amp	**055** = 55 amp
020 = 20 amp	**060** = 60 amp
025 = 25 amp	**070** = 70 amp
030 = 30 amp	**080** = 80 amp
035 = 35 amp	**090** = 90 amp
040 = 40 amp	**100** = 100 amp
045 = 45 amp	

Construction
H = 240V (two- and three-pole only)

Product Selection

QUICKLAG Type QCD 10,000 Ampere I.C. Thermal-Magnetic Breakers

Continuous Ampere Rating at 40°C	Single-Pole, 120/240 Vac Catalog Number	Two-Pole, 120/240 Vac Catalog Number	Three-Pole, 240 Vac Catalog Number
10	**QCD1010**	**QCD2010**	—
15	**QCD1015**	**QCD2015**	**QCD3015H**
20	**QCD1020**	**QCD2020**	**QCD3020H**
30	**QCD1030**	**QCD2030**	**QCD3030H**
40	**QCD1040**	**QCD2040**	**QCD3040H**
50	**QCD1050**	**QCD2050**	**QCD3050H**
60	**QCD1060**	**QCD2060**	**QCD3060H**
70	—	**QCD2070**	**QCD3070H**
100	—	**QCD2100**	**QCD3100H**

QUICKLAG Type QC Miniature Circuit Breakers—Cable-In/Cable-Out 1/2-Inch Wide Types QCR, QCF

Features

When Space is at a Premium

- QCR: For DIN-rail mount cable-in/cable-out applications
- QCF: For front-mount through-the-door cable-in/cable-out applications
- 1/2 in (12.7 mm) wide per pole
- Three-position handle: ON, tripped (center), OFF
- Thermal-magnetic protection
- Single-, two- and three-pole
- 10 kAIC at 120/240 Vac, 10–60A
- 10 kAIC at 240 Vac, 10–30A

Catalog Number Selection

QUICKLAG Type QC Miniature Circuit Breakers—Cable-In/Cable-Out 1/2-Inch Wide Types QCR, QCF

QCR 1 020 T

Breaker Type
QCR = QCD Breaker (rear mount)
QCF = QCF Breaker (front mount)

Number of Poles
1 = Single-pole
2 = Two-pole
3 = Three-pole

Ampere Rating		
010 = 10 amp	**030** = 30 amp	**050** = 50 amp
015 = 15 amp	**035** = 35 amp	**055** = 55 amp
020 = 20 amp	**040** = 40 amp	**060** = 60 amp
025 = 25 amp	**045** = 45 amp	

Construction/Terminals
H = 240V (two- and three-pole only)
T = Ring or spade terminals (10–30A only)

Product Selection

QUICKLAG Type QCR Breakers 10 kAIC Interrupting Ratings ①②③④

Continuous Ampere Rating at 40°C	Single-Pole 120/240 Vac Catalog Number	Two-Pole 120/240 Vac Catalog Number	Three-Pole 240 Vac Catalog Number
10	**QCR1010**	**QCR2010**	—
	QCR1010T	**QCR2010T**	—
15	**QCR1015** ⑤	**QCR2015**	**QCR3015H**
	QCR1015T ⑤	**QCR2015T**	**QCR3015HT**
20	**QCR1020** ⑤	**QCR2020**	**QCR3020H**
	QCR1020T ⑤	**QCR2020T**	**QCR3020HT**
25	**QCR1025**	**QCR2025**	**QCR3025H**
	—	—	**QCR3025HT**
30	**QCR1030**	**QCR2030**	**QCR3030H**
	—	—	**QCR3030HT**
35	**QCR1035**	**QCR2035**	—
40	**QCR1040**	**QCR2040**	—
45	**QCR1045**	**QCR2045**	—
50	**QCR1050**	**QCR2050**	—
55	**QCR1055**	—	—
60 ⑥	**QCR1060**	**QCR2060**	—

QUICKLAG Type QCF Breakers 10 kAIC Interrupting Ratings ①②③

Continuous Ampere Rating at 40°C	Single-Pole 120/240 Vac Catalog Number	Two-Pole 120/240 Vac Catalog Number	Three-Pole 240 Vac Catalog Number
10	**QCF1010**	**QCF2010**	—
	QCF1010T	**QCF2010T**	—
15	**QCF1015** ⑤	**QCF2015**	**QCF3015H**
	—	—	**QCF3015HT**
20	**QCF1020** ⑤	**QCF2020**	**QCF3020H**
	—	—	**QCF3020HT**
25	**QCF1025**	**QCF2025**	**QCF3025H**
	—	—	**QCF3025HT**
30	**QCF1030**	**QCF2030**	**QCF3030H**
	—	—	**QCF3030HT**
40	**QCF1040**	**QCF2040**	—
50	**QCF1050**	**QCF2050**	—
60 ⑥	**QCF1060**	**QCF2060**	—

Notes

① Standard breaker terminals are box type lugs.
② Breakers with "T" catalog number suffix are suitable for line and load side ring terminal connection (#10-32 plus/minus terminal screw provided).
③ Breakers with "P" catalog number suffix are suitable for terminating two 10 AWG quick-connect type terminals per phase on breaker load side.
④ Breakers with shunt trip (extra pole required on breaker right-hand side) are available on single-, two- and three-pole.
⑤ All 15 and 20A single-pole breakers are SWD (switching duty) rated for fluorescent lighting applications.
⑥ 60/75°C Cu/Al wire on all ratings except 60A, which requires Cu only conductor.

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Accessories

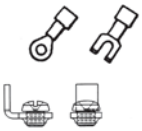
Type QCR and QCF

Description	Catalog Number
Steel mounting clip mounts QCR breaker if individual mounting is required. Quantity two required for single- and two-pole and four required for three-pole breakers.	**QCRMTGFT**
Removable padlock device for single-pole QCR or QCF breaker.	**QCRFPL1P**
Removable padlock device for multi-pole QCR or QCF breaker.	**QCRFPLMP**
Padlock bracket assembly for QCR or QCF single- or multi-pole breakers (OFF only).	**QCRFLOFF**
Padlock bracket for QCR, lock-off only.	**QCRPLOFF**
QUICKLAG Type C Spacer	**QCRSPACER**

QUICKLAG Type C Spacer

QCR and QCF ring or spade lug terminals (10–30A ratings only). Factory installed line and load side terminals each equipped with a #10-32 screw suitable for terminating one 10 AWG wire with insulated ring or spade type terminal as shown.	**Suffix "T"**

QCR and QCF Ring or Spade Lug Terminals



QUICKLAG Type QC Miniature Circuit Breakers—Cable-In/Cable-Out
1/2-Inch Wide Types QCGF, QCGFEP

Features

For Cable-In/Cable-Out Panel-Mount Applications

- QUICKLAG ground fault circuit breakers, Class A GFCI:
- Built and tested to UL 943
- 5 mA trip sensitivity
- QUICKLAG ground fault equipment protectors:
  - Built and tested to UL 1053
  - 30 mA trip sensitivity
- All products UL and CSA listed

Catalog Number Selection

QUICKLAG Type QC Miniature Circuit Breakers— Cable-In/Cable-Out Ground Fault and Equipment Protector Types QCGF, QCGFEP

QCGFEP 1 020

Breaker Type
QCGF = QC ground fault circuit protector
QCGFEP = QC ground fault equipment protector

Number of Poles
1 = Single-pole
2 = Two-pole

Ampere Rating	
015 = 15 amp	**030** = 30 amp
020 = 20 amp	**040** = 40 amp
025 = 25 amp	**050** = 50 amp

Product Selection

Types QCGF and QCGFEP Thermal-Magnetic Breakers

Continuous Ampere Rating at 40°C	Single-Pole, 120/240 Vac Catalog Number	Two-Pole, 120/240 Vac Catalog Number
Ground Fault Circuit Breakers—5 mA Sensitivity QUICKLAG Type: QCGF 10,000 Ampere I.C.		
15	**QCGF1015**	**QCGF2015**
20	**QCGF1020**	**QCGF2020**
30	**QCGF1030**	**QCGF2030**
40	**QCGF1040**	**QCGF2040**
50	—	**QCGF2050**
Ground Fault Equipment Protectors—30 mA Sensitivity QUICKLAG Type: QCGFEP 10,000 Ampere I.C.		
15	**QCGFEP1015**	**QCGFEP2015**
20	**QCGFEP1020**	**QCGFEP2020**
30	**QCGFEP1030**	**QCGFEP2030**
40	**QCGFEP1040**	**QCGFEP2040**
50	—	**QCGFEP2050**

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Accessories

Type QC Miniature Circuit Breakers

Handle Locks

Accessory ①	Description	Catalog Number
Handle locks: Non-padlockable ②	QUICKLAG type P, B, C—single-pole	**QL1NPL**
	QUICKLAG type P, B, C—two-, three-pole	**QL23NPL**
Handle locks: Padlockable	QUICKLAG type P, B, C—single-pole	**QL1PL**
	QUICKLAG type C—single-, two-, three-pole	**QC123PL**
	QUICKLAG type C—single-, two-, three-pole (off only)	**QCD123PLOFF**

Handle Tie

Handle tie	QUICKLAG handle tie—single-pole	**QL1HT**
	QUICKLAG handle tie—three-pole	**QL3HT**

Hardware

Mounting hardware	QUICKLAG type C face mounting clip	**QCFCLIP**
	QUICKLAG type C face mounting plate—single-pole	**QC1FP**
	QUICKLAG type C face mounting plate —two-pole	**QC2FP**
	QUICKLAG type C face mounting plate —three-pole	**QC3FP**
	QUICKLAG type C face mounting plate and lock-off (off only)—two-pole ③	**QC2FPLOFF**
	QUICKLAG type C face mounting plate and lock-off (off only)—three-pole	**QC3FPLOFF**
	QUICKLAG type C base mounting clamp	**QCBCLIP**
	QUICKLAG base mounting plate—six poles total	**QC6BP**
	QUICKLAG type C base mounting plate, six-poles total—heavy-duty screw-secured	**QC6BPS**
	QUICKLAG type C (QCD) two-way jumper unit with cover	**QCDJ2**
	QUICKLAG type C (QCD) four-way jumper unit with cover	**QCDJ4**
	QUICKLAG type C (QCD) six-way jumper unit with cover	**QCDJ6**
	QUICKLAG type C (QCD) two-way jumper unit, no cover	**QCDJ2T**
	QUICKLAG type C (QCD) four-way jumper unit, no cover	**QCDJ4T**
	QUICKLAG type C (QCD) six-way jumper unit, no cover	**QCDJ6T**
	QUICKLAG type QCD finger protection attachment	**QCDFP**
	QUICKLAG type C DIN-rail adapter	**QCDINADAPT**

Notes

① See **Page V9-T1-22** for QCR and QCF accessories.
② Can lock in ON or OFF position.
③ Suitable for ground fault breakers.

WMZ UL 489 Miniature Circuit Breakers

Features

- UL 489 listed DIN-rail mounted miniature circuit breakers up to 40A current rating
- Current limiting design provides fast short circuit interruption that reduces let-through energy
- Thermal-magnetic overcurrent protection available with C and D curve level of protection
  - C curve—5–10X I_n—for medium inrush startup currents
  - D curve—10–20X I_n—provides a magnetic range to allow for high inrush levels
- Ring-tongue terminals available
- Complete line of accessories

Catalog Number Selection

WMZ UL 489 Miniature Circuit Breakers

WMZ UL 489

WMZ T 1 C 16 T

Breaker Type
WMZ = WMZ UL 489 circuit breaker

Breaker Type
T = 10 kAIC
H = 14 kAIC
D = 10 kAIC/DC

Number of Poles
1 = Single-pole
2 = Two-pole
3 = Three-pole

Protective Curve
C = C curve (5–10X I_n)
D = D curve (10–20X I_n)

Ampere Rating	
X0 = 0.5A	**10** = 10A
01 = 1A	**13** = 13A
X1 = 1.5A	**15** = 15A
02 = 2A	**16** = 16A
03 = 3A	**20** = 20A
04 = 4A	**25** = 25A
05 = 5A	**30** = 30A
06 = 6A	**32** = 32A
07 = 7A	**40** = 40A
08 = 8A	

Terminal
T = Ring terminals

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Product Selection

WMZT UL 489 Circuit Breakers

Ampere Rating	C Curve (5–10X I_n Current Rating) Single-Pole ① Catalog Number	Two-Pole ① Catalog Number	Three-Pole ① Catalog Number	D Curve (10–20X I_n Current Rating) Single-Pole ① Catalog Number	Two-Pole ① Catalog Number	Three-Pole ① Catalog Number
0.5	WMZT1CX0	WMZT2CX0	WMZT3CX0	WMZT1DX0	WMZT2DX0	WMZT3DX0
1	WMZT1C01	WMZT2C01	WMZT3C01	WMZT1D01	WMZT2D01	WMZT3D01
1.5	WMZT1CX1	WMZT2CX1	WMZT3CX1	WMZT1DX1	WMZT2DX1	WMZT3DX1
2	WMZT1C02	WMZT2C02	WMZT3C02	WMZT1D02	WMZT2D02	WMZT3D02
3	WMZT1C03	WMZT2C03	WMZT3C03	WMZT1D03	WMZT2D03	WMZT3D03
4	WMZT1C04	WMZT2C00	WMZT3C04	WMZT1D04	WMZT2D04	WMZT3D04
5	WMZT1C05	WMZT2C05	WMZT3C05	WMZT1D05	WMZT2D05	WMZT3D05
6	WMZT1C06	WMZT2C06	WMZT3C06	WMZT1D06	WMZT2D06	WMZT3D06
7	WMZT1C07	WMZT2C07	WMZT3C07	WMZT1D07	WMZT2D07	WMZT3D07
8	WMZT1C08	WMZT2C08	WMZT3C08	WMZT1D08	WMZT2D08	WMZT3D08
10	WMZT1C10	WMZT2C10	WMZT3C10	WMZT1D10	WMZT2D10	WMZT3D10
13	WMZT1C13	WMZT2C13	WMZT3C13	WMZT1D13	WMZT2D13	WMZT3D13
15	WMZT1C15	WMZT2C15	WMZT3C15	WMZT1D15	WMZT2D15	WMZT3D15
16	WMZT1C16	WMZT2C16	WMZT3C16	WMZT1D16	WMZT2D16	WMZT3D16
20	WMZT1C20	WMZT2C20	WMZT3C20	WMZT1D20	WMZT2D20	WMZT3D20
25	WMZT1C25	WMZT2C25	WMZT3C25	WMZT1D25	WMZT2D25	WMZT3D25
30	WMZT1C30	WMZT2C30	WMZT3C30	WMZT1D30	WMZT2D30	WMZT3D30
32	WMZT1C32	WMZT2C32	WMZT3C32	WMZT1D32	WMZT2D32	WMZT3D32
40	WMZT1C40	WMZT2C40	WMZT3C40	WMZT1D40	WMZT2D40	WMZT3D40

WMZH UL 489 Circuit Breakers—14 kAIC

Amperes	Single-Pole Catalog Number	Two-Pole Catalog Number	Three-Pole Catalog Number
C Curve (5–10X I_n Current Rating)			
15	WMZH1C15	WMZH2C15	WMZH3C15
16	WMZH1C16	WMZH2C16	WMZH3C16
20	WMZH1C20	WMZH2C20	WMZH3C20
25	WMZH1C25	WMZH2C25	WMZH3C25
D Curve (10–20X I_n Current Rating)			
13	WMZH1D13	WMZH2D13	WMZH3D13
15	WMZH1D15	WMZH2D15	WMZH3D15
16	WMZH1D16	WMZH2D16	WMZH3D16
20	WMZH1D20	WMZH2D20	WMZH3D20

WMZH UL 489 Circuit Breakers with Ring-Tongue Terminals

Amperes	Single-Pole Catalog Number	Two-Pole Catalog Number	Three-Pole Catalog Number
C Curve (5–10X I_n Current Rating)			
15	WMZH1C15T	WMZH2C15T	WMZH3C15T
16	WMZH1C16T	WMZH2C16T	WMZH3C16T
20	WMZH1C20T	WMZH2C20T	WMZH3C20T
25	WMZH1C25T	WMZH2C25T	WMZH3C25T
D Curve (10–20X I_n Current Rating)			
13	WMZH1D13T	WMZH2D13T	WMZH3D13T
15	WMZH1D15T	WMZH2D15T	WMZH3D15T
16	WMZH1D16T	WMZH2D16T	WMZH3D16T
20	WMZH1D20T	WMZH2D20T	WMZH3D20T

WMZD UL 489 Circuit Breakers—10 kAIC at 125 Vdc per Pole

Amperes	Single-Pole Catalog Number	Two-Pole Catalog Number
C Curve (5–10X I_n Current Rating)		
2	WMZD1C02	WMZD2C02
3	WMZD1C03	WMZD2C03
4	WMZD1C04	WMZD2C04
5	WMZD1C05	WMZD2C05
6	WMZD1C06	WMZD2C06
7	WMZD1C07	WMZD2C07
8	WMZD1C08	WMZD2C08
10	WMZD1C10	WMZD2C10
13	WMZD1C13	WMZD2C13
15	WMZD1C15	WMZD2C15
16	WMZD1C16	WMZD2C16
20	WMZD1C20	WMZD2C20
25	WMZD1C25	WMZD2C25
30	WMZD1C30	WMZD2C30
32	WMZD1C32	WMZD2C32
40	WMZD1C40	WMZD2C40

Note

① For ring-tongue terminals, ADD suffix "T" to above catalog number.

WMZS UL 1077 Miniature Circuit Breakers—Supplementary Protectors

Features

- UL 1077 recognized DIN-rail mounted supplemental protectors up to 63A
- Current limiting design provides fast short circuit interruption that reduces let-through energy
- Thermal-magnetic overcurrent protection available with B, C and D curve levels of protection
  - B curve—3–5X I_n—for maximum protection of control circuit wiring from low-level short circuit faults
  - C curve—5–10X I_n—for medium inrush startup currents
  - D curve—10–20X I_n—provides a magnetic range to allow for high inrush levels
- Ideal replacement for fuses that are applied as supplemental protection
- Complete line of accessories

Catalog Number Selection

WMZS UL 1077 Miniature Circuit Breakers—Supplementary Protectors

WMZS UL 1077 Miniature Circuit Breakers

WMZS 1 B 10

Breaker Family	Number of Poles	Protective Curve	Ampere Rating			
WMZS = Supplementary protector	**1** = Single-pole **2** = Two-pole **3** = Three-pole	**B** = B curve (3–5X I_n) **C** = C curve (5–10X I_n) **D** = D curve (10–20X I_n)	**00** = 0.5A **01** = 1A **02** = 2A **03** = 3A **04** = 4A	**05** = 5A **06** = 6A **07** = 7A **08** = 8A **10** = 10A	**13** = 13A **15** = 15A **16** = 16A **20** = 20A **25** = 25A	**30** = 30A **32** = 32A **40** = 40A **50** = 50A **63** = 63A

Product Selection

WMZS UL 1077 Supplementary Protectors

	B Curve (3–5X I_n Current Rating)			C Curve (5–10X I_n Current Rating)			D Curve (10–20X I_n Current Rating)		
Ampere Rating	Single-Pole Catalog Number	Two-Pole Catalog Number	Three-Pole Catalog Number	Single-Pole Catalog Number	Two-Pole Catalog Number	Three-Pole Catalog Number	Single-Pole Catalog Number	Two-Pole Catalog Number	Three-Pole Catalog Number
0.5	—	—	—	**WMZS1C00**	**WMZS2C00**	**WMZS3C00**	**WMZS1D00**	**WMZS2D00**	**WMZS3D00**
1	—	—	—	**WMZS1C01**	**WMZS2C01**	**WMZS3C01**	**WMZS1D01**	**WMZS2D01**	**WMZS3D01**
2	—	—	—	**WMZS1C02**	**WMZS2C02**	**WMZS3C02**	**WMZS1D02**	**WMZS2D02**	**WMZS3D02**
3	—	—	—	**WMZS1C03**	**WMZS2C03**	**WMZS3C03**	**WMZS1D03**	**WMZS2D03**	**WMZS3D03**
4	—	—	—	**WMZS1C04**	**WMZS2C04**	**WMZS3C04**	**WMZS1D04**	**WMZS2D04**	**WMZS3D04**
5	—	—	—	**WMZS1C05**	**WMZS2C05**	**WMZS3C05**	**WMZS1D05**	**WMZS2D05**	**WMZS3D05**
6	**WMZS1B06**	**WMZS2B06**	**WMZS3B06**	**WMZS1C06**	**WMZS2C06**	**WMZS3C06**	**WMZS1D06**	**WMZS2D06**	**WMZS3D06**
7	**WMZS1B07**	**WMZS2B07**	**WMZS3B07**	**WMZS1C07**	**WMZS2C07**	**WMZS3C07**	**WMZS1D07**	**WMZS2D07**	**WMZS3D07**
8	**WMZS1B08**	**WMZS2B08**	**WMZS3B08**	**WMZS1C08**	**WMZS2C08**	**WMZS3C08**	**WMZS1D08**	**WMZS2D08**	**WMZS3D08**
10	**WMZS1B10**	**WMZS2B10**	**WMZS3B10**	**WMZS1C10**	**WMZS2C10**	**WMZS3C10**	**WMZS1D10**	**WMZS2D10**	**WMZS3D10**
13	**WMZS1B13**	**WMZS2B13**	**WMZS3B13**	**WMZS1C13**	**WMZS2C13**	**WMZS3C13**	**WMZS1D13**	**WMZS2D13**	**WMZS3D13**
15	**WMZS1B15**	**WMZS2B15**	**WMZS3B15**	**WMZS1C15**	**WMZS2C15**	**WMZS3C15**	**WMZS1D15**	**WMZS2D15**	**WMZS3D15**
16	**WMZS1B16**	**WMZS2B16**	**WMZS3B16**	**WMZS1C16**	**WMZS2C16**	**WMZS3C16**	**WMZS1D16**	**WMZS2D16**	**WMZS3D16**
20	**WMZS1B20**	**WMZS2B20**	**WMZS3B20**	**WMZS1C20**	**WMZS2C20**	**WMZS3C20**	**WMZS1D20**	**WMZS2D20**	**WMZS3D20**
25	**WMZS1B25**	**WMZS2B25**	**WMZS3B25**	**WMZS1C25**	**WMZS2C25**	**WMZS3C25**	**WMZS1D25**	**WMZS2D25**	**WMZS3D25**
30	**WMZS1B30**	**WMZS2B30**	**WMZS3B30**	**WMZS1C30**	**WMZS2C30**	**WMZS3C30**	**WMZS1D30**	**WMZS2D30**	**WMZS3D30**
32	**WMZS1B32**	**WMZS2B32**	**WMZS3B32**	**WMZS1C32**	**WMZS2C32**	**WMZS3C32**	**WMZS1D32**	**WMZS2D32**	**WMZS3D32**
40	**WMZS1B40**	**WMZS2B40**	**WMZS3B40**	**WMZS1C40**	**WMZS2C40**	**WMZS3C40**	**WMZS1D40**	**WMZS2D40**	**WMZS3D40**
50	**WMZS1B50**	**WMZS2B50**	**WMZS3B50**	**WMZS1C50**	**WMZS2C50**	**WMZS3C50**	—	—	—
63	**WMZS1B63**	**WMZS2B63**	**WMZS3B63**	**WMZS1C63**	**WMZS2C63**	**WMZS3C63**	—	—	—

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Accessories

WMZT UL 489

Description	Catalog Number
Two-pole contact or auxiliary contact/trip indicating contact	**WMZSAUXTRIP**
Auxiliary contact	**WMZTAUX**
Shunt trip 110–415 Vac	**WMZTST415**
Shunt trip 12–110 Vac	**WMZTST110**
Padlock hasp	**WMZPLK**
Busbar—single-pole 6 terminals	**WMZT1P6T**
Busbar—single-pole 12 terminals	**WMZT1P12T**
Busbar—single-pole 18 terminals	**WMZT1P18T**
Busbar—two-pole 6 terminals	**WMZT2P6T**
Busbar—two-pole 12 terminals	**WMZT2P12T**
Busbar—two-pole 18 terminals	**WMZT2P18T**
Busbar—three-pole 6 terminals	**WMZT3P6T**
Busbar—three-pole 12 terminals	**WMZT3P12T**
Busbar—three-pole 18 terminals	**WMZT3P18T**
Three-pole busbar shroud	**WMZT3PSHROUD**
Extension terminal—35 mm (2–14 AWG)	**WMZT35EXT**
Bus connector—conductors up to 50 mm^2 (~1/0 AWG)	**WMZTBCON**

WMZT UL 489

Description	Rating	Catalog Number
Auxiliary contact—1 NO/1 NC	230 Vac	**WMZSAUX**
Two-pole contact or auxiliary contact/ trip indicating contact	230 Vac	**WMZSAUXTRIP**
Undervoltage release	115 Vac	**WMZSUVR115**
	230 Vac	**WMZSUVR230**
	400 Vac	**WMZSUVR400**
Shunt trip	110–415 Vac	**WMZSST415**
	110–230 Vdc	
Shunt trip	12–110 Vac	**WMZSST110**
	12–60 Vdc	
Without Auxiliary Contacts		
Busbar—Single-pole 57 terminals	80A	**WMZS1P57T**
Busbar—Two-pole 56 terminals	80A	**WMZS2P56T**
Busbar—Three-pole 57 terminals	80A	**WMZS3P57T**
Busbar—Single-pole 57 terminals	100A	**WMZS1P57T25**
Busbar—Two-pole 56 terminals	100A	**WMZS2P56T25**
Busbar—Three-pole 57 terminals	100A	**WMZS3P57T25**
Auxiliary/Trip Indicating Contacts		
Busbar— Single-pole 37 terminals	80A	**WMZS1P37TAUX**
Busbar— Two-pole 46 terminals	80A	**WMZS2P46TAUX**
Busbar— Three-pole 48 terminals	80A	**WMZS3P48TAUX**
Busbar— Single-pole 37 terminals	100A	**WMZS1P37T25AUX**
Busbar— Two-pole 46 terminals	100A	**WMZS2P46T25AUX**
Busbar— Three-pole 48 terminals	100A	**WMZS3P48T25AUX**
Pin type incoming supply terminals 25 mm^2 (~AWG 4)	—	**WMZSBCON**
Bus incoming supply terminals 50 mm^2 (14-1 AWG)	—	**WMZS50EXT**
Busbar terminals cover	—	**WMZSBBTC**
Padlock hasp	—	**WMZPLK**
Fork connector—Two- and three-pole	—	**WMZS3CAP**
Fork connector—Single-pole	—	**WMZS1CAP**

Series NRX Low Voltage Power Breakers

Features

- Rogowski coil does not saturate like iron core sensors, and one sensor accommodates 200–1600A range. Never change a sensor, and NO CTs are required
- Tension clamp secondary terminals—10A continuous rating at 600V meets UL/CSA/RoHS and UL-94 V0. Mounted directly to fixed breaker or drawout cassette they reduce wiring and provide clean, organized wiring schemes
- Breaker mounted communication modules for INCOM™, Modbus® and PROFIBUS® mount directly to the cassette, reducing the space and room required for communication capability
- With the patent pending simple design of the fold-up cassette, all items in a cassette are replaceable without removing the cassette from the cell
- Plug-and-play accessories—no special tools needed. Accessories come with plug and wires ready to install

Series NRX™ Low Voltage Power Breakers

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Catalog Number Selection

Series NRX Power Breakers (Exclusionary Rules Apply)

N S S6 08 3 W 52 8 A B A N 4 X N D X

Breaker Frame Size
N = Type NF, 630–1600A, (70 mm pole spacing)

Standard, Mechanism, Device
S = UL 1066, stored energy, power breaker
X = UL 489, stored energy, insulated case breaker
E = IEC 60947-2, stored energy, air breaker

Fault Current Rating
S4 = 42 kA at 480 Vac UL or 415 Vac IEC
S5 = 50 kA at 480 Vac UL or 415 Vac IEC
S6 = 65 kA at 480 Vac UL or 415 Vac IEC

Frame Rating (Amperes)

07 = 630 (IEC only)	**12** = 1200 (UL only)
08 = 800	**13** = 1250 (IEC only)
10 = 1000 (IEC only)	**16** = 1600 (On NF: IEC only)

Poles, Phasing
3 = Three-pole, ABC
4 = Four-pole, NABC

Mounting Configuration
W = Drawout
B = Fixed mount rear connect, mounting bracket, with secondary terminal row
R = Fixed mount rear connect, surface mount, with secondary terminal row
T = Fixed mount front connect, surface mount, cable connect, with secondary terminal row
F = Fixed mount front connect, mounting bracket, bus connect, with secondary terminal row
S = Fixed mount front connect, surface mount, bus connect, with secondary terminal row

Trip Unit
52 = 520 LSI, no ZSI
53 = 520 LSI, with ZSI
5G = 520 LSIG, no ZSI
5H = 520 LSIG, with ZSI
M2 = 520M LSI, no ZSI, 24 Vdc
M3 = 520M LSI, with ZSI, 24 Vdc
MA = 520M LSIA, no ZSI, 24 Vdc
MB = 520M LSIA, with ZSI, 24 Vdc
MG = 520M LSIG, no ZSI, 24 Vdc
MH = 520M LSIG, with ZSI, 24 Vdc
R2 = 520M LSI, no ZSI, 24 Vdc, with Arcflash Reduction Maintenance System™
R3 = 520M LSI, with ZSI, 24 Vdc, with Arcflash Reduction Maintenance System
RA = 520M LSIA, no ZSI, 24 Vdc, with Arcflash Reduction Maintenance System
RB = 520M LSIA, with ZSI, 24 Vdc, with Arcflash Reduction Maintenance System
RG = 520M LSIG, no ZSI, 24 Vdc, with Arcflash Reduction Maintenance System
RH = 520M LSIG, with ZSI, 24 Vdc, with Arcflash Reduction Maintenance System
SW = Non-auto switch

Rating Plug (Amperes)

1 = 200	**7** = 630
2 = 250	**8** = 800
3 = 300	**A** = 1000
4 = 400	**B** = 1200
5 = 500	**C** = 1250
6 = 600	**D** = 1600

Shunt Trip ①
N = No shunt trip
A = 110–127 Vac/Vdc
R = 208–240 Vac/Vdc
L = 24 Vdc
H = 48 Vdc

Motor Operator ①
M = Manually operated
B = 110–125 Vac
W = 110–125 Vdc
T = 208–250 Vac
P = 220–250 Vdc
L = 24 Vdc
H = 48 Vdc

Spring Release, Latch Check Switch ①
N = No spring release, no LCS
A = 110–127 Vac/Vdc, no LCS
R = 208–240 Vac/Vdc, no LCS

UVR, Second Shunt Trip ①
N = None
A = 110–125 Vac/Vdc UVR
R = 220–250 Vac/Vdc UVR
1 = 110–127 Vac/Vdc second shunt trip
2 = 208–240 Vac/Vdc second shunt trip

Auxiliary, Switches, Label Language ①
E = No auxiliary switches, no label (parent)
2 = 2 Form C, English
4 = 4 Form C, English

Trip Indicator and Bell Alarm/OTS, Secondary Terminal Blocks ①
N = No indicator, no OTS, secondary terminal blocks per breaker options
X = Trip indicator provided, no OTS, secondary terminal blocks per breaker options
Z = Trip indicator provided, 2 Form C OTS, secondary terminal blocks per breaker options
M = Interlock trip indicator provided, no OTS, secondary terminal blocks per breaker options
Y = Trip indicator provided, 2 Form C OTS, secondary terminal blocks per breaker options
1 = No indicator, no OTS, full complement secondary terminal blocks
2 = Trip indicator, no OTS, full complement secondary terminal blocks
3 = Trip indicator provided, 2 Form C OTS, full complement secondary terminal blocks
4 = Interlock trip indicator provided, no OTS, full complement secondary terminal blocks
5 = Interlock trip indicator provided, 2 Form C, full complement secondary terminal blocks

Padlock Provisions, Key Lock Provisions, Operations Counter ①
N = No PB covers, none, no counter

Drawout Breaker Shipping, Fixed Breaker Terminals, Door Frame Kit
D = Drawout (or parent) breaker shipping alone, without door frame kit
C = Drawout breaker in cassette, no shutters, no terminals, with door frame kit
K = Fixed breaker, no adapters, rear connector, with door frame kit, with mounting feet, with door frame kit
A = Terminal adapters for rear connect, short vertical/horizontal, with door frame kit
E = Terminal adapters for rear connect, long vertical/horizontal, with door frame kit
F = Terminal adapters for rear connect, with mounting feet, short vertical/horizontal, with door frame kit
H = Terminal adapters for rear connect, with mounting feet, long vertical/horizontal, with door frame kit
1 = Drawout breaker in cassette, no shutters, short vertical/horizontal, with door frame kit
2 = Drawout breaker in cassette, no shutters, long vertical/horizontal, with door frame kit
4 = Drawout breaker in cassette, with shutters, short vertical/horizontal, with door frame kit
5 = Drawout breaker in cassette, with shutters, long vertical/horizontal, with door frame kit
9 = Drawout breaker in cassette, with shutters, no terminals, with door frame kit

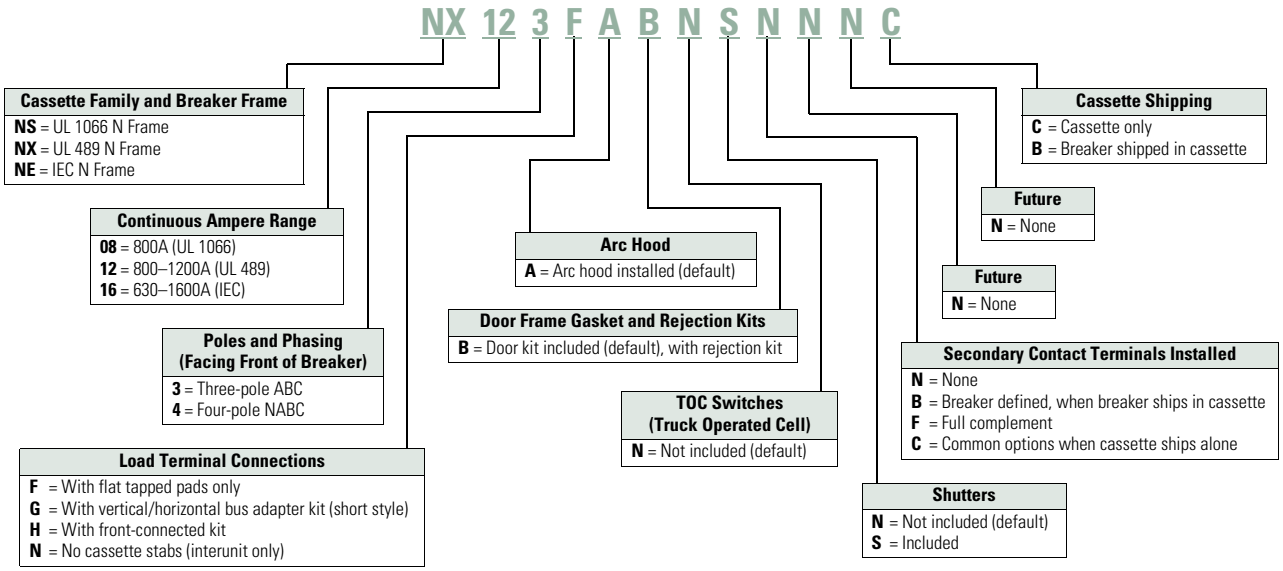
Future Use
X = All product

Note

① Contact Eaton for available voltages. Not all voltages are currently available.

Catalog Number Selection

Series NRX Cassettes



Product Selection

Series NRX Low Voltage Power Breakers

Breaker Frame	Industry Standard	Fault Current Rating (kAIC)	Frame Rating in Amperes	Poles	Mounting	Trip Unit	Rating Plug	Part Number ②
N	UL 1066	42	800	3	Drawout ①	520 LSI (No ZSI)	800	**NSS4083W528**
N	UL 1066	42	800	4	Fixed	520 LSI (No ZSI)	800	**NSS4084B528**
N	UL 1066	50	800	3	Drawout ①	520 LSI (No ZSI)	800	**NSS5083W528**
N	UL 1066	50	800	4	Fixed	520 LSI (No ZSI)	800	**NSS5084B528**
N	UL 1066	65	800	3	Drawout ①	520 LSI (No ZSI)	800	**NSS6083W528**
N	UL 1066	65	800	3	Fixed	520 LSI (No ZSI)	800	**NSS6083B528**
N	UL 1066	65	800	4	Drawout ①	520 LSI (No ZSI)	800	**NSS6084W528**
N	UL 1066	65	800	4	Fixed	520 LSI (No ZSI)	800	**NSS6084B528**
N	UL 489	42	800	3	Drawout ①	520 LSI (No ZSI)	800	**NXS4083W528**
N	UL 489	42	1200	4	Drawout ①	520 LSI (No ZSI)	1200	**NXS4124W52B**
N	UL 489	50	800	3	Fixed	520 LSI (No ZSI)	800	**NXS5083B528**
N	UL 489	50	1200	4	Fixed	520 LSI (No ZSI)	1200	**NXS5124B528**
N	UL 489	65	800	3	Drawout ①	520 LSI (No ZSI)	800	**NXS6083W528**
N	UL 489	65	800	4	Fixed	520 LSI (No ZSI)	800	**NSS6084B528**
N	UL 489	65	1200	3	Drawout ①	520 LSI (No ZSI)	1200	**NXS6123W52B**
N	UL 489	65	1200	4	Fixed	520 LSI (No ZSI)	1200	**NXS6124B52B**
N	IEC	42	630	3	Drawout ①	520 LSI (No ZSI)	630	**NES4073W527**
N	IEC	42	1600	4	Drawout ①	520 LSI (No ZSI)	1600	**NES4164W52D**
N	IEC	50	630	3	Fixed	520 LSI (No ZSI)	630	**NES5073B527**
N	IEC	50	1600	4	Fixed	520 LSI (No ZSI)	1600	**NES5164B52D**
N	IEC	65	630	3	Drawout ①	520 LSI (No ZSI)	630	**NES6073W527**
N	IEC	65	800	4	Fixed	520 LSI (No ZSI)	800	**NES6084B528**
N	IEC	65	1250	3	Fixed	520 LSI (No ZSI)	1250	**NES6133B52C**
N	IEC	65	1600	4	Drawout ①	520 LSI (No ZSI)	1600	**NES6164W52D**

Notes

① See **Page V9-T1-30** for cassette selection for drawout breakers.

② See selection above for accessories in positions 12–20.

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Magnum Low Voltage Power Breakers

Features

- Rated up to 6300A with interrupting ratings up to 200 kAIC and withstand ratings up to 100 kAIC
- Magnum® DS is UL 1066 listed for one-half second short-time withstand rating, and rated for 30 cycles. It is a switchgear class product to meet UL 1558 switchgear standards
- Magnum SB is a UL 1066 listed product with one-half second short-time withstand rating at three cycles to meet switchboard class product specifications, such as UL 891
- Magnum DS MDDX is the highest interrupting performance in a non-current limiting breaker construction rated up to 200 kAIC with 100 kAIC short-time withstand
- The Magnum DS, Magnum SB and Magnum IEC lines all offer the smallest double narrow 4000A frame available

Magnum Low Voltage Power Breakers

Catalog Number Selection

Magnum ANSI/UL Low Voltage Power Breakers

MD S 4 12 3 V E A 06 MU A W C H N E H K L A X

Breaker Type
MD = Magnum DS
SB = Magnum switchboard

Frame Type
S = Standard or double
N = Narrow
D = Double (MDDX only)

Interrupting/ Withstand Rating
4 = 42
5 = 50
6 = 65
8 = 85
C = 100
E = 150 (DSE)
X = 200 (DSX)
L = 200 (DSL)

Continuous Amperes and Phasing (Facing Front of Breaker)
08 = 800 ABC
12 = 1200 ABC
16 = 1600 ABC
20 = 2000 ABC
25 = 2500 ABC
30 = 3000 ABC
32 = 3200 ABC or ABCABC
3N = 3200 AABBCC
4N = 4000 AABBCC
5N = 5000 AABBCC
6N = 6000 AABBCC
40 = 4000 ABCABC
50 = 5000 ABCABC
60 = 6000 ABCABC

Poles and Neutral (Facing Front of Breaker)
3 = Three-pole
4 = Four-pole, neutral left

Mounting Configuration and Load Terminals
H = Fixed horizontal
V = Fixed vertical
L = Drawout (MDN)
W = Drawout (MDS)

Nameplate Language
E = English
A = Spanish

Current Limiter Selection

A = Non-DSL (no limiter)	**H** = MA800
D = MA250	**K** = MB1200
E = MA300	**L** = MB1600
F = MA400	**M** = MB2000
G = MA600	**N** = MD2500
	P = MD3000

Sensor and Rating Plug Rating

NN = None	**13** = 1250
01 = 100	**16** = 1600
02 = 200	**20** = 2000
05 = 250	**25** = 2500
03 = 300	**30** = 3000
04 = 400	**32** = 3200
06 = 600	**40** = 4000
08 = 800	**50** = 5000
10 = 1000	**60** = 6000
12 = 1200	

Trip Unit and Protection (and External Control Voltage When Required)
NN = Non-automatic (no trip unit)
22 = 220 + LI
52 = 520 LSI
5G = 520 LSIG
M2 = 520M LSI
MT = 520M LSI (24/48 Vdc)
MU = 520M LSI (120 Vac)
MV = 520M LSI (240 Vac)
MQ = 520M LSI (125 Vac)
MG = 520M LSIG
MH = 520M LSIG (24/48 Vdc)
MM = 520M LSIG (120 Vac)
MN = 520 LSIG (240 Vac)
MX = 520M LSIG (125 Vac)
ME = 520M LSIA (24/48 Vdc)
MC = 520 LSIA (120 Vac)
MF = 520M LSIA (240 Vac)
MZ = 520M LSIA (125 Vac)
CT = 520MC LSI (24/48 Vdc)
CU = 520MC LSI (120 Vac)
CV = 520MC LSI (240 Vac)
CQ = 520MC LSI (125 Vac)
CH = 520MC LSIG (24/48 Vdc)
CM = 520MC LSIG (120 Vac)
CN = 520MC LSIG (240 Vac)
CX = 520MC LSIG (125 Vac)
CE = 520MC LSIA (24/48 Vdc)
CC = 520MC LSIA (120 Vac)
CF = 520MC LSIA (240 Vac)
CY = 520MC LSIA (125 Vac)
1A = 1150 LSI (24/48 Vdc)
1C = 1150 LSI (120 Vac)
1E = 1150 LSI (240 Vac)
1Q = 1150 LSI (125 Vac)
1F = 1150 LSIG (24/48 Vdc)
1G = 1150 LSIG (120 Vac)
1H = 1150 LSIG (240 Vac)
1X = 1150 LSIG (125 Vac)
1J = 1150 LSIA (24/48 Vdc)
1K = 1150 LSIA (120 Vac)
1M = 1150 LSIA (240 Vac)
1Y = 1150 LSIA (125 Vac)

Shunt Trip (ST)
N = None
A = 110–127 Vac/Vdc
R = 208–240 Vac/Vdc
C = 24 Vdc
H = 48 Vdc

Motor Operator
M = Manual operated
N = 110–125 Vac
W = 110–125 Vdc
T = 220–250 Vdc
P = 220–240 Vac
L = 24 Vdc
K = 48 Vdc

Spring Release Device (SRD)
N = None
A = 110–127 Vac/Vdc
R = 208–240 Vac/Vdc
C = 24 Vdc
H = 48 Vdc

Undervoltage Release (UVR) or 2nd Shunt Trip (ST)
N = None
A = UVR (110–127 Vac)
R = UVR (208–240 Vac)
C = UVR (24 Vdc)
H = UVR (48 Vdc)
E = UVR (110–125 Vdc)
F = UVR (220–250 Vdc)
J = UVR (480 Vac)
K = UVR (600 Vac)
1 = 2nd ST (110–127 Vac/Vdc)
2 = 2nd ST (208–240 Vac/Vdc)
3 = 2nd ST (24 Vdc)
4 = 2nd ST (48 Vdc)

Auxiliary Switch
N = None
2 = 2A/2B
4 = 4A/4B
6 = 6A/6B

Bell Alarms Switch (OTS) with 2a/2b Contacts and/or Mechanical Trip Indicator

	OTS 2a/2b	Trip Indicator
E =	No OTS	No indicator
N =	No OTS	With indicator
Y =	With OTS	With indicator

Frame Use
X = All breakers

Breaker Shipping Options and Instructions
A = Fixed breaker alone with door kit
F = Fixed breaker alone without door kit
A = Drawout breaker alone without door frame kit
C = Drawout breaker in cassette (unwired)
P = Drawout breaker in cassette (prewired)
S = Drawout breaker in cassette (shutters)
W = Drawout breaker in cassette (prewired and shutters)
Double frame drawout breakers ship without cassette drawout. ACBs ship in narrow and universal cassettes only.

Latch Check Switch/Trip Unit Metering Voltage Connection for Digitrip 1150 Trip Unit

	Latch Check Switch	1150 Voltage Connection
N =	None	Upper terminals
M =	None	Lower terminals
L =	LCS wired to SRD	Upper terminals
Y =	LCS wired to SRD	Lower terminals
C =	LCS wired external	Upper terminals
D =	LCS wired external	Lower terminals

Operations Counter and/or Keylock Provisions

	Counter	Keylock Provisions
N =	No counter	No lock
K =	No counter	Kirk lock
C =	No counter	Castell lock
R =	No counter	Ronis lock
A =	Counter	No lock
Y =	Counter	Kirk lock
L =	Counter	Castell lock
H =	Counter	Ronis lock

Padlock Provisions for Blocking Close and/or Open ACB Manual Pushbuttons
N = None
M = Metal (block close and open)
P = Plastic (block close and open)
C = Metal (block close only)
H = Plastic (block close only)
S = Metal swbd lock-off (block close, depress open)

Magnum ANSI/UL Low Voltage Air Circuit Breaker Cassettes

M E 32 3 C A DN N NNN W C

Cassette Family
M = Standard or double frame
L = Narrow frame
S = SB standard or double frame
T = SB narrow frame

Future Use
E = SB cassette (150 kAIC)
N = Cassettes (up to 100 kA)
L = MDSL cassettes (200 kA)
X = MDSX cassettes (200 kA)
D = MDDX breaker

Continuous Amperes
16 = Up to 1600A
20 = Up to 2000A
32 = 2500 to 3200A
40 = 4000A
50 = 5000A

Poles
3 = Three-pole
4 = Four-pole

Cassette Frame and Rear Terminals
P = Basic cassette (without vertical bus stabs)
C = Basic cassette with stabs (with vertical bus stab kit)
H = Narrow frame cassette (with horizontal terminal pads)
U = Universal cassette (with universal terminal pads)

Arc Hood
A = Arc hood installed

Door Frame and Gasket Kit
DN = Door frame and gasket kit included
XN = Door frame and gasket kit not included

Shutters
N = No shutters
S = Shutters installed

Future Use
NNN = All cassettes

Cassette Wiring
N = Unwired
W = Cassettes wired

Cassette Shipping
CA = Cassette only
BA = Breaker shipped in cassette

Magnum IEC Low Voltage Air Circuit Breakers

MW I 4 08 3 H E A – 02 22 A M A A 2 E M K L A X

Breaker Frame
- **I** = Standard or double
- **N** = Narrow
- **K** = Special 1100 Vac ACB

Interrupting I_{CU}
- **4** = 40 kA
- **5** = 50 kA
- **6** = 65 kA
- **8** = 85 kA
- **C** = 100 kA
- **2** = 25 kA (1100 Vac MWK)

Continuous Amperes and Phasing (Facing Front of Breaker)
- **08** = 800 ABC
- **10** = 1000 ABC
- **12** = 1250 ABC
- **16** = 1600 ABC
- **20** = 2000 ABC
- **25** = 2500 ABC
- **32** = 3200 ABC
- **4N** = 4000 AABBCC
- **5N** = 5000 AABBCC
- **6N** = 6300 AABBCC
- **40** = 4000 ABCABC
- **50** = 5000 ABCABC
- **60** = 6300 ABCABC

Poles and Neutral (Facing Front of Breaker)
- **3** = Three
- **4** = Four (neutral left)
- **R** = Four (reserved for neutral right)

Mounting Configuration and Load Terminals
- **H** = Fixed horizontal
- **V** = Fixed vertical
- **L** = Drawout horizontal

Nameplate Language
- **E** = English
- **A** = Spanish

Sensor and Rating Plug Rating

NN = None	**13** = 1250
02 = 200	**16** = 1600
05 = 250	**20** = 2000
03 = 300	**25** = 2500
04 = 400	**30** = 3000
06 = 600	**32** = 3200
07 = 630	**40** = 4000
08 = 800	**50** = 5000
10 = 1000	**63** = 6300
12 = 1200	

Trip Unit Protection, (and External Control Voltage When Required)
- **NN** = Non-automatic (no trip unit)
- **22** = 220 LI
- **52** = 520 LSI
- **5W** = 520i LSIG
- **M2** = 520M LSI
- **MT** = 520M LSI (24–48 Vdc)
- **MU** = 520M LSI (120 Vac)
- **MV** = 520M LSI (240 Vac)
- **MW** = 520Mi LSIG
- **MJ** = 520Mi LSIG (24–48 Vdc)
- **MK** = 520Mi LSIG (120 Vac)
- **ML** = 520Mi LSIG (240 Vac)
- **ME** = 520M LSIA (24–48 Vdc)
- **MC** = 520M LSIA (120 Vac)
- **MF** = 520M LSIA (240 Vac)
- **CT** = 520MC LSI
- **CU** = 520MC LSI
- **CV** = 520MC LSI
- **CE** = 520MC LSIA
- **CC** = 520MC LSIA
- **CF** = 520MC LSIA
- **CJ** = 520MCi LSIG
- **CK** = 520MCi LSIG
- **CL** = 520MCi LSIG
- **1W** = 1150i LSI (24–48 Vdc)
- **1N** = 1150i LSI (120 Vac)
- **1P** = 1150i LSI (240 Vac)
- **1R** = 1150i LSIG/A (24–48 Vdc)
- **1S** = 1150i LSIG/A (120 Vac)
- **1T** = 1150i LSIG/A (240 Vac)

Auxiliary Switch
- **N** = None
- **2** = 2A/2B
- **4** = 4A/4B
- **6** = 6A/6B

Undervoltage Release (UVR) or 2nd Shunt Trip Attachment (STA)
- **N** = None
- **A** = 110–127 Vac
- **R** = 208–240 Vac
- **C** = 24 Vdc
- **H** = 48 Vdc
- **E** = 110–125 Vdc
- **F** = 220–250 Vdc
- **G** = 32 Vdc
- **X** = 380–415 Vac
- **J** = 480 Vac
- **K** = 600 Vac
- **1** = 2nd STA (110–127 Vac/Vdc)
- **2** = 2nd STA (208–250 Vac/Vdc)
- **3** = 2nd STA (24 Vdc)
- **4** = 2nd STA (48 Vdc)

Spring Release Device (SRD)
- **N** = None
- **A** = 110–127 Vac/Vdc
- **R** = 208–240 Vac/Vdc
- **C** = 24 Vdc
- **H** = 48 Vdc

Motor Operator
- **M** = Manual operated
- **N** = 110–125 Vac
- **W** = 110–125 Vdc
- **T** = 220–250 Vdc
- **P** = 220–250 Vac
- **L** = 24 Vdc
- **K** = 48 Vdc

Shunt Trip Attachment (STA)
- **N** = None
- **A** = 110–127 Vac
- **R** = 208–240 Vac
- **C** = 24 Vdc
- **H** = 48 Vdc

Latch Checking Switch/Trip Unit Metering Voltage Connection for Digitrip 1150 Trip Unit

	Latch Check Switch	1150 Voltage Connection
N =	None	Upper terminals
M =	None	Lower terminals
L =	LCS wired to SRD	Upper terminals
Y =	LCS wired to SRD	Lower terminals
C =	LCS wired external	Upper terminals
D =	LCS wired external	Lower terminals

Operations Counter and/or Keylock Provisions

	Counter	Keylock Provisions
N =	No counter	No lock
K =	No counter	Kirk lock
C =	No counter	Castell lock
R =	No counter	Ronis lock
A =	Counter	No lock
T =	Counter	Kirk lock
L =	Counter	Castell lock
H =	Counter	Ronis lock

Padlock Provisions for Blocking Close and/or Open ACB Manual Pushbuttons
- **N** = None
- **M** = Metal (block close and open)
- **P** = Plastic (block close and open)
- **C** = Metal (block close only)
- **H** = Plastic (block close only)

Bell Alarms Switch (OTS) with 2a/2b Contacts and/or Mechanical Trip Indicator

	OTS 2a/2b	Trip Indicator
E =	No OTS	No indicator
N =	No OTS	With indicator
Y =	With OT	With indicator

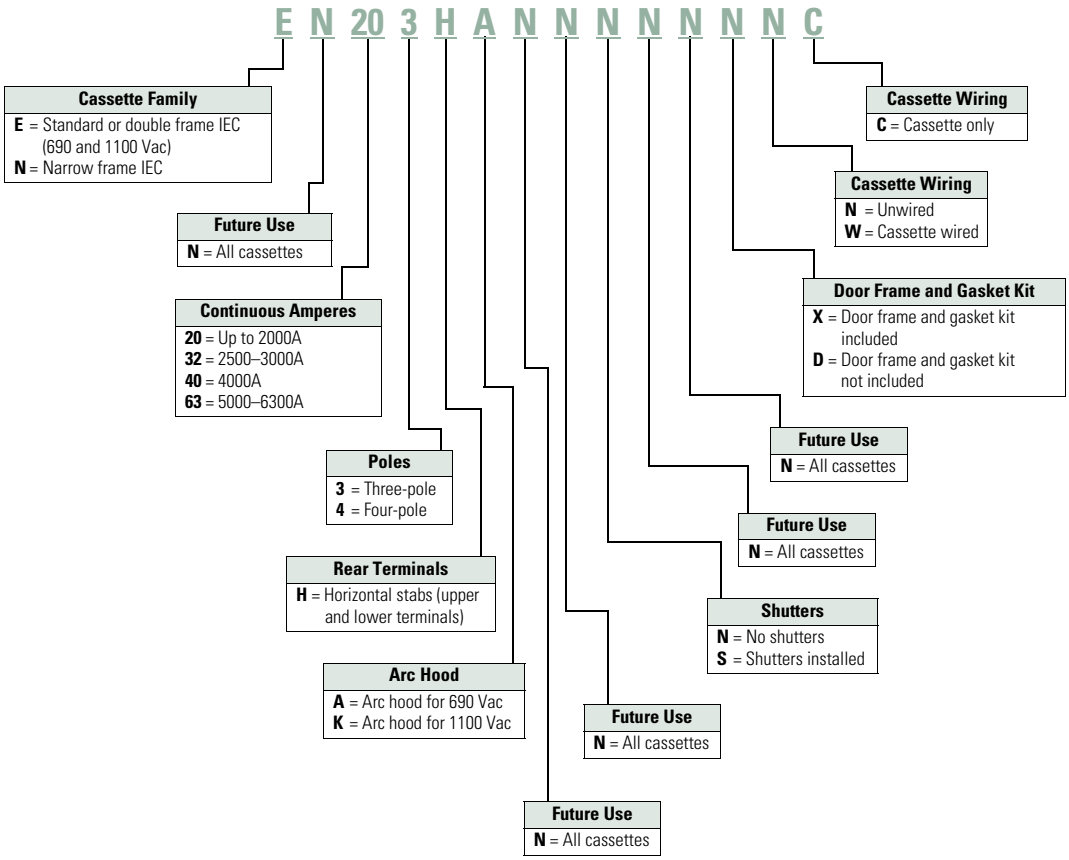
ACB Shipping Instructions
- **A** = Fixed ACB with door kit
- **F** = Fixed ACB without door kit
- **A** = D/O ACB only without door kit
- **C** = D/O ACB in cassette (unwired)
- **P** = D/O ACB in cassette (prewired)
- **S** = D/O ACB in cassette (shutters)
- **W** = D/O ACB in cassette (prewired and shutters)

Double frame D/O ACBs ship without cassette

Future Use
- **X** = All ACBs

1

Magnum IEC Low Voltage Air Circuit Breaker Cassettes



Product Selection

Magnum DS Switchgear Class UL 1066 Low Voltage Power Circuit Breakers

Frame Type	RMS Symmetrical Current Ratings kA 50/60 Hz ① Interrupting at 254 Vac	Interrupting at 508 Vac	Interrupting at 635 Vac	Short Time Current Rating	Frame Amperes	Breaker Type ②
Narrow	42	42	42	42	800	**MDN-408**
	50	50	50	50		**MDN-508**
	65	65	65	65		**MDN-608**
	100	100	65	20		**MDN-C08**
Standard	42	42	42	42	800	**MDS-408**
	65	65	65	65		**MDS-608**
	85	85	85	85		**MDS-808**
	100	100	100	85		**MDS-C08**
	200	200	200	—		**MDS-L08** ③
	200	200	④	30		**MDS-X08** ⑤⑥
Narrow	42	42	42	42	1600	**MDN-416**
	50	50	50	50		**MDN-516**
	65	65	65	65		**MDN-616**
	100	100	65	30		**MDN-C16**
Standard	65	65	65	65	1600	**MDS-616**
	85	85	85	85		**MDS-816**
	100	100	100	85		**MDS-C16**
	200	200	200	—		**MDS-L16** ③
	200	200	④	30		**MDS-X16** ⑤
Narrow	65	65	65	65	2000	**MDN-620**
	100	100	65	35		**MDN-C20**
Standard	65	65	65	65	2000	**MDS-620**
	85	85	85	85		**MDS-820**
	100	100	100	85		**MDS-C20**
	200	200	200	—		**MDS-L20** ③
	200	200	④	30		**MDS-X20** ⑤
	65	65	65	65	3200	**MDS-632**
	85	85	85	85		**MDS-832**
	100	100	100	85		**MDS-C32**
Double	200	200	④	50	3200	**MDS-X32** ⑤
Double (N)	85	85	④	85	4000	**MDN-840**
	100	100	④	100		**MDN-C40**
Double	85	85	85	85	4000	**MDS-840**
	100	100	100	100		**MDS-C40**
	200	200	④	50		**MDS-X40** ⑤
	200	200	④	100	4000	**MDD-X40**
	85	85	85	85	5000	**MDS-850**
	100	100	100	100		**MDS-C50**
	200	200	④	50		**MDS-X50** ⑤⑦
	200	200	④	100		**MDD-X50**
	100	100	100	100	6000	**MDS-C60** ⑦
	200	200	④	100		**MDD-X60**

Notes

① Interrupting ratings shown based on breaker equipped with integral Digitrip RMS trip unit. Interruption ratings for non-automatic breakers are equal to the published short time current rating. These interruption ratings are based on the standard duty cycle consisting of an open operation, a 15-second interval and a close-open operation, in succession, with delayed tripping in case of short-delay devices. The standard duty cycle for short time ratings consists of maintaining the rated current for two periods of 1/2 seconds each, with a 15-second interval of zero current between the two periods.

② See **Page V9-T1-36** for selection of trip unit and accessories. See **Page V9-T1-36** for cassette selection for drawout breakers.

③ Magnum MDSL current limiting power circuit breaker with integral current limiters. Current limiter selected determines short time and maximum instantaneous trip rating. Maximum voltage rating is 600 Vac.

④ Product to be tested. Contact Eaton for product rating.

⑤ Magnum MDSX current limiting power circuit breaker with fast opening contacts.

⑥ Contact Eaton for availability.

⑦ Breaker applied in a tested fan-cooled enclosure.

Magnum SB Switchboard Class UL 1066 Insulated Case Low Voltage Power Circuit Breakers

Frame Type	RMS Symmetrical Current Ratings kA 50/60 Hz ① Interrupting at 254 Vac	Interrupting at 508 Vac	Interrupting at 635 Vac	Short Time Current Rating	Frame Amperes	Breaker Type ②
Narrow	50	50	35	20	800	**SBN-508**
	65	65	42	20		**SBN-608**
	100	100	65	20		**SBN-C08**
Standard	65	65	65	20	800	**SBS-608**
	100	100	85	20		**SBS-C08**
	200	150	②	30		**SBS-E08** ③
Narrow	50	50	35	25	1200	**SBN-512**
	65	65	42	25		**SBN-612**
	100	100	65	25		**SBN-C12**
Standard	65	65	65	25	1200	**SBS-612**
	100	100	85	25		**SBS-C12**
	200	150	②	30		**SBS-E12** ③
Narrow	50	50	35	30	1600	**SBN-516**
	65	65	42	30		**SBN-616**
	100	100	65	30		**SBN-C16**
Standard	65	65	65	30	1600	**SBS-616**
	100	100	85	30		**SBS-C16**
	200	150	②	30		**SBS-E16** ③
Narrow	65	65	65	35	2000	**SBN-620**
	100	100	65	35		**SBN-C20**
Standard	65	65	65	35	2000	**SBS-620**
	100	100	85	35		**SBS-C20**
	200	150	②	30		**SBS-E20** ③
	65	65	65	45	2500	**SBS-625**
	100	100	85	45		**SBS-C25**
Double	200	150	②	50		**SBS-E25** ③
Standard	65	65	65	50	3000	**SBS-630**
	100	100	85	50		**SBS-C30**
Double	200	150	②	50		**SBS-E30** ③
Double (N)	85	85	③	85	4000	**SBN-840**
	100	100	③	100		**SBN-C40**
Double	85	85	85	85		**SBS-840**
	100	100	100	100		**SBS-C40**
	200	150	②	50		**SBS-E40** ③
	85	85	85	85	5000	**SBS-850**
	100	100	100	100		**SBS-C50**
	200	150	②	50		**SBS-E50** ③④
	100	100	100	100	6000	**SBS-C60** ④

Notes

① Interrupting ratings shown based on breaker equipped with integral Digitrip RMS trip unit. Interruption ratings for non-automatic breakers are equal to the published short time current rating. These interruption ratings are based on the standard duty cycle consisting of an open operation, a 15-second interval and a close-open operation, in succession, with delayed tripping in case of short-delay devices. The standard duty cycle for short time ratings consists of maintaining the rated current for two periods of 1/2 seconds each, with a 15-second interval of zero current between the two periods.

② Product to be tested. Contact Eaton for product rating.

③ Magnum SBSE current limiting power circuit breaker with fast opening contacts.

④ Breaker applied in a tested fan-cooled enclosure.

Magnum IEC 60947-2 Rated Low Voltage Air Circuit Breakers

Frame Amperes	Breaker Type	Frame Type	rms Symmetrical Current Ratings kA ① Interrupting at 240 Vac $I_{CU} = I_{CS}$	Interrupting at 440 Vac $I_{CU} = I_{CS}$	Interrupting at 690 Vac $I_{CU} = I_{CS}$	Withstand Rating I_{CW} 1-Sec/3-Sec	Fixed Internal Inst. Trip	Available Current Sensor and Rating Plugs for Digitrip RMS Trip Unit (Establishes Breaker I_n Rating)
800	MWN-408	Narrow	40	40	40	40/—	—	200, 250, 300, 400, 630, 800
	MWN-508	Narrow	50	50	50	50/—	—	
	MWN-608	Narrow	65	65	65	65/40	—	
	MWI-608	Standard	65	65	65	65/—	—	
	MWI-808	Standard	85	85	85	85/65	—	
	MWI-C08	Standard	100	100	85	85/65	85	
1000	MWN-410	Narrow	40	40	40	40/—	—	200, 250, 300, 400, 630, 800, 1000
	MWN-510	Narrow	50	50	50	50/—	—	
	MWN-610	Narrow	65	65	65	65/40	—	
	MWI-610	Standard	65	65	65	65/—	—	
	MWI-810	Standard	85	85	85	85/65	—	
	MWI-C10	Standard	100	100	85	85/65	85	
1250	MWN-412	Narrow	40	40	40	40/—	—	200, 250, 300, 400, 630, 800, 1000, 1250
	MWN-512	Narrow	50	50	50	50/—	—	
	MWN-612	Narrow	65	65	65	65/40	—	
	MWI-612	Standard	65	65	65	65/—	—	
	MWI-812	Standard	85	85	85	85/65	—	
	MWI-C12	Standard	100	100	85	85/65	85	
1600	MWN-516	Narrow	50	50	50	50/—	—	200, 250, 300, 400, 630, 800, 1000, 1250, 1600
	MWN-616	Narrow	65	65	65	65/40	—	
	MWI-616	Standard	65	65	65	65/—	—	
	MWI-816	Standard	85	85	85	85/65	—	
	MWI-C16	Standard	100	100	85	85/65	85	
2000	MWN-520	Narrow	50	50	50	50/30	—	200, 250, 300, 400, 630, 800, 1000, 1250, 1600, 2000
	MWN-620	Narrow	65	65	65	65/40	—	
	MWI-620	Standard	65	65	65	65/50	—	
	MWI-820	Standard	85	85	85	85/65	—	
	MWI-C20	Standard	100	100	85	85/65	85	
2500	MWI-625	Standard	65	65	65	65/—	—	200, 250, 300, 400, 630, 800, 1000, 1250, 1600, 2000, 2500
	MWI-825	Standard	85	85	85	85/65	—	
	MWI-C25	Standard	100	100	85	85/65	85	
3200	MWI-632	Standard	65	65	65	65/50	—	200, 250, 300, 400, 630, 800, 1000, 1250, 1600, 2000, 2500, 3200
	MWI-832	Standard	85	85	85	85/65	—	
	MWI-C32	Standard	100	100	85	85/65	85	
4000	MWI-64N	Double	65	65	65	65/—	—	2000, 2500, 3200, 4000
	MWI-84N	Double	85	85	85	85/—	—	
	MWI-C4N	Double	100	100	100	100/—	—	
5000	MWI-85N	Double	85	85	85	85/—	—	2500, 3200, 4000, 5000
	MWI-C5N	Double	100	100	100	100/—	—	
6300	MWI-86N	Double	85	85	85	85/—	—	3200, 4000, 5000, 6300
	MWI-C6N	Double	100	100	100	100/—	—	

Note

① Interrupting ratings shown based on breaker equipped with integral Digitrip RMS trip unit. Interruption ratings for non-automatic breakers are equal to the published breaker I_{cw} rating.

1

Product Overview

Fuse Blocks and Fuse Holders

Description	C350 Series
	Page V9-T1-41
Technical Data	
Number of poles	Up to 3
Mounting	35 mm flat or 32 mm asymmetrical DIN rail (with optional adapter)
Terminal ratings	600V, 30A
Housing construction	Thermoplastic UL 94VO flammability rating
Clip/terminal construction	Tin-plated copper alloy
Screw/pressure plate construction	Zinc-plated steel
Dielectric strength	1200V
Approvals	
	UL, CSA

For our complete product offering, see Volume 4—Circuit Protection, CA08100005E.

C350 Series Fuse Blocks and Fuse Holders

Features

- Space-saving design
- Rated 600V, 30A
- UL approved for motor loads

Product Selection

C350 Series

Fuse Blocks and Fuse Holders

Wire Termination	Number of Poles	250V 30A Catalog Number	Carton Qty.	60A Catalog Number	Carton Qty.	600V 30A Catalog Number	Carton Qty.	60A Catalog Number	Carton Qty.
Class H Fuse Holders									
Single collar (box lug)—sized to ampere rating	1	**W231HA**	10	**W261HA**	10	**W631HA**	10	**W661HA**	1
	2	**W232HA**	5	**W262HA**	5	**W632HA**	5	**W662HA**	1
	3	**W233HA**	5	**W263HA**	5	**W633HA**	1	**W663HA**	2
Class M Fuse Holders									
Combination of double quick-connect, 20A max., and binding head screw, #10 max., Cu/Al	1	—	—	—	—	**WM631F**	10	—	—
	2	—	—	—	—	**WM632F**	8	—	—
	3	—	—	—	—	**WM633F**	6	—	—
Combination of double quick-connect, 20A max., and pressure plate screw, #10 max., Cu only	1	—	—	—	—	**WM631G**	10	—	—
	2	—	—	—	—	**WM632G**	8	—	—
	3	—	—	—	—	**WM633G**	6	—	—
Class R Fuse Holders									
Single collar (box lug)—sized to ampere rating	1	**WR231HA**	10	—	—	**WR631HA**	10	—	—
	2	—	—	—	—	**WR632HA**	5	—	—
	3	**WR233HA**	5	**WR263HA**	1	**WR633HA**	5	**WR663HA**	5
Combination of double quick-connect, 20A max., and binding head screw, #10 max., Cu/Al	1	—	—	—	—	—	—	—	—
	2	—	—	—	—	**WMR632F**	1	—	—
	3	—	—	—	—	**WMR633F**	6	—	—
Combination of double quick-connect, 20A max., and pressure plate screw, #10 max., Cu only	1	—	—	—	—	**WMR631G**	10	—	—
	3	—	—	—	—	**WMR633G**	6	—	—
Class R Fuse Holder, Type WRR Control Transformer Fuse Block									
Combination of double quick-connect, 20A max., and pressure plate screw, #14–#10 Cu only	3	—	—	—	—	**WRR633G**	6	—	—

1

Open Rotary Disconnects

Product Overview

Rotary Disconnect Switch Selection Guide

Description	R5 Series Non-Fusible 16–80A	R9 Series Non-Fusible 30–100A Compact	R9 Series Non-Fusible 100–1200A
	Page V9-T1-44	Page V9-T1-46	Page V9-T1-48
Product Description			
	R5 Series (UL 508 listed) products are manually operated modular switches. Load break switching and isolation provide safety solutions for any low voltage circuit, particularly for machine and control circuits. The R5 Series products are manual motor controllers suitable as motor disconnect.	The R9 Series (UL 98 listed) non-fusible 30–100A compact range ensures making or breaking on load and safety isolation for low voltage electrical circuits, particularly for machine control circuits up to 600V.	The R9 Series (UL 98 listed) non-fusible 100–1200A are manually operated multipole load-break switches. Quick-make, quick-break design provides safety isolation for any low voltage circuit.
Approvals			
	UL 508 listed, Guide NLRV, File E165150 CSA C22.2 No.14, File 217736 IEC 60947-3, EN 60947-3 CCC	UL 98, File E222859 CSA 22.2 No. 4, File 217736 IEC 60947-3 EN 60947-3	UL 98, File E222859 CSA 22.2 No. 4, File 217736 IEC 60947-3 EN 60947-3

Description	R9 Series Fusible 30–800A	R9 Series DC Rated Disconnects	Manual Transfer Switches
	Page V9-T1-50	Page V9-T1-55	Page V9-T1-56
Product Description			
	R9 Series (UL 98 listed) Fusible 30–800A manual operated multi-pole fusible disconnect switches use double break contacts per pole that ensure complete isolation of the fuse when the switch is in the OFF position. When installed with fuses, they provide protection for low voltage electrical installations against short circuit and overload.	UL listed disconnect switches 600 Vdc for photovoltaic applications 100 to 400A R9 Series (UL 98 listed) DC rated disconnects are manually operated multi-pole load break switches. They provide safety isolation for any low voltage circuit in a photovoltaic application.	R9 Series (UL 98 listed) non-fusible disconnects are heavy-duty manual transfer switches, they transfer load manually between two low voltage circuits and provide safety disconnection. These switches are extremely durable and are tested and approved for use in the most demanding applications as resistive load or total system applications.
Approvals			
	UL 98, File E222859 for 30 to 800A ratings UL 489, File E305341 for H Frame switches CSA 22.2 No. 4, File 217736 CSA 22.2 No. 5, File 217736, H Frame only IEC 60947-1, EN 60947-1 IEC 60947-3, EN 60947-3 CE mark NFPA® 79	UL 98, cULus®, File E222859 CSA 22.2 No. 4, File 217736 ① IEC 60947-3 EN 60947-3 IEC 60-364-7-712 (Rules for the installations and sites special—photovoltaic applications)	UL 98, cULus, File E222859 UL 1008 (2011) CSA 22.2 No. 4, File 217736 IEC 60947-3 EN 60947-3

Note

① Q4 2010

Catalog Number Selection

Disconnects

R5 A 3 016 U __

UL Listing
R5 = UL 508
R9 = UL 98
R4 = UL 489

Frame Designation
A = UL 508 (16–40A)
B = UL 508 (60–80A)
C = UL 98 Non-fusible (30–100A modular)
V = UL 98 Non-fusible (60–100A visible blade)
D = UL 98 Non-fusible (100–200A)
E = UL 98 Non-fusible (400A)
F = UL 98 Non-fusible (600A)
G = UL 98 Non-fusible (800–1200A)
H = UL 489 Fusible (30A compact)
I = UL 98 Fusible (30A)
J = UL 98 Fusible (30–60A)
K = UL 98 Fusible (60–100A)
L = UL 98 Fusible (200A)
M = UL 98 Fusible (400A)
N = UL 98 Fusible (600–800A)

Phase
2 = Two-pole
3 = Three-pole
4 = Four-pole

Ampere Rating
016 = 16A
025 = 25A
030 = 30A
040 = 40A
060 = 60A
080 = 80A
100 = 100A
200 = 200A
400 = 400A
600 = 600A
800 = 800A
1000 = 1000A
1200 = 1200A

Protection
U = Non-fusible
F = Fusible

Fuse Type Accepted
CC = Class CC
J = Class J
L = Class L
Blank = Non-fusible device

External Handles

SH B 00 4X F __

Handle Type
SH = Selector handle
PH = Pistol handle

Color
B = Black/blue
R = Red/yellow

Size (Smallest to Largest)
00 = Size 00
0 = Size 0
1 = Size 1
2 = Size 2
3 = Size 3
4 = Size 4

NEMA Type Rating
12 = Type 1, 3R, 12
4X = Type 4, 4X

Operation
F = Front
S = Right side
Blank = Front or right side

Additional Features ①
T = Test position function
Blank = No test function

Shafts

SF 150 SH 5X5 __

Product Type
SF = Shaft

Length
55 = 55 mm
90 = 90 mm
150 = 150 mm
200 = 200 mm
320 = 320 mm
400 = 400 mm
500 = 500 mm

Applicable Handle Type
SH = Selector handle
PH = Pistol handle

Shaft Cross Section
5x5 = 5 mm x 5 mm
6x6 = 6 mm x 6 mm
10x10 = 10 mm x 10 mm
12x12 = 12 mm x 12 mm
15x12 = 15 mm x 12 mm

Additional Features ②

Notes

① **HV** at the end of some catalog numbers indicates use with H and V switches only. Not all handles are designed to go with all disconnects. Consult specific section of the catalog for available options.

② **H** at the end of some catalog numbers indicates use with H Frame switches only. Not all shafts are designed to go with all disconnects. Consult specific section of the catalog for available options.

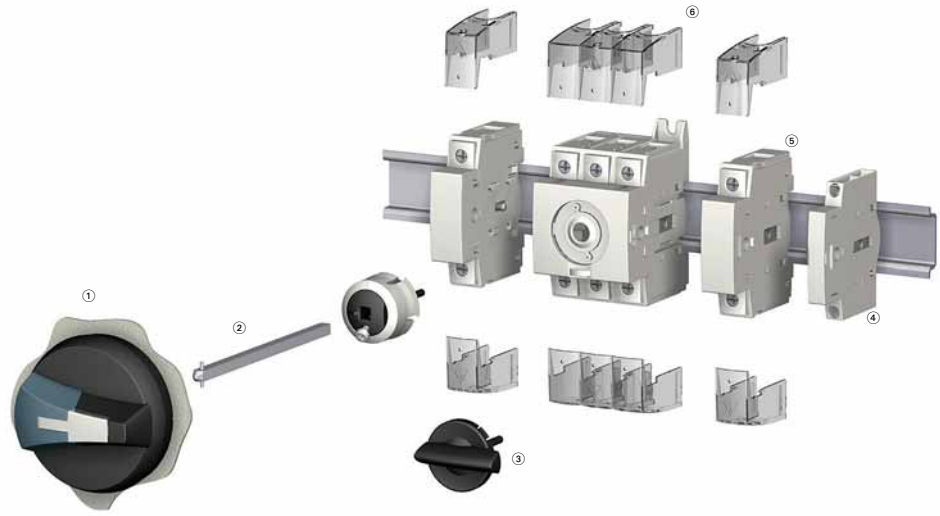
1

R5 Series Non-Fusible 16–80A

Features

- Up to 65 kAIC short-circuit rating
- Direct or external operation
- Compact footprint
- DIN rail or base mount
- Wide range of accessories
- Modular design
- Padlockable design (direct, toggle and external handles)

R5 Series Non-Fusible 16–80A



Product Identification

① External front handle
② Shaft extension for external handle
③ Direct handle
④ Auxiliary contacts
⑤ Switched fourth-pole module
⑥ Terminal shroud

Note: For further details, please see the installation instructions supplied with each device.

Product Selection

Direct Operation

Switch body + Direct handle

External Operation

Switch body + Shaft + External handle

R5 Series

Ampere Rating	Three-Pole Toggle Switch Only ①	Three-Pole Rotary Switch Only	Direct Handle	Front and Right External Handle SH00 (Choose One)	Front and Right External Handle SH0 (Choose One)	Three-Position Front External Handle SH00 (Black) ②	Shaft for SH0 and SH00—5 x 5 mm—In (mm)
16	—	**R5A3016U**	**DHR5**	SH00 Black 3R, 12 **SHB00N12**	SH0 Black 3R, 12 **SHB0N12**	SH00 4, 4X I–0–II Open transition **SHB00MTSOT**	2.20 (55.5) **SF55SH5X5**
25	—	**R5A3025U**					3.50 (90.0) **SF90SH5X5**
30	**T5A3030U**	**R5A3030U**		SH00 Red 3R, 12 **SHR00N12**	SH0 Red 3R, 12 **SHR0N12**	SH00 4, 4X I–I+II–II Closed transition **SHB00MTSCT**	5.90 (150.0) **SF150SH5X5**
40	**T5A3040U**	**R5A3040U**					7.90 (200.0) **SF200SH5X5**
60	**T5B3060U**	**R5B3060U**		SH00 Black 4, 4X **SHB00N4X**	SH0 Black 4, 4X **SHB0N4X**		12.60 (320.0) **SF320SH5X5**
80	**T5B3080U**	**R5B3080U**		SH00 Red 4, 4X **SHR00N4X**	SH0 Red 4, 4X **SHR0N4X**		

Accessories

Ampere Rating	Switched Fourth-Pole Module	Unswitched Neutral Module	Auxiliary Contacts (Choose One)	Terminal Shrouds	Conversion Kit (Choose One) ②	Door Mounting Kit ③
16	**S4PR516**	**UNMR5A**	1NO + 1NC **AC1NON**	1P **TS1R5A**	6/8 pole **CKR568**	**DMK**
25	**S4PR525**			3P **TS3R5A**	Changeover switch Open transition I–0–II **MTSCKR5OT**	
30	**S4PR530**					
40	**S4PR540**		2NO **AC2N**	1P **TS1R5B**		
60	**S4PR560** ②	**UNMR5B**		3P **TS3R5B**	Changeover switch Closed transition I–I+II–II **MTSCKR5CT**	
80	**S4PR580** ②					

Notes

① Toggle version includes direct handle.
② Available Q2 2011.
③ Includes shaft and accessory cap.

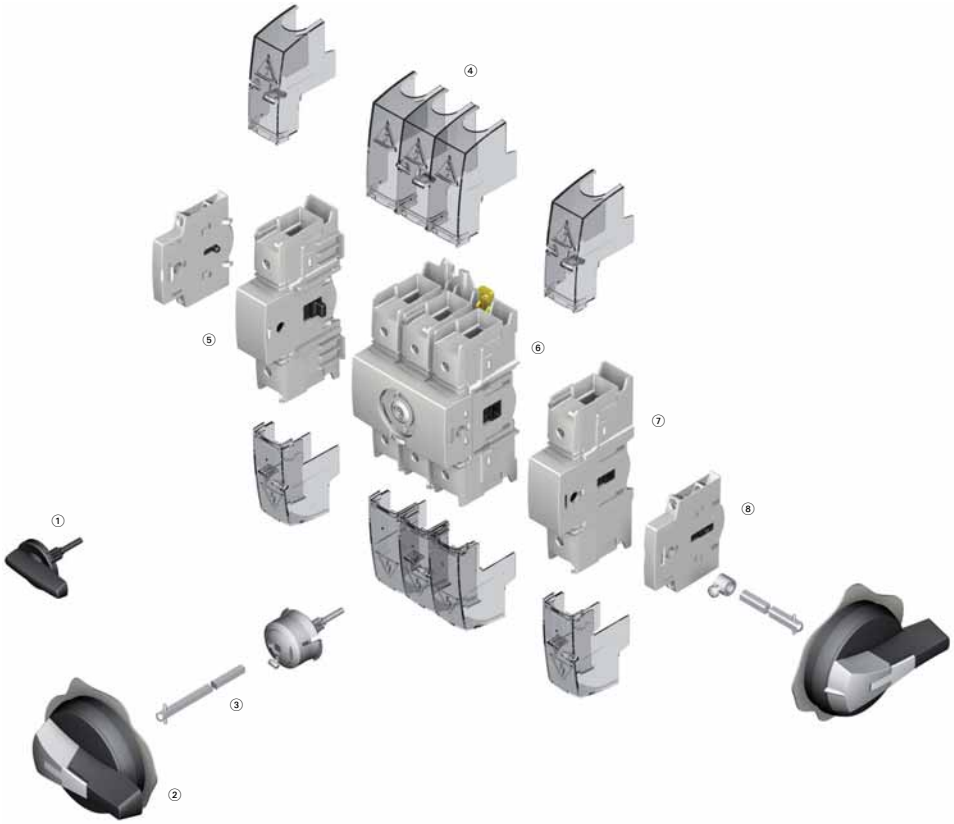
1

Non-Fusible 30–100A Compact

Features

- Rating three-pole from 30A to 100A
- Direct or external operation handle (padlockable in ON position)
- Double breaking per phase
- Small footprint

R9 Series Non-Fusible 30–100A Compact



Product Identification

① Direct handle
② Door interlocked external handle
③ Shaft extension
④ Terminal shrouds
⑤ Unswitched neutral pole
⑥ Switch body
⑦ Switched fourth-pole module
⑧ Modular type auxiliary contacts

Note: For further details, please see the installation instructions supplied with each device.

Product Selection

Direct Operation

Switch body + Direct handle

External Operation

Switch body + Shaft + External handle

R9 Series 30–100A

Ampere Rating (Frame)	Number of Poles	Switch Body Only	Direct Handle	Front and Right External Handle SH00 (Choose One)	Front and Right External Handle SH0 (Choose One)	Shaft for SH0 and SH00 Handles—In (mm) (Choose One)	Switched Fourth-Pole Module	Unswitched Neutral Module	Auxiliary Contacts (Choose One)	Terminal Shrouds (Choose One)
30 (C Frame)	3	**R9C3030U**	**DHR9**	SH00 Black 3R, 12 **SHB00N12**	SH0 Black 3R, 12 **SHB0N12**	2.20 (55.5) **SF55SH5X5**	**S4PR930**	Neutral **UNMR9C**	1NO + 1NC **AC1NONC**	1P **TS1R9**
60 (C Frame)	3	**R9C3060U**				3.50 (90.0) **SF90SH5X5**	**S4PR960**		2NO **AC2N**	3P **TS3R9CV**
100 (C Frame)	3	**R9C3100U**		SH00 Red 3R, 12 **SHR00N12**	SH0 Red 3R, 12 **SHR0N12**	5.91 (150.0) **SF150SH5X5**	**S4PR9100**			
				SH00 Black 4, 4X **SHB00N4X**	SH0 Black 4, 4X **SHB0N4X**	7.87 (200.0) **SF200SH5X5**				
				SH00 Red 4 4X **SHR00N4X**	SH0 Red 4 4X **SHR0N4X**	12.60 (320.0) **SF320SH5X5**				

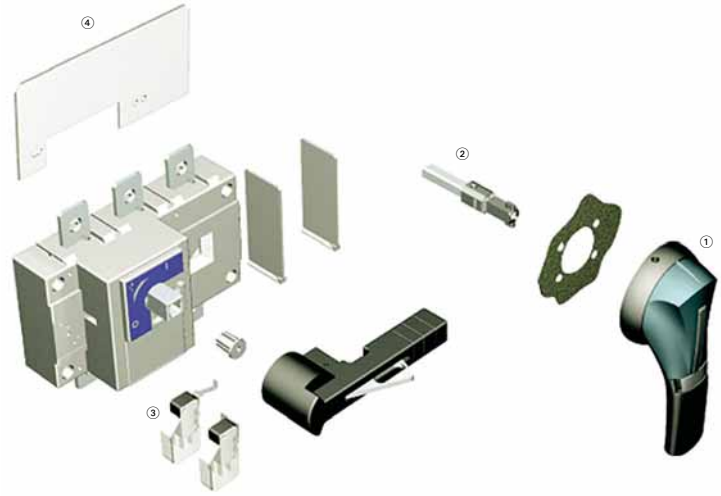
1

Non-Fusible 100–1200A

Features

- High thermal and dynamic withstand ratings
- Arduous categories of applications
- High electrical and mechanical endurances

R9 Series Non-Fusible 100–1200A



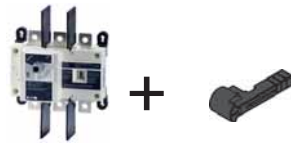
Product Identification

① External front handle
② Shaft extensions for external handle
③ Configurable U-type ACs, for pre-break and signalling or TEST
④ Terminal Screens

Note: For further details, please see the installation instructions supplied with each device.

Product Selection

Direct Operation



External Operation

R9 Series Non-Fusible 100–1200A

Ampere Rating (Frame)	Number of Poles	Switch Body Only	Direct Handle	Door Interlocked External Pistol Handle (Choose One)	Shaft Extensions for External Handle—In (mm) (Choose One)	Auxiliary Contacts	Terminal Screens (Choose One)	Terminal Lugs ③
100 (D Frame)	3	**R9D3100U**	**DHR9DE**	Size 2, Black 1, 3R, 12 Defeatable **PHB2N12F**	7.90 (200.0) **SF200PH10X10**	1NO + 1NC **AC1N0NCDE** **AC1N0NCDELL**	3-pole, Line side only **TS3R9DT**	**LK3R9DL**
	4	**R9D4100U**						**LK4R9DL**
200 (D Frame)	3	**R9D3200U**			12.60 (320.0) **SF320PH10X10**		3-pole, Load side only **TS3R9DB**	**LK3R9DL**
	4	**R9D4200U**						**LK4R9DL**
400 (E Frame)	3	**R9E3400U**		Size 2, Red 1, 3R, 12 Defeatable **PHR2N12F**	15.70 (400.0) **SF400PH10X10**	2NO + 2NC **AC2N0NCDE** **AC2N0NCDELL**	4-pole, Line or load side **TS4R9DTB**	**LK3R9EM**
	4	**R9E4400U**			19.70 (500.0) **SF500PH10X10**		3-pole, Line side only **TS3R9ET**	**LK4R9EM**
				Size 2, Black 4, 4X Defeatable **PHB2N4XF**			3-pole, Load side only **TS3R9EB**	
				Size 2, Red 4, 4X Defeatable **PHR2N4XF**			4-pole, Line or load side **TS4R9ETB**	
600 (F Frame)	3	**R9F3600U**	**DHR9FG**	Size 3, Black 4, 4X Defeatable **PHB3N4XF**	7.90 (200.0) **SF200PH15X12**	1NO AC U Type **AC1N0R9** ②	**TS3R9F** ①	**LK3R9FN**
	4	**R9F4600U**					**TS4R9F** ①	**LK4R9FN**
800 (G Frame)	3	**R9G3800U**		Size 3, Red 4, 4X Defeatable **PHR3N4XF**	12.60 (320.0) **SF320PH15X12**	1NC AC U Type **AC1NCR9** ②	**TS3R9G** ①	**LK6R9G** **LK8R9G**
	4	**R9G4800U**					**TS4R9G** ①	
1000 (G Frame)	3	**R9G31000U**			1.70 (400.0) **SF400PH15X12**			
	4	**R9G41000U**						
1200 (G Frame)	3	**R9G31200U**		Size 4, Black 4, 4X Defeatable **PHB4N4XF**	19.7 (500.0) **SF500PH15X12**			
	4	**R9G41200U**						
				Size 4, Red 4, 4X Defeatable **PHR4N4XF**				

Notes

① Top (line side) supplied as standard.

② Auxiliary contact requires holder (catalog number ACHFG) when used on F and G Frame switches (non-fusible 600–1200A).

③ Each catalog number is for line or load side. For both line and load, please order two sets.

1

Fusible 30–800A

Features

- Load break functionality
- Double break contacts
- Up to 200 kA short-circuit rating with Class CC, J or L fuses
- Compact footprints
- Defeatable pistol handles automatically re-latch when the panel door is closed
- Front or right side operation
- NFPA 79 compliant kits
- Two-, three- and four-pole devices

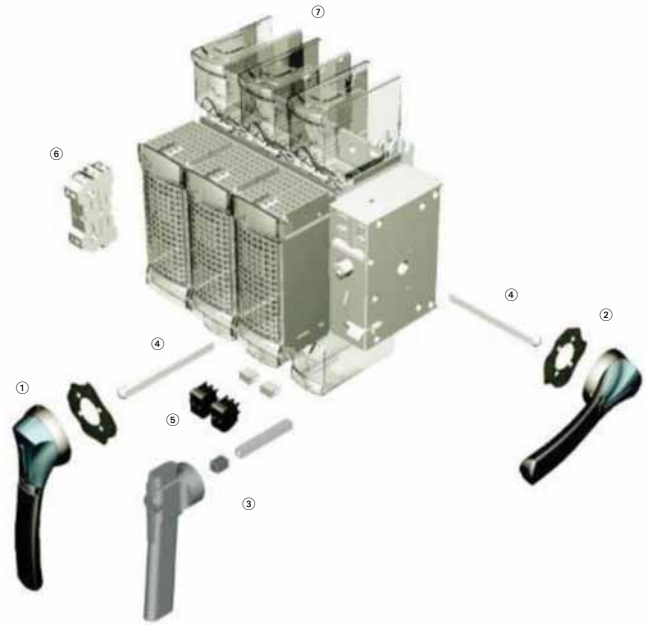
R9 Series Fusible 30–800A

R9 Fusible 30A/CC and 30A/J (H Frame)—Direct and External Operation

Product Identification

① External front handles
② Direct handle
③ Shaft extensions for external handles
④ Configurable U Type ACs, for pre-break and signaling or TEST

R9 Fusible 30A/J–800A/L (I–N Frames)—Direct and External Operation

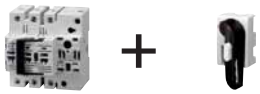


Product Identification

① External front handles
② External right side handle (not applicable for N Frame 600/800A)
③ Direct handle
④ Shaft extensions for external handles
⑤ Configurable U Type ACs, for pre-break and signaling or TEST
⑥ Side auxiliary contacts
⑦ Terminal shrouds

Product Selection

Direct Operation

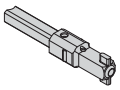


Switch body + Direct handle

External Operation

Switch body + Shaft + External handle

Front and Right Side Operation



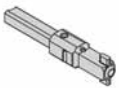
Ampere Rating (Frame) (Fuse Class)	Number of Poles	Switch Body Only	Direct Handle	External Selector Handle (Choose One)	Shaft Extension for Selector Handle Only (Choose One)	External Front Pistol Handle	External Right Side Pistol Handle
30 Compact (H Frame) (CC)	3	**R4H3030FCC**	**DHR9HC**	Black 1,3R,12 **SHB0N12HV**	7.90 (200.0) **SF200SH5X5H**	Black 1,3R,12 **PHB1N12F**	—
30 (H Frame) (CC)	3 + switched neutral	**R4H3030FCCSN**		Red 1,3R,12 **SHR0N12HV**	12.60 320.0) **SF320SH5X5H**	Red 1,3R,12 **PHR1N12F**	
30 Compact (H Frame) (J)	3	**R4H3030FJ**	**DHR9HJ**	Black 4,4X **SHB0N4XHV**	15.70 (400.0) **SF400SH5X5H**	Black 4,4X **PHB1N4XF**	
30 (H Frame) (J)	3 + switched neutral	**R4H3030FJSN**		Red 4,4X **SHR0N4XHV**		Red 4,4X **PHR1N4XF**	
30 (I Frame) (CC)	3	**R9I3030FCC**	**DHR9J2M**	—	—		
	4	**R9I4030FCC**					
30 (J Frame) (J)	2	**R9J2030FJ**				Black 4,4X (w/ TEST Position) **PHB1N4XFT**	Black 4, 4X **PHB1N4XS**
	3	**R9J3030FJ**					
	4	**R9J4030FJ**					
60 ① (J Frame) (J)	2	**R9J2060FJ**				Red 4,4X (w/ TEST Position) **PHR1N4XFT**	Red 4, 4X **PHR1N4XS**
	3	**R9J3060FJ**					
	4	**R9J4060FJ**					

Note

① 100 kA short-circuit rating.

1

Front and Right Side Operation, continued



Ampere Rating (Frame) (Fuse Class)	Number of Poles	Switch Body Only	Shaft Extensions for Pistol Handle Only In (mm) (Choose One)	NFPA 79 Kit	Auxiliary Contacts (Choose One)	S Type Auxiliary Contacts (Choose One)	Terminal Shrouds
30 Compact (H Frame) (CC)	3	**R4H3030FCC**	7.90 (200.0) **SF200PH5X5**	**NFPA79H**	1 AC NO **AC1NOR9**	—	Integral to switch
30 (H Frame) (CC)	3 + switched neutral	**R4H3030FCCSN**	12.60 (320.0) **SF320PH5X5**		1 AC NC **AC1NCR**		
30 Compact (H Frame) (J)	3	**R4H3030FJ**	15.70 (400.0) **SF400PH5X5**				
30 (H Frame) (J)	3 + switched neutral	**R4H3030FJSN**					
30 (I Frame) (CC)	3	**R9I3030FCC**	7.90 (200.0) **SF200PH10X10**	**NFPA79JKL**		1 AC NO + NC **AC1NO1NCJ2N**	
	4	**R9I4030FCC**					
30 (J Frame) (J)	2	**R9J2030FJ**	12.60 (320.0) **SF320PH10X10**			2 AC NO + NC **AC2NO2NCJ2N**	
	3	**R9J3030FJ**					
	4	**R9J4030FJ**	15.70 (400.0) **SF400PH10X10**			1 AC NO + NC w/ TEST **AC1NO1NCJ2NT**	
60 ① (J Frame) (J)	2	**R9J2060FJ**					
	3	**R9J3060FJ**	19.70 (500.0) **SF500PH10X10**				
	4	**R9J4060FJ**				2 AC NO + NC w/ TEST **AC2NO2NCJ2NT**	

Note

① 100 kA short-circuit rating.

Front and Right Side Operation, continued

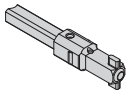
Ampere Rating (Frame) (Fuse Class)	Number of Poles	Switch Body Only	Direct Handle (Black)	External Front Pistol Handle (Choose One)	External Right Side Pistol Handle (Choose One)
60 ① (K Frame) (J)	2	**R9K2060FJ**	**DHR9J2M**	Black 1,3R,12 **PHB2N12F**	Black 4, 4X **PHB2N4XS**
	3	**R9K3060FJ**			
	4	**R9K4060FJ**		Red 1,3R,12 **PHR2N12F**	Red 4, 4X **PHR2N4XS**
100 (K Frame) (J)	2	**R9K2100FJ**			
	3	**R9K3100FJ**			
	4	**R9K4100FJ**		Black 4,4X **PHB2N4XF**	
200 (L Frame) (J)	2	**R9L2200FJ**			
	3	**R9L3200FJ**			
	4	**R9L4200FJ**		Red 4,4X **PHR2N4XF**	—
400 (M Frame) (J)	3	**R9M3400FJ**			
	4	**R9M4400FJ**		Black 4,4X (w/ TEST Position) **PHB2N4XFT**	
				Red 4,4X (w/ TEST Position) **PHR2N4XFT**	
600 (N Frame) (J)	2	**R9N2600FJ**	**DHR9N**	Black 4, 4X **PHB3N4XF**	
	3	**R9N3600FJ**			
	4	**R9N4600FJ**		Red 4,4X **PHR3N4XF**	
800 (N Frame) (L)	2	**R9N2800FL**			
	3	**R9N3800FL**			
	4	**R9N4800FL**			

Note

① 200 kA short-circuit rating.

1

Front and Right Side Operation, continued



Ampere Rating (Frame) (Fuse Class)	Number of Poles	Switch Body Only	Shaft Extensions for External Handle In (mm) (Choose One)	NFPA 79 Kit	Auxiliary Contacts (Choose One)	Auxiliary Contacts (Choose One)	Terminal Shrouds
60 ① (K Frame) (J)	2	**R9K2060FJ**	7.90 (200.0) Pistol **SF200PH10X10**	**NFPA79JKL**	1 AC NO **AC1NOR9**	1 AC NO + NC **AC1NO1NCJ2N**	Integral to switch
	3	**R9K3060FJ**					
	4	**R9K4060FJ**					
100 (K Frame) (J)	2	**R9K2100FJ**	12.60 (320.0) Pistol **SF320PH10X10**		1 AC NC **AC1NCR9**	2 AC NO + NC **AC2NO2NCJ2N**	
	3	**R9K3100FJ**					
	4	**R9K4100FJ**					
200 (L Frame) (J)	2	**R9L2200FJ**	15.70 (400.0) Pistol **SF400PH10X10**			1 AC NO + NC w/ TEST **AC1NO1NCJ2NT**	**TSR9L2**
	3	**R9L3200FJ**					**TSR9L3**
	4	**R9L4200FJ**	19.70 (500.0) Pistol **SF500PH10X10**				**TSR9L4**
400 (M Frame) (J)	3	**R9M3400FJ**				2 AC NO + NC w/ TEST **AC2NO2NCJ2NT**	**TSR9M3**
	4	**R9M4400FJ**					**TSR9M4**
600 (N Frame) (J)	2	**R9N2600FJ**	7.90 (200.0) Pistol **SF200PH12X12**	**NFPA79N**		1 AC NO + NC **AC1NO1NCJ2N**	**TSR9N2**
	3	**R9N3600FJ**					**TSR9N3**
	4	**R9N4600FJ**					**TSR9N4**
800 (N Frame) (L)	2	**R9N2800FL**	12.60 (320.0) Pistol **SF320PH12X12**			2 AC NO + NC **AC2NO2NCJ2N**	**TSR9N2**
	3	**R9N3800FL**					**TSR9N3**
	4	**R9N4800FL**	15.70 (400.0) Pistol **SF400PH12X12**				**TSR9N4**
			19.70 (500.0) Pistol **SF500PH12X12**				

Note

① 200 kA short-circuit rating.

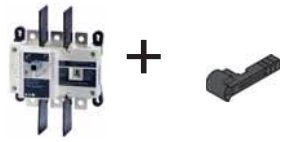
DC Rated Disconnects

Features

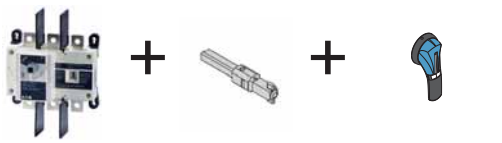
- Switching technology
- Up to 600 Vdc according to UL 98/CSA
- Up to 1000 Vdc according to IEC 947-3

R9 Series DC Rated Disconnects

Product Selection

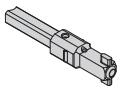


Switch body + Direct handle



Switch body + Shaft + External handle

Front Operation—Three- and Four-Pole



Ampere Rating	Number of Poles	Switch Body	Direct Handle	External Handle (Choose One)	Shaft for External Handle In (mm) (Choose One)	Auxiliary Contacts (Choose One)	Terminals Shroud	Terminal Lugs	Jumpers for Connecting Poles in Series
100	3	**R9D3100UDC**	**DHR9DE**	S2 Type Black 1, 3R, 12 ① **PHB2N12F**	7.90 (200.0) **SF200PH10X10**	C Type 1st Contact NO+NC **AC1NONCDE**	3P ② **TS3R9DT**	3P ④ **LK3R9DL**	2 pieces **DCJUMPD2**
	4	**R9D4100UDC**							
					12.60 (320.0) **SF320PH10X10**		3P ③ **TS3R9DB**	4P ④ **LK4R9DL**	3 pieces **DCJUMPD3**
200	3	**R9D3200UDC**		Red/Yellow 1, 3R, 12 ① **PHR2N12F**	15.7 0 (400.0) **SF400PH10X10**	C Type 2nd Contact NO+NC **AC2NONCDE**	4P ④ **TS4R9DTB**		
	4	**R9D4200UDC**		Black 4, 4X ① **PHB2N4XF**					
400	3	**R9E3400UDC**		Red/Yellow 4, 4X ① **PHR2N4XF**			3P ② **TS3R9ET**	3P ④ **LK3R9EM**	2 pieces **DCJUMPE2**
	4	**R9E4400UDC**					3P ③ **TS3R9EB**	4P ④ **LK4R9EM**	3 pieces **DCJUMPE3**
							4P ④ **TS4R9ETB**		

Notes

① Defeatable handle.
② Top (line side).
③ Bottom (load side).
④ Top or bottom (line or load side).

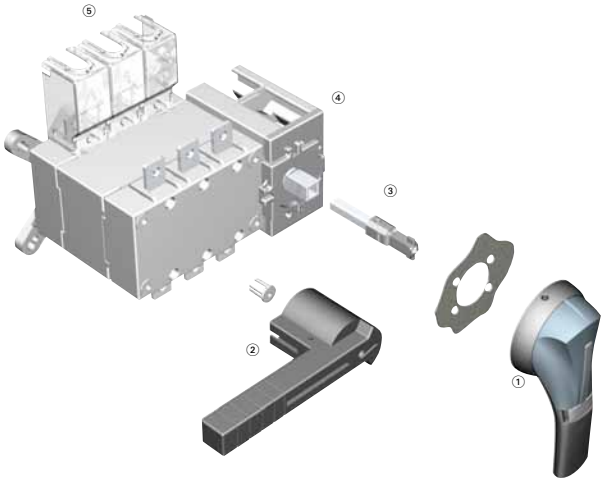
1

Manual Transfer Switches

Features

- Three load break positions (I, 0, II)
- On load switching
- Direct or external handle
- 480 Vac total system
- 600 Vac resistive load

Manual Transfer Switches



Product Identification

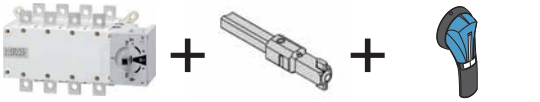
① External front handle
② Direct handle
③ Shaft extension for external handle
④ Pre-break ACs (standard on 600–1200A)
⑤ Terminal Screen

Product Selection

Direct Operation

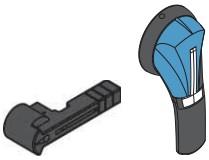
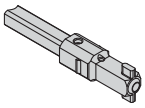
Switch body + Direct handle

External Operation



Switch body + Shaft + External handle

Manual Transfer Switches—UL 98 Standard ①

Ampere Rating	Number of Poles	Switch Body Only ①	Direct Handle (Black)	External Three-Position Handle (Choose One)	Shaft Extensions for External Handle In (mm) (Choose One)	Bridging Bars	Auxiliary Contacts	Terminal Screens ②
100	3	**RMTS3100U**	**DHMTSSL**	Size 2, Black I–0–II Type 4/4X **PHB2N4X3P**	7.90 (200.6) **SF200PH10X10**	3P **BB3P200**	NO/NC **AC1NONCMTS400**	3P **TS3MTS200TB**
	4	**RMTS4100U**						
200	3	**RMTS3200U**			12.60 (320.0) **SF320PH10X10**	4P **BB4P200**	Low level **AC1NONCMTS400LL** ③	4P **TS4MTS200TB**
	4	**RMTS4200U**		Size 2, Red I–0–II Type 4/4X **PHR2N4X3P**	15.70 (398.8) **SF400PH10X10**			
400	3	**RMTS3400U**		Size 3, Black I–0–II Type 4/4X **PHB3N4X3P**	7.90 (200.6) **SF200PH15X12**	3P **BB3P400**		3P **TS3MTS400TB**
	4	**RMTS4400U**			12.60 (320.0) **SF320PH15X12**	4P **BB4P400**		4P **TS4MTS400TB**
				Size 3, Red I–0–II Type 4/4X **PHR3N4X3P**	15.70 (398.8) **SF400PH15X12**			
600	3	**RMTS3600U**	**DHMTSDL**	Size 4, Black I–0–II Type 4/4X **PHB4N4X3P**		3P **BB3P600**	NO/NC contact standard	3P **TS3MTS600**
	4	**RMTS4600U**				4P **BB4P600**		4P **TS4MTS600**
800	3	**RMTS3800U**	**DHMTSDLM**	Size 4, Red I–0–II Type 4/4X **PHR4N4X3P**		3P **BB3P1200**		3P **TS3MTS1200**
	4	**RMTS4800U**						
1200	3	**RMTS31200U**				4P **BB4P1200**		4P **TS4MTS1200**
	4	**RMTS41200U**						

Notes

① All ratings, 100–1200A, are UL 98 listed. Switches are to be UL 1008 listed in 2011.
② Line or load (top or bottom); for both line and load, order two kits.
③ Low level auxiliary contact—gold plated for minimal resistance—for PLC applications.

1

Enclosed Rotary Disconnects

Enclosed Rotary Disconnects

Provide users with the ability to lock directly wired motor loads in the OFF position to comply with OSHA lockout/tagout regulations. Also for machine applications that require compact, economical disconnect switches.

Enclosed rotary disconnect switches allow safe control and safe disconnect of any motor application.

Open rotary disconnects can be found on **Pages V9-T1-42** to **V9-T1-57** and full information in Volume 5, Motor Control and Protection, CA08100006E, Tab 34.

Features

- Padlockable in the OFF position (up to three padlocks) to meet OSHA lockout requirements
- Available in 16–80A ratings
- 600 Vac, three- and four-pole non-fusible device
- Rated for making and breaking loads
- Accepts auxiliary contacts; capability to signal PLC controllers
- Ground lug connection provided
- Possibility of adding one power pole and one auxiliary contact
- NEMA Type 1, 3R, 12, 4, 4X
- 65kAIC rating when applied downstream from appropriate fusing

Product Selection

Enclosed Rotary Non-Fusible

Ampere Rating	Maximum Horsepower Ratings Three-Phase AC 208V	240V	480V	600V	NEMA 1 ① Enclosure Indoor Catalog Number	NEMA 12 ①② Enclosure Dust-Tight/ Rainproof Catalog Number	NEMA 4X ① Enclosure Corrosion-Resistant, Stainless Steel Catalog Number	NEMA 4X ① Enclosure Corrosion-Resistant, Non-Metallic Catalog Number	NEMA 4X Enclosure Polycarbonate-Non-Metallic Catalog Number
Three-Pole, 600 Vac									
16	3	5	10	10	**ER53016UG**	**ER53016UD**	**ER53016UW**	**ER53016UX**	—
25	7-1/2	7-1/2	15	20	**ER53025UG**	**ER53025UD**	**ER53025UW**	**ER53025UX**	—
30	7-1/2	7-1/2	15	20	**ER53030UG**	**ER53030UD**	**ER53030UW**	**ER53030UX**	**ER53030UPYR** ③④
40	7-1/2	7-1/2	20	25	**ER53040UG**	**ER53040UD**	**ER53040UW**	**ER53040UX**	—
60	15	15	30	30	**ER53060UG**	**ER53060UD**	**ER53060UW**	**ER53060UX**	**ER53060UPYR** ③④
80	15	20	40	40	**ER53080UG**	**ER53080UD**	**ER53080UW**	**ER53080UX**	—
Four-Pole, 600 Vac									
16	3	5	10	10	**ER54016UG**	**ER54016UD**	**ER54016UW**	**ER54016UX**	—
25	7-1/2	7-1/2	15	20	**ER54025UG**	**ER54025UD**	**ER54025UW**	**ER54025UX**	—
30	7-1/2	7-1/2	20	25	**ER54030UG**	**ER54030UD**	**ER54030UW**	**ER54030UX**	—
40	7-1/2	7-1/2	20	25	**ER54040UG**	**ER54040UD**	**ER54040UW**	**ER54040UX**	—

Accessories for Enclosed Rotary Disconnects ⑤⑥

Disconnect Ampere Rating	Switched Fourth Pole	Unswitched Neutral Pole	Auxiliary Contacts (Choose One)	Terminal Shrouds
16	**S4PR516**	**UNMR5A**	1NO + 1NC **AC1NONC**	Single-pole **TS1R5A**
25	**S4PR525**			
30	**S4PR530**		2NC **AC2NC**	Three-pole **TS3R5A**
40	**S4PR540**			
60	**S4PR560** ⑦	**UNMR5B** ⑦		Single-pole **TS1R5B**
80	**S4PR580** ⑦			
				Three-pole **TS3R5B**

Notes

① For CSA listed switches, add prefix letter "C" to the front of the catalog number.
② NEMA Type 12 enclosures (16–80A) can be field modified to meet NEMA Type 3R rainproof requirements when a factory-provided drain hole is opened.
③ YR suffix indicates **Y**ellow cover with **R**ed handle. For **G**ray cover with **B**lack handle, replace "YR" with "GB." For **G**ray cover with **R**ed handle, replace "YR" with "GR."
④ cULus only.
⑤ Ordered and shipped as separate components—not integral to enclosed device.
⑥ Enclosed disconnects can accept one power pole, neutral or up to two auxiliary contacts (one mounted on either side of switch).
⑦ Available 2011.

Contact the Safety Switch Flex Center (**1-888-329-9272**) for factory-installed accessories or other special modifications.