

Thermal-magnetic molded case circuit breakers shown on Pages 6-21 thru 6-25 are permanent trip UL Listed, CSA certified, IEC rated, and also meet the requirements of Federal Specification W-C-375B/GEN as indicated on Pages 6-4 thru 6-8. For I-LINE® molded case circuit breakers, see listings on Pages 8-24-8-34.



**FAL**  
 1-pole  
 15-100 Amperes



**FAL/FHL**  
 2-pole  
 15-100 Amperes



**FAL/FHL/FCL**  
 3-pole  
 15-100 Amperes

**Interrupting Ratings (kA)**

	FAL240	FAL480	FCL
240 V	10	18 (1P), 25 (2, 3P)	100
480 V	...	18	65
600 V	...	...	...

- Accessories .....Pages 6-37-6-39
- Optional Lugs .....Pages 6-40, 6-41
- Dimensions .....Page 6-45, 6-46
- Enclosures .....Pages 6-47-6-50
- Catalog Numbering System .....Page 6-23

**F Frame – 100 A, Thermal-Magnetic (240 Vac)**

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings		Standard Interrupting		Terminal Wire Range
	Hold	Trip	Catalog Number	Price	
<b>1-Pole, 120 Vac</b>					
15	275	600	FAL12015	\$126.	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al
20	275	600	FAL12020	126.	
25	275	600	FAL12025	126.	
30	275	600	FAL12030	126.	
35	400	850	FAL12035	126.	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al
40	400	850	FAL12040	126.	
45	400	850	FAL12045	126.	
50	400	850	FAL12050	126.	
60	800	1450	FAL12060	126.	
70	800	1450	FAL12070	166.	
80	800	1450	FAL12080	166.	
90	900	1700	FAL12090	166.	
100	900	1700	FAL12100	166.	
<b>2-Pole, 240 Vac</b>					
15	275	600	FAL22015	\$211.	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al
20	275	600	FAL22020	211.	
25	275	600	FAL22025	211.	
30	275	600	FAL22030	211.	
35	400	850	FAL22035	211.	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al
40	400	850	FAL22040	211.	
45	400	850	FAL22045	211.	
50	400	850	FAL22050	211.	
60	800	1450	FAL22060	211.	
70	800	1450	FAL22070	345.	
80	800	1450	FAL22080	345.	
90	900	1700	FAL22090	345.	
100	900	1700	FAL22100	345.	
<b>3-Pole, 240 Vac</b>					
15	275	600	FAL32015	\$314.	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al
20	275	600	FAL32020	314.	
25	275	600	FAL32025	314.	
30	275	600	FAL32030	314.	
35	400	850	FAL32035	314.	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al
40	400	850	FAL32040	314.	
45	400	850	FAL32045	314.	
50	400	850	FAL32050	314.	
60	800	1450	FAL32060	314.	
70	800	1450	FAL32070	447.	
80	800	1450	FAL32080	447.	
90	900	1700	FAL32090	447.	
100	900	1700	FAL32100	447.	

**F Frame – 100 A, Thermal-Magnetic (480 Vac)**

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings		Standard Interrupting		Extra High Interrupting		Terminal Wire Range	FC Lugs
	Hold	Trip	Catalog Number	Price	Catalog Number	Price		
<b>1-Pole, 277 Vac, 125 Vdc</b>								
15	275	600	FAL14015	\$159.	...	...	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al	...
20	275	600	FAL14020	159.	...	...		
25	275	600	FAL14025	159.	...	...		
30	275	600	FAL14030	159.	...	...		
35	400	850	FAL14035	159.	...	...	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al	...
40	400	850	FAL14040	159.	...	...		
45	400	850	FAL14045	159.	...	...		
50	400	850	FAL14050	159.	...	...		
60	800	1450	FAL14060	159.	...	...		
70	800	1450	FAL14070	198.	...	...		
80	800	1450	FAL14080	198.	...	...		
90	900	1700	FAL14090	198.	...	...		
100	900	1700	FAL14100	198.	...	...		
<b>2-Pole, 480 Vac, 250 Vdct†</b>								
15	275	600	FAL24015	\$387.	FCL24015	\$ 919.	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al	CU30FA4 1-#14-#10 AWG CU only
20	275	600	FAL24020	387.	FCL24020	919.		
25	275	600	FAL24025	387.	FCL24025	919.		
30	275	600	FAL24030	387.	FCL24030	919.		
35	400	850	FAL24035	387.	FCL24035	919.	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al	AL100FA4 1-#14-#3 AWG CU or 1-#12-#1 AWG AL
40	400	850	FAL24040	387.	FCL24040	919.		
45	400	850	FAL24045	387.	FCL24045	919.		
50	400	850	FAL24050	387.	FCL24050	919.		
60	800	1450	FAL24060	387.	FCL24060	919.		
70	800	1450	FAL24070	500.	FCL24070	1131.		
80	800	1450	FAL24080	500.	FCL24080	1131.		
90	900	1700	FAL24090	500.	FCL24090	1131.		
100	900	1700	FAL24100	500.	FCL24100	1131.		
<b>3-Pole, 480 Vac, 250 Vdct†</b>								
15	275	600	FAL34015	\$496.	FCL34015	\$1149.	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al	CU30FA4 1-#14-#10 AWG CU only
20	275	600	FAL34020	496.	FCL34020	1149.		
25	275	600	FAL34025	496.	FCL34025	1149.		
30	275	600	FAL34030	496.	FCL34030	1149.		
35	400	850	FAL34035	496.	FCL34035	1149.	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al	AL100FA4 1-#14-#3 AWG CU or 1-#12-#1 AWG AL
40	400	850	FAL34040	496.	FCL34040	1149.		
45	400	850	FAL34045	496.	FCL34045	1149.		
50	400	850	FAL34050	496.	FCL34050	1149.		
60	800	1450	FAL34060	496.	FCL34060	1149.		
70	800	1450	FAL34070	587.	FCL34070	1413.		
80	800	1450	FAL34080	587.	FCL34080	1413.		
90	900	1700	FAL34090	587.	FCL34090	1413.		
100	900	1700	FAL34100	587.	FCL34100	1413.		

▲ FCL 2-pole circuit breaker built using 3-pole module.  
 † FCL circuit breakers are not rated for 250 Vdc.

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# Thermal-Magnetic Molded Case

100, 225 Ampere Frame  
Class 525, 650, 734, 820

**Square D**  
[www.squared.com](http://www.squared.com)  
FOR CURRENT INFORMATION



FIL36100



GJL 3-pole  
circuit breaker



Q2L  
2- and 3-pole  
100-225 Amperes

## F Frame – 100 A, Thermal-Magnetic (600 Vac)

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings		Standard Interrupting		High Interrupting		Current Limiting		Terminal Wire Range
	Hold	Trip	Catalog Number	Price	Catalog Number	Price	Catalog Number	Price	
<b>1-Pole, 277 Vac, 125 Vdc</b>									
15	275	600	...	...	FHL16015	\$287.	...	...	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al
20	275	600	...	...	FHL16020	287.	...	...	
25	275	600	...	...	FHL16025	287.	...	...	
30	275	600	...	...	FHL16030	287.	...	...	
35	400	850	...	...	FHL16035	287.	...	...	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al
40	400	850	...	...	FHL16040	287.	...	...	
45	400	850	...	...	FHL16045	287.	...	...	
50	400	850	...	...	FHL16050	287.	...	...	
60	800	1450	...	...	FHL16060	287.	...	...	
70	800	1450	...	...	FHL16070	323.	...	...	
80	800	1450	...	...	FHL16080	323.	...	...	
90	900	1700	...	...	FHL16090	323.	...	...	
100	900	1700	...	...	FHL16100	323.	...	...	
<b>2-Pole, 600 Vac, 250 Vdc</b>									
15	275	600	FAL26015	\$447.	FHL26015	\$738.	...	...	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al
20	275	600	FAL26020	447.	FHL26020	738.	FIL26020	\$1671.	
25	275	600	FAL26025	447.	FHL26025	738.	...	...	
30	275	600	FAL26030	447.	FHL26030	738.	FIL26030	1671.	
35	400	850	FAL26035	447.	FHL26035	738.	...	...	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al
40	400	850	FAL26040	447.	FHL26040	738.	FIL26040	1671.	
45	400	850	FAL26045	447.	FHL26045	738.	...	...	
50	400	850	FAL26050	447.	FHL26050	738.	FIL26050	1671.	
60	800	1450	FAL26060	447.	FHL26060	738.	FIL26060	1671.	
70	800	1450	FAL26070	565.	FHL26070	859.	FIL26070	1671.	
80	800	1450	FAL26080	565.	FHL26080	859.	FIL26080	1671.	
90	900	1700	FAL26090	565.	FHL26090	859.	FIL26090	1671.	
100	900	1700	FAL26100	565.	FHL26100	859.	FIL26100	1671.	
<b>3-Pole, 600 Vac, 250 Vdc</b>									
15	275	600	FAL36015	\$575.	FHL36015	\$862.	...	...	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al
20	275	600	FAL36020	575.	FHL36020	862.	FIL36020	\$2092.	
25	275	600	FAL36025	575.	FHL36025	862.	...	...	
30	275	600	FAL36030	575.	FHL36030	862.	FIL36030	2092.	
35	400	850	FAL36035	575.	FHL36035	862.	...	...	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al
40	400	850	FAL36040	575.	FHL36040	862.	FIL36040	2092.	
45	400	850	FAL36045	575.	FHL36045	862.	...	...	
50	400	850	FAL36050	575.	FHL36050	862.	FIL36050	2092.	
60	800	1450	FAL36060	575.	FHL36060	862.	FIL36060	2092.	
70	800	1450	FAL36070	708.	FHL36070	978.	FIL36070	2092.	
80	800	1450	FAL36080	708.	FHL36080	978.	FIL36080	2092.	
90	900	1700	FAL36090	708.	FHL36090	978.	FIL36090	2092.	
100	900	1700	FAL36100	708.	FHL36100	978.	FIL36100	2092.	

## POWERPACT® G Frame – 100 A, Thermal-Magnetic (600Y/347 Vac)

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings		J Interrupting		Terminal Wire Range
	Hold	Trip	Catalog Number	Price	
<b>3-Pole, Vac, Vdc</b>					
15	600	1200	GJL36015	\$1264.	#14-#1/0 AWG Cu #8-#1/0 AWG Al
20	600	1200	GJL36020	1264.	
30	600	1200	GJL36030	1264.	
40	600	1200	GJL36040	1264.	
50	800	1400	GJL36050	1264.	
60	800	1400	GJL36060	1264.	
70	800	1400	GJL36070	1554.	
80	800	1400	GJL36080	1554.	
100	800	1400	GJL36100	1554.	

## Q Frame★ – 225 A, Thermal-Magnetic (240 Vac)

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings		Standard Interrupting		High Interrupting		Extra High Interrupting	
	Hold	Trip	Catalog Number	Price	Catalog Number	Price	Catalog Number	Price
<b>2-Pole, 240 Vac</b>								
100	1400	2400	Q2L2100●	\$301.	Q2L2100H	\$726.	Q2LH2100	\$966.
110	1400	2400	Q2L2110●	301.	Q2L2110H	726.	Q2LH2110	966.
125	1400	2400	Q2L2125●	301.	Q2L2125H	726.	Q2LH2125	966.
150	1400	2400	Q2L2150●	301.	Q2L2150H	726.	Q2LH2150	966.
175	1400	2400	Q2L2175●	301.	Q2L2175H	726.	Q2LH2175	966.
200	1400	2400	Q2L2200●	301.	Q2L2200H	726.	Q2LH2200	966.
225	1400	2400	Q2L2225●	301.	Q2L2225H	726.	Q2LH2225	966.
<b>3-Pole, 240 Vac</b>								
100	1400	2400	Q2L3100	\$792.	Q2L3100H	\$1132.	...	...
110	1400	2400	Q2L3110	792.	Q2L3110H	1132.	...	...
125	1400	2400	Q2L3125	792.	Q2L3125H	1132.	...	...
150	1400	2400	Q2L3150	792.	Q2L3150H	1132.	...	...
175	1400	2400	Q2L3175	792.	Q2L3175H	1132.	...	...
200	1400	2400	Q2L3200	792.	Q2L3200H	1132.	...	...
225	1400	2400	Q2L3225	792.	Q2L3225H	1132.	...	...

★ Accessories and replacement lugs are not available on the Q2 circuit breaker. Lugs for the Q2 circuit breakers accept 1-#4 AWG-300 kcmil.  
● 2-pole Q2 is 10 kA at 120/240 Vac.

### Interrupting Ratings (kA)

	FAL	FHL	FIL	GJL	Q2L	Q2L-H	Q2LH
240 V	25	25 (1P:35-100A), 65 (2, 3P)	200	100	10●	22	42
480 V	18	25 (2, 3P)	200	65	...	...	...
600 V	14	18 (2, 3P)	100	18▲	...	...	...

▲ GJL is rated 18 kA at 600Y/347 Vac.

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**Catalog Numbering System for Thermal-Magnetic Molded Case Circuit Breakers**

<b>Circuit Breaker Family</b>	FA, FH, FC, FI KA, KH, KC, KI LA, LH, LC, LI MA, MH NA, NC	<b>Note:</b> "A" is replaced by letter "H" for high interrupting circuit breaker. "A" is replaced by letter "C" for extra high interrupting circuit breaker. "A" is replaced by the letter "I" for current-limiting circuit breakers.	FA	L	3	6	100	2100
No Letter – I-LINE L – Lugs on both ends	F – Terminal pads only (No Lugs) P – Lugs OFF end only							
1 – 1-pole    2 – 2-pole    3 – 3-pole								
2 – 240 Vac    4 – 480 Vac    6 – 600 Vac								
015-1200 – Ampere rating 000M-0000M – Molded case switch (automatic)								
Special Features A, B, C – I-LINE phase connections XXXX – Factory-installed accessories								



**KAL/KHL**  
 2- and 3-pole  
 70-250 Amperes



**KIL36250**

**K Frame – 250 A, Thermal-Magnetic (600 Vac)**

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings▲		Standard Interrupting		High Interrupting		Current Limiting		Terminal Wire Range
	Low	High	Catalog Number	Price	Catalog Number	Price	Catalog Number	Price	
<b>2-Pole, 600 Vac, 250 Vdc</b>									
70	350	700	KAL26070	\$1315.	KHL26070	\$3072.	...	...	AL250KA 1-#4 AWG-350 kcmil
80	400	800	KAL26080	1315.	KHL26080	3072.	...	...	
90	450	900	KAL26090	1315.	KHL26090	3072.	...	...	
100	500	1000	KAL26100	1315.	KHL26100	3072.	...	...	
110	550	1100	KAL26110	1315.	KHL26110	3072.	KIL26110	\$3922.	
125	625	1250	KAL26125	1315.	KHL26125	3072.	KIL26125	3922.	
150	750	1500	KAL26150	1315.	KHL26150	3072.	KIL26150	3922.	
175	875	1750	KAL26175	1315.	KHL26175	3072.	KIL26175	3922.	
200	1000	2000	KAL26200	1315.	KHL26200	3072.	...	...	
225	1125	2250	KAL26225	1315.	KHL26225	3072.	...	...	
250	1250	2500	KAL26250	2286.	KHL26250	4039.	...	...	
200	1000	2000	...	...	...	...	KIL26200	3922.	
225	1125	2250	...	...	...	...	KIL26225	3922.	
250	1250	2500	...	...	...	...	KIL26250	4586.	
<b>3-Pole, 600 Vac, 250 Vdc</b>									
70	350	700	KAL36070	\$1650.	KHL36070	\$3713.	...	...	AL250KA 1-#4 AWG-350 kcmil
80	400	800	KAL36080	1650.	KHL36080	3713.	...	...	
90	450	900	KAL36090	1650.	KHL36090	3713.	...	...	
100	500	1000	KAL36100	1650.	KHL36100	3713.	...	...	
110	550	1100	KAL36110	1650.	KHL36110	3713.	KIL36110	\$4923.	
125	625	1250	KAL36125	1650.	KHL36125	3713.	KIL36125	4923.	
150	750	1500	KAL36150	1650.	KHL36150	3713.	KIL36150	4923.	
175	875	1750	KAL36175	1650.	KHL36175	3713.	KIL36175	4923.	
200	1000	2000	KAL36200	1650.	KHL36200	3713.	...	...	
225	1125	2250	KAL36225	1650.	KHL36225	3713.	...	...	
250	1250	2500	KAL36250	2751.	KHL36250	4824.	...	...	
200	1000	2000	...	...	...	...	KIL36200	4923.	
225	1125	2250	...	...	...	...	KIL36225	4923.	
250	1250	2500	...	...	...	...	KIL36250	5766.	

**K Frame – 250 A, Thermal-Magnetic (480 Vac)**

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings▲		Extra High Interrupting		Terminal Wire Range
	Low	High	Catalog Number	Price	
<b>2-Pole, 480 Vac</b>					
110	550	1100	KCL24110	\$3465.	AL250KA 1-#4 AWG-350 kcmil
125	625	1250	KCL24125	3465.	
150	750	1500	KCL24150	3465.	
175	875	1750	KCL24175	3465.	
200	1000	2000	KCL24200	3465.	AL250KI 1-#1/0 AWG-350 kcmil
225	1125	2250	KCL24225	3465.	
250	1250	2500	KCL24250	4248.	
<b>3-Pole, 480 Vac</b>					
110	550	1100	KCL34110	4331.	AL250KA 1-#4 AWG-350 kcmil
125	625	1250	KCL34125	4331.	
150	750	1500	KCL34150	4331.	
175	875	1750	KCL34175	4331.	
200	1000	2000	KCL34200	4331.	AL250KI 1-#1/0 AWG-350 kcmil
225	1125	2250	KCL34225	4331.	
250	1250	2500	KCL34250	5314.	

▲ UL magnetic trip setting tolerances are ±25% (low) and ±20% (high) from nominal values shown.

**Interrupting Ratings (kA)**

	KAL	KHL	KCL	KIL
240 V	42	65	100	200
480 V	25	35	65	200
600 V	22	25	...	100

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# Thermal-Magnetic Molded Case

400, 600, 1000 Ampere Frame

Class 660, 665, 735, 830

**Square D**  
www.squared.com  
FOR CURRENT INFORMATION



LAL/LHL  
2- and 3-pole  
125-400 Amperes



LIL3660



MAL/MHL  
2- and 3-pole  
300-1000 Amperes

6 CIRCUIT BREAKERS

## Q4 Frame – 400 A, Thermal-Magnetic (240 Vac)

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings▲		Standard Interrupting		Terminal Wire Range
	Low	High	Catalog Number	Price	
<b>2-Pole, 240 Vac</b>					
250	1250	2500	Q4L2250	<b>\$2013.</b> 2013. 2013. 2013.	AL400LA 1-#1 AWG-600 kcmil or 2-#1 AWG-250 kcmil
300	1500	3000	Q4L2300		
350	1750	3500	Q4L2350		
400	2000	4000	Q4L2400		
<b>3-Pole, 240 Vac</b>					
250	1250	2500	Q4L3250	<b>\$2432.</b> 2432. 2432. 2432.	AL400LA 1-#1 AWG-600 kcmil or 2-#1 AWG-250 kcmil
300	1500	3000	Q4L3300		
350	1750	3500	Q4L3350		
400	2000	4000	Q4L3400		

## L Frame – 400 A, Thermal-Magnetic (600 Vac)

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings▲		Standard Interrupting		High Interrupting		Terminal Wire Range			
	Low	High	Catalog Number	Price	Catalog Number	Price				
<b>2-Pole, 600 Vac, 250 Vdc</b>										
125	625	1250	LAL26125	<b>\$2417.</b> 2417. 2417. 2417. 2417. 2417. 2417. 2417. 2417. 2417. 2417. 2417. 2417. 2417. 2417. 2417.	LHL26125	<b>\$4039.</b> 4039. 4039. 4039. 4039. 4039. 4039. 4039. 4039. 4039. 4039. 4039. 4039. 4039. 4039. 4039.	AL400LA 1-#1 AWG-600 kcmil or 2-#1 AWG-250 kcmil			
150	750	1500	LAL26150		LHL26150					
175	875	1750	LAL26175		LHL26175					
200	1000	2000	LAL26200		LHL26200					
225	1125	2250	LAL26225		LHL26225					
250	1250	2500	LAL26250		LHL26250					
300	1500	3000	LAL26300		LHL26300					
350	1750	3500	LAL26350		LHL26350					
400	2000	4000	LAL26400		LHL26400					
<b>3-Pole, 600 Vac, 250 Vdc</b>										
125	625	1250	LAL36125		<b>\$2932.</b> 2932. 2932. 2932. 2932. 2932. 2932. 2932. 2932. 2932. 2932. 2932. 2932. 2932. 2932. 2932.			LHL36125	<b>\$4824.</b> 4824. 4824. 4824. 4824. 4824. 4824. 4824. 4824. 4824. 4824. 4824. 4824. 4824. 4824. 4824.	AL400LA 1-#1 AWG-600 kcmil or 2-#1 AWG-250 kcmil
150	750	1500	LAL36150					LHL36150		
175	875	1750	LAL36175					LHL36175		
200	1000	2000	LAL36200					LHL36200		
225	1125	2250	LAL36225					LHL36225		
250	1250	2500	LAL36250					LHL36250		
300	1500	3000	LAL36300	LHL36300						
350	1750	3500	LAL36350	LHL36350						
400	2000	4000	LAL36400	LHL36400						

## L Frame – 600 A, Thermal-Magnetic (600 Vac)

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings▲		Extra High Interrupting■		Current Limiting		Terminal Wire Range			
	Low	High	Catalog Number	Price	Catalog Number	Price				
<b>2-Pole, 600 Vac</b>										
300	1500	3000	LCL26300	<b>\$4749.</b> 4749. 4749. 4967. 4967. 4967. 5277. 5277. 5277. 5518. 5518. 5518. 5518. 5518. 5518.	LIL26300	<b>\$5463.</b> 5463. 5463. 7969. 7969. 7969. 6071. 6071. 6071. 8856. 8856. 8856. 8856. 8856. 8856.	AL600L15 2-#4/0 AWG- 500 kcmil			
350	1750	3500	LCL26350		LIL26350					
400	2000	4000	LCL26400		LIL26400					
450	2250	4500	LCL26450		LIL26450					
500	2500	5000	LCL26500		LIL26500					
600	3000	5400	LCL26600		LIL26600					
<b>3-Pole, 600 Vac</b>										
300	1500	3000	LCL36300		<b>\$5277.</b> 5277. 5277. 5518. 5518. 5518. 5518. 5518. 5518. 5518. 5518. 5518. 5518. 5518. 5518.			LIL36300	<b>\$6071.</b> 6071. 6071. 8856. 8856. 8856. 8856. 8856. 8856. 8856. 8856. 8856. 8856. 8856. 8856.	AL600L15 2-#4/0 AWG- 500 kcmil
350	1750	3500	LCL36350					LIL36350		
400	2000	4000	LCL36400					LIL36400		
450	2250	4500	LCL36450					LIL36450		
500	2500	5000	LCL36500					LIL36500		
600	3000	5400	LCL36600					LIL36600		

## Interrupting Ratings (kA)

	Q4L	LAL	LHL	LCL	LIL	MAL	MHL
240 V	25	42	65	100	200	42	65
480 V	...	30	35	65	200	30	65
600 V	...	22	25	35	100	22	25

## M Frame – 1000 A, Thermal-Magnetic (600 Vac)

Cont. Current Rating @ 40° C	AC Magnetic Trip Settings▲		Standard Interrupting		High Interrupting		Terminal Wire Range			
	Low	High	Catalog Number	Price	Catalog Number	Price				
<b>2-Pole, 600 Vac, 250 Vdc</b>										
300	1500	3000	MAL26300	<b>\$3784.</b> 3784. 3784. 3784. 3784. 3784. 4901. 4901. 4901. 6991. 6991.	MHL26300	<b>\$4970.</b> 4970. 4970. 4970. 4970. 4970. 6131. 6131. 6131. 7753. 7753.	AL900MA 3-#3/0 AWG- 500 kcmil			
350	1750	3500	MAL26350		MHL26350					
400	2000	4000	MAL26400		MHL26400					
450	2250	4500	MAL26450		MHL26450					
500	2500	5000	MAL26500		MHL26500					
600	3000	6000	MAL26600		MHL26600					
700	3500	7000	MAL26700		MHL26700					
800	4000	8000	MAL26800		MHL26800					
900	4500	9000	MAL26900		MHL26900					
1000	5000	10000	MAL261000		MHL261000					
1200	5500	12000	MAL261200		<b>8221.</b>			MHL261200	<b>9684.</b>	AL1000MA* 4-#1/0 AWG- 350 kcmil

## M Frame – 1000 A, Thermal-Magnetic (600 Vac) (Continued)

Cont. Current Rating @ 40° C	AC Magnetic Trip Settings▲		Standard Interrupting		High Interrupting		Terminal Wire Range			
	Low	High	Catalog Number	Price	Catalog Number	Price				
<b>3-Pole, 600 Vac, 250 Vdc</b>										
300	1500	3000	MAL36300	<b>\$4800.</b> 4800. 4800. 4800. 4800. 4800. 6303. 6303. 6067. 8067.	MHL36300	<b>\$6004.</b> 6004. 6004. 6004. 6004. 6004. 7544. 7544. 8938. 8938.	AL900MA 3-#3/0 AWG- 500 kcmil			
350	1750	3500	MAL36350		MHL36350					
400	2000	4000	MAL36400		MHL36400					
450	2250	4500	MAL36450		MHL36450					
500	2500	5000	MAL36500		MHL36500					
600	3000	6000	MAL36600		MHL36600					
700	3500	7000	MAL36700		MHL36700					
800	4000	8000	MAL36800		MHL36800					
900	4500	9000	MAL36900		MHL36900					
1000	5000	10000	MAL361000		MHL361000					
1200	5500	12000	MAL361200		<b>9591.</b>			MHL361200	<b>11182.</b>	AL1000MA* 4-#1/0 AWG- 350 kcmil

▲ UL magnetic trip setting tolerances are ±25% (low) and ±20% (high) from nominal values shown.  
■ Use only in tested and listed enclosures.  
\* The AL1000MA lug is the only lug available for the 1200 Ampere MA and MH circuit breaker.

Accessories ..... Pages 6-37–6-39  
Optional Lugs ..... Pages 6-40, 6-41  
Dimensions ..... Page 6-45, 6-46  
Enclosures ..... Pages 6-47–6-50  
Catalog Numbering System ..... Page 6-23

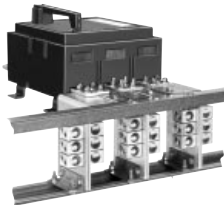




**NAL/NCL**  
 Two- and Three-Pole  
 600-1200 Amperes

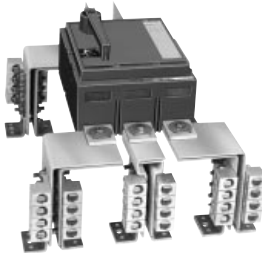


**PAF/PHF**  
 Two- and Three-Pole  
 600-2000 Amperes



**PALTB**

PAF and PHF circuit breakers can be bus or cable connected. For cable connections, optional terminal pad kit PALTB or equivalent bus structure is required. Each PALTB kit contains terminal pads for one end of the circuit breaker only and has provisions for mounting a maximum of six lugs per phase. Order lugs separately. See Pages 6-40 and 6-41.



PCF circuit breakers are supplied with terminal pads for both ends of the circuit breaker. The supplied terminal pads or equivalent bus structure must be used for bus or cable connections. Terminal pads have provisions for mounting a maximum of eight lugs per phase. Order lugs separately. See Pages 6-40 and 6-41.

**N Frame – 1200 A, Thermal-Magnetic (600 Vac)**

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings▲		Standard Interrupting		Extra High Interrupting		Terminal Wire Range
	Low	High	Catalog Number	Price	Catalog Number	Price	
<b>2-Pole, 600 Vac</b>							
600	4000	8000	NAL26600	\$11024.	NCL26600	\$12694.	AL1200NE6 4-#3/0 AWG-600 kcmil
700	4000	8000	NAL26700	11024.	NCL26700	12694.	
800	4000	8000	NAL26800	11024.	NCL26800	12694.	
900	5000	10000	NAL26900	11024.	NCL26900	12694.	
1000	5000	10000	NAL261000	11024.	NCL261000	12694.	
1200	5000	10000	NAL261200	11024.	NCL261200	12694.	
<b>3-Pole, 600 Vac</b>							
600	4000	8000	NAL36600	\$12094.	NCL36600	\$13620.	AL1200NE6 4-#3/0 AWG-600 kcmil
700	4000	8000	NAL36700	12094.	NCL36700	13620.	
800	4000	8000	NAL36800	12094.	NCL36800	13620.	
900	5000	10000	NAL36900	12094.	NCL36900	13620.	
1000	5000	10000	NAL361000	12094.	NCL361000	13620.	
1200	5000	10000	NAL361200	12094.	NCL361200	13620.	

**P Frame – 2000 and 2500 A, Thermal-Magnetic (600 Vac)**

Ampere Rating	AC Magnetic Trip Settings▲		2-pole – 600 Vac				3-pole – 600 Vac					
	Low	High	Frame Only		Rating Columns Two Per Kit		Total Price†	Frame Only		Rating Columns Three Per Kit		Total Price†
			Catalog No.	Price	Kit Catalog No.	Kit Price		Catalog No.	Price	Kit Catalog No.	Kit Price	

**2000 Ampere Frame**

**PAF** Standard Interrupting – Complete Circuit Breaker Requires Frame and Rating Columns

600	3200	9000			PA2600RC	\$232.			PA3600RC	\$350.		
700	3200	9000			PA2700RC	232.			PA3700RC	350.		
800	3200	9000			PA2800RC	232.			PA3800RC	350.		
1000	3500	9000			PA21000RC	232.			PA31000RC	350.		
1200	3500	9000	PAF2026	\$10809.	PA21200RC	232.	\$11041.	PAF2036	\$13855.	PA31200RC	350.	\$14205.
1400	4500	9000			PA21400RC	232.			PA31400RC	350.		
1600	5000	10000			PA21600RC	232.			PA31600RC	350.		
1800	6500	11000			PA21800RC	232.			PA31800RC	350.		
2000	8000	12000			PA22000RC	232.			PA32000RC	350.		

**PHF** High Interrupting – Complete Circuit Breaker Requires Frame and Rating Columns

600	3200	9000			PA2600RC	\$232.			PA3600RC	\$350.		
700	3200	9000			PA2700RC	232.			PA3700RC	350.		
800	3200	9000			PA2800RC	232.			PA3800RC	350.		
1000	3500	9000			PA21000RC	232.			PA31000RC	350.		
1200	3500	9000	PHF2026	\$12397.	PA21200RC	232.	\$12629.	PHF2036	\$15347.	PA31200RC	350.	\$15697.
1400	4500	9000			PA21400RC	232.			PA31400RC	350.		
1600	5000	10000			PA21600RC	232.			PA31600RC	350.		
1800	6500	11000			PA21800RC	232.			PA31800RC	350.		
2000	8000	12000			PA22000RC	232.			PA32000RC	350.		

**2500 Ampere Frame**

**PCF** High Interrupting – Complete Circuit Breaker Requires Frame and Rating Columns

1600	6000	12000			PC21600RC	\$232.			PC31600RC	\$350.		
1800	6000	12000			PC21800RC	232.			PC31800RC	350.		
2000	6000	12000	PCF2526	\$19945.	PC22000RC	232.	\$20177.	PCF2536	\$24655.	PC32000RC	350.	\$25005.
2500	8000	14000			PC22500RC	232.			PC32500RC	350.		

† Price does not include lugs. See Pages 6-40 and 6-41 for catalog numbers and prices.  
 ▲ UL magnetic trip setting tolerances are ±25% (Low) and ±20% (High) from the nominal values shown.

**Interrupting Ratings (kA)**

	NAL	NCL	PAF	PHF	PCF
240 V	100	125	65	125	125
480 V	50	100	50	100	100
600 V	25	65	42	65	65

Accessories .....	Pages 6-37–6-39
Optional Lugs .....	Pages 6-40, 6-41
Dimensions .....	Page 6-45, 6-46
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Catalog Numbering System .....	Page 6-23



# MAG-GARD® Motor Circuit Protectors

Selection Table  
Class 680

**Square D**  
www.squared.com  
FOR CURRENT INFORMATION

## Adjustable Instantaneous-trip Circuit Breakers for Single Motor Circuit Protection



Based on NEC Article 430-52 and NEC Table 430-150.  
See Page 6-27 for a complete listing of Square D Adjustable Instantaneous Trip Circuit Breakers.

HP Ratings of Induction Type Squirrel-cage and Wound Rotor Motors				★ Full Load Amperes	MAG-GARD Circuit Breaker Catalog No.	Magnetic Trip Settings †		GJL Family MAG-GARD Circuit Breaker Catalog No.	Magnetic Trip Settings †	
Three-Phase 60 Hz ac						MIN	MAX		MIN	MAX
200 Volts	230 Volts	460 Volts	575 Volts							
			1/2	0.8	FAL36003-11M★	1000%	3500%	GJL36003M01▲	1100%	4100%
			1/2	1	FAL36003-11M★	800%	2800%	GJL36003M01▲	900%	3300%
			3/4	1.1	FAL36003-11M	700%	2500%	GJL36003M01▲	800%	3000%
			3/4	1.4	FAL36003-11M	600%	2000%	GJL36003M01	600%	2400%
			1	1.8	FAL36003-11M	400%	1600%	GJL36003M01	500%	1800%
			1	2	FAL36003-11M	400%	1400%	GJL36003M01	500%	1700%
			1 1/2	2.1	FAL36003-11M	400%	1300%	GJL36003M01	400%	1600%
			1 1/2	2.3	FAL36003-11M■	300%	1200%	GJL36003M01	400%	1400%
			1 1/2	2.6	FAL36007-12M	700%	2700%	GJL36003M01	300%	1300%
			1 1/2	2.7	FAL36007-12M	700%	2600%	GJL36003M01■	300%	1200%
			1 1/2	2.8	FAL36007-12M	600%	2500%	GJL36003M01■	300%	1200%
			1 1/2	3.2	FAL36007-12M	600%	2200%	GJL36007M02	700%	2400%
			1 1/2	3.4	FAL36007-12M	500%	2100%	GJL36007M02	600%	2300%
			1 1/2	3.6	FAL36007-12M	500%	1900%	GJL36007M02	600%	2100%
			1 1/2	3.9	FAL36007-12M	500%	1800%	GJL36007M02	500%	2000%
			1 1/2	4.1	FAL36007-12M	400%	1700%	GJL36007M02	500%	1900%
			1 1/2	4.8	FAL36007-12M	400%	1500%	GJL36007M02	400%	1600%
			1 1/2	5.2	FAL36007-12M	300%	1300%	GJL36007M02	400%	1500%
			1 1/2	6	FAL36007-12M■	300%	1200%	GJL36007M02	400%	1300%
			1 1/2	6.1	FAL36007-12M■	300%	1100%	GJL36015M03	700%	2700%
			1 1/2	6.8	FAL36015-13M	700%	2600%	GJL36015M03	700%	2400%
			1 1/2	7.6	FAL36015-13M	700%	2400%	GJL36015M03	600%	2200%
			1 1/2	7.8	FAL36015-13M	600%	2300%	GJL36015M03	600%	2100%
			1 1/2	9	FAL36015-13M	600%	2000%	GJL36015M03	500%	1800%
			1 1/2	9.6	FAL36015-13M	500%	1900%	GJL36015M03	500%	1700%
			1 1/2	11	FAL36015-13M	500%	1600%	GJL36015M03	400%	1500%
			1 1/2	14	FAL36030-15M	700%	2500%	GJL36030M04	600%	2400%
			1 1/2	15.2	FAL36030-15M	700%	2300%	GJL36030M04	600%	2200%
			1 1/2	17	FAL36030-15M	600%	2100%	GJL36030M04	500%	1900%
			1 1/2	17.5	FAL36030-15M	600%	2000%	GJL36030M04	500%	1900%
			1 1/2	21	FAL36030-15M	500%	1700%	GJL36030M04	400%	1600%
			1 1/2	22	FAL36050-16M	700%	2600%	GJL36030M04	400%	1500%
			1 1/2	25.3	FAL36050-16M	600%	2300%	GJL36030M04	400%	1300%
			1 1/2	27	FAL36050-16M	600%	2100%	GJL36050M05	600%	2000%
			1 1/2	28	FAL36050-16M	500%	2100%	GJL36050M05	500%	2000%
			1 1/2	32	FAL36050-16M	500%	1800%	GJL36050M05	500%	1700%
			1 1/2	32.2	FAL36050-16M	500%	1800%	GJL36050M05	500%	1700%
			1 1/2	34	FAL36050-16M	400%	1700%	GJL36050M05	400%	1600%
			1 1/2	40	FAL36050-16M	400%	1500%	GJL36050M05	400%	1400%
			1 1/2	41	FAL36100-18M	700%	2700%	GJL36050M05	400%	1300%
			1 1/2	42	FAL36100-18M	700%	2600%	GJL36075M06	400%	1300%
			1 1/2	48.3	FAL36100-18M	600%	2300%	GJL36075M06	500%	1700%
			1 1/2	52	FAL36100-18M	600%	2100%	GJL36075M06	400%	1600%
			1 1/2	54	FAL36100-18M	600%	2000%	GJL36075M06	400%	1500%
			1 1/2	62	FAL36100-18M	500%	1800%	GJL36075M06	400%	1300%
			1 1/2	65	FAL36100-18M	500%	1700%	GJL36075M06	300%	1300%
			1 1/2	68	FAL36100-18M	400%	1600%			
			1 1/2	77	FAL36150-24M	600%	1400%			
			1 1/2	78.2	FAL36150-24M	600%	1400%			
			1 1/2	80	FAL36150-24M	600%	1400%			
			1 1/2	92	KAL36250-25M	700%	1400%			
			1 1/2	96	KAL36250-25M	700%	1300%			
			1 1/2	99	KAL36250-25M	600%	1300%			
			1 1/2	104	KAL36250-26M	700%	1400%			
			1 1/2	120	KAL36250-29M	700%	1500%			
			1 1/2	124	KAL36250-29M	700%	1400%			
			1 1/2	125	KAL36250-29M	700%	1400%			
			1 1/2	130	KAL36250-29M	700%	1300%			
			1 1/2	144	KAL36250-30M	700%	1400%			
			1 1/2	150	KAL36250-30M	700%	1300%			
			1 1/2	154	KAL36250-31M	700%	1500%			
			1 1/2	156	KAL36250-31M	700%	1400%			
			1 1/2	177.1	KAL36250-32M	700%	1400%			
			1 1/2	180	KAL36250-32M	700%	1400%			
			1 1/2	192	KAL36250-32M	700%	1300%			
			1 1/2	221	LAL36400-33M	700%	1400%			
			1 1/2	240	LAL36400-35M	700%	1500%			
			1 1/2	242	LAL36400-35M	700%	1400%			
			1 1/2	248	LAL36400-35M	700%	1400%			
			1 1/2	285	LAL36400-36M	700%	1400%			
			1 1/2	289	LAL36400-36M	700%	1400%			
			1 1/2	302	LAL36400-36M	700%	1300%			
			1 1/2	312	LAL36400-36M	600%	1300%			
			1 1/2	336	MAL36600-40M	700%	1500%			
			1 1/2	359	MAL36600-40M	700%	1400%			
			1 1/2	360	MAL36600-40M	700%	1400%			
			1 1/2	361	MAL36600-40M	700%	1400%			
			1 1/2	382	MAL36600-40M	700%	1300%			
			1 1/2	414	MAL36600-42M	700%	1400%			
			1 1/2	472	MAL36600-44M	700%	1500%			
			1 1/2	477	MAL36600-44M	700%	1500%			
			1 1/2	480	MAL36600-44M	700%	1500%			
			1 1/2	552	MAL36800-45M	700%	1400%			
			1 1/2	590	MAL36800-45M	700%	1400%			
			1 1/2	602	MAL36800-45M	700%	1300%			

Adjustable instantaneous-trip circuit breakers are intended for use in combination with motor starters with overload relays for the protection of motor circuits from short circuits. Other specific applications include rectifiers and resistance welders. These circuit breakers contain a magnetic trip element in each pole with the trip point adjustable from the front. Interrupting ratings are determined by testing the instantaneous trip circuit breakers in combination with a contactor and overload relay.

Select instantaneous trip circuit breakers as follows:

1. This selection table is suitable for motors, other than NEMA Design E, with locked-rotor indicating code letters per NEC Table 430-7 (b) as follows:

Horsepower	Motor Code Letters
1/2 or less	A-L
3/4 to 1 1/2	A-K
2 to 3	A-J
5 to 25	A-H
30 to 125	A-G
150 or more	A-F

For other motors order a special thermal magnetic circuit breaker with magnetic trip settings for the specific motor – specify motor horsepower, voltage, frequency, full-load current and code letter or locked rotor current.

2. Determine motor HP rating from the motor nameplate.
3. Refer to the table at right and select an instantaneous trip circuit breaker with an Ampere rating recommended for the HP and voltage involved.
4. Select an adjustable trip setting of at least 700%, not to exceed 1300%, of the motor full-load Amperes. (FLA) for other than Design E motors. For Design E motors, select an adjustable trip setting of at least 1100% not to exceed 1700% of FLA.
5. The NEC 1300% maximum setting may be inadequate for instantaneous trip circuit breakers to withstand current surges typical of the magnetization current of autotransformer type reduced voltage starters, or open transition wye-delta starters during transfer from "start" to "run", constant HP multi-speed motors, and motors labeled "high efficiency". Select thermal-magnetic circuit breakers from Page 6-28 for those applications.

6. Part-winding motors, per NEC 430-3, should have two circuit breakers selected from the above at not more than one half the allowable trip setting for the horsepower rating. The two circuit breakers should operate simultaneously as a disconnecting means per NEC 430-103.

★ Motor full-load currents are taken from Table 430-150 of the NEC. Select wire and circuit breakers on basis of horsepower rather than nameplate full-load current per NEC Article 430-6 (a) for general motor applications. Do not use these values to select overload relay thermal units. See Digest 172, Page 13-15-13-19 for selection of thermal units when actual full load is not known. The voltages listed are rated motor voltages. Corresponding nominal system voltages are 200 to 208, 220 to 240, 440 to 480 and 550 to 600 volts.

▲ See NEC Section 430-52(a) for breaker settings above 700%.

■ If due to motor starting characteristics, trip settings at the 1300% maximum permitted level are needed, the next size MAG-GARD circuit breaker should be chosen.

† Only MIN and MAX settings are shown, intermediate settings are available on all circuit breakers.

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Instantaneous trip magnetic only circuit breakers have a single adjustment which simultaneously sets the magnetic trip level of each individual pole. MAG-GARD circuit breakers comply with NEC requirements for providing motor circuit protection when installed as part of a UL Listed combination controller having motor overload protection. Interrupting ratings are established for these UL Recognized

Components only when they are used in combination with motor starters with properly sized overload relays and contactors.

All MAG-GARD circuit breakers will accept the same lugs and accessories as equivalent thermal-magnetic circuit breakers. MAG-GARD circuit breakers are available with I-LINE construction\*. H construction MAG-GARD circuit breakers (FHL, KHL, LHL, etc.) are also available.

**Magnetic Only • 3-1200 Amperes 600 Vac, 50/60 Hz▼**

Ampere Rating	Adjustable▲ Trip Range Amperes	3-pole only		Ampere Rating	Adjustable▲ Trip Range Amperes	Suffix	3-pole only			
		Catalog Number	Price				Catalog Number	Price		
<b>FAL</b>	3	8-28	FAL3600311M	400	500-1000		LAL3640022M	\$ 2932.		
	7	18-70	FAL3600712M		750-1600		LAL3640028M		2932.	
	15	50-180	FAL3601513M		1000-2000		LAL3640030M		2932.	
	30	50-180	FAL3603013M		1125-2250		LAL3640031M		2932.	
	30	100-350	FAL3603015M		1250-2500		LAL3640032M		2932.	
	50	75-260	FAL3605014M		1500-3000		LAL3640033M		2932.	
	50	150-580	FAL3605016M		1750-3500		LAL3640035M		2932.	
	100	150-580	FAL3610016M		2000-4000		LAL3640036M		2932.	
	100	300-1100	FAL3610018M							
	150	450-1100	FAL3615024M							
<b>GJL</b>	3	9-33	GJL36003M01	600 800 1000	625-1250	25M	MAL36600	Add Suffix	4800.	
	7	21-77	GJL36007M02				MAL36800			6303.
	15	45-165	GJL35015M03				MAL361000			8067.
	30	90-330	GJL36030M04							
	50	150-550	GJL36050M05							
	75	225-825	GJL36075M06							
<b>KAL</b>	150	750-1500	KAL3615026M	1200	4000-8000	45M	NAL36120045M		12094.	
		400-800	KAL3625021M				1650.			
	500-1000	KAL3625022M	1650.							
	625-1250	KAL3625025M	1650.							
	750-1500	KAL3625026M	1650.							
	875-1750	KAL3625029M	1650.							
	1000-2000	KAL3625030M	1650.							
	1125-2250	KAL3625031M	1650.							
	1250-2500	KAL3625032M	1650.							
	1500-3000	KAL3625033M*	1650.							

\* Each Ampere rating can be ordered with any designated trip range for the frame by adding the proper suffix to the catalog numbers.  
 ▼ 250 Vdc ratings are available except on NA. Contact your nearest Square D/Schneider Electric sales office for trip range. No UL component recognition.  
 ▲ UL magnetic trip setting tolerances are -20%/+30% from the nominal values shown.  
 \* Not UL Recognized.  
 ☆ No GJL I-LINE available.  
 ● POWERPACT® MAG-GARD motor circuit protectors are listed on Page 6-17.

**Molded Case Switches and Automatic Molded Case Switches ◊**

**AUTOMATIC** molded case switches open instantaneously at a factory preset magnetic trip point, calibrated to protect only the molded case switch itself, when it is subjected to high fault currents. The trip point is nonadjustable and provides no overload or low level fault protection.

**STANDARD** molded case switches provide no overcurrent protection or short-circuit protection. They must not be used on systems that have an available fault current greater than the values listed in the table to the right.

Molded case switches open when the handle is switched to the OFF position or in response to an auxiliary tripping device such as a shunt trip.

All standard and automatic switches will accept the same lugs and accessories as equivalent thermal-magnetic circuit breakers, with the exception of the QOU and Q2 models.

Standard and automatic molded case switches are UL Listed per UL 1087 and are CSA Certified.

Ampere Rating	2-pole		3-pole		Withstand Rating■				Trip Point – Amperes (Automatic Switch)		Lug Kit Installed
	Catalog No.	Price	Catalog No.	Price	240 Vac	480 Vac	600 Vac	250 Vdc	AC‡	DC‡	

**Standard Molded Case Switches**  
240 Vac Standard

60	QO200	\$ 44.70	QO300	\$157.00	10k				N/A	N/A	N/A
60	QOU200	55.00	QOU300	181.00	10k				N/A	N/A	N/A
100	QO2000	127.00	QO3000	232.00	10k				N/A	N/A	N/A
100	QOU2000	156.00	QOU3000	264.00	10k				N/A	N/A	N/A
125	QOU20001	287.00	QOU30001	454.00	10k				N/A	N/A	N/A

**Automatic Molded Case Switches**  
240 Vac Automatic

225	Q2L2000M	\$ 279.00	Q2L3000M	\$ 757.00	10k				4500	N/A	N/A
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**600 Vac Automatic**

100	FHL26000M*	\$ 494.00	FHL36000M*	\$ 635.00	65k	25k	18k	10k	1500	1725	AL100FA
150	—	—	FHL3600015M*	952.00	65k	25k	18k	—	2500	—	AL150FA
250	KHL26000M*	1160.00	KHL36000M*	1451.00	65k	35k	25k	10k	4500	5175	AL250KA
400	LHL26000M	2283.00	LHL36000M	2749.00	65k	35k	25k	10k	8000	9600	AL400LA
600	MHL26000M	3390.00	MHL36000M	4180.00	65k	65k	25k	10k	9000	9900	AL900MA
800	MHL260008M	3804.00	MHL360008M	4594.00	65k	65k	25k	10k	9000	9900	AL900MA
1000	MHL26000M	4742.00	MHL36000M	5896.00	65k	65k	25k	10k	9000	9900	AL900MA
1200	NCL2600012M	6912.00	NCL3600012M	7981.00	125k	100k	65k		16000	N/A	AL1200NE6
2000	PHF260000M	10055.00	PHF360000M	12418.00	125k	100k	65k		16000	N/A	N/A
2500	PCF260000M	15990.00	PCF360000M	19765.00	125k	100k	65k		16000	N/A	N/A

■ The Withstand Rating is the fault current, at rated voltage, that the molded case switch will withstand without damage when protected by a circuit breaker with an equal continuous current rating.  
 ‡ UL magnetic trip setting tolerances are -20% and +30% from the nominal values shown.  
 \* FHL and KHL automatic switches will not accept cylinder lock attachments.  
 ◊ POWERPACT® automatic switches are listed on Page 6-17.



Accessories ..... Pages 6-37–6-39  
 Optional Lugs ..... Pages 6-40, 6-41  
 Dimensions ..... Pages 6-45, 6-46  
 Enclosures ..... Pages 6-47–6-50  
 Catalog Numbering System ..... Page 6-23

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DE2	DE2A
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# Single Motor Branch Circuits

Application Data  
Class 601

**Square D**  
www.squared.com  
FOR CURRENT INFORMATION

## SELECTION TABLES FOR CONDUCTORS, SAFETY SWITCHES AND THERMAL-MAGNETIC CIRCUIT BREAKERS

Based on 1999 NEC Tables  
430-147, 430-148 & 430-150



- Ordinary service for normal starting duty only with acceleration time of 10 seconds or less.
- ▲ Heavy service is jogging or plugging duty or cycling load with over 25 starts per hour or over 5 starts per minute. Energy efficient motors are polyphase motors defined in NEMA Standard MG1 and exhibit high starting current.
- ★ NEC Section 430-22 for Single Motor, Smaller conductors may be permitted for light duty-cycle service per 430-22 (b) Exception No. 1. DC motors operating from a rectified single-phase power supply will require larger conductors per 430-22 (a) Exception No. 2. For motor-generator arc welders, see 630-11.
- † Motor full load currents thru 200 HP are taken from Tables 430-147, 148 and 150 of the NEC. Above 200 HP from UL 98. Select wire size, circuit breakers, or fuses on basis of horsepower rather than nameplate full load current per NEC Article 430-6. **Do not use these values to select overload relay thermal units.** See Digest Pages 16-16 thru 16-36 for selection of thermal units when actual full load current is not known. The voltages listed are rated motor voltages. Corresponding nominal system voltages are 110 to 120, 200 to 208, 220 to 240, 440 to 480 and 550 to 600 volts.
- ‡ Size of switch only is shown in tables above. Fuses should be selected not to exceed maximum percent of full-load current as given in NEC Table 430-152. Above 50 horsepower dc switches are not horsepower rated by UL as Motor Circuit Switches, but as General Use Switches only and are not necessarily capable of interrupting the maximum operating overload current of a motor. See NEC Article 100 for definition of General Use Switch. When protecting a 3-phase, Design E energy efficient motor, the switch is required by NEC 430-109 to have a horsepower rating of not less than 1.4 times that of a motor rated 3-100 hp, or not less than 1.3 times that of a motor rated over 100 hp. Switches shown in this table do not necessarily comply with that requirement.
- ◇ Thermal-magnetic breaker continuous current ratings recommended are approximate for average conditions and are based on trip characteristics of Square D circuit breakers and NEC Table 430-152. Under some conditions, the next size larger switch or breaker rating may be necessary to accommodate the motor starting current and is permitted by NEC 430-52(c)(1) Exception 2. High starting currents are anticipated with Design E and other energy efficient motors. For explanation of Code letter markings, see NEC 430-7(b). For Busway Plug-in units, see Page 9-7.
- \* Thermal-magnetic breaker continuous current ratings recommended are approximate for average conditions and based on trip characteristics of Square D circuit breakers and NEC Tables 430-7(b) and 430-152.

† Motor full load currents thru 200 HP are taken from Tables 430-147, 148 and 150 of the NEC. Above 200 HP from UL 98. Select wire size, circuit breakers, or fuses on basis of horsepower rather than nameplate full load current per NEC Article 430-6. **Do not use these values to select overload relay thermal units.** See Digest Pages 16-16 thru 16-36 for selection of thermal units when actual full load current is not known. The voltages listed are rated motor voltages. Corresponding nominal system voltages are 110 to 120, 200 to 208, 220 to 240, 440 to 480 and 550 to 600 volts.

‡ Size of switch only is shown in tables above. Fuses should be selected not to exceed maximum percent of full-load current as given in NEC Table 430-152. Above 50 horsepower dc switches are not horsepower rated by UL as Motor Circuit Switches, but as General Use Switches only and are not necessarily capable of interrupting the maximum operating overload current of a motor. See NEC Article 100 for definition of General Use Switch. When protecting a 3-phase, Design E energy efficient motor, the switch is required by NEC 430-109 to have a horsepower rating of not less than 1.4 times that of a motor rated 3-100 hp, or not less than 1.3 times that of a motor rated over 100 hp. Switches shown in this table do not necessarily comply with that requirement.

◇ Thermal-magnetic breaker continuous current ratings recommended are approximate for average conditions and are based on trip characteristics of Square D circuit breakers and NEC Table 430-152. Under some conditions, the next size larger switch or breaker rating may be necessary to accommodate the motor starting current and is permitted by NEC 430-52(c)(1) Exception 2. High starting currents are anticipated with Design E and other energy efficient motors. For explanation of Code letter markings, see NEC 430-7(b). For Busway Plug-in units, see Page 9-7.

\* Thermal-magnetic breaker continuous current ratings recommended are approximate for average conditions and based on trip characteristics of Square D circuit breakers and NEC Tables 430-7(b) and 430-152.

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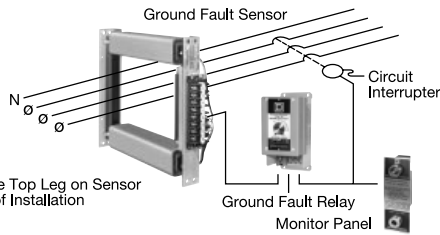
Contact your nearest Square D/Schneider Electric sales office for circuit breaker selection on constant horsepower multi-speed motors.

Horsepower Ratings									I-LINE Thermal-Magnetic ◇ Inverse Time Circuit Breaker			‡ QMB and Heavy Duty Switch with Time Delay Fuses	★ Minimum Size Metallic Conduit 75°C, Copper Wire Field Installed Sized for 125% FLA							
Squirrel-Cage and Wound-Rotor Motors with Norm. Torque Characteristics Operating at Usual Speeds						Average Direct Current Motors Operating at Base Speed	† Full Load Amps	For Motor Code Letter B to E		For Motor Code Letter F to V *	AWG kcmil		Conduit 3 W							
Three Phase 60Hz ac								120 V DC	240 V DC				■ Ordinary Service	▲ Heavy Service and Energy Efficient	THHN THWN XHHW	THW				
200 V Volts	230 Volts	460 Volts	575 Volts	115 Volts	200 V Volts	230 Volts	120 V DC	240 V DC	200 V	250 V	300 V	350 V	400 V	450 V	500 V	600 V	700 V	800 V	900 V	1000 V
2	5	7 1/2	1	3/4	1	2	3/4	2	6.9	15FA	15FA	20FA	30A	#14	1/2"	N/A				
									7.2	15FA	15FA	20FA								
									7.6	15FA	15FA	20FA								
									7.8	15FA	20FA	20FA								
									7.9	15FA	20FA	20FA								
	8.0	15FA	20FA	20FA																
	8.5	15FA	20FA	20FA																
	9.0	15FA	20FA	25FA																
	9.2	15FA	20FA	25FA																
	9.5	15FA	20FA	25FA																
3	7 1/2	10	1 1/2	1 1/2	2	3	1 1/2	3	10.0	15FA	15FA	20FA	60A	#12	1/2"	N/A				
									11.0	20FA	25FA	30FA								
									11.5	20FA	25FA	30FA								
									12.0	20FA	20FA	30FA								
									12.2	25FA	25FA	35FA								
	13.2	25FA	25FA	35FA																
	13.8	25FA	30FA	35FA																
	14.0	25FA	30FA	35FA																
	15.2	30FA	35FA	40FA																
	16.0	30FA	35FA	40FA																
5	15	15	3	3	3	5	5	5	17.0	30FA	35FA	45FA	100A	#10	1/2"	N/A				
									17.5	35FA	35FA	45FA								
									19.6	35FA	40FA	50FA								
									20.0	40FA	40FA	50FA								
									21.0	40FA	45FA	60FA								
	22.0	40FA	45FA	60FA																
	24.0	45FA	50FA	60FA																
	25.0	50FA	50FA	70FA																
	25.3	50FA	60FA	70FA																
	27.0	50FA	60FA	70FA																
7 1/2	20	25	5	5	5	7 1/2	7 1/2	7 1/2	28.0	50FA	60FA	70FA	200A	#8	1/2"	3/4"				
									29.0	60FA	60FA	80FA								
									32.0	60FA	70FA	80FA								
									32.2	60FA	70FA	90FA								
									34.0	60FA	70FA	90FA								
	38.0	80FA	80FA	100KA																
	40.0	80FA	80FA	100KA																
	41.0	80FA	90FA	110KA																
	42.0	80FA	90FA	110KA																
	46.0	90FA	110KA	125KA																
15	40	50	10	10	10	15	15	15	48.3	90FA	110KA	125KA	400A	#6	3/4"	1"				
									50.0	90FA	110KA	125KA								
									52.0	90FA	110KA	150KA								
									54.0	90FA	110KA	150KA								
									55.0	90FA	110KA	150KA								
	56.0	90FA	125KA	150KA																
	57.5	90FA	125KA	150KA																
	58.0	90FA	125KA	150KA																
	62.0	100FA	125KA	175KA																
	62.1	100FA	125KA	175KA																
20	50	60	10	10	10	20	20	20	65.0	100FA	150FA	175KA	600A	#4	1"	1"				
									68.0	100FA	150KA	175KA								
									72.0	110KA	150KA	200KA								
									76.0	125KA	175KA	200KA								
									77.0	110KA	175KA	200LA								
	78.2	110KA	175KA	200LA																
	80.0	110KA	175KA	200LA																
	89.0	125KA	175KA	225LA																
	92.0	125KA	200LA	250LA																
	96.0	125KA	200LA	250LA																
25	60	75	15	15	15	25	25	25	99.0	150KA	200LA	250LA	1000A	#3	1"	1 1/4"				
									100.0	150KA	200LA	250LA								
									104.0	150KA	225LA	300LA								
									106.0	175KA	225LA	300LA								
									120.0	175KA	250LA	300LA								
	124.0	200KA	250LA	350LA																
	125.0	200KA	250LA	350LA																
	130.0	200KA	300LA	350LA																
	140.0	200LA	300LA	350LA																
	144.0	200LA	300LA	400MA																
30	75	100	20	20	20	40	40	40	154.0	225LA	350LA	400MA	2000A	2/0"	1 1/2"	1 1/2"				
									156.0	225LA	350LA	400MA								
									173.0	250LA	350LA	400MA								
									177.0	250LA	400MA	500MA								
									180.0	250LA	400MA	500MA								
	192.0	250LA	400MA	500MA																
	221.0	300LA	450MA	600MA																
	240.0	350LA	500MA	600MA																
	242.0	350LA	500MA	700MA																
	248.0	350LA	500MA	700MA																
40	100	125	25	25	25	50	50	50	285.0	400LA	600MA	800MA	4000A	3/0	1 1/2"	2"				
									289.0	400LA	600MA	800MA								
									302.0	400LA	700MA	800MA								
									312.0	450MA	700MA	800MA								
									336.0	500MA	700MA	900MA								
	359.0	600MA	800MA	900MA																
	360.0	600MA	800MA	1000NA																
	361.0	600MA	800MA	1000NA																
	382.0	600MA	800MA	1000NA																
	414.0	600MA	900MA	1200NA																
50	125	150	30	30	30	60	60	60	472.0	800MA	1000NA	1200NA	6000A	4/0	2"	2"				
									477.0	800MA	1000NA	1200NA								
									480.0	800MA	1000NA	1200NA								
									552.0	800MA	1200NA	1600PA								
									590.0	900MA	1200NA	1600PA								
	602.0	900MA	1200NA	1600PA																
	602.0	900MA	1200NA	1600PA																
	602.0	900MA	1200NA	1600PA																
	602.0	900MA	1200NA	1600PA																
	602.0	900MA	1200NA	1600PA																
602.0	900MA	1200NA	1600PA																	

● #8 XHHW requires 3/4" conduit for 3W. ▼ 200 V. motors are commonly used on 208V. services.







Removable Top Leg on Sensor For Ease of Installation

**Type GC Features:**

- 120 Vac 50/60 Hz power required (50 VA min.). Contact your nearest Square D/Schneider Electric sales office on additional VA requirement of circuit breaker or BOLT-LOC®.
- Ground-fault current pickup adjustable from 100-1200 Amperes.
- Time delay field adjustable 0.1, 0.2, 0.3, or 0.5 seconds.
- Monitor panel provides visual ground-fault indication and testing provisions to meet NEC 230-95. (Requires 50 VA control power, 120 Vac). Monitor panel components must be ordered separately.
- 120 Vac shunt trip is required on the circuit breaker or the BOLT-LOC® switch to interrupt the circuit.
- Zone-selective interlocking capability with MICROLOGIC® circuit breakers and GC systems is standard for multiple level protection. ▲

**GROUND-CENSOR® Type GC 100 – 600 Vac**

Type GC GROUND-CENSOR equipment ground-fault protection systems are ideally suited for protection of main and feeder circuits on solidly grounded electrical distribution systems. The GC system requires the following components: GC relay, GT sensor, circuit interrupter with 120 Vac shunt trip, and monitor components. ■

Description	Usable Window Size		Catalog Number	Price
	Inches	mm		
Type GC Relay	...	...	GC-100	\$1879.
Ground-fault Sensors	5½ x 8½	(140 x 216)	GT 912	1123.
	5½ x 14½	(140 x 368)	GT 918	1307.
	5½ x 26½	(140 x 673)	GT 930	1756.
	8½ x 14½	(216 x 368)	GT 1218	1679.
	8½ x 20½	(216 x 521)	GT 1224	1842.
	8½ x 26½	(216 x 673)	GT 1230	2061.
	11½ x 26½	(292 x 673)	GT 1530	2366.
	9½ x 24	(241 x 610)	GT 1327	1806.
	9½ x 27	(241 x 686)	GT 1330	2044.
■ Monitor Components Type GC	Test Button		Class 9001 Type K1L38GH2	
Test With and Without Tripping	Reset Button		Class 9001 Type K1L38RH1	
	Test Relay		Class 8501 Type RS14, 120 Vac	
	Relay Socket		Class 8501 Type NR45	

A nameplate is supplied with each GC100 giving operation instructions for "Test With and Without Tripping" arrangement.  
 ■ Order components individually for monitor.  
 ▲ When using zone-selective interlocking with MICROLOGIC circuit breakers, a restraint interface module will be required. See Supplemental Digest.

**GC-200 Ground-fault System**

GC-200 Ground Fault Relays work in conjunction with new Square D bolted pressure switches, or circuit breaker shunt trip coils installed in service entrance switchboards. GC-200 relays replace existing Square D GC-100 relays.

**GC-200 Relays Features**

- Adjustable Pickup and Time Delay settings
- I<sup>2</sup>t – Inverse Time Characteristics
- ZSI – Zone Selective Interlocking
- ZSI Push-to-Test with Signal Indication
- Closing Contacts (2 N./O., 1 N./C.)
- Auxiliary Input Terminals
- External Battery Backup Connection
- Optional GCDSP Display Module

**GCDSP Display Features**

- LCD Back Lit Display
- Surface Mounted
- Local Display of System Parameters
- "Fine tuning" Adjustment of Ground Fault Relay Pickup Settings
- Remote Testing of Ground Fault Relay
- Remote Resetting of Ground Fault Relay
- Multiple Length Display Cables ( Optional )

**GFR Features** – Adjustable Pickup and Time Delay Settings – The following tables illustrate the ground fault pickup and time delay settings available for each relay:

Catalog Number	Adjustable Pickup Settings									
GC-200D	30 A	90 A	90 A	120 A	150 A	180 A	210 A	240 A	270 A	300 A
GC-200E	120 A	240 A	360 A	480 A	600 A	720 A	840 A	960 A	1080 A	1200 A

Catalog Number	Adjustable Time Delay Settings									
GC-200D ★	0.1	0.2	0.3	0.5	0.5	0.3	0.2	0.1	0	...
GC-200E ★	0.1	0.2	0.3	0.5	0.5	0.3	0.2	0.1	0	...

★ Note: I<sup>2</sup>t inverse time on and off settings are available for GC-200D and GC-200E.

Catalog Number	Description	Price
GC-200D	30 A–300 A Relay	\$1879.
GC-200E	120 A–1200 A Relay	1879.
GCDSP	GC-200 Display	602.
GC4★	4' GC-200 to GCDSP Cable	61.
GC12	12' GC-200 to GCDSP Cable	100.
GC30	30' GC-200 to GCDSP Cable	191.

Catalog Number	Description	Window Size (in)	Window Size (mm)	Price
GT 912	Ground Fault Sensor	5½ x 8½	(140 x 216)	\$1123.
GT 918		5½ x 14½	(140 x 368)	1307.
GT 930		5½ x 26½	(140 x 673)	1756.
GT 1218		8½ x 14½	(216 x 368)	1679.
GT 1224		8½ x 20½	(216 x 521)	1842.
GT 1230		8½ x 26½	(216 x 673)	2061.
GT 1530		11½ x 26½	(292 x 673)	2366.
GT 1327		9½ x 24	(241 x 610)	1806.
GT 1330		9½ x 27	(241 x 686)	2044.

★ Note: GC4 4' cable shipped standard with GCDSP display units.

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## GROUND-CENSOR® Type GA – 600 Vac

The Type GA GROUND-CENSOR equipment ground-fault protection system is recommended for protection of motor branch circuits. The type GA system is not recommended for service entrance applications, see GC system on previous page. The GA system requires the following components: GA relay, GA sensor, and circuit interrupter with 120 Vac shunt trip. GA test panel is optional, however sensor selected must be compatible with test panel when one is used★.

### Type GA System Features:

- Ground-fault current pickup adjustable from 4-1200 Amperes, dependent on the sensor used and the connections.
- Time delay field adjustable from instantaneous to 36 cycles.
- Test panel available to meet NEC 230-95. Test with or without tripping. Requires 120 Vac 50/60 Hz power (50 VA min.).
- 120 Vac shunt trip is required on the circuit breaker to interrupt the circuit.
- Relay contacts are rated for 10 Amperes continuous @ 250 Vac UL Listed..

Description		Ground-fault Trip Range	Catalog Number	Price
Instantaneous relay Time delay relay (for motor starter applications)		Dependent on sensor and connections	GA 12 GAT 12	\$629. 907.
Sensor Type GA▼	Window Size 3¾" Diameter 3¾" Diameter 2½" Diameter 7⅞" x 11¼" 7⅞" x 15¾" 7⅞" x 24⅞"	4-12, 12-36 Amperes 4-12 Amperes 4-12 Amperes 25-75, 50-150, 150-450, 400-1200 Amperes 50-150, 150-450, 400-1200 Amperes 150-400, 400-1200 Amperes	GA 375T GA 375★ GA 250★ GA 811 GA 816 GA 825	426. 388. 359. 769. 873. 1057.
Test Panel		Same As Sensor	GA 12TPM	1009.

★ Does not have connections for test panel.

▼ Requires 2 inch clearance from current carrying wires on all sides.

## MICROLOGIC® Add-on Ground-fault Modules (GFM)

The MICROLOGIC ground-fault Module (GFM) is a UL Listed circuit breaker accessory. It is a combination ground-fault relay and ground-fault sensing device.

### MICROLOGIC Add-on Ground-fault Module Features:

- Used in combination with the FA, KA, FC, KC, FI, and KI type circuit breakers with a ground-fault shunt trip factory installed.
- Molded case circuit breakers used with the GFM require ground-fault shunt trip (add the suffix "G" to the circuit breaker).
- Adjustable ground-fault pickup levels.
- Adjustable ground-fault time delays.
- Integral ground fault push-to-test feature and ground-fault indicator.
- All GFMs supplied for I-LINE mounting, easily convertible to unit mount by removing the I-LINE brackets.
- Neutral current transformer is supplied for 3-phase 4-wire applications. Refer to instructions for proper installation.
- Zone-selective interlocking capability is standard with upstream MICROLOGIC trip system circuit breakers. The GFM can also be zone interlocked with the GC ground-fault system by using a restraint interface module. See Supplementary Catalog.
- 120 Vac control power is required for integral test feature. Meets NEC 230-95(c).

### Module/Enclosure Selection Chart

Companion Circuit Breaker Prefix	Catalog Number	Enclosure Space Required		Ground-fault Pickup Adjustment Range Amperes	GFM Price
		I-LINE Switchboard	Individual Enclosure*		
FAL, FHL, FCL, FA, FH, FC	GFM100FA	LA	KA	20-100	\$2698.
FI	GFM100FI	LA	—	20-100	2698.
KAL, KHL, KI, KA, KH, KC	GFM250	LA	LA	40-200	2698.
FIL	GFM100FI	—	Factory installed only. See page 6-49	20-100	2698.
KCL, KIL	GFM250	—		40-200	2698.

\* Use NEMA Type 1 or Type 3R enclosures only. See Page 6-48 for dimensions. For NEMA Type 4, 4X, 5 Stainless Steel or Type R enclosures, see Page 6-49.



**MICROLOGIC® Series B Trip System**



**Circuit Breakers with MICROLOGIC Standard-function Trip Systems (LX, LXI, MX, NX and PX)**



**Circuit Breakers with MICROLOGIC Full-Function Trip Systems (LE, ME, NE, PE and SE)**



**SE**

**Standard-function Features:**

- 80% Rated
- True RMS Sensing
- Interchangeable Rating Plugs
- LSI, LS(I)G, Trip Configurations
- Short-time Delay = I<sup>2</sup>t IN and Ground-fault Delay = I<sup>2</sup>t OUT
- Integral Ground-fault Testing
- LED Long-time Pickup Indication
- Thermal & Magnetic Backup Protection
- Long-time & Ground-fault Memory
- Optional Local Trip Indicators - Overload, Short-circuit, Ground- fault
- Optional Local Ammeter/Trip Indicator
- Universal Test Set Available
- Optional I-LINE® Mounting (LX, LXI, MX, NX)
- Optional Neutral Current Transformer for 4-Wire Systems

**Full-function Features:**

- 100% Rated (600 sensor LE/LEL and 2500 sensor PEF circuit breakers are 80% rated)
- True RMS Sensing
- Interchangeable Rating Plugs
- POWERLOGIC® Compatible
- LI, LIG, LS(I), LS(I)G (Instantaneous OFF) Configurations
- Short-time Delay = I<sup>2</sup>t IN & I<sup>2</sup>t OUT and Ground-fault Delay = I<sup>2</sup>t IN & I<sup>2</sup>t OUT
- Short-time Withstand Rating
- Integral Ground-fault Testing
- **Optional Ground-fault Alarm (No Trip)** (Requires CIM3F with POWERLOGIC or see Bulletin 0602PD9701.)
- LED Long-time Pickup Indication
- Zone Selective Interlocking (Short-time & Ground-fault)
- Thermal & Magnetic Backup Protection
- Long-time & Ground-fault Memory
- Local Trip Indicators - Overload, Short-circuit, Ground-fault
- Local Ammeter/Trip Indicator
- Universal Test Set Available
- Optional I-LINE® Mounting (LE, ME, NE)
- Optional Neutral Current Transformer for 4-Wire Systems

**SE 250 to 4000 A Electronic Trip Insulated Case Circuit Breaker:**

- Ideal for switchboard applications (standard for Square D)
  - Complies with UL 489
  - UL Listed for continuous operation at 100% of the current ratings
  - 80 to 4000 ampere continuous current ratings
  - High short time ratings
  - Drawout or fixed-mounted circuit breaker
  - Two-step stored energy mechanism (mechanically or electrically operated) 5 cycle closing times
  - True RMS sensing
  - Adjustable LSIG trip functions
  - Interchangeable rating plugs
  - Local electronic trip indication and local current meter
  - Field replaceable accessories
  - Zone Selective Interlocking
  - POWERLOGIC® compatible communications
  - Complete system solutions – switchboards (main-tie-main, zone selective interlocking, and modified differential ground fault schemes)
- Please refer to the Supplemental Digest for selection and pricing information.

Accessories ..... Pages 6-35, 6-37–6-39  
 Optional Lugs ..... Pages 6-40, 6-41  
 Dimensions ..... Pages 6-45, 6-46  
 Enclosures ..... Pages 6-47–6-50

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# Electronic Trip Circuit Breakers

600 A Frame  
Class 661

**Square D**  
www.squared.com  
FOR CURRENT INFORMATION

## L Frame – 600 A, MICROLOGIC Trip System 3-Pole, 600 V

Sensor Size	Ampere Rating	Trip Function	Standard Function		Standard Function Current Limiting		100% Rated▲ Full Function★		Installed Rating Plug	Terminal Wire Range
			Catalog Number	List Price	Catalog Number	List Price	Catalog Number	List Price		
250	100	LI	LXL36100	\$3566.	LXIL36100	\$ 7150.	LEL36100LI	\$ 4884.	ARP040	AL600LI35 2-#1 AWG- 350 kcmil
		LSI	LXL36100G	4883.	LXIL36100G	8467.	LEL36100LS	8276.		
	LIG					LEL36100LIG	6202.			
	LSIG					LEL36100LSG	9594.			
	125	LI	LXL36125	3566.	LXIL36125	7150.	LEL36125LI	4884.		
		LSI	LXL36125G	4883.	LXIL36125G	8467.	LEL36125LS	8276.		
		LIG					LEL36125LIG	6202.		
	LSIG					LEL36125LSG	9594.			
150	LI	LXL36150	3566.	LXIL36150	7150.	LEL36150LI	4884.			
	LSI	LXL36150G	4883.	LXIL36150G	8467.	LEL36150LS	8276.			
	LIG					LEL36150LIG	6202.			
	LSIG					LEL36150LSG	9594.			
175	LI	LXL36175	3566.	LXIL36175	7150.	LEL36175LI	4884.			
	LSI	LXL36175G	4883.	LXIL36175G	8467.	LEL36175LS	8276.			
	LIG					LEL36175LIG	6202.			
	LSIG					LEL36175LSG	9594.			
200	LI	LXL36200	3566.	LXIL36200	7150.	LEL36200LI	4884.			
	LSI	LXL36200G	4883.	LXIL36200G	8467.	LEL36200LS	8276.			
	LIG					LEL36200LIG	6202.			
	LSIG					LEL36200LSG	9594.			
225	LI	LXL36225	3566.	LXIL36225	7150.	LEL36225LI	4884.			
	LSI	LXL36225G	4883.	LXIL36225G	8467.	LEL36225LS	8276.			
	LIG					LEL36225LIG	6202.			
	LSIG					LEL36225LSG	9594.			
250	LI	LXL36250	3566.	LXIL36250	7150.	LEL36250LI	4884.			
	LSI	LXL36250G	4883.	LXIL36250G	8467.	LEL36250LS	8276.			
	LIG					LEL36250LIG	6202.			
	LSIG					LEL36250LSG	9594.			
400	300	LI	LXL36300	5471.	LXIL36300	10412.	LEL36300LI	6788.	ARP075	AL600LI5 2-#4/0 AWG- 500 kcmil
		LSI	LXL36300G	6788.	LXIL36300G	11730.	LEL36300LS	10180.		
	LIG					LEL36300LIG	8106.			
	LSIG					LEL36300LSG	11498.			
350	LI	LXL36350	5471.	LXIL36350	10412.	LEL36350LI	6788.			
	LSI	LXL36350G	6788.	LXIL36350G	11730.	LEL36350LS	10180.			
	LIG					LEL36350LIG	8106.			
	LSIG					LEL36350LSG	11498.			
400	LI	LXL36400	5471.	LXIL36400	10412.	LEL36400LI	6788.			
	LSI	LXL36400G	6788.	LXIL36400G	11730.	LEL36400LS	10180.			
	LIG					LEL36400LIG	8106.			
	LSIG					LEL36400LSG	11498.			
450	450	LI	LXL36450	8007.	LXIL36450	14762.	LEL36450LI	9326.	ARP075	
		LSI	LXL36450G	9325.	LXIL36450G	16079.	LEL36450LS	12718.		
	LIG					LEL36450LIG	10644.			
	LSIG					LEL36450LSG	14037.			
500	500	LI	LXL36500	8007.	LXIL36500	14762.	LEL36500LI	9326.		
		LSI	LXL36500G	9325.	LXIL36500G	16079.	LEL36500LS	12718.		
	LIG					LEL36500LIG	10644.			
	LSIG					LEL36500LSG	14037.			
600▲	600	LI	LXL36600	8007.	LXIL36600	14762.	LEL36600LI	9326.		
		LSI	LXL36600G	9325.	LXIL36600G	16079.	LEL36600LS	12718.		
	LIG					LEL36600LIG	10644.			
	LSIG					LEL36600LSG	14037.			

▲ 600 Ampere sensor is 80% rated  
★ Substitute (A) in place of (G) for ground-fault alarm (pick up indication only). No instantaneous OFF position for LI or LIG circuit breakers.

### Interrupting Ratings (kA)

	LXL	LEL	LXIL
240 V	100	100	200
480 V	65	65	200
600 V	35	35	100

Accessories .....Pages 6-35, 6-37-6-39  
Optional Lugs .....Pages 6-40, 6-41  
Dimensions.....Page 6-45, 6-46  
Enclosures.....Pages 6-47-6-50



**M Frame—800 A, MICROLOGIC Trip System**  
**3-Pole, 600 V**

Sensor Size	Ampere Rating	Trip Function	Standard Function		100% Rated, Full Function ★		Installed Rating Plug	Terminal Wire Range
			Catalog Number	List Price	Catalog Number	List Price		
800	450	LI	...	...	MEL36450LI	\$11381.	ARP056	AL900MA 3-#3/0-500 kcmil
		LSI	MXL36450	\$ 8711.	MEL36450LS	14773.		
		LIG	...	...	MEL36450LIG	14773.		
		LSIG	MXL36450G	10029.	MEL36450LSG	18165.		
	500	LI	...	...	MEL36500LI	11381.	ARP063	
		LSI	MXL36500	8711.	MEL36500LS	14773.		
		LIG	...	...	MEL36500LIG	14773.		
		LSIG	MXL36500G	10029.	MEL36500LSG	18165.		
	600	LI	...	...	MEL36600LI	11381.	ARP075	
		LSI	MXL36600	8711.	MEL36600LS	14773.		
		LIG	...	...	MEL36600LIG	14773.		
		LSIG	MXL36600G	10029.	MEL36600LSG	18165.		
	700	LI	...	...	MEL36700LI	11381.	ARP088	
		LSI	MXL36700	8711.	MEL36700LS	14773.		
		LIG	...	...	MEL36700LIG	14773.		
		LSIG	MXL36700G	10029.	MEL36700LSG	18165.		
	800	LI	...	...	MEL36800LI	11381.	ARP100	
		LSI	MXL36800	8711.	MEL36800LS	14773.		
		LIG	...	...	MEL36800LIG	14773.		
		LSIG	MXL36800G	10029.	MEL36800LSG	18165.		

**N Frame—1200 A, MICROLOGIC Trip System**  
**3-Pole, 600 V**

Sensor Size	Ampere Rating	Trip Function	Standard Function		100% Rated, Full Function ★		Installed Rating Plug	Terminal Wire Range
			Catalog Number	List Price	Catalog Number	List Price		
1200	600	LI	...	...	NEL36600LI	\$20553.	ARP050	AL1200NE6 4-#3/0-600 kcmil
		LSI	NXL36600	\$13252.	NEL36600LS	23945.		
		LIG	...	...	NEL36600LIG	23945.		
		LSIG	NXL36600G	14570.	NEL36600LSG	27337.		
	700	LI	...	...	NEL36700LI	20553.	ARP058	
		LSI	NXL36700	13252.	NEL36700LS	23945.		
		LIG	...	...	NEL36700LIG	23945.		
		LSIG	NXL36700G	14570.	NEL36700LSG	27337.		
	800	LI	...	...	NEL36800LI	20553.	ARP067	
		LSI	NXL36800	13252.	NEL36800LS	23945.		
		LIG	...	...	NEL36800LIG	23945.		
		LSIG	NXL36800G	14570.	NEL36800LSG	27337.		
	900	LI	...	...	NEL36900LI	20553.	ARP075	
		LSI	NXL36900	13252.	NEL36900LS	23945.		
		LIG	...	...	NEL36900LIG	23945.		
		LSIG	NXL36900G	14570.	NEL36900LSG	27337.		
	1000	LI	...	...	NEL361000LI	20553.	ARP083	
		LSI	NXL361000	13915.	NEL361000LS	23945.		
		LIG	...	...	NEL361000LIG	23945.		
		LSIG	NXL361000G	15233.	NEL361000LSG	27337.		
	1200	LI	...	...	NEL361200LI	20553.	ARP100	
		LSI	NXL361200	13915.	NEL361200LS	23945.		
		LIG	...	...	NEL361200LIG	23945.		
		LSIG	NXL361200G	15233.	NEL361200LSG	27337.		

★ Substitute (A) in place of (G) for ground-fault alarm (pick up indication only). No instantaneous OFF position for LI or LIG circuit breakers.

**6 CIRCUIT BREAKERS**

**Interrupting Ratings (kA)**

	MXL	MEL	NXL	NEL
240 V	65	65	125	125
480 V	65	65	100	100
600 V	25	25	65	65

Accessories .....Pages 6-35, 6-37–6-39  
Optional Lugs .....Pages 6-40, 6-41  
Dimensions .....Page 6-45, 6-46  
Enclosures .....Pages 6-47–6-50



# Electronic Trip Circuit Breakers

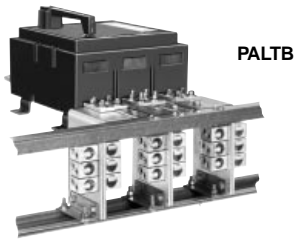
2500 A Frame

Class 677



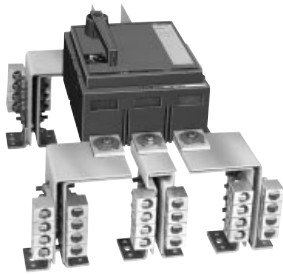
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PALTB

PXF-12, PEF-12, PXF-16, PEF-16, and PXF-20 circuit breakers can be bus or cable connected. For cable connections, optional terminal pad kit PALTB or equivalent bus structure is required. Each PALTB kit contains terminal pads for one end of the circuit breaker only and has provisions for mounting a maximum of six lugs per phase. Order lugs separately. See Pages 6-40 and 6-41.



PEF-20, PXF-25 or PEF-25 circuit breakers are supplied with terminal pads for both ends of the circuit breaker. The supplied terminal pads or equivalent bus structure must be used for bus or cable connections. Terminal pads have provisions for mounting a maximum of eight lugs per phase. Order lugs separately. See Pages 6-40 and 6-41.

## P Frame – 2500 A, MICROLOGIC Trip System 3-Pole, 600 V

Sensor Size	Ampere Rating	Trip Function	Standard Function		100% Rated▲, Full Function★		Installed Rating Plug	
			Catalog Number	List Price	Catalog Number	List Price		
1200	600	LI	...	...	PEF36600LI	\$18516.	ARP050	
		LSI	PXF36600	\$11982.	PEF36600LS	21908.		
	LIG	...	...	PEF36600LIG	21908.			
	LSIG	PXF36600G	13300.	PEF36600LSG	25300.			
	700	LI	...	...	PEF36700LI	18516.		ARP058
		LSI	PXF36700	11982.	PEF36700LS	21908.		
1600	800	LIG	...	...	PEF36700LIG	21908.	ARP067	
		LSIG	PXF36700G	13300.	PEF36700LSG	25300.		
	900	LI	...	...	PEF36800LI	18516.		ARP075
		LSI	PXF36800	11982.	PEF36800LS	21908.		
	1000	LIG	...	...	PEF36800LIG	21908.		ARP083
		LSIG	PXF36800G	13300.	PEF36800LSG	25300.		
2000	1200	LI	...	...	PEF36900LI	18516.	ARP100	
		LSI	PXF36900	11982.	PEF36900LS	21908.		
	LIG	...	...	PEF36900LIG	21908.			
	LSIG	PXF36900G	13300.	PEF36900LSG	25300.			
	1400	LI	...	...	PEF361200LI	18516.		ARP100
		LSI	PXF361200	11982.	PEF361200LS	21908.		
2500▲	1600	LIG	...	...	PEF361200LIG	21908.	ARP088	
		LSIG	PXF361200G	13300.	PEF361200LSG	25300.		
	1800	LI	...	...	PEF361400LI	19938.		ARP090
		LSI	PXF361400	13086.	PEF361400LS	23330.		
	2000	LIG	...	...	PEF361400LIG	23330.		ARP100
		LSIG	PXF361400G	14403.	PEF361400LSG	26722.		
2500▲	2000	LI	...	...	PEF361600LI	19938.	ARP100	
		LSI	PXF361600	13086.	PEF361600LS	23330.		
2500▲	1800	LIG	...	...	PEF361600LIG	23330.	ARP090	
		LSIG	PXF361600G	14403.	PEF361600LSG	26722.		
	2000	LI	...	...	PEF361800LI	23654.		ARP100
		LSI	PXF361800	14751.	PEF361800LS	27046.		
	2500▲	LIG	...	...	PEF361800LIG	27046.		ARP0100
		LSIG	PXF361800G	16069.	PEF361800LSG	30438.		
2500▲	2500	LI	...	...	PEF362000LI	23654.	ARP100	
		LSI	PXF362000	14751.	PEF362000LS	27046.		
2500▲	2500	LIG	...	...	PEF362000LIG	27046.	ARP100	
		LSIG	PXF362000G	16069.	PEF362000LSG	30438.		
2500▲	2500	LI	...	...	PEF362500LI	36141.	ARP100	
		LSI	PXF362500	24928.	PEF362500LS	39533.		
2500▲	2500	LIG	...	...	PEF362500LIG	39533.	ARP100	
		LSIG	PXF362500G	26247.	PEF362500LSG	42925.		

▲ 2500 Ampere sensor is 80% rated.

★ Substitute (A) in place of (G) for ground-fault alarm (pick up indication only.) No instantaneous OFF position for LI or LIG circuit breakers.

### Interrupting Ratings (kA)

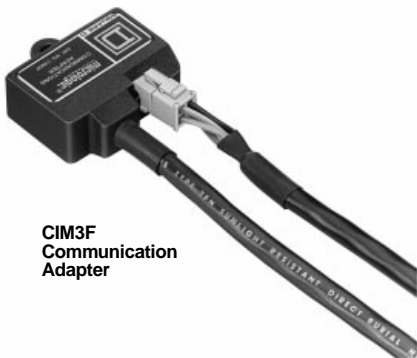
	PXF	PEF
240 V	125	125
480 V	100	100
600 V	65	65

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**Combination Local Current Meter and Trip Indicator**



**CIM3F Communication Adapter**



**Universal Test Set**



**Electronic Trip Unit with Seals Installed to Restrict Access**

**Neutral Current Transformers**

Catalog No.	Price	Sensor	Where Used
LE25CT2	\$373.	250	LXL, LEL, LXIL
LE4CT2	373.	400	LXL, LEL, LXIL
LE6CT2	373.	600	LXL, LEL, LXIL
ME8CT2	373.	800	MXL, MEL
NE12CT2	373.	1200	NXL, NEL
PE12CT2	373.	1200	PXF, PEF
PE16CT2	373.	1600	PXF, PEF
PE20CT2	373.	2000	PXF, PEF
PE25CT2	373.	2500	PXF, PEF

**Electronic Trip Indicator and Current Meter Field-installable Kits**

Device	Catalog No.	Included With Circuit Breaker	Optional	Price
Local Trip Indicator Kit	ALTI	....	LXL, MXL, NXL, LXIL	\$ 928.
Local Trip Indicator Kit	ALTIP	....	PXF	928.
Local Current Meter Kit/Trip Indicator	ALAM	LEL, MEL, NEL, SE	LXL, LXIL, MXL, NXL	1451.
Local Current Meter Kit/Trip Indicator	ALAMP	PEF	PXF	1451.

**Complying with NEC®**

The National Electric Code, Section 240-6(b) exception allows conductor Ampere ratings equal to the selected long-time pick-up setting. Square D offers the seals below to restrict access to trip unit once settings are selected.

Description	Catalog Number	Package Quantity	Price
Trip Unit Seal	TUSEAL	100	\$65.

Description	Catalog Number	Price
Communication Adapter	CIM3F*	\$295.

\* Required for MICROLOGIC® to communicate with POWERLOGIC® system.

**Interchangeable Rating Plug Kits for all Circuit Breakers with MICROLOGIC Trip System**

Catalog No.	Sensor Multiplier Value	Price
ARP040	0.400	\$189.
ARP050	0.500	189.
ARP056	0.563	189.
ARP058	0.583	189.
ARP060	0.600	189.
ARP063	0.625	189.
ARP067	0.667	189.
ARP070	0.700	189.
ARP075	0.750	189.
ARP080	0.800	189.
ARP083	0.833	189.
ARP088	0.875	189.
ARP090	0.900	189.
ARP100	1.000	189.

**Test Equipment for Circuit Breakers with MICROLOGIC Trip Systems ▲**

Description	Catalog Number	Price
Universal Test Set (includes test module for Full-function and Standard-function LEL, LXL, LXIL, MEL, NEL, PEF, SE, MXL, NXL, PXF)	UTS3	\$8903.
Test Module for Full-function and Standard-function LEL, LXL, LXIL, MEL, NEL, PEF, SE, MXL, NXL, PXF. (For use with existing CBTU1 or UTS3 test set.)	CBTMB	1491.
Replacement ribbon cable and rating plug adapter for CBTMB	CBTMBRK	398.
Long-time and ground-fault Memory Reset Module (Series I and II)	MTM2	358.
Long-time and ground-fault Memory Reset Module (Series III Electronics)	MTM3	242.
Long-time and ground-fault Memory Reset Module (Series B Electronics)	MTMB	242.

▲ See Supplemental Digest for more information.

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# EH/EHB and GJL Circuit Breakers

Class 590, 652

**Square D**

www.squared.com

FOR CURRENT INFORMATION

## E Frame – 100 A, Thermal Magnetic (480Y/277 Vac)

Amp Rating	1-Pole 277 V ac — 14,000 AIR 120 Vac — 65,000 AIR		2-Pole 480Y/277 Vac — 14,000 AIR 120/240 Vac — 65,000 AIR		3-Pole 480Y/277 Vac — 14,000 AIR 240 Vac — 65,000 AIR		Wire Size (AWG)		Wire Temp.	
	Requires 1 Space	Requires 1 Space	Requires 2 Spaces	Requires 2 Spaces	Requires 3 Spaces	Requires 3 Spaces				
	Plug-on		Bolt-on		Plug-on		Bolt-on			
	Catalog No.	Price	Catalog No.	Price	Catalog No.	Price	Catalog No.	Price	Al	Cu

## EH/EHB

15	EH14015▲	\$85.	EHB14015▲	\$95.	EH24015	\$214.	EHB24015	\$243.	EH34015	\$387.	EHB34015	\$425.	...	(2)-#14-#10	60/75°C
20	EH14020▲	85.	EHB14020▲	95.	EH24020	214.	EHB24020	243.	EH34020	387.	EHB34020	425.	...	(2)-#14-#10	60/75°C
25	EH14025	85.	EHB14025	95.	EH24025	214.	EHB24025	243.	EH34025	387.	EHB34025	425.	#12-#8	#14-#8	60/75°C
30	EH14030	85.	EHB14030	95.	EH24030	214.	EHB24030	243.	EH34030	387.	EHB34030	425.	#12-#8	#14-#8	60/75°C
35	EH14035	85.	EHB14035	95.	EH24035	214.	EHB24035	243.	EH34035	387.	EHB34035	425.	#12-#2	#14-#2	75°C
40	EH14040	85.	EHB14040	95.	EH24040	214.	EHB24040	243.	EH34040	387.	EHB34040	425.	#12-#2	#14-#2	75°C
45	EH14045	85.	EHB14045	95.	EH24045	214.	EHB24045	243.	EH34045	387.	EHB34045	425.	#12-#2	#14-#2	75°C
50	EH14050	85.	EHB14050	95.	EH24050	214.	EHB24050	243.	EH34050	387.	EHB34050	425.	#12-#2	#14-#2	75°C
60	EH14060	85.	EHB14060	95.	EH24060	214.	EHB24060	243.	EH34060	387.	EHB34060	425.	#12-#2	#14-#2	75°C
70	.....	...	.....	...	.....	...	EHB24070▼	480.	.....	...	EHB34070▼	578.	#4-#2/0	#4-#2/0	75°C
80	.....	...	.....	...	.....	...	EHB24080▼	480.	.....	...	EHB34080▼	578.	#4-#2/0	#4-#2/0	75°C
90	.....	...	.....	...	.....	...	EHB24090▼	480.	.....	...	EHB34090▼	578.	#4-#2/0	#4-#2/0	75°C
100	.....	...	.....	...	.....	...	EHB24100▼	480.	.....	...	EHB34100▼	578.	#4-#2/0	#4-#2/0	75°C

## EH/EHB HID Circuit Breakers — For Use on High Intensity Discharge Lighting Systems

15	EH14015HID▲	94.	EHB14015HID▲	108.	EH24015HID	232.	EHB24015HID	259.	EH34015HID	411.	EHB34015HID	449.	...	(2)-#14-#10	60/75°C
20	EH14020HID▲	94.	EHB14020HID▲	108.	EH24020HID	232.	EHB24020HID	259.	EH34020HID	411.	EHB34020HID	449.	...	(2)-#14-#10	60/75°C
25	EH14025HID	94.	EHB14025HID	108.	EH24025HID	232.	EHB24025HID	259.	EH34025HID	411.	EHB34025HID	449.	#12-#8	#14-#8	60/75°C
30	EH14030HID	94.	EHB14030HID	108.	EH24030HID	232.	EHB24030HID	259.	EH34030HID	411.	EHB34030HID	449.	#12-#8	#14-#8	60/75°C

▲ UL Listed as SWD (switching duty) rated.

▼ For use only in Series 3 or Series E1 panelboards. Contact your nearest Square D/Schneider Electric sales office for use in earlier series panelboards

Electrical and mechanical accessories listed below are for use with GJL instantaneous-trip and thermal-magnetic circuit breakers. All ac electrical accessories shown below are rated for 50/60 Hz.

### Field-installable Electrical Accessories for GJL Circuit Breakers

Accessory	Description	Rated Voltage	Coil Burden	Catalog No.	Price
Shunt Trip	Trips the circuit breaker from a remote location by means of a trip coil energized from a separate circuit. All shunt trips will operate at 55% or more of rated voltage.	AC	50mA	GSA	\$455.
			208	GSB	455.
			240	GSC	455.
			277	GSD	455.
			480	GSH	455.
		DC	24	GSO	455.
			48	GSP	455.
			125	GSR	455.
			250	GSS	455.
			Undervoltage Trip	Trips the circuit breaker electrically when a control circuit falls below 35 to 70% of nominal voltage. (Not field adjustable.) Picks up at 35 to 85% of nominal voltage. UVR must be energized in order to close the circuit breaker.	AC
208	GUB	455.			
240	GUC	455.			
277	GUD	455.			
480	GUH	455.			
DC	24	GUO			455.
	48	GUP			455.
	125	GUR			455.
	250	GUS			455.
	Auxiliary Switch	Monitors circuit breaker contact status and provides a remote signal indicating the circuit breaker contacts are OPEN or CLOSED. Ratings: 3A-600 Vac, 6A-480 Vac, 0.3A-250 Vdc, 0.8A-125 Vdc			
Alarm Switch	Used with control circuits and is actuated only when the circuit breaker has tripped. Ratings: 3A-600 Vac, 6A-480 Vac, 0.3A-250 Vdc, 0.8A-125 Vdc			AAC▲	189.

### Field-installable External Accessories

DIN Rail Adapter	Hardware that allows mounting on standard 35 mm DIN rail.		GYR	59.00
Terminal Shields	Used to prevent accidental contact with live parts.		GYT	47.60
Padlock Attachment	Prevents access to unauthorized personnel. Locks in OFF position only. Suitable for padlock with a shaft diameter up to 0.312 in. (8 mm).		AHP	12.50
Cover Screw Seal	(10) Cover Screw Seals to prevent unauthorized removal of circuit breaker cover.		ACS	11.70

▲ Same accessory – Application depends on installation location. Switch has common and both normally open and normally closed contacts.



Shunt Trip for GJL Circuit Breaker



Undervoltage Trip for GJL Circuit Breaker



Alarm/Auxiliary Switch for GJL Circuit Breaker





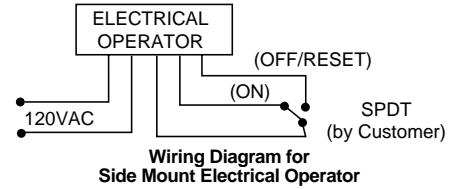
**Electrical Operators**

Provides remote ON, OFF/RESET control of molded case circuit breakers.

- A complete line of field-installable electrical operators.
- Not applicable on LE/LX/LXI, ME/MX or NE/NX circuit breakers.
- Installing side mounted motor operators on non I-LINE® circuit breakers requires the use of a separate mounting pan.
- Side mounted electrical operators require an additional 4½ in. (114mm) of mounting space in I-LINE® installations.

Circuit Breaker Prefix	Top Mount			Side Mount			Mounting Pan	
	Voltage	Catalog No.	Price	Voltage	Catalog No.	Price	Catalog No.	Price
FA, FH, FC	...	...	...	120 Vac	FAMO1	\$ 828.	...	...
FAL, FHL, FCL	...	...	...	120 Vac	FAMO1	828.	FAMOP	\$ 69.
FI, KA, KH, KC, KI	...	...	...	120 Vac	KAMO1	2226.	...	...
FIL, KIL, KAL, KHL, KCL	120 Vac	KAMO2120AC	\$2312.	120 Vac	KAMO1	2226.	KAMOP	85.
	240 Vac	KAMO2240AC	2312.					
	24 Vdc	KAMO224DC	2312.					
	125 Vdc	KAMO2125DC	2312.					
LA, LH, Q4	...	...	...	120 Vac	LAMO1	2869.	...	...
LAL, LHL, Q4L	120 Vac	LAMO2120AC	2987.	120 Vac	LAMO1	2869.	LAMOP	117.
	240 Vac	LAMO2240AC	2987.					
	24 Vdc	LAMO224DC	2987.					
	125 Vdc	LAMO2125DC	2987.					
MA, MH	...	...	...	120 Vac	MAMO1	2869.	...	...
MAL, MHL	120 Vac	MAMO2120AC	2987.	120 Vac	MAMO1	2869.	MAMOP	117.
	240 Vac	MAMO2240AC	2987.					
	24 Vdc	MAMO224DC	2987.					
	125 Vdc	MAMO2125DC	2987.					
PA, PH, PC, PE, PX	120 Vac	PAMO2	3520.	...	...	...	...	...

When remote indication of circuit breaker status is required, order circuit breaker with 1A-1B auxiliary switch for ON-OFF indication and alarm switch for TRIP indication. Electrical operators require SPDT maintained contact switch. Refer to Class 9001 control unit listing for operators and pilot lights.



**KAMO2120AC**  
 With KAL Circuit Breaker



**FAMO1 and FAMOP**  
 With FAL Circuit Breaker

**Cylinder Lock**

Used to lock the circuit breaker in the OFF position. Circuit breaker cannot be reset when locked OFF.

Circuit Breaker Prefix	Catalog Number		Price
	Factory Inst. Suffix	Field Inst.	
FA, FAL, FH, FHL■	—CL	Factory Installed Only	\$200.
KA, KAL, KH, KHL■		200.	
LA, LAL, LH, LHL, Q4	Field Installable Only	LA1CL	200.
MA, MAL, MH, MHL		MA1CL	200.

■ Not available on MAG-GARD circuit breakers and molded case switches.

**Handle Accessories**

Breaker Prefix	No. of Poles	Catalog No.	Price
<b>Handle Lock-Off (locks ON or OFF)</b>			
QO	1	QO1LO	\$2.40
QO, QOU	1,2,3	HLO1	6.30
EH(60A max.)	1,2,3	HLOEH	6.90
<b>Handle Padlock Attachment (locks ON or OFF)</b>			
QOU	1	QOU1PA	6.40
QOU	2,3	QOU1PL	6.40
QOM1	2	QOM1PA	6.90
QOM2	2	QOM2PA	6.90
QO(loose)	1	QOHP1	6.00
QO(fixed)	1	QO1PA	6.80
QO(loose)	2,3	QO1HPL	6.80
QO(fixed)	2,3	QO1PL	6.80
QO-GFI(fixed)	2	GFI2PA	5.80
EH(15-100A)	1,2,3	HPAEH	6.90

Breaker Prefix	No. of Poles	Catalog No.	Price
<b>Handle Tie</b>			
(2)FA	3	FKHT	\$136.00
(2)KA, (2)FI, (2)KI, or (1)FI + (1)KI	2,3	FKHT	136.00
(2)LA or (2)Q4	2,3	LAHT	315.00
(2)QO	1	QO1HT	2.40
(2)QOT	-	QO1HT	2.40
(2)QO	3	QO3HT	8.50
<b>California Title 24 Comb. Handle Tie and Lock Off</b>			
FY	(3)1-Pole	FY3HT	33.10
FA	(3)1-Pole	FA3HT	33.10

Circuit Breaker Prefix	No. of Poles	Catalog No.	Price
<b>Handle Padlock Attachment (locks ON or OFF)</b>			
FY Series 1 Q2	1 2,3	HPAFYQ HPAFYQ	\$12.60
FA, FH, FC, FI FY Series 2, KA, KH, KC, KI	1,2,3 2,3	HPAFK HPAFK	15.30
LA, LH, MA, MH, ME, MX, Q4	2,3	HPALM♦ HPAXLM□	16.50 17.50
NA, NC, NE, NX	2,3	HPANE	16.50
LC, LE, LI, LX, LXI	2,3	AHPALI	16.00
<b>Handle Extension</b>			
MA, MH, ME, MX, NA, NC, NE, NX	2,3	MAHEX	60.00
LA, LC, LH, LE, LI, LX, LXI, Q4	2,3	AHEXLI	60.00

♦ MA, MH, ME, and MX circuit breakers will not lock in ON position.  
 □ Use with MAHEX handle extension.

**Walking Beam Mechanical Interlock Components**

Circuit Breaker		Price Adder	Walking Beam Ass'y.		Mounting Pan	
Prefix	Suffix		Catalog No.	Price	Catalog No.	Price
<b>Manually Operated</b>						
FAL, FHL	WB	\$164.	FA4WB	\$ 85.	FAWBP4	\$112.
KAL	WB	164.	KA4WB	85.	KAWBP4	112.
LAL, LHL	WB	164.	LA6WB	113.	LAWBP6	153.
MAL, MHL	WB	164.	MA9WB	136.	MAWBP9	196.
<b>Electrically Operated</b>						
FAL, FHL	WBMO	\$164.	FA9WB	\$127.	FAWBP9	\$153.
KAL	WBMO	164.	KA9WB	127.	KAWBP9	153.
LAL, LHL	WBMO	164.	LA10WB	135.	LAWBP10	196.
MAL, MHL	WB	164.	MA13WB	159.	MAWBP13	272.

See Pages 6-47-6-50 for Enclosures.  
 Fully enclosed interlocked units are available in Type 1 and Type 3R enclosures, with two neutrals provided in each enclosure. The completely enclosed assembly is not UL Listed. Please consult your nearest Square D/Schneider Electric sales office for more information.

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**Walking Beam Mechanical Interlock**

Requires two circuit breakers with WB suffix, one walking beam assembly and one mounting pan.



# Electrical Accessories

UL Listed  
Class 690

**Square D**  
[www.squared.com](http://www.squared.com)  
FOR CURRENT INFORMATION

Electrical accessories are available on all molded case circuit breakers except FY, Q2, QOM1 and QOB-VH (2-pole 150 A and 3-pole 110-150 A) circuit breakers. All AC electrical accessories shown below are rated for 50/60 Hz. Add 20% to accessory price for each field-installable accessory that is factory installed. See Page 6-39 for field-installable accessories.

## Molded Case Circuit Breakers Factory-installed Electrical Accessories

Accessory	Description	Rated Voltage	Coil Burden†	Suffix	List Price Adder*
SHUNT TRIP	Trips the circuit breaker from a remote location by means of a trip coil energized from a separate circuit. A 120 V shunt trip will operate at 55% or more of rated voltage. All other shunt trips will operate at 75% or more of rated voltage.  <b>Application</b> • For use with momentary or maintained push button. • Sure Trip Capacitor Unit requires 48 Vdc shunt trip. • Leads: (2) Black #18 AWG Cu.	AC 24	21VA	-1042■	\$ 479.
		120	24VA	-1021★	479.
		208	107VA	-1021	479.
		240	154VA	-1021	479.
		277	14VA	-1037■	479.
		480	45VA	-1037	479.
		DC 24	36VA	-1027	479.
		48	36VA	-1028	479.
		125	44VA	-1029	479.
		250	15VA	-1030▲	479.
GROUND-FAULT SHUNT TRIP	Trips the circuit breaker electrically using the signal from a MICROLOGIC® Ground-Fault Module.  <b>Application</b> • For use only with obsolete GP GROUND-CENSOR® system or add on ground-fault module. • Leads: (2) Orange #18 AWG Cu.	...	...	-G▲	479.
UNDER VOLTAGE TRIP	Trips the circuit breaker electrically when a control circuit falls below 35 to 70% of nominal (not field adjustable). Picks up at 35-85% of nominal voltage.  <b>Application</b> • UVR must be energized in order to close the circuit breaker. • Leads: (2) Brown #18 AWG Cu leads.	AC 24 120 240 DC 24 48	5 VA 8 VA 8 VA 2 VA 3 VA	-1143▲◆ -1121 -1124◆ -1127◆ -1128◆	479. 479. 479. 479. 479.
TIME DELAY UNIT	Provides adjustable time delay for UVR of 0.1 to 0.6 second before circuit breaker trips.  <b>Application</b> • For use only with -1121 UV trip. • Adjustable time delay (0.1 to 0.6 second). • I-LINE unit requires 1.5 in. (38 mm) of mounting space. • Leads: (2) Brown #18 AWG Cu and (2) Black/White #18 AWG Cu.	AC 120	Catalog No.		1232.
			Unit Mt.	I-LINE	
			690UVTD	690UVTDI	
AUXILIARY SWITCHES	Monitors circuit breaker contact status and provides a remote signal indicating the circuit breaker contacts are OPEN or CLOSED.  <b>Application</b> • Max. Load = FA, FH, FC, FI, KA, KH, LC, LE, LI, LX, LXI. 10A @ 125-250 Vac ¼hp @ 125-250 Vac, 5A @ 30 Vdc • Leads: Yellow for "A", Blue for "B", Striped for common #18 AWG Cu.	1A/1B	See load info. in App. text at left	-1212	198.
		2A/2B	See load info. in App. text at left	-1352	395.
		3A/3B	See load info. in App. text at left	-1364★	508.
ALARM SWITCHES	Used with control circuits and actuated only when the circuit breaker has tripped. Standard construction includes a normally open contact.  <b>Application</b> • Max. Load = 10 A @ 125-250 Vac 5 A @ 30 Vdc • Leads: (2) Red #18 AWG Cu.	1A	AC 250	-2100	198.
		1A	DC 28	-2100	198.
		1B	AC 250	-2103	198.
		1B	DC 28	-2103	198.

**Note:**  
Alarm switch is the only accessory available for 1-pole FA circuit breakers.

Combination accessories may be ordered by description, i.e., 1021 and 1212.

■ Not available on FI, KI or KC circuit breakers.  
▲ Not available on LC, LE, LI, LX, LXI circuit breakers.  
◆ Not available on ME or MX circuit breakers.

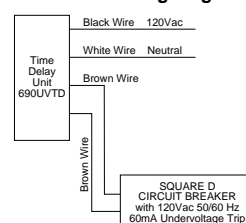
★ LC, LE, LI, LX, and LXI circuit breakers operate at 75% or more of rated voltage.

☆ Not available in FA, FC, FH, FI and KI circuit breakers.

† Coil burden values do not apply to LC, LE, LI, LX and LXI. Consult Field Sales Office for more information.

\* List price for field-installed accessories. See Page 6-39.

### 690UVTD Wiring Diagram



1-pole QO with Shunt Trip

## Miniature Circuit Breakers

Factory-installed electrical accessories take up an additional pole space on EH, EH-PL, QO, QO-GFI, QO-EPD, QO-SWN, QOU and QO-PL circuit breakers. All AC electrical accessories shown below are rated for 50/60 Hz. Accessories are not available for Q2, QOM1 and QOB-VH (2-pole 150 A and 3-pole 110-150 A) circuit breakers or QO molded case switches. QO circuit breakers will accept only one accessory per circuit breaker. EH/EHB circuit breakers will accept multiple accessories. Undervoltage trip is not available on miniature circuit breakers.

Accessory	Description	Rated Voltage	Coil Burden	Suffix	List Price Adder	Accessory	Description	Contact Comb.	Max. Voltage	Max. Load	Suffix	List Price Adder			
SHUNT TRIP	Trips the circuit breaker from a remote location by means of a trip coil energized from a separate circuit. A 120 V shunt trip will operate at 55% or more of rated voltage. All other shunt trips will operate at 75% or more of rated voltage.  <b>Application</b> • For use with momentary or maintained push button. • Not available on QO-GFI, QO-EPD. • Shunt trip terminals accept (2) #14-#12 AWG Cu. • Leads: EHB circuit breakers have (2) Black #16 AWG Cu.	QO Circuit Breakers				AUXILIARY SWITCHES	Monitors circuit breaker contact status and provides a remote signal indicating the circuit breaker contacts are OPEN or CLOSED.  <b>Application</b> • Auxiliary switch terminals accept (2) #14-#12 AWG Cu leads. • Leads (EH): Yellow for "A", Blue for "B", Striped common #18 AWG Cu.	QO Circuit Breakers							
		AC/DC 12	60VA	-1042	\$120.			1A	AC 120	5A	-1200	\$ 84.			
		24	168VA	-1042				1B	AC 120	5A	-1201				
		AC 120	72VA	-1021				EH/EHB Circuit Breakers							
		208	228VA	-1021				1A/1B	AC 277	5A	-1212	198.			
		240	288VA	-1021	QO Circuit Breakers										
		EH/EHB Circuit Breakers						479.	ALARM SWITCHES	Used with control circuits and is actuated only when the circuit breaker has tripped. Standard construction includes a normally-open contact.  <b>Application</b> Leads: EHB circuit breakers have (2) Red #18 AWG Cu. Alarm switch terminals accept (2) #14-#12 AWG Cu leads.	QO Circuit Breakers				
		AC/DC 12	60VA	-1042	1A						AC 120	5A	-2100	84.	
		24	168VA	-1042	EH/EHB Circuit Breakers										
		AC 120	72VA	-1082	1A						AC 277	5A	-2100	198.	
208	218VA	-1082	QO M2												
240	288VA	-1082	120.	QO Circuit Breakers											
277	416VA	-1082		EH/EHB Circuit Breakers											
QO M2		AC240	168VA	-1021	120.	1A	AC 277	5A			-2100	198.			

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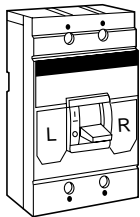
Complete field-installable accessory catalog number by inserting suffix from previous page between the parentheses in the catalog numbers shown in the table below. (Example: LA11212) See Page 6-38 for accessory pricing; add 20% to factory install field-installable devices.

**Field-installable Electrical Accessories**

Accessory	Shunt Trip	Ground-fault Shunt Trip★	Undervoltage Trip	Auxiliary Switches	Alarm Switch
Miniature Circuit Breakers EH and EH-PL	Factory Installed Only	Not Available	Not Available	Factory Installed Only	Factory Installed Only
FA, FH, FC, FI, KA, KH, KC, KI	Factory Installed Only				
LA, LH, Series 4♦	LA1( )	LA1G	LA1( )	LA1( )	Factory Installed Only Right Pole
Q4	LA1( )	LA1G	LA1( )	LA1( )	Factory Installed Only Right Pole
MA, MH Series 2	MA1( )	MA1G	MA1( )	MA1( )	Factory Installed Only Center Pole▲
LC, LE, LI, LX, LXI	LC1( )	Not Available	LC1( )	LC1( )	Factory Installed Only
ME, MX	Factory Installed Only				
NA, NC, NE, NX Series 1, 2, 3	NA1( )	NA1G	NA1( )	NA1( )	NA1( )
PA, PH, PC Series 4	PA1( )	Factory Installed Only	PA11121 PA11124	PA1( )	Factory Installed Only
PE, PX Series 4, 5, 6	PA1( )	Factory Installed Only	PA11121 PA11124	PA1( )	Factory Installed Only

- ▲ Combination accessory in right pole with factory-installed alarm switch must also be factory installed on MA circuit breaker.
- ★ Used with obsolete GP GROUND-CENSOR® system or add on ground-fault modules.
- ♦ With LA and LH top-fed I-LINE® circuit breakers (suffix [MT] I-LINE® jaws on OFF end) all accessories must be factory installed.

**Accessory Mounting Locations**

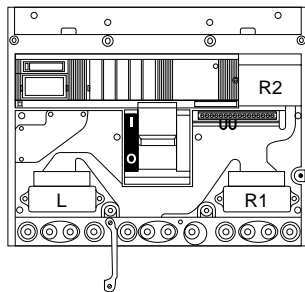


LA, LH, Q4 Series 4 circuit breakers or newer = Field-installable accessories

LC, LI, LE, LX, LXI circuit breakers = Field-installable accessories  
 MA, MH Series 2 circuit breakers or newer = Field-installable accessories

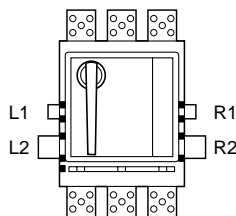
ME, MX circuit breakers = Not Field-installable accessories

Both ports will accept shunt trips, UVRs and auxiliary switches. Alarm switches are factory installable **only** (right pole). Maximum of one device per port.



NA, NC, NE, NX circuit breakers = Field-installable accessories

"L" port and "R1" port will accept shunt trips, alarm switches and UVRs; "R2" port will accept auxiliary switches. Maximum of one device per port.

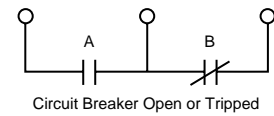
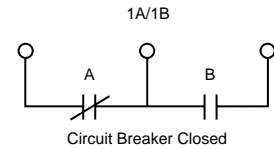


PA, PH, PC, PE, PX Series 4 circuit breakers or newer = Field-installable accessories

"L1" and "L2" or "R1" and "R2" port combinations are required to mount a single shunt trip. Both "L2" and "R2" ports will accept a UVR. Both "L1" and "R1" ports will accept auxiliary switches. If alarm switch is factory installed in PA or PC circuit breaker, it will be installed in "R2" port. For a PE or PX circuit breaker, the alarm switch will be factory installed in "L2" port.

**Auxiliary Switch Contact Configuration**

Color Code:  
 "A" Contact-Yellow Leads  
 "B" Contact-Blue Leads  
 Common-Striped Leads



**1A Alarm Switch Configuration**

Color Code: Red Leads

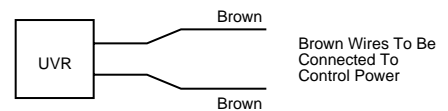


**1B Alarm Switch Configuration**

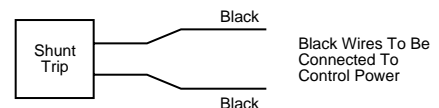
Color Code: Red Leads



**Undervoltage Trip Wiring Diagram**

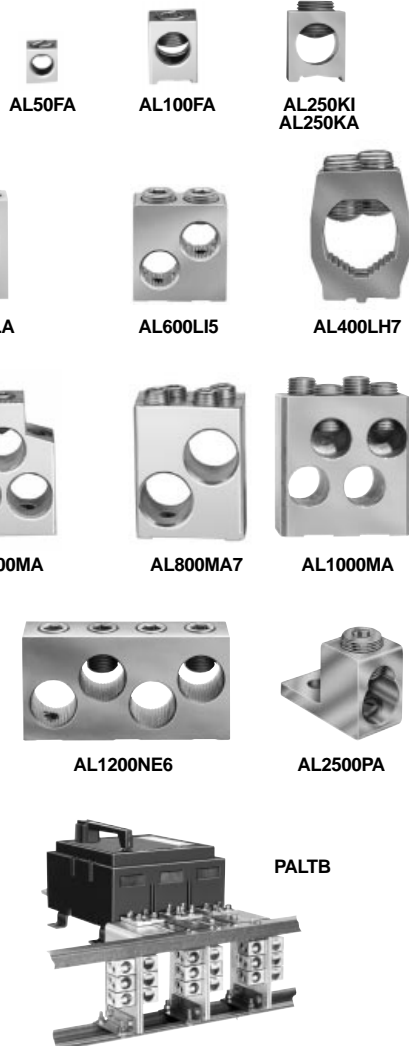


**Shunt Trip Wiring Diagram**

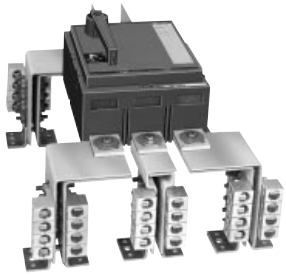


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PAF, PHF, PXF-12, PEF-12, PXF-16, PEF-16, and PXF-20 circuit breakers can be bus or cable connected. For cable connections, optional terminal pad kit PALTB or equivalent bus structure is required. Each PALTB kit contains terminal pads for one end of the circuit breaker only and has provisions for mounting a maximum of six lugs per phase. Order lugs separately. See this page and Page 6-41.



PCF, PEF-20, PXF-25 or PEF-25 circuit breakers are supplied with terminal pads for both ends of the circuit breaker. The supplied terminal pads or equivalent bus structure must be used for bus or cable connections. Terminal pads have provisions for mounting a maximum of eight lugs per phase. Order lugs separately. See this page and Page 6-41.

**Mechanical Lug Kit Information**

Circuit Breaker Application				Number of Wires Per Lug and Wire Range♦	Kit Catalog Number	Lugs Per Kit	Price Per Kit
Standard	Ampere Rating	Optional	Ampere Rating				
<b>Al Lugs for Use with Al or Cu Wire</b>							
EDB, EGB, EJB, FD, FG, FJ	15-30	....	....	1—#12-#6 AWG Al or 1—#14-#6 AWG Cu	AL30FD	3	\$ 26.20
EDB, EGB, EJB, FD, FG, FJ	35-125	EDB, EGB, EJB, FD, FG, FJ	15-30	1—#12-#2/0 AWG Al or 1—#14-#2/0 AWG Cu	AL100FD	3	26.20
FA, FH, FI	15-30	FA, FH, FI	35-100	1—#14-#4 AWG Cu or 1—#12-#4 AWG Al	AL50FA	3	23.60
FC	35-100	FC	15-30	1—#14-#3 AWG Cu or 1—#12-#1 AWG Al	AL100FA4	3	23.60
FA, FH, FI	35-100	FA, FH, FI	15-30	1—#14-#1/0 AWG Cu or 1—#12-#1/0 AWG Al	AL100FA	3	23.60
....	....	FA, FH, FC	15-100	1—#12-#3 AWG Cu	AL100TF*	3	23.60
....	....	FA	150 (only)	1—#1/0 #2/0 AWG	AL150FA	3	23.60
ME, MX	100-250	....	....	1—#6 AWG-350 kcmil	AL250ME	3	71.00
KA, KH	70-250	....	....	1—#4 AWG-350 kcmil	AL250KA	3	71.00
KI, KC	110-175	....	....	1—#6 AWG-350 kcmil	AL250KD	3	68.00
KD, KG	100-250	....	....	1—#6 AWG-350 kcmil	AL250KI	3	68.00
KI, KC	200-250	KI	110-175	1—#1/0 AWG-350 kcmil	AL250KI	3	68.00
Q4, LA, LH	125-400	....	....	1—#1 AWG-600 kcmil or 2—#1 AWG-250 kcmil	AL400LA	1	22.70
....	....	Q4, LA, LH	125-400	1—350-750 kcmil	AL400LH7	1	29.90
LE, LX, LXI	100-250	LC, LI, LE, LX, LXI	....	2—#1 AWG-350 kcmil	AL600LI35	1	24.00
LC, LI, LE, LX, LXI	300-600	LE, LX, LXI	100-250	2—#4/0 AWG-500 kcmil	AL600LI5	1	29.90
....	....	LC, LI, LE, LX, LXI	....	1—500-750 kcmil	AL600LI7	1	29.90
....	....	ME, MX	250-400	1—350-750 kcmil	AL400ME7	1	29.90
....	....	MA, MH	300-1000	2—500-750 kcmil	AL800MA7	1	88.00
....	....	ME, MX	100-800	2—500-750 kcmil	AL800MA7	1	88.00
MA, MH	300-1000	....	....	3—#3/0 AWG-500 kcmil	AL900MA	1	60.00
ME, MX	300-800	ME, MX	100-250	4—#1/0 AWG-350 kcmil	AL1000MA	1	60.00
....	....	MA, MH, ME, MX	300-1200	4—#1/0 AWG-350 kcmil	AL1000MA	1	60.00
NA, NC, NE, NX	600-1200	....	....	4—#3/0 AWG-600 kcmil	AL1200NE6	1	136.00
....	....	PAF, PHF, PEF, PXF, PCF	600-2500	1—#1/0 AWG-750 kcmil	AL2500PA	2	84.00

**Cu Lugs for Use with Cu Wire Only**

....	....	EDB, EGB, EJB, FD, FG, FJ	15-125	1—#14-#1/0 AWG Cu	CU100FD	3	26.20
FC	15-30	....	....	1—#14-#10 AWG Cu	CU30FA4	3	23.60
....	....	FA, FH, FC, FI	15-100	1—#14-#1 AWG Cu	CU100FA	3	23.60
....	....	FA, FH, FC	15-100	1—#12-#3 AWG Cu	CU100TF*	3	23.60
....	....	KA, KH	70-250	1—#4 AWG-250 kcmil Cu	CU250KA	3	71.00
....	....	KC, KI	110-250	1—#4 AWG-250 kcmil Cu	CU250KA	3	71.00
KD, KG	100-250	....	....	1—#6 AWG-350 kcmil	CU250KD	3	71.00
....	....	ME, MX	125-250	1—#4 AWG-250 kcmil	CU250ME	3	71.00
....	....	Q4, LA, LH	125-400	1—#1 AWG-600 kcmil Cu or 2—#1 AWG-250 kcmil Cu	CU400LA	1	23.70
....	....	LC, LI, LE, LX, LXI	....	2—#1 AWG-350 kcmil	CU600LI35	1	25.10
....	....	LC, LI, LE, LX, LXI	....	2—#4/0 AWG-500 kcmil	CU600LI5	1	29.90
....	....	LC, LI, LE, LX, LXI	....	1—500-750 kcmil	CU600LI7	1	29.90
....	....	ME, MX	100-800	3—#3/0 AWG-500 kcmil Cu	CU1000MA	1	60.00
....	....	MA, MH	300-1000	3—#3/0 AWG-500 kcmil Cu	CU1000MA	1	60.00
....	....	NA, NC, NE, NX	600-1200	4—#3/0 AWG-600 kcmil Cu	CU1200NE6	1	348.00

- ♦ All P-frame circuit breakers require terminal pads for mounting lugs of any type. See table at bottom of the page.
- ◆ Unless otherwise specified, wire sizes apply to both aluminum and copper conductors.
- \* For use in the OFF end only, when the OFF end is the load end.

**Terminal Pad Kits for PA, PH, PC, PE and PX Circuit Breakers**

Circuit Breaker Prefix	Terminal Pad Kit	
	Catalog Number	Price
PAF, PHF, PXF-12, PEF-12, PXF-16, PEF-16	PALTB (See photo A at left)	\$580.00
PCF, PEF-20, PXF-25, PEF-25	Included with circuit breaker (See photo B at left)	....
RGF, RJF, RLF	RLTB	*

\* Contact your nearest Square D/Schneider Electric sales office for current prices.

**UL Listed Field-installable VERSAtile™ Lug Kits**

Circuit Breaker Type	VERSAtile System Range†	Dimension A (In)	VERSA-CRIMP® Tool Type	Max. Lugs Per Terminal	Kit Catalog Number	Lug Qty. Per Kit	Price Per Kit
<b>Aluminum Compression Lug Kits</b>							
EDB, EGB, EJB, FD, FG, FJ	#8-#1/0 AWG	1.375	VC-6 Series	1	VC100FD	3	\$ 65.
FA, FH, FC, FI	#8-#1/0 AWG	1.3	VC-6 Series	1	VC100FA	3	65.
KA, KH, KC, KI	#4 AWG-300 kcmil	1.5	VC-6 Series	1	VC250KA3	3	123.
KA, KH, KC, KI	250-350 kcmil	1.5	VC-6 Series	1	VC250KA35	3	123.
LA, LH, Q4	250-350 kcmil	1.25	VC-6 Series	2	VC400LA35	2	123.
LA, LH, Q4	#4 AWG-300 kcmil	1.0	VC-6 Series	2	VC400LA3	2	123.
LA, LH, Q4	#2/0 AWG-500 kcmil	2.2	VC-6 Series	1	VC400LA5	1	60.
LA, LH, Q4	500-750 kcmil Al or 500 kcmil Cu	2.5	VC-6 FT or VC-8	1	VC400LA7	1	82.
LC, LI, LE, LX, LXI*	#4 AWG-300 kcmil	1.05	VC-6 Series	2	VC600LI3	2	83.
LC, LI, LE, LX, LXI*	#2/0 AWG-500 kcmil	3.20	VC-6 Series	2	VC600LI5	2	85.
LC, LI, LE, LX, LXI*	500-750 kcmil	3.45	VC-6 FT or VC-8C	1	VC600LI7	1	85.
ME2, MX2	#4 AWG-300 kcmil	1.5	VC-6 Series	1	VC250ME3	3	123.
ME2, MX2	250-350 kcmil	1.5	VC-6 Series	1	VC250ME35	3	123.
ME4, MX4	#2/0 AWG-500 kcmil	2.2	VC-6 Series	1	VC400ME5	1	60.
ME4, MX4	500-750 kcmil Al or 500 kcmil Cu	2.5	VC-6 FT or VC-8	1	VC400ME7	1	82.
MA, MH, ME, MX	#2/0 AWG-500 kcmil	1.9	VC-6 Series	2	VC600MA5	2	186.
MA, MH, ME, MX	500-750 kcmil Al or 500 kcmil Cu	2.1	VC-6 FT or VC-8	2	VC800MA7	2	198.
NA, NC, NE, NX	#2/0 AWG-500 kcmil	3.3	VC-6 Series	4	VC1200NE5	4	598.
NA, NC, NE, NX	500-750 kcmil Al or 500 kcmil Cu	3.6	VC-6 FT or VC-8	4	VC1200NE7	4	598.
PAF, PHF, PXF, PEF•	#2/0 AWG-500 kcmil	•	VC-6 Series	6-8	VC2000PA5	1	61.
PAF, PHF, PCF• PXF, PEF	500-750 kcmil Al or 500 kcmil Cu	•	VC-6 FT or VC-8	6-8	VC2500PA7	2	61.
<b>Copper Compression Lug Kits</b>							
EDB, EGB, EJB, FD, FG, FJ	#6-#1/0 AWG	1.375	VC-6 Series	1	CVC100FD	3	\$ 65.
FA, FH, FC, FI	#6-#1/0 AWG Cu	1.4	VC-6 Series	1	CVC100FA	3	65.
KA, KH, KC, KI	#2/0 AWG-300 kcmil Cu	1.5	VC-6 Series	1	CVC250KA3	3	124.
LA, LH, Q4	#2/0 AWG-300 kcmil Cu	1.3	VC-6 Series	2	CVC400LA3	2	124.
LA, LH, Q4	250-500 kcmil Cu	2.3	VC-6 Series	1	CVC400LA5	1	60.
LC, LI, LE, LX, LXI*	250-500 kcmil	3.20	VC-6 Series	1	CVC600LI5	1	85.
ME4, MX4	250-500 kcmil Cu	2.6	VC-6 Series	1	CVC400ME5	1	60.
MA, MH, ME, MX	250-500 kcmil Cu	2.4	VC-6 Series	2	CVC600MA5	2	186.
NA, NC, NE, NX	250-500 kcmil Cu	3.3	VC-6 Series	4	CVC1200NE5	4	599.
NA, NC, NE, NX	500-750 kcmil Cu	3.6	VC-6 Series	4	CVC1200NE7	4	599.

• Unless otherwise specified, wire sizes apply to both aluminum and copper conductors.  
 • All P-frame circuit breakers require terminal pads for mounting lugs of any type. See Page 6-40.  
 \* These lug kits cannot be used on I-LINE® circuit breakers.

**Power Distribution Connectors for Circuit Breakers — for Field Replacement of Mechanical Lugs**



**FAL Circuit Breaker**  
 With Three PDC6FA6 Installed.



**MAL Circuit Breaker**  
 With Three PDC6MA20 Installed

Can be used for multiple load connections on one circuit breaker. Use in place of standard distribution blocks to save space and time.

Field-installable kits, including tin plated aluminum connectors and all necessary mounting hardware are available for Square D FA, KA, LA, Q4, MA, ME and MX molded case circuit breakers.

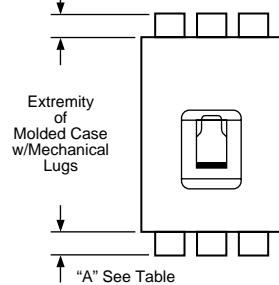
Connectors are UL Listed:

- For use on OFF end of circuit breaker when the OFF end is the load end.
- For use in UL508 Industrial Control applications only.
- For copper wire only.

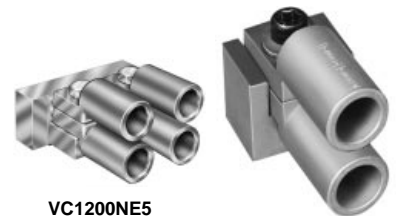
Use With Circuit Breaker*	Circuit Breaker Ampere Rating	Number of Wires Per Terminal & Wire Range†	Catalog Number	Lug Quantity Per Kit	Dimension A (In.)	Price Per Kit
FAL, FHL, FCL	15-100	6-#14-#6 AWG Cu	PDC6FA6	3	1.0	\$ 58.
	15-100	3-#14-#2 AWG Cu	PDC3FA2	3	1.2	58.
KAL, KHL	70-250	6-#14-#4 AWG Cu	PDC6KA4	3	1.0	109.
	70-250	2-#14-#1 AWG Cu 1-#12-#2/0 AWG Cu	PDC3KA20	3	1.5	109.
LAL, LHL, Q4L	125-400	6-#12-#2/0 AWG Cu 12-#14-#4 AWG Cu	PDC6LA20 PDC12LA4	1 1	2.25 1.25	82.
	125-400	3-#14-#2 AWG Cu 1-#2-250 kcmil Cu	PDC4LA250	1	2.0	82.
MAL, MHL, MEL, MXL	125-1000	6-#12-#2/0 AWG Cu	PDC6MA20	1	0.0	82.
		12-#14-#4 AWG Cu	PDC12MA4	1	0.0	

▲ Not for use with I-LINE mounted circuit breakers.  
 † When using fine stranded wire, increased cross sectional area may cause maximum wire size to be reduced.

Crimp lug or power distribution connectors extension past end of circuit breaker "A" See Table



CVC100FA VC250KA3 CVC400LA5 VC400LA7



VC1200NE5

CVC600MA5



PDC6FA6



PDC6KA4



PDC12LA4



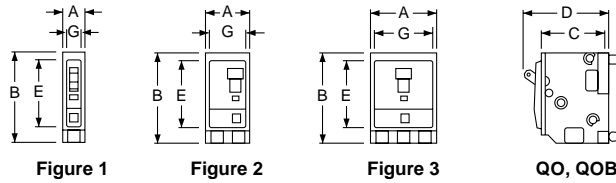


Figure 1 Figure 2 Figure 3 QO, QOB

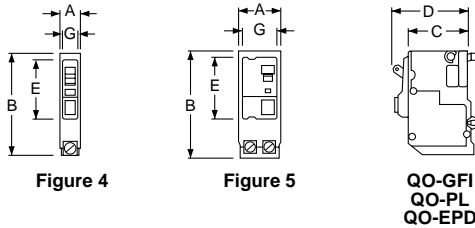


Figure 4 Figure 5 QO-GFI  
QO-PL  
QO-EPD

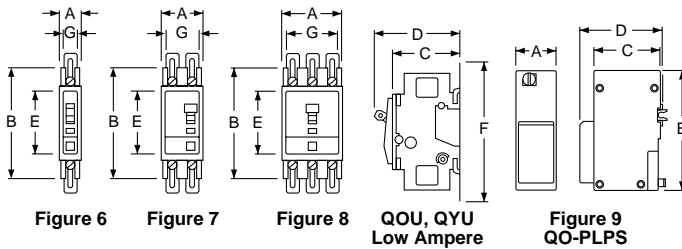


Figure 6 Figure 7 Figure 8 QOU, QYU  
Low Ampere Figure 9  
QO-PLPS

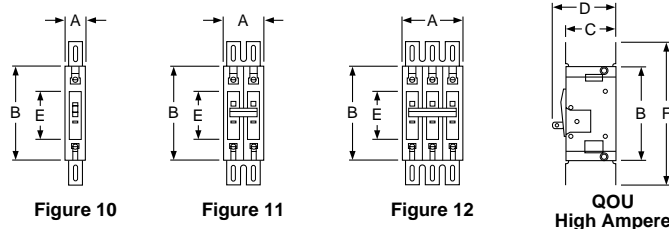


Figure 10 Figure 11 Figure 12 QOU  
High Ampere

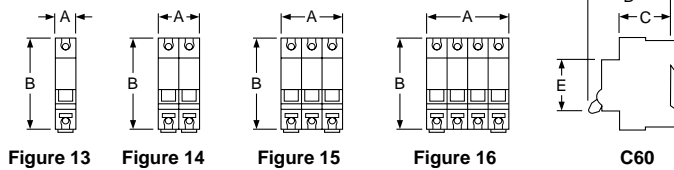


Figure 13 Figure 14 Figure 15 Figure 16 C60

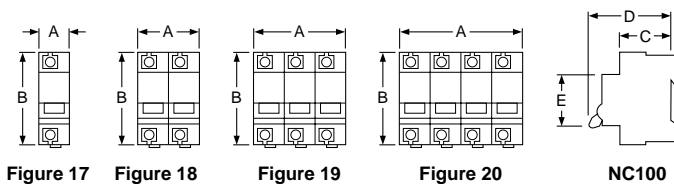


Figure 17 Figure 18 Figure 19 Figure 20 NC100

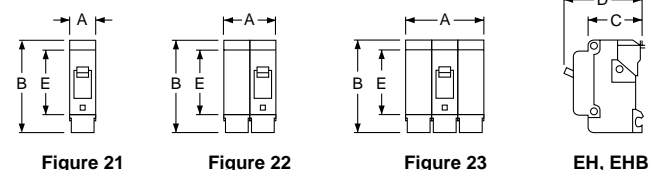


Figure 21 Figure 22 Figure 23 EH, EHB

**QO, QOU, EH Circuit Breakers**

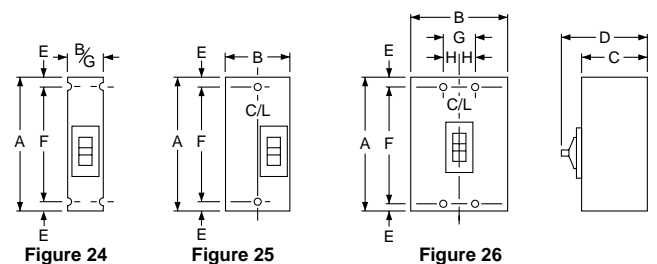
Circuit Breaker Catalog No. Prefix	No. Poles	Fig. No.	Dimensions - Inches						
			A	B	C	D	E	F	G
QO, QOB	1	1	0.75	3.00▲	2.31	2.91	2.25	...	0.59
	2	2	1.50	3.00▲	2.31	2.91	2.25	...	1.34
	3	3	2.25	3.00▲	2.31	2.91	2.25	...	2.09
QOB-VH 150A QOB-VH 110-150A	2	2	3.0	5.72	2.53	4.90	3.78	...	2.85
	3	3	4.50	5.72	2.53	4.90	3.78	...	4.35
QO-PL QO-GFI QO-EPD	1	4	0.75	4.12■	2.31	2.91	2.25	...	0.59
	2	5	1.50	4.12■	2.31	2.91	2.25	...	1.34
	3	5	2.25	4.12■	2.31	2.91	2.25	...	2.09
QOU QYU Low Ampere	1	6	0.75	4.05★	2.38	2.98	2.25	5.00†	0.62
	2	7	1.50	4.05★	2.38	2.98	2.25	5.00†	1.37
	3	8	2.25	4.05★	2.38	2.98	2.25	5.00*	2.12
QOU High Ampere	1	10	0.75	4.45	2.37	2.96	2.25	6.78	...
	2	11	1.50	4.45	2.37	2.96	2.25	6.78	...
	3	12	2.25	4.45	2.37	2.96	2.25	6.78	...
MULTI 9 C60N	1	13	0.71	3.19	1.73	2.76	1.77	...	...
	2	14	1.42	3.19	1.73	2.76	1.77	...	...
	3	15	2.13	3.19	1.73	2.76	1.77	...	...
	4	16	2.84	3.19	1.73	2.76	1.77	...	...
MULTI 9 NC100	1	17	1.06	3.19	1.73	2.76	1.77	...	...
	2	18	2.13	3.19	1.73	2.76	1.77	...	...
	3	19	3.19	3.19	1.73	2.76	1.77	...	...
	4	20	4.25	3.19	1.73	2.76	1.77	...	...
QO-PLPS Power Supply	2	9	1.45	4.35	2.42	3.11	...	...	...
EH, EHB	1	21	1.00	3.50	2.00	2.97	2.44	...	...
	2	22	2.00	3.50‡	2.00	2.97	2.44	...	...
	3	23	3.00	3.50‡	2.00	2.97	2.44	...	...

‡ 70-100 A is 4.00 in.  
▲ 35-70 A is 3.12 in; 80-100 A 2-pole and 70-100 A 3-pole are 3.50 in.  
■ QO-PL is 4.55 in.  
★ 80-100 A 1-pole and 80-125 A 2-pole are 4.45 in.  
● 70-100 A 4.45 in.  
† 80-100 A 1-pole and 80-125 A 2-pole are 6.78 in.  
\* 70-100 A is 6.78 in.

**Q2, Q4, FA, FI, KA, KI, LA, MA, ME and MX Circuit Breakers**

Circuit Breaker Catalog No. Prefix	No. Poles	Fig. No.	Dimensions - Inches							
			A	B	C	D	E	F	G	H
Q2L, Q2L-H	2	25	6.44	3.00	3.16	3.92	★	4.25	...	...
	3	26	6.44	4.50	3.16	3.92	★	4.25	1.50	0.75
FAL, FHL,FCL▼	1	24	6.00	1.50	3.16	4.13	0.44	5.13	1.50	...
	2	25	6.00	3.00▼	3.16	4.13	0.44	5.13	...	...
	3	26	6.00	4.50	3.16	4.13	0.44	5.13	1.50	0.75
FIL, KAL, KHL, KCL, KIL	2 & 3	26	8.00	4.50	3.66	4.75	0.44	7.13	1.50	0.75
Q4L, LAL, LHL	2 & 3	26	11.00	6.00	4.06	5.84	0.88	9.25	2.00	1.00
MAL, MHL	2 & 3	26	14.00	9.00	4.53	6.50	1.66	10.69	3.00	1.50
MXL, MEL	2 & 3	26	14.75	9.00	4.37	6.50	1.66	11.43	3.00	1.50

★ Dimensions E 1.59 in at ON end and 0.63 in at OFF end.  
▼ FCL 2-pole circuit breaker dimension B is 4.50 as in Fig. 26.



QO is a Registered Trademark of Square D Company or related companies.  
MULTI 9 is a Trademark of Schneider Electric.



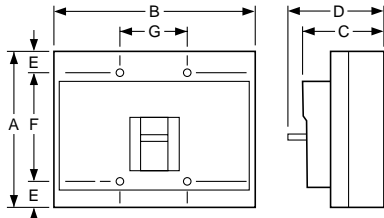


Figure 27

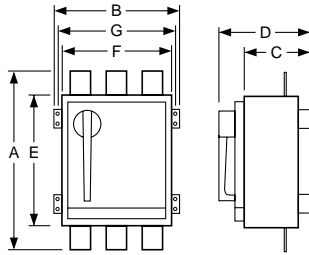


Figure 28

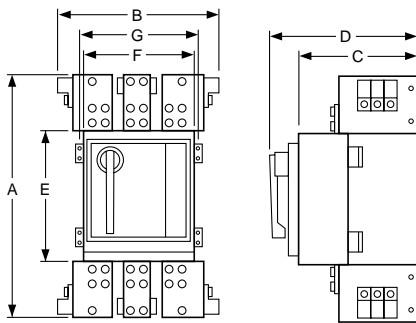


Figure 29

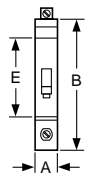


Figure 30

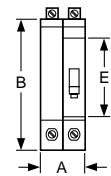


Figure 31

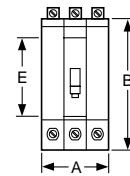


Figure 32

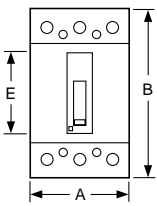
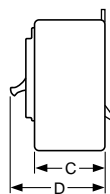


Figure 33

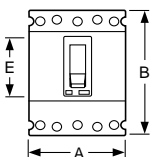


Figure 34

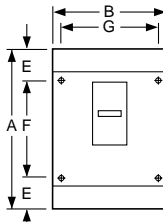
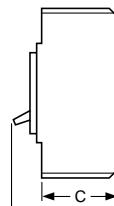


Figure 35

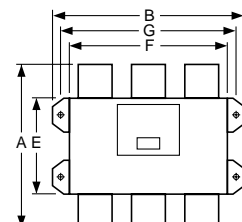
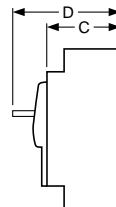


Figure 36

**LC, LI, LE, LX, LXI, NA, NE, NX, PA, PC, PE, and PX Circuit Breakers**

Circuit Breaker Catalog No. Prefix	No. Poles	Fig. No.	Dimensions - Inches						
			A	B	C	D	E	F	G
LC, LI, LE, LX, LXI	2 & 3	27	11.86	7.50	5.48	6.74	0.55	10.75	2.50
NA, NC, NX, NE	2 & 3	27	12.12	14.98	6.40	8.07	1.69	8.75	5.00
PA, PH, PX, PE	2 & 3	28	20.06	13.70	7.25	10.47	14.00	12.00	12.75
PC, PX-25, PE-20-25	2 & 3	29	26.10	23.30	13.33	16.55	14.10	12.00	...

**ED, EG, EJ, KD, KG and GJ Circuit Breakers**

Circuit Breaker Catalog No. Prefix	No. of Poles	Fig. No.	Dimensions — Inches				
			A	B	C	D	E
ED, EG, EJ	1	30	0.98	5.66	3.09	4.05	3.32
	2	31	1.96	5.66	3.09	4.05	3.32
	3	32	2.94	5.66	3.09	4.05	3.32
KD, KG	2, 3	33	4.12	7.35	3.20	4.17	3.34
GJ	3	34	3.54	4.72	2.76	3.94	2.20

**MG, MJ, PG, PJ, PL, RG, RJ and RL Circuit Breakers**

Circuit Breaker Catalog No. Prefix	No. of Poles	Fig. No.	Dimensions — Inches						
			A	B	C	D	E	F	G
MG, MJ	2, 3	35	12.40	8.27	5.53	8.05	2.28	7.87	7.87
PG, PJ, PL	2, 3	35	16.29	8.27	5.53	8.05	4.19	7.87	7.87
RG, RJ, RL	2, 3	36	15.00	16.54	6.30	14.38	8.73	14.25	15.35

Frame Size	Approx. Shipping Weight (Lbs.)	Frame Size	Approx. Shipping Weight (Lbs.)
ED, EG, EJ 1-pole	2	MAL	34
ED, EG, EJ 2-pole	3	MHL	44
ED, EG, EJ 3-pole	4	MXL	49
FAL	2	MEL	65
FHL 1-pole	3	NAL	69
FHL 2-pole	5	NCL	80
FCL	7	MG	52
FAL	9	MJ	4
FHL 3-pole	15	NXL	15
FCL	25	NEL	
FIL		PAF	
GJ		PHF	
KD		PG	
KG		PJ	
KAL		PL	
KHL		PXF	
KCL		PEF	
KIL		RG	
LAL		RJ	
LHL		RL	
LEL		Q2L	
LCL		Q4L	
LIL			
LXL			

All weights are for 3-pole circuit breakers unless otherwise noted.

