3P Series Molded Case Circuit Breakers Overview

Overview

Designed to provide branch and feeder circuit protection in industrial control panels, this line of Molded Case Circuit Breakers supplies protection against overload in conductors and short circuit in connected equipment such as motors. They are UL listed for installation in UL 508 control panels. Their small size, in relation to standard circuit breakers or other comparable devices, saves panel space. Four frame sizes and all standard accessories are available.

Features

- UL489 listed performance for branch circuit overcurrent protection and disconnecting means
- Patented contact conductor designs featuring high-speed "blow-open" action, providing superior performance when high level fault currents produce extra-ordinary electromechanical forces
- · Advanced arc extinguishing technology
- Toggle handle provides three positions (on/off/tripped) along with visual indicators
- Manufactured in ISO 9000 certified facilities
- · HACR (heating, air conditioning and refrigeration) rated
- G-Frame and F-Frame breakers are suitable for reverse feed
- K-Frame and L-Frame breakers include 3-pole adjustable magnetic trip.

Note: These parts available for sale to North American locations only.

Listings

- UL 489 MCCB, File: E7819
- Field-installed accessories: UL file E64983
- CSA 22.2 No.5, File: 43556
- IEC 157-1
- NEMA Standards Pub. No. AB1-1993

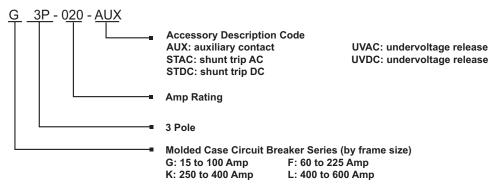


Manufactured by Eaton Corporation

Molded Case Circuit Breakers Technical Specifications										
	Ampere Rating at		Volts		Federal	UL 489 Interrupting Ratings (rms Symmetrical Amperes) (kA)				
Circuit Breaker Type	40°C	No. Poles	AC	DC	Type of Trip*	Specification W-C-375b	Volts AC (50/60 Hz)		z)	Volts DC
						17 0 0705	240	480	600	250**
G-Frame	15 -100	3	480	250	N.I.T.U	13b	65	22	_	10
F-Frame	60 - 225	3	600	250	N.I.T.U	22a	65	35	18	10
K-Frame	250 - 400	3	600	250	I.T.U	23a	65	35	25	10
L-Frame	400 - 600	3	600	250	I.T.U	23a	65	35	25	22

^{*}Note: N.I.T.U denotes non-interchangeable trip unit. I.T.U denotes interchangeable trip unit.

Molded Case Circuit Breakers Part Numbering System



^{**}Note: For DC or 1-phase AC applications, use the two outside poles of the 3-pole circuit breaker

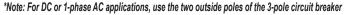
3P Series Molded Case Circuit Breakers 400-600 Amp L-Frame

L-Frame circuit breakers are available as individual components or in a kit. Breaker frame includes 3-pole adjustable magnetic trip. Available accessories are field installable

on this frame size.

All breakers include base mounting hardware for panel mount applications.

L-	L-Frame Series Three Pole Molded Case Circuit Breakers								
Part Number	Price	Description	Kits	Ampere Rating	Voltage	Interrupt Capacity			
<u>L3P-400</u>	\$2,519.00		MCCB only						
<u>L3P-400-AUX</u>	\$2,864.00	Molded case circuit	Kit includes L3P-400 and A1X4PK						
L3P-400-STAC	\$2,813.00	breaker with adjustable thermal magnetic trip; line and load lug	Kit includes L3P-400 and SNT4RP11K	400					
L3P-400-STDC	\$2,813.00		Kit includes L3P-400 and SNT4RP03K	400					
L3P-400-UVAC	\$2,813.00	terminals included.	Kit includes L3P-400 and UVH4LP08K		240VAC 480VAC 600VAC 250VDC	65kA 35kA 25kA 22kA*			
L3P-400-UVDC	\$2,813.00	I	Kit includes L3P-400 and UVH4LP21K						
L3P-500	\$2,519.00		MCCB only	500					
L3P-500-AUX	\$2,864.00		Kit includes L3P-500 and A1X4PK						
L3P-500-STAC	\$2,813.00		Kit includes L3P-500 and SNT4RP11K						
L3P-500-STDC	\$2,813.00	thermal magnetic trip; line and load lug	Kit includes L3P-500 and SNT4RP03K						
L3P-500-UVAC	\$2,813.00	terminals included.	Kit includes L3P-500 and UVH4LP08K						
L3P-500-UVDC	\$2,813.00		Kit includes L3P-500 and UVH4LP21K						
L3P-600	\$2,519.00		MCCB only						
L3P-600-AUX	\$2,864.00	Molded case circuit	Kit includes L3P-600 and A1X4PK						
L3P-600-STAC	\$2,813.00	breaker with adjustable	Kit includes L3P-600 and SNT4RP11K	000					
L3P-600-STDC	\$2,813.00	thermal magnetic trip; line and load lug	Kit includes L3P-600 and SNT4RP03K	600					
L3P-600-UVAC	\$2,813.00	terminals included.	Kit includes L3P-600 and UVH4LP08K						
L3P-600-UVDC	\$2,813.00		Kit includes L3P-600 and UVH4LP21K						



L-Frame Accessory Selection Guide							
Part Number	Price	Description					
LHMVD12B	\$202.00	NEMA 1/12 rotary handle for L-Frame. Position indicating. Lock-off feature. Shaft length: 12"					
HM4R12X	\$276.00	NEMA 4/4X rotary handle for L-Frame. Position indicating. Lock-off feature. Shaft length: 12"					
HM4R24X \$292.00 NEMA 4/4X rotary handle for L-Frame. Position indicating. Lock-off feature. Shaft length							
F4S04C	\$721.00	NEMA 1/12 flex shaft cable operator for L-Frame. Flange mounted. Lockable. Cable length: 4'					
F4S06C	\$829.00	NEMA 1/12 flex shaft cable operator for L-Frame. Flange mounted. Lockable. Cable length: 6'					
A1X4PK	\$318.00	Field installable auxiliary contact for L-Frame MCCB, SPDT, 18" pigtail leads					
SNT4RP11K	\$550.00	Field installable 110 - 240 VAC shunt trip for L-Frame, 18" pigtail leads					
SNT4RP03K	\$550.00	Field installable 12/24 VDC / VAC shunt trip for L-Frame, 18" pigtail leads					
3TA603LDK	\$166.00	Replacement lug kit for L-Frame. Rated 600A. Package of 3					
UVH4LP08K	\$513.00	Field installable 110 - 127 VAC undervoltage release for L-Frame, 18" pigtail leads					
<u>UVH4LP21K</u>	\$550.00	Field installable 24 VDC undervoltage release for L-Frame, 18" pigtail leads					

Note: See 3P Series Molded Case Circuit Breakers Accessories catalog pages for accessory electrical specifications.

AWG Wire Range Specifications							
Circuit Breaker	Ampere Rating	Wire Type	AWG Wire Range	Metric Wire Range mm²			
	400	Cu/Al	3/0 - 350 (2)	95 - 150			
L-Frame	500		3/0 - 350 (2)	95 - 150			
	600		400 - 500 (2)	185 - 240			



L3P-600



LHMVD12B



F4S04C



A1X4PK



SNT4RP03K

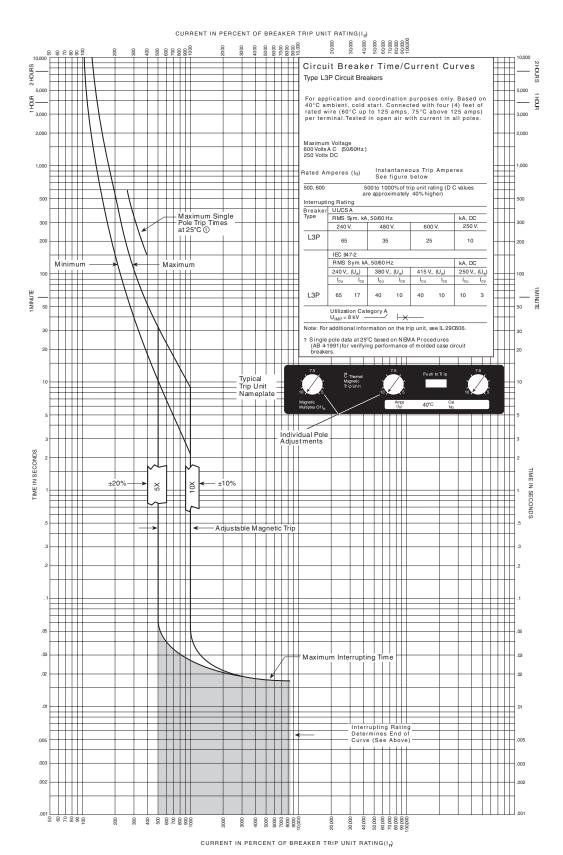


3TA603LDK



UVH4LP08K

3P Series Molded Case Circuit Breakers 400-600 Amp L-Frame

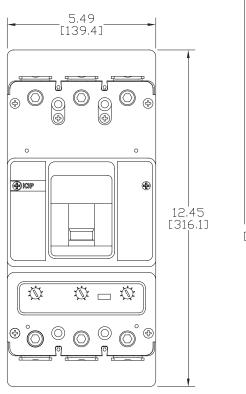


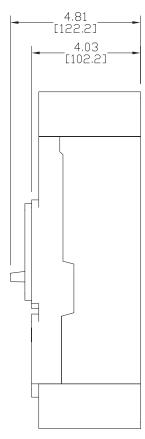
3P Series Molded Case Circuit Breakers Dimensions

Dimensions

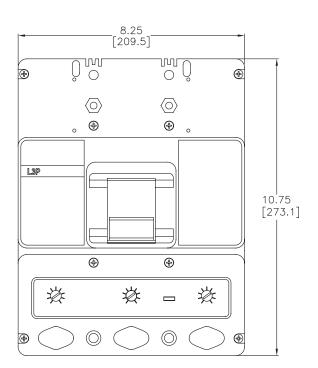
mm [inches]

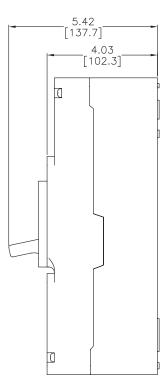
250 - 400 Amp K-Frame





400 - 600 Amp L-Frame





Field Mountable Accessories





HM1R12X



F0S03C

Rotary Handles

A rotary handle is available for each frame size of molded case circuit breaker.

The C-Series rotary handle (HM) is available for F, K, & L frame molded case breakers. These robust and durable handles include the following features:

- Suitable for use with NEMA 4/4X enclosures
- Handle, shaft, and mechanism made from all metal parts
- Large handle easily accommodates gloves
- Heavy Duty Metal locking hasp
- · Door interlock and defeater
- Standard ON/OFF/Trip markings and a 45-degree rotation
- UL 489, CSA

The Universal rotary series handles (HMV) is available for G, F, K, & L frame molded case breakers. These handles include the following features:

- Suitable for use with NEMA 1/12 enclosures
- Composite Nylon handle with metal shaft, and mechanism
- Large handle easily accommodates gloves
- · Access Handle Lock-Off by pressing arrow on handle insert
- · Door interlock and defeater
- Global ON/OFF markings (I/ON, O/OFF) and TRIP indication on handle plus 90-degree rotation
- UL 489, IEC 947-1/-2, CSA

	Rotary Handle Accessory Selection Guide							
Part Number	Price	Description						
GHMVD06B	\$110.00	NEMA 1/12 black rotary handle for G-Frame MCCB. Shaft length: 6in [152.4 mm]						
GHMVD12B	\$123.00	NEMA 1/12 black rotary handle for G-Frame MCCB. Shaft length: 12in [304.8 mm]						
FHMVD12B	\$123.00	NEMA 1/12 black rotary handle for F-Frame MCCB. Shaft length: 12in [304.8 mm]						
<u>HM1R12X</u>	\$173.00	NEMA 4/4X black rotary handle for F-Frame MCCB. Shaft length: 12in [304.8 mm]						
HM1R24X	\$194.00	NEMA 4/4X black rotary handle for F-Frame MCCB. Shaft length: 24in [609.6 mm]						
KHMVD12B	\$175.00	NEMA 1/12 black rotary handle for K-Frame MCCB. Shaft length: 12in [304.8 mm]						
HM3R12X	\$212.00	NEMA 4/4X black rotary handle for K-Frame MCCB. Shaft length: 12in [304.8 mm]						
HM3R24X	\$237.00	NEMA 4/4X black rotary handle for K-Frame MCCB. Shaft length: 24in [609.6 mm]						
LHMVD12B	\$202.00	NEMA 1/12 black rotary handle for L-Frame MCCB. Shaft length: 12in [304.8 mm]						
HM4R12X	\$276.00	NEMA 4/4X black rotary handle for L-Frame MCCB. Shaft length: 12in [304.8 mm]						
HM4R24X	\$292.00	NEMA 4/4X black rotary handle for L-Frame MCCB. Shaft length: 24in [609.6 mm]						

Flex Shaft™ Flexible Handle

Meeting crucial time limits for shutdown procedures is easier with an externally mounted handle. The flexible handle makes it possible to operate the circuit breaker externally and can be used in enclosures of varying depths and heights. It can be used with NEMA 1, NEMA 3R and NEMA 12 enclosures, and it accepts up to three padlock shackles. Each item includes a painted steel handle, breaker operating mechanism, and cable.

Note: A minimum bending radius of four inches is necessary for proper operation.

Flex	Shaft™	Flexible Handle Accessory Selection Guide
Part Number	Price	Description
F0S03C	\$473.00	NEMA 1/12 flex shaft cable operator for G-Frame MCCB. Cable length: 3ft [0.91 m]
F0S06C	\$529.00	NEMA 1/12 flex shaft cable operator for G-Frame MCCB. Cable length: 6ft [1.83 m]
F1S03C	\$529.00	NEMA 1/12 flex shaft cable operator for F-Frame MCCB. Cable length: 3ft [0.91 m]
F1S06C	\$573.00	NEMA 1/12 flex shaft cable operator for F-Frame MCCB. Cable length: 6ft [1.83 m]
F3S03C	\$631.00	NEMA 1/12 flex shaft cable operator for K-Frame MCCB. Cable length: 3ft [0.91 m]
F3S06C	\$662.00	NEMA 1/12 flex shaft cable operator for K-Frame MCCB. Cable length: 6ft [1.83 m]
F4S04C	\$721.00	NEMA 1/12 flex shaft cable operator for L-Frame MCCB. Cable length: 4ft [1.22 m]
F4S06C	\$829.00	NEMA 1/12 flex shaft cable operator for L-Frame MCCB. Cable length: 6ft [1.83 m]



F0S03HP

High Performance Flex Shaft™ Flange Handles

These two-position flange handles feature external front mounting. Models are available for NEMA 1/3R/12 and 4/4X enclosures and for G-frame, F-frame, K-frame or L-frame model MCCBs. All models are lockable in the OFF position and are defeatable. The Flex Shaft handle will accept up to three padlock shackles, each with a maximum diameter of 0.375 in [9.5 mm]. Each item includes a high-strength nylon handle, breaker operating mechanism, and cable.

	Flange Handle Accessory Selection Guide						
Part Number	Price	Description					
FOSO3HP	\$309.00	3ft [0.91 m] cable length, NEMA 1/3R/12. For use with G-frame model MCCBs.					
FOSO6HP	\$352.00	6ft [1.83 m] cable length, NEMA 1/3R/12. For use with G-frame model MCCBs.					
F1S03HP	\$352.00	3ft [0.91 m] cable length, NEMA 1/3R/12. For use with F-frame model MCCBs.					
F1S06HP	\$379.00	6ft [1.83 m] cable length, NEMA 1/3R/12. For use with F-frame model MCCBs.					
F3S03HP	\$429.00	3ft [0.91 m] cable length, NEMA 1/3R/12. For use with K-frame model MCCBs.					
F3S06HP	\$450.00	6ft [1.83 m] cable length, NEMA 1/3R/12. For use with K-frame model MCCBs.					
F4S04HP	\$504.00	4ft [1.22 m] cable length, NEMA 1/3R/12. For use with L-frame model MCCBs.					
F4S06HP	\$580.00	6ft [1.83 m] cable length, NEMA 1/3R/12. For use with L-frame model MCCBs.					
F0S03HPX	\$340.00	3ft [0.91 m] cable length, NEMA 4/4X. For use with G-frame model MCCBs.					
FOSO6HPX	\$387.00	6ft [1.83 m] cable length, NEMA 4/4X. For use with G-frame model MCCBs.					
F1S03HPX	\$387.00	3ft [0.91 m] cable length, NEMA 4/4X. For use with F-frame model MCCBs.					
F1S06HPX	\$418.00	6ft [1.83 m] cable length, NEMA 4/4X. For use with F-frame model MCCBs.					
F3S03HPX	\$473.00	3ft [0.91 m] cable length, NEMA 4/4X. For use with K-frame model MCCBs.					
F3S06HPX	\$496.00	6ft [1.83 m] cable length, NEMA 4/4X. For use with K-frame model MCCBs.					
F4S04HPX	\$543.00	4ft [1.22 m] cable length, NEMA 4/4X. For use with L-frame model MCCBs.					
F4S06HPX	\$625.00	6ft [1.83 m] cable length, NEMA 4/4X. For use with L-frame model MCCBs.					

Note: A minimum bending radius of four inches is necessary for proper operation.

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Field Mountable Accessories



A1X3PK

Auxiliary Contact

The auxiliary contact provides circuit breaker contact status information by monitoring the position of the molded cross bar which contains the moving contact arms. The auxiliary switch is used for remote indication and interlock system verification, and consists of one SPDT switch housed in a plug-in module. Each SPDT switch has one 'a' and one 'b' contact. When the circuit breaker contacts are open, the 'a' contact is open and the 'b' contact is closed.

Note: Field installable auxiliary contacts are not available for the G and F frame breakers.

For G and F frame auxiliary contacts, order breakers with -AUX as part of the part number. Please see G and F-frame sections for available selections.

Auxiliary Contact Accessory Selection Guide						
Part Number	Price	Description				
A1X3PK	\$310.00	Field installable auxiliary contact for K-Frame MCCB, SPDT, 18" pigtail leads				
A1X4PK	\$318.00	Field installable auxiliary contact for L-Frame MCCB, SPDT, 18" pigtail leads				

K-Frame Electrical Ratings 1,2								
	Max Volts	Frequency	Max Amperes	Dielectric Withstand Voltage	Notes			
	600	50/60 Hz	6		1. Endurance: 5000			
K-Frame Auxiliary	125	DC	0.50^{3}	2500	electrical operations plus 1000 mechanical			
Switch	250	DC	0.25 ³	2500	operatons. 2. Pigtail wire size: 18 AWG (0.82 mm²) 3. Non-inductive load			

	L-	Ratings	1,2		
	Max Volts	Frequency	Max Amperes	Dielectric Withstand Voltage	Notes
	600	50/60 Hz	6		1. Endurance: 5000
L-Frame Auxiliary	125	DC	0.50 ³	2500 plus 100 op 2. Pigtail wir (0.	electrical operations plus 1000 mechanical
Switch	250	DC	0.25 ³		operatons. 2. Pigtail wire size: 18 AWG (0.82 mm²) 3. Non-inductive load

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UVH3LP21K

Undervoltage Release

This product monitors a voltage (typically a line voltage) and trips the circuit breaker when the voltage falls to between 70% and 35% of the solenoid coil rating. It consists of a continuous rated solenoid, with a plunger and tripping lever mounted in a plug-in module.

Note: The undervoltage release is a pre-installed accessory on G-Frame and F-Frame breakers.

Undervoltage Release Accessory Selection Guide							
Part Number	Price	Description					
UVH3LP08K	\$481.00	Field installable 110 - 127 VAC undervoltage release for K-Frame MCCB					
UVH4LP08K	\$513.00	Field installable 110 - 127 VAC undervoltage release for L-Frame MCCB					
UVH3LP21K	\$481.00	Field installable 24 VDC undervoltage release for K-Frame MCCB					
<u>UVH4LP21K</u>	\$550.00	Field installable 24 VDC undervoltage release for L-Frame MCCB					

		Supply Voltage	Dropout Voltage		Pickup Voltage	VA	Notes	
	K-Frame	voitage	Min	Max	Max			
	Undervoltage	24 VDC	8.4	16.8	20.4	3.1	1. Endurance:	
	Release Mechanism	110 VAC ²				1.8	5000 electrical operations plus 1000 mechanical	
		120 VAC ²	44.5	77.0	93.5	2.1	operatons.	
		127 VAC ²				2.4	2. 50/60 HZ	

	Supply	Dropout Voltage		Pickup Voltage	VA	Notes
L-Frame	Voltage	Min	Max	Max		
Undervoltage Release	24 VDC	8.4	16.8	20.4	3.1	Endurance:
Mechanism	110 VAC ²		77.0		1.8	5000 electrical operations plus 1000 mechanical operatons.
	120 VAC ²			93.5	93.5 2.1	
	127 VAC ²				2.4	2. 50/60 Hz

Field Mountable Accessories

Shunt Trip

The Shunt Trip provides remote controlled tripping of the circuit breaker. Consisting of an intermittent rated solenoid with a tripping plunger and a cutoff switch assembled to a plug-in module, shunt trip coils are designed to be applied at specific AC or DC voltages.

Shunt Trip Accessory Selection Guide				
Part Number	Price	Description		
SNT3P11K	\$481.00	Field installable 110/240 VAC / 110/125 VDC shunt trip for K-Frame MCCB.		
SNT4RP11K	\$550.00	Field installable 110/240 VAC shunt trip for L-Frame MCCB		
SNT3P04K	\$481.00	Field installable 12/24 VAC/DC shunt trip for K-Frame MCCB		
SNT4RP03K	\$550.00	Field installable 12/24 VAC/DC shunt trip for L-Frame MCCB		



SNT3P04

	Supply Voltage	Min Operating Voltage	VA	Supply Voltage	Min Operating Voltage	VA	Notes
	VAC 50/60 Hz			VDC			
	12	9	45	12	8.4	35	Endurance: 5000 electrical operations plus 1000 mechanical operatons.
K-Frame	24		200	24		170	
Shunt Trip	110	60	100	110	77	110	
11119	120		120	120	77	130	Approx. unlatching time: 6 ms
	127		140	125	77	140	Approx. total circuit breaker contact
	208		420	_	-	_	opening time: 8 ms
	220		470	_	ı	_	
	240		550	_	_	-	

	Supply Voltage	Min Operating Voltage	VA	Supply Voltage	Min Operating Voltage	VA	Notes
	V	AC 50/60 Hz		VDC			
	12	9	45 12	9	35		
L-Frame	24	9	200	24	9	170	Endurance: 5000 electrical operations
Shunt Trip	11111	60	100	-	-	_	plus 1000 mechanical operatons.
ΠΡ	120		120	_	_	_	2. Approx. unlatching time: 6 ms
	127		140	-	_	_	Approx. total circuit breaker contact opening
_	208		420	-	-	_	time: 18 ms
	220		470	_	_	_	
	240		550	_	_	_	

Field Mountable Accessories

Six-wire Connector

This is a field installable multi-wire connector which allows six wires to be connected to the load side (OFF) end terminals. It is used to distribute the load from the circuit breaker to multiple devices without the use of separate distribution terminal blocks. UL listed for copper only as used on the load side (OFF) end. Includes mounting hardware, insulators and tin-plated aluminum connectors.

S	Six-wire Connector Accessory Selection Guide				
Part Number	Price	Description			
3TA100G6K	\$87.00	For G-Frame MCCBs. Pkg. of 3. Wire size: 14 - 6 AWG, copper			
3TA150F6K	\$87.00	For F-Frame MCCBs. Pkg. of 3. Wire size: 14 - 6 AWG, copper			



Multi-Wire Box Type Wiring Lug

These multi-wire lugs allow for cost and space savings within a panel and allow for improved short-circuit ratings by eliminating the need for power distribution blocks. Designed for load-side mounting. Choose for G-frame, F-frame, or K-frame model MCCBs. Mounting hardware and insulators included. Package of 3.

M	Multi-Wire Box Type Wiring Lug Selection Guide				
Part Number	Price	Description			
3TA100G3K	\$72.00	100A, 3 openings, #14-2 AWG copper only. For use with G-frame model MCCBs.			
3TA150F3K	\$80.00	225A, 3 openings, #14-2 AWG copper only. For use with F-frame model MCCBs.			
3TA400K3K	\$161.00	400A, 3 openings, #14-2/0 AWG copper only. For use with K-frame model MCCBs.			
3TA400K6K	\$161.00	400A, 6 openings, #14-3 AWG copper only. For use with K-frame model MCCBs.			



3TA100G3K

Replacement Lug Kit

Line and load terminals provide wire connecting capabilities for specific ranges of continuous current ratings and wire types. Replacement lugs will accept wire types Cu/Al as standard.

Replacement Lug Kit Accessory Selection Guide					
Part Number	Price	Description			
3TA225FD	\$129.00	Replacement lug kit for F-Frame MCCB. Wire range (1) #4-4/0 (25-95 mm²). Package of (3) terminals.			
<u>3TA401K</u>	\$135.00	Replacement lug kit for K-Frame MCCB. Wire range (2) 2/0-250 kcmil or (1) 2/0-500 kcmil (70-240 mm²). 3-pole kit (one terminal per pole and one terminal cover).			
3TA603LDK	\$166.00	Replacement lug kit for L-Frame MCCB. 3-pole kit (one terminal per pole and one terminal cover). Wire range 400-500 AWG (185-240 m²), 2 conductors.			



3TA401K

Note: G-frame terminals are factory-installed only. No replacement terminals available.

Din Rail Mounting Clip

	Din Rail Mount Clip Accessory Selection Guide				
Part Number	Price	Description			
<u>GDIN</u>	\$15.00	Clip for mounting G-Frame to 35 mm Din rail. Mounting hardware included. Pkg of 1			



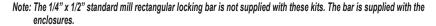
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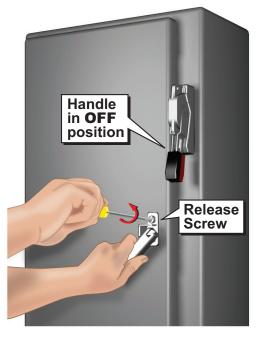
Field Mountable Accessories

NEMA 12 Safety Door Hardware

Type C361 door interlocking safety handle kits are designed for use with AutomationDirect 3P series MCCBs and flexible handle when mounted in an SDN12, or equivalent, enclosure. These handles secure the SDN12 enclosure, protecting against unauthorized entry while the MCCB is in the ON position. Use them on enclosures with right-side flanges only and material thickness from 16 gauge through 3/16 in. All mounting hardware is included for enclosures up to 40in [101.6 cm] tall. The addition of the C361KR roller kit is necessary for enclosures taller than 40in [101.6 cm] that require a 3-point latch. See SDN12 Enclosures section for enclosure specifications.

Safety Door Hardware Selection Guide					
Part Number	Price	Description			
<u>C361KJ4</u>	\$360.00	Handle length: 4in [10.16 cm]. Mounting hardware included for enclosures up to 40in [101.6 cm] tall. For taller enclosures that require a 3-point latch, the C361KR (purchase separately) will also be needed.			
<u>C361KJ6</u>	\$378.00	Handle length: 6in [15.24 cm]. Mounting hardware included for enclosures up to 40in [101.6 cm] tall. For taller enclosures that require a 3-point latch, the C361KR (purchase separately) will also be needed.			
<u>C361KR</u>	\$77.00	Door interlocking safety roller kit for use with the C361KJ4 and C361KJ6 safety handle kits when the SDN12 series enclosure is taller than 40in [101.6 cm] and 3-point latching is required. Kit includes roller and all hardware.			





Safety Handle shown on enclosure