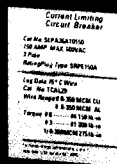
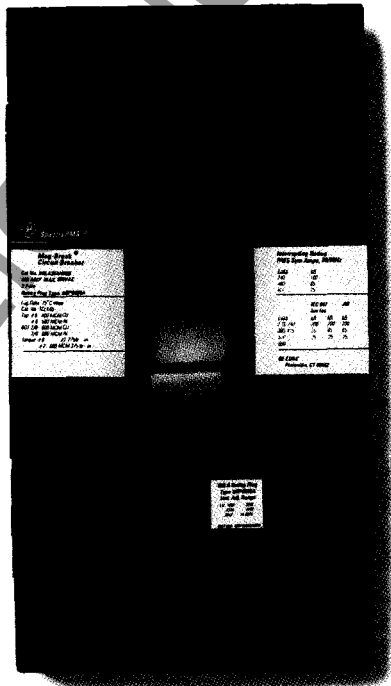
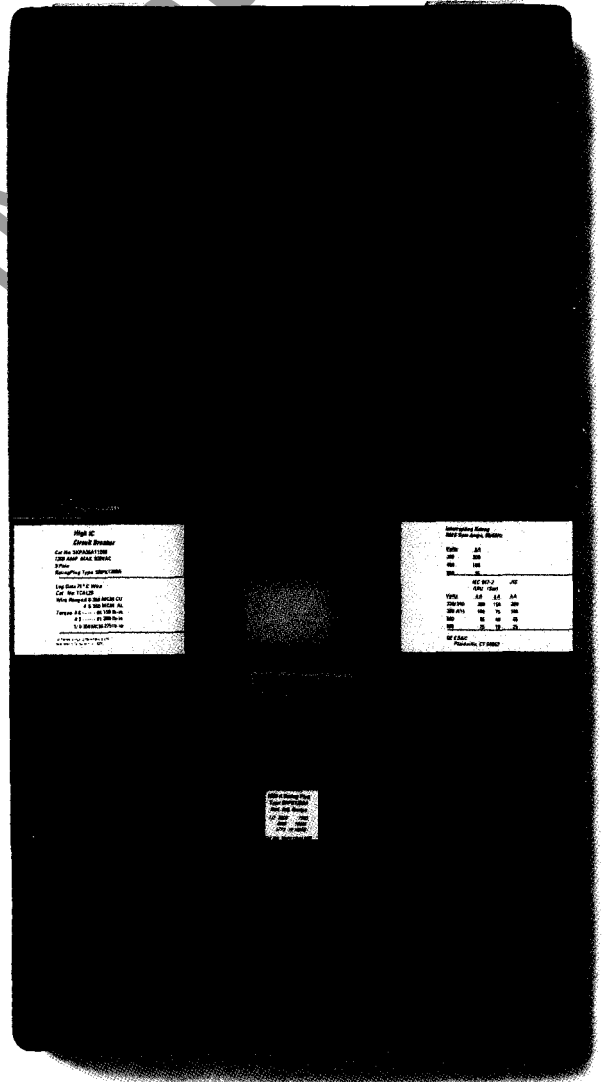
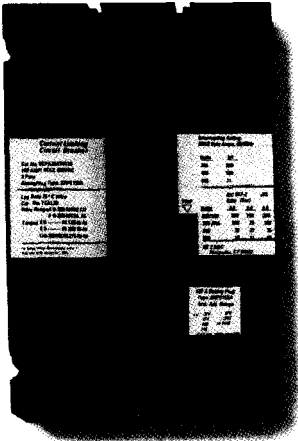
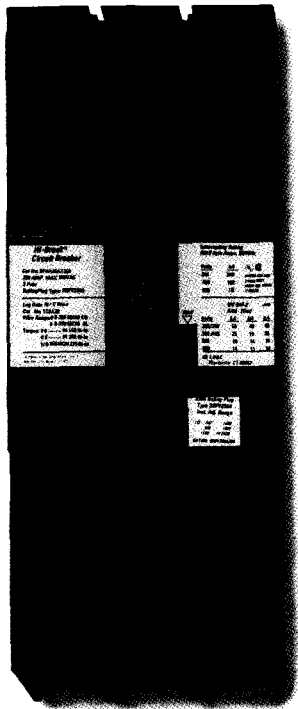




# *Spectra RMS™ Molded Case Circuit Breakers*

# ADVANCED TECHNOLOGY, SOLID-STATE, DIGITAL RMS SENSING.





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# INTRODUCING THE FIRST BREAKER LINE WITH UNIVERSAL ACCESSORIES. GE'S NEW SPECTRA RMS™

With Spectra RMS™ breakers, there's no need to stock or specify multiple types of accessories. Shunt trips, auxiliary switches, bell alarms and undervoltage releases are the same for every breaker – cutting inventory to the absolute minimum.

Not only is inventory reduced, but installation time, too. Only Spectra RMS™ breakers are designed so that rating plugs and internal accessories can be quickly installed in the field – without breaker disassembly. And GE's exclusive snap-in lugs speed installation further. The bottom line: less time. Less labor. And lower installed cost.

Spectra RMS™ breakers provide true RMS sensing. A short-time function is standard on all breakers – for an extra level of motor and transformer protection. Accessory leads can be either left or right feed. And the entire line is available in IC ratings to 200kA @ 240 Vac and 100kA @ 480 Vac.

Spectra RMS™ breakers. More convenience and greater performance. Only from GE.

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■ External Accessories	12-17
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# The Features You've Asked For.

Snap-in lugs (in E & F frames). Lug installation requires no disassembly or removal of cover.

An industry first! Common internal accessories. Regardless of frame rating, you only have to stock one type of accessory. Reduces SKUs.

Reverse Feed. Front-mounting internal accessories and rating plugs make reverse feeding possible on all frames.

Unique, tracking short-time function provides additional protection for motors and transformers. A new solution in a lower-priced breaker!



Current limiting by design. E150, F250, and G400/600 provide exceptional equipment protection and less system stressing.

Addition of internal accessories does not add to breaker width.

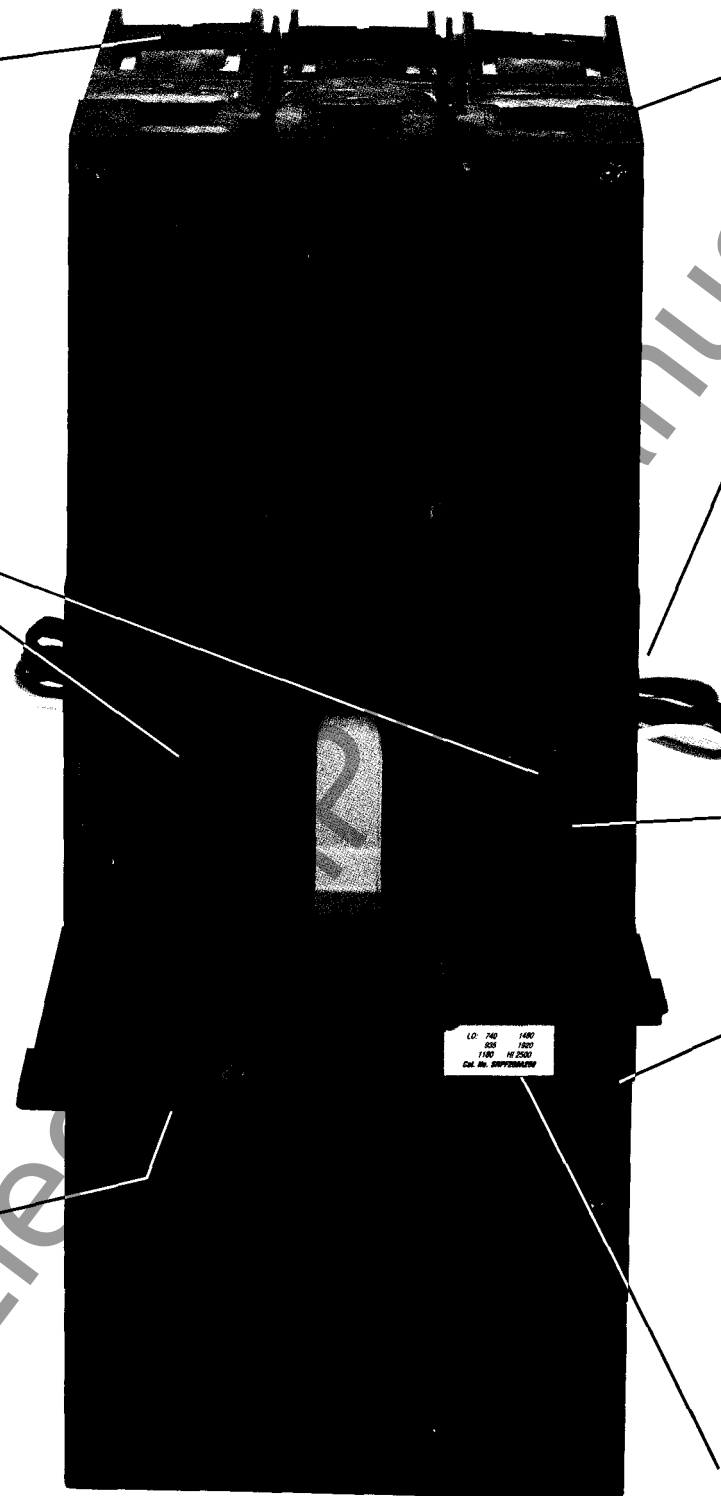
Accessory leads, which fit into troughs, can be either right or left feed. And, thanks to the side and rear troughs, no added space is required for lead exit.

Higher IC ratings. Ratings to 100kA @480V without fuses – and without changing from traditional GE breaker sizes.

Entire line provides true RMS sensing. Breakers accurately react to non-sinusoidal currents produced by SCR drives, welders, arc furnaces, computer power supplies, and discharge-type lighting.

A GE exclusive! Full line of interchangeable rating plugs. Amp rating changed by plugs – a marketing advantage. Reduced stock keeping – your advantage.

New frame size/current ratings. Better packaging density. More amps per cubic inch. F-frame now offers 250-amp protection. 5 1/2"-wide 400- and 600-amp G-frame replaces 8 1/4"-wide J-frame.



TURN THE  
 FLAP, AND  
 SEE HOW  
 EASY IT IS  
 TO INSTALL  
 BREAKER  
 RATING  
 PLUGS AND  
 ACCESSORIES.



**Current Limiting  
 Circuit Breaker**

Cat No. SFP36ATZ50  
 250 AMP. MAX. 600VAC  
 3 Pole  
 Rating/Plug Type: SRPF250A

Lug Data 75° C Wire  
 Cat. No. TCA125  
 Wire Range: 0-350 MCM CU  
 # 0-350 MCM AL  
 Torque: # 8 ----- 04 150 lb-in  
 # 3 ----- 01 200 lb-in  
 1/0-350 MCM 275 lb-in

For Torque Ratings, consult Bulletin 114  
 or refer to GE Bulletin GEC-1820

**Interrupting Rating  
 RMS Sym Amps, 50/60Hz**

Volts	kA	UL
240	200	LISTED CTR 90A
480	100	3 POLE ONLY
600	25	ISSUE NO. LP2122 E. XXXX2

TRIP

Volts	IEC 947-2 (Ult) (Ser)		JIS
	kA	kA	kA
220/240	200	100	200
380/415	100	50	100
500	25	13	25
690	18	9	18

GE ED&C  
 Plainville, CT 06062

# Selection and Ordering Information

## TO ORDER

1. Select frame Cat. No. from Table 8.1.
2. Select rating plug from Table 10.1.
3. Select lugs, if required, from Table 12.1.
4. Select internal accessories from Tables 11.1-11.4.

## FRAME DESIGNATION & AMPACITIES

Table 6.1

Frame Type	Frame Max Amp	Rating Plugs
SE150	30	15-30
	60	40-60
	100	70-100
	150	110-150
SF250	250	70-250
SG600	400	125-400
	600	250-600
SK1200	800	300-800
	1200	600-1200

## INTERRUPTING CAPACITIES

Table 6.2

Frame Type	Frame Designation Prefix	Interrupting Capacity, RMS Sym kA		
		240	480	600
SE150	SEDA	18	14	10
	SEHA	65	25	14
	SELA	100	65	18
	SEPA	200	100	25
SF250	SFHA	65	25	14
	SFLA	100	65	18
	SFPA	200	100	25
SG600	SGHA	65	35	25
	SGLA	100	65	30
	SGPA	200	100	42
SK1200	SKHA	65	35	25
	SKLA	100	65	42
	SKPA	200	100	50

### NOTE:

Contact GE sales office for availability.

## SPECTRA RMS™ FRAME CATALOG NUMBER MAKEUP

**Table 7.1**

	S E LA 3 6 AT 0150	
Prefix		Frame Max Ampere Rating
Frame Designation		0007 7A
E SE150		0030 30A
F SF250		0060 60A
G SG600		0100 100A
K SK1200		0150 150A
IC Tier (see Table 6.2)		0250 250A
		0400 400A
		0600 600A
		0800 800A
		1200 1200A
Number of Poles		Function Code
2 Two-Pole		AT Circuit Breaker
3 Three-pole		AI Mag Break® Motor Circuit Protector
Max. Rated Voltage (per UL 489)		AN Molded Case Switch with Fixed, High Instantaneous Trip
2 240 Vac		
4 480 Vac		
6 600 Vac		

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# Selection and Ordering Information

## CIRCUIT BREAKERS

Table 8.1. UL Listed File No. E11592. Suitable for reverse feed.

Frame Type	480 Vac IC Rating kA RMS Sym <sup>2</sup>	Frame Max Amps <sup>4</sup>	Frame Catalog Number	
			2 Pole <sup>1</sup>	3 Pole
SE150 <sup>3</sup>	14	30	SEDA 24AT 0030	SEDA 36AT 0030
		60	SEDA 24AT 0060	SEDA 36AT 0060
		100	SEDA 24AT 0100	SEDA 36AT 0100
		150	SEDA 24AT 0150	SEDA 36AT 0150
	25	30	SEHA 24AT 0030	SEHA 36AT 0030
		60	SEHA 24AT 0060	SEHA 36AT 0060
		100	SEHA 24AT 0100	SEHA 36AT 0100
		150	SEHA 24AT 0150	SEHA 36AT 0150
	65 <sup>5</sup>	30	SELA 24AT 0030	SELA 36AT 0030
		60	SELA 24AT 0060	SELA 36AT 0060
		100	SELA 24AT 0100	SELA 36AT 0100
		150	SELA 24AT 0150	SELA 36AT 0150
100 <sup>5</sup>	30	SEPA 24AT 0030	SEPA 36AT 0030	
	60	SEPA 24AT 0060	SEPA 36AT 0060	
	100	SEPA 24AT 0100	SEPA 36AT 0100	
	150	SEPA 24AT 0150	SEPA 36AT 0150	
SF250	25	250	SFHA 24AT 0250	SFHA 36AT 0250
	65 <sup>5</sup>	250	SFLA 24AT 0250	SFLA 36AT 0250
	100 <sup>5</sup>	250	SFPA 24AT 0250	SFPA 36AT 0250
SG600 <sup>3</sup>	35	400	SGHA 26AT 0400	SGHA 36AT 0400
		400	SGLA 26AT 0400	SGLA 36AT 0400
		400	SGPA 26AT 0400	SGPA 36AT 0400
	65 <sup>5</sup>	600	SGHA 26AT 0600	SGHA 36AT 0600
		600	SGLA 26AT 0600	SGLA 36AT 0600
		600	SGPA 26AT 0600	SGPA 36AT 0600
SK1200 <sup>3</sup>	35	800	SKHA 26AT 0800	SKHA 36AT 0800
		800	SKLA 26AT 0800	SKLA 36AT 0800
		800	SKPA 26AT 0800	SKPA 36AT 0800
	65	1200	SKHA 26AT 1200	SKHA 36AT 1200
		1200	SKLA 26AT 1200	SKLA 36AT 1200
		1200	SKPA 26AT 1200	SKPA 36AT 1200

<sup>1</sup> 2 Pole E150 and F250 are rated 480 Vac max. <sup>2</sup> Refer to Table 6.2 for complete interrupting ratings.

<sup>3</sup> UL Listing Pending. <sup>4</sup> Use rating plugs in Table 10.1 to establish/change ampere rating.

<sup>5</sup> UL Listed Current-Limiting circuit breakers. UL File E11592.



## MAG-BREAK® MOTOR CIRCUIT PROTECTORS

**Table 9.1.** 3-Pole-UL Component-Recognized, File No. E11592

Frame Type	Frame Max Amps <sup>②</sup>	Frame Cat. No.	Interrupting Rating RMS Sym kA at		
			240 Vac	480 Vac	600 Vac
SE150 <sup>③</sup>	7	SELA 36AI 0007	100	65	25
	30	SELA 36AI 0030	100	65	25
	60	SELA 36AI 0060	100	65	25
	100	SELA 36AI 0100	100	65	25
	150	SELA 36AI 0150	100	65	25
SF250	250	SFLA 36AI 0250	100	65	25
SG600 <sup>③</sup>	400	SGLA 36AI 0400	100	65	30
	600	SGLA 36AI 0600	100	65	30
SK1200 <sup>③③</sup>	800	SKLA 36AI 0800	100	65	42
	1200	SKLA 36AI 1200	100	65	42

•Not current limiting. <sup>②</sup>Use rating plugs in Table 10.1 to establish/change ampere rating. <sup>③</sup>UL Recognition pending.

## MOLDED CASE SWITCHES

**Table 9.2.** With fixed, high-set instantaneous trip. UL File E57546

Frame Type	Amp Rating	3 Pole Switch Cat. No.	Short Circuit Withstand Rating <sup>①</sup> when protected by Spectra RMS™ Circuit Breaker of equal or lower ampere rating and equal short circuit rating <sup>②</sup>		
			240 Vac	480 Vac	600 Vac
SE150 <sup>③</sup>	100	SEDA 36AN 0100	200	100	25
	150	SEDA 36AN 0150	200	100	25
SF250	250	SFDA 36AN 0250	200	100	25
SG600 <sup>③</sup>	400	SGDA 36AN 0400	200	100	42
	600	SGDA 36AN 0600	200	100	42
SK1200 <sup>③</sup>	800	SKDA 36AN 0800	200	100	50
	1200	SKDA 36AN 1200	200	100	50

<sup>①</sup>In RMS symmetrical kiloamperes.

<sup>②</sup>Molded case switch short circuit withstand rating is equal to any equally (or lower) amp-rated breaker interrupting rating.

<sup>③</sup>UL Listing pending.

# Selection and Ordering Information

## RATING PLUGS

**Table 10.1.** Spectra RMS™ Circuit Breakers and Mag-Break® Motor Circuit Protectors

Breaker Frame Type	Frame Max. Amps	Rating Plug Amps	Rating Plug Cat. No.	Adjustable Instantaneous Pickup Range – RMS Sym Amperes – Nominal	
				LO	HI
SE150	7 <sup>①</sup>	3	SPRE 7A 3	11	39
		7	SPRE 7A 7	22	90
	30	15	SPRE 30A 15	43	182
		20	SPRE 30A 20	58	254
		25	SPRE 30A 25	73	332
		30	SPRE 30A 30	87	415
	60	40	SPRE 60A 40	118	501
		50	SPRE 60A 50	148	637
		60	SPRE 60A 60	178	777
	100	70	SPRE 100A 70	206	863
		80	SPRE 100A 80	236	999
		90	SPRE 100A 90	267	1138
		100	SPRE 100A 100	297	1280
	150	110	SPRE 150A 110	328	1426
		125	SPRE 150A 125	374	1640
150		SPRE 150A 150	450	1991	
SF250	250	70	SPRF250A 70	205	700
		90	SPRF 250A 90	265	900
		100	SPRF 250A 100	295	1000
		110	SPRF 250A 110	325	1100
		125	SPRF 250A 125	370	1250
		150	SPRF 250A 150	440	1500
		175	SPRF 250A 175	515	1750
		200	SPRF 250A 200	590	2000
		225	SPRF 250A 225	665	2250
		250	SPRF 250A 250	736	2500
		SG600	400	125	SPRG 400A 125
150	SPRG 400A 150			455	1530
175	SPRG 400A 175			530	1785
200	SPRG 400A 200			605	2040
225	SPRG 400A 225			680	2295
250	SPRG 400A 250			755	2550
300	SPRG 400A 300			905	3060
350	SPRG 400A 350			1060	3570
600	400		SPRG 600A 400	1210	4080
	250		SPRG 600A 250	765	2530
	300		SPRG 600A 300	915	3035
	350		SPRG 600A 350	1070	3545
	400		SPRG 600A 400	1220	4050
	450		SPRG 600A 450	1375	4555
	500		SPRG 600A 500	1525	5060
	600		SPRG 600A 600	1830	6075
	SK1200		800	300	SPRK 800A 300
400		SPRK 800A 400		1255	4015
500		SPRK 800A 500		1570	5020
600		SPRK 800A 600		1875	6195
700		SPRK 800A 700		2155	7420
800		SPRK 800A 800		2440	8705
1200		600	SPRK 1200A 600	1825	6110
		700	SPRK 1200A 700	2125	7400
		800	SPRK 1200A 800	2425	8775
		1000 <sup>②</sup>	SPRK 1200A 1000	3015	11755
		1200 <sup>②</sup>	SPRK 1200A 1200	3605	15050

<sup>①</sup>Mag-Break only <sup>②</sup>Values are preliminary.

# Internal Accessories

All Spectra RMS™ circuit breakers from the SE150 through the SK1200, including instantaneous-trip Mag-Break® breakers and Molded-Case Switches, use the same UL Listed, field-installable internal accessories that do not require cover removal to install.

UL File No. E57253. Installation instructions – GEH-5551 (Shunt Trip and UVR) and GEH-5593 (Auxiliary Switch and Bell Alarm).

## AUXILIARY SWITCH

Table 11.1

Auxiliary Switch Cat. No.	No. of Switch Elements	Switch Rating
SAUXPAB1	1 AB	5A @ 240 Vac/ 0.5A @ 125 Vdc
SAUXPAB2	2 AB	5A @ 240 Vac/ 0.5A @ 125 Vdc
SAUXGAB1	1 AB	GOLD-PLATED CONTACTS 0.5A @ 30V
SAUXGAB2	2 AB	GOLD-PLATED CONTACTS 0.5A @ 30V

Auxiliary Switches provide remote indication of whether the circuit breaker main contacts are opened or closed via open or closed SPDT switch elements.

## BELL ALARM SWITCH

Table 11.2

Bell Alarm Switch Cat. No.	No. of Switch Elements	Switch Rating
SABAP1	1 AB	5A @ 240 Vac/ 0.5A @ 125 Vdc
SABAG1	1 AB	GOLD-PLATED CONTACTS 0.5A @ 30V

The Bell Alarm Switch provides remote indication of whether the circuit breaker has been tripped via open or closed SPDT switch elements, but remains unchanged during "On/Off" circuit breaker operation.

## UNDERVOLTAGE RELEASE

Table 11.3

Undervoltage Cat. No.	Voltage		Peak Current (mA)
	ac	dc	
SAUV1	120	125	200
SAUV2	240	250	200
SAUV3		24	100
SAUV4		48	100

The Undervoltage Release provides automatic circuit breaker tripping when there is a power loss or major dip

(to 35%-70% of rated voltage) in accessory control voltage. Ac devices are rated for 50-400 Hz and UL Listed for 50-60 Hz. Cat. No. SAUV1 may be used with time delay unit Cat. No. TD110A530 or TD1000.

## SHUNT TRIP

Table 11.4

Shunt Trip Cat. No.	Voltage		Current (mA)	
	ac	dc	Inrush	Cont
SAST1	120	125	500	6.0
SAST2	240	250	400	5.0
SAST3		24	300	10.0
SAST4		48	300	10.0

For remote tripping of breaker, use with momentary close contact. Not recommended for use with latching relay contact since electronics in Shunt Trip will pulse power to the coil if continuously energized, and breaker tripping upon reclosure will be delayed 1-2 seconds at rated control voltage.

If maintained (latching relay) contact must be used and delayed shunt tripping is not acceptable, use bell alarm in series with control power for SE150 and SF250 frames and auxiliary switch for SG600 and SK1200 breakers.

These devices are suitable for use with Ground Fault Sensing and Relaying Equipment. Maximum VA is 75. Ac devices are rated for 50-400 Hz and UL Listed for 50-60 Hz.

## ACCESSORY MOUNTING

All accessories mount in pouches accessible from a front cover. All breakers have a left-side pouch and a right-side pouch. The following combinations may be installed:

**Left-side Pouch** – either shunt trip or undervoltage release plus bell alarm.

**Right-side Pouch** – auxiliary switch (single- or double-pole).

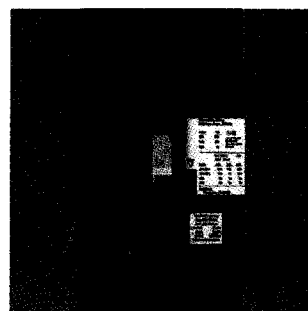


Fig.11.1. Left-side Pouch

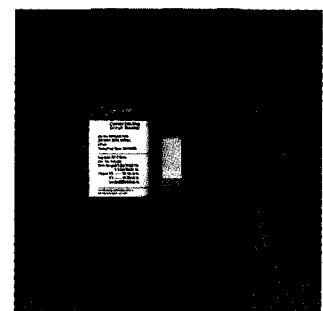


Fig.11.2. Right-side Pouch

# External Accessories

All external accessories are UL Listed for field installation.

The following external accessories are available (except as noted) for Spectra RMS™ breakers:

- Handle Operators – Type TDA, Type TDM, and Type TDR
- Motor-Operated Mechanisms
- Back-Connected Studs
- Plug-in Mounting Bases
- Handle locks (blocking devices)
- Padlocking devices
- Breaker mounting screw kits

## HANDLE OPERATORS

Type TDA flange handles and variable depth operating mechanisms:

- Designed to meet automotive duty specifications
- NEMA 12 and 13 UL-recognized components
- For right- or left-hand flange mounting – field convertible
- Have mounting dimensions that fit standard flange enclosures 8 inches to 24 inches deep

**Table 12.1. LUGS, LINE SHIELDS, COVERS AND BUS CONNECTORS**

Accessory	For Use With	Wire Range		Catalog Number		Description	Ampacity Range <sup>①</sup>
		Copper	Aluminum				
Plated extruded aluminum lugs for terminating copper or aluminum cables	SE150	# 14-3/0	# 12-3/0	TCAL18		single lug	15-150
		# 14-8	# 14-8	TCAL14		single lug	15-40
	SF250	# 8-350 MCM	# 8-350 MCM	TCAL29		single lug	70-250
	SG600	(2) 2/0-400 MCM or (1) # 6-600 MCM	(2) 2/0-500 MCM or (1) # 6-600 MCM	TCLK365		3-pole lug kit with lug cover for line or load end	125-600
	SK1200	(3) 3/0-500 MCM	(3) 3/0-500 MCM	Line TCLK381	Load TCLK391	3-pole lug kit with lug cover	300-800
(4) 250-350 MCM		(4) 250-350 MCM	TCLK3121	TCLK3131	600-1200		
Replacement Line Shields, Lug Covers, and End Covers	SE150	–	–	252B1661G1		Three lug covers for line end	–
	SF250	–	–	252B1659G1		Three lug covers for line end	–
	SG600	–	–	331A1770G1		3-pole lug cover for line or load end	
	SK1200	–	–	252B1660G1		Lugcover for line or load end 800A and 1200A lug kits <sup>③</sup>	
		–	–	②		End cover for line or load end	
Plated Copper Lugs	Refer to company for availability						

① Both copper and aluminum cables may not cover full ampacity range.

② For part number refer to Company.

③ 100kA, 480 Vac (SKPA) uses longer lug cover/arc shield; Use Cat. No. SKPSHLD for replacement. May be used on other K1200 devices.

## HANDLE OPERATORS (CON'T)

### Flange Handle Selection

Cat. No. TDA1 (6-inch) and TDA2 (10-inch) flange handles are interchangeable. While all operating mechanisms can be easily operated with the 6-inch TDA1 handle, the 10-inch TDA2 may be used to obtain lower operating force and/or to provide a proportionally larger handle on large enclosures.

Table 13.1

Flange Handle Cat. No.	Nominal Length Inches
TDA1	6
TDA2	10

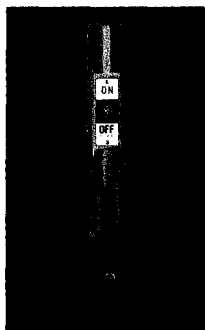


Fig. 13.1. Flange Handle, Cat. No. TDA1

### Operating Mechanism Selection

Table 13.2

Spectra RMS™ Circuit Breaker Type	Flange Handle Cat. No.	Operating Mechanism Cat. No.
SE150	TDA1 (6-inch)	SDOM1A
SF250		SDOM3
SG600	TDA2 (10-inch)	SDOM4
SK1200		SDOM6

### Flange Handle Construction

- Rugged die cast housing with provision for locking in **OFF** position with up to three  $\frac{3}{16}$ -inch to  $\frac{5}{16}$ -inch diameter padlocks
- O-ring seals for dirt-tight/oil-tight duty
- Gusseted,  $\frac{3}{32}$ -inch thick double-sided steel handle with large, red-black self-extinguishing grade plastic grip

### Variable Depth Operating Mechanism Construction

- Plated steel yokes and integral mounting plates are  $\frac{1}{8}$ -inch thick minimum
- Operating yokes have toggle spring assist for positive on/off operation
- Mounting plates include positive yoke stops to prevent undue wear on disconnect and circuit breaker toggle handles

### Accessories

**Auxiliary Contact Kit:** Available SPDT and DPDT and actuated by operating mechanism yoke.

Table 13.3

Used With Operating Mechanism Catalog Number	When TDA handle is on		Auxiliary Contact Kit	
	Right Flange	Left Flange	SPDT Catalog Number	DPDT Catalog Number
SDOM1A	X		TDAS1L1	TDAS1L2
SDOM3		X	TDAS1R1	TDAS1R2
SDOM4	X		TDAS2L1	TDAS2L2
SDOM6		X	TDAS1R1	TDAS1R2

**Flange Stiffener Kit or Extended-Length Drive Rod, Cat. No. TDSR** Provides rigid  $\frac{3}{8}$ -inch diameter rod between TDA handle mounting surface (flange or center mullion) and operating mechanism when TDA handle would otherwise not be rigidly supported.

Rod length is 22 inches and may be cut to appropriate length. Also used as extended length drive rod when standard 16-inch rod is not long enough.

Table 13.4

Operating Mechanism Catalog Number	Flange Stiffener Kit Catalog Number	Extended Drive Rod Catalog Number
SDOM1A SDOM3	TDSR	TDSR
SDOM4 SDOM6	16" supplied with operating mechanism	TDSR 1

# External Accessories

## TDA VARIABLE DEPTH ACCESSORIES (CON'T)

**Extended Drive Stud, Cat. No. TDS1, TDS2** This optional drive stud permits locating the operating mechanism  $1\frac{5}{16}$  inches further to the left (when flange handle is on right side) or to the right (when handle is on left side) to accommodate specific mounting restrictions.

**Table 14.1**

Operating Mechanism Catalog Number	Extended Drive Stud Catalog Number
SDOM1A, SDOM3	TDS1
SDOM4	TDS2

**Note:** Not suitable for use with SDOM6 operating mechanisms.

**Door Hardware (NEMA 12)** Type TDV door hardware provides sealing and interlocking of  $\frac{3}{4}$ -inch nominal door depth hinged on left. Interlocking design requires use of screwdriver to release. When used with TDA flange handle and operating mechanisms disconnect or circuit breaker cannot be turned on unless door and door hardware have been closed. For non-interlocking type, one bracket in kit is not used. Use of third point latch recommended for doors 40 inches or longer.

**Table 14.2**

Description	Catalog Number for Door hinged on left
Two-point interlocking door hardware kit	TDV1
Auxiliary third point roller latch	TDV3

### Instructions

Door Hardware	GEH-5322
Auxiliary Contact Kit	GEH-5323
Flange Stiffener Kit or Extended Length Drive Rod	GEH-5324
Extended Drive Stud	GEH-5325

## TDM HANDLE OPERATING MECHANISMS, DOOR-MOUNTED

**Table 14.3**

Spectra RMS™ Breaker Type	Box Depth in Inches	Complete Mechanism <sup>Ⓢ</sup> with NEMA 1, 3R, 12 Handle	Operating Mechanism Only	Handle Only	
				NEMA 1, 3R, 12	NEMA 4 and 5
		Catalog Number	Catalog Number	Catalog Number	Catalog Number
SE150	$4\frac{3}{16}$	SEFHM1	SEFOM1	TH1	THCH45
	$6\frac{1}{8}$ -15	SEFHM2	SEFOM2		
SF250	$5\frac{7}{8}$	SEFHM1	SEFOM1	TH2	
	$7\frac{3}{8}$ -15 $\frac{1}{2}$	SEFHM2	SEFOM2		
SG600	$5\frac{7}{8}$	SGHM1	SGOM1	TH2	
	$6\frac{5}{8}$ -15 $\frac{5}{8}$	SGHM2	SGOM2		
SK1200	$7\frac{7}{16}$	SKHM1	SKOM1	TH2	
	$7\frac{1}{32}$ -17 $\frac{5}{16}$	SKHM2	SKOM2		

<sup>Ⓢ</sup>Packaged separately.

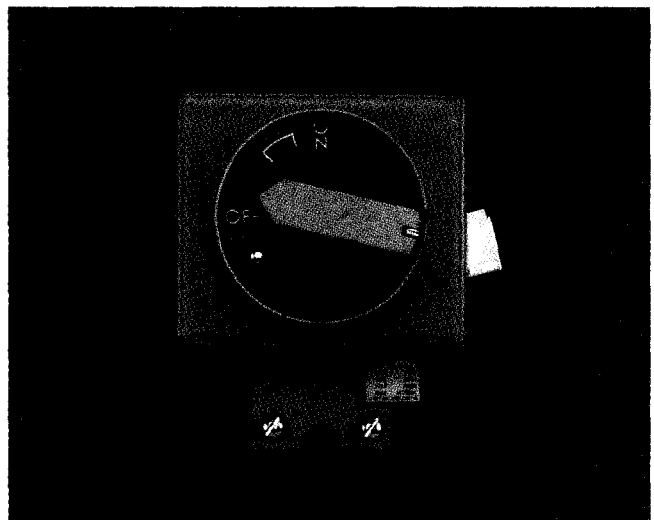
## TDR INTEGRAL HANDLE MECHANISM

**Table 14.4**

Spectra RMS™ Breaker Type	Handle			Door Ring - Interlock Catch Kit	Gasket Kit
	Vertical Mounting Cat. No.	Horizontal Mounting Cat. No.	Ship Wt.	Cat. No.	Cat. No.
SE150, SF250	SEFR1 <sup>Ⓢ</sup>	SEFR1H <sup>Ⓢ</sup>	17 <sup>Ⓢ</sup>	343L483G1	792A489G1
SG600	SGR1	SGR1H	5	343L483G2	792A489G2
SK1200	SKR1	SKR1H	5	343L483G3	792A489G3

<sup>Ⓢ</sup>For F250 Frame also order adapter bracket, Cat. No. 343L494G57, no charge when ordered with handle. <sup>Ⓢ</sup>Shipped 12 per pack.

<sup>Ⓢ</sup>Shipped 12 per pack.



**Fig. 14.1.** TDR handle on E-Frame Mag-Break®

## MOTOR-OPERATED MECHANISMS

Table 15.1

Spectra RMS™ Breaker Type	Voltage		Cat. No.
	ac 50/60 Hz	dc	
SE150	120	125	SEMOM1
	240 <sup>①</sup>	–	SEMOM2
	–	24	SEMOM8
	–	48	SEMOM9
SF250	120	125	SFMOM1
	240 <sup>①</sup>	–	SFMOM2
	–	24	SFMOM8
	–	48	SFMOM9
SG600	120	125	SGMOM1
	240 <sup>①</sup>	250	SGMOM2
	–	24	SGMOM8
	–	48	SGMOM9
SK1200	120	125	SKMOM1
	240 <sup>①</sup>	250	SKMOM2
	–	24	SKMOM8
	–	48	SKMOM9

<sup>①</sup>Suitable for use at 208V

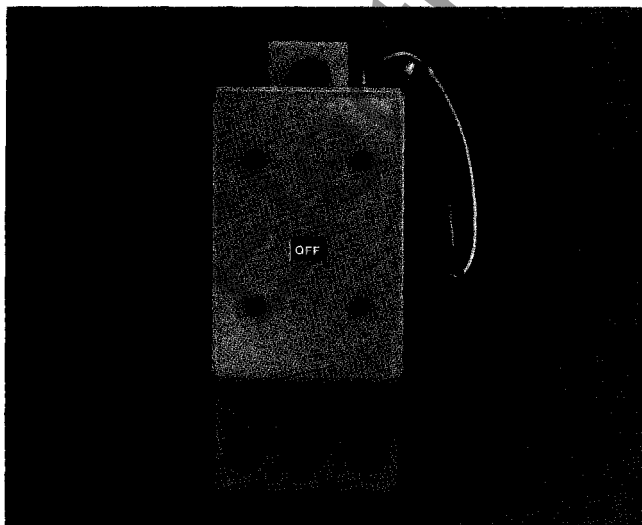


Fig. 15.1. MOM Motor-Operated mechanism on F-Frame breaker

## Mounting Screw Kit for Motor-Operated Mechanism

Required with plug-in mounting-base assembly when used with motor-operating mechanisms and TDR integral-handle kits. Furnished no charge when ordered with base.

Table 15.2

Spectra RMS™ Breaker Type	Mounting Screw Kit Catalog Number
SE150	343L564G7
SF250	343L564G1
SG600	343L564G2
SK1200	343L564G3

## BACK-CONNECTED STUDS

Table 15.3

Spectra RMS™ Breaker Type	Max. Amps	Length, Back of Breaker in Inches	Catalog Number	Std Pkg
SE150	50	2 <sup>25</sup> / <sub>32</sub> (short)	TEF1	1
		4 <sup>13</sup> / <sub>32</sub> (long)	TEF2	
SE150	150	3 <sup>13</sup> / <sub>32</sub> (short)	TEF3	1
		5 <sup>25</sup> / <sub>32</sub> (long)	TEF4	
SF250	250	2 <sup>23</sup> / <sub>32</sub> (short)	TFK1	1
		5 <sup>31</sup> / <sub>32</sub> (long)	TFK2	
SG600	600	5 <sup>17</sup> / <sub>32</sub>	SGBCS	2
SK1200	600	5 <sup>1</sup> / <sub>2</sub>	TKM10	2
SK1200	1200	5 <sup>1</sup> / <sub>2</sub>	TKM11	
		8	TKM12	

# External Accessories

## PLUG-IN MOUNTING BASE ASSEMBLY

Table 16.1

Plug-in Mounting Bases – 2 Required per Breaker						Optional Mounting Plate
Ampere Rating	Spectra RMS™ Breaker Type	No. Poles	Stud Configuration		Catalog Number	Catalog Number
			PD1	PD2		
150	SE150	3	SLS	LSL	TE13PD1,2	TMP1 TMP5
250	SF250	2 3	SOS SLS	LOL LSL	TF22PD1,2 TF23PD1,2	TMP2
400	SG400	3	SLS	LSL	SGPC1ⓄSGPC2Ⓞ	SMP3
600	SG600	3	SLS	LSL	SGPC1ⓄSGPC2Ⓞ	SMP3
800	SK1200	3	SLS	LSL	TK83PD1A,2A	TMP4
1000	SK1200	3	SLS	LSL	TK103PD1A,2A	TMP4
1200	SK1200	3	SLS	LSL	TK123PD1A,2A	TMP4

●Vertical studs only for G600 frame.

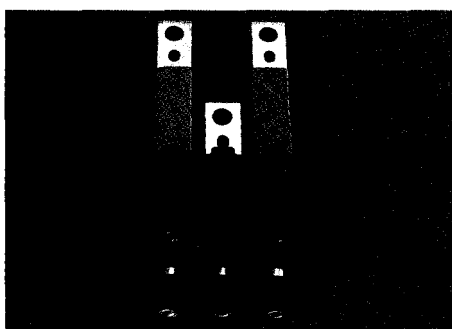


Fig. 16.1. Plug-in mounting base Cat. No. TF23 PD2

Each plug-in mounting base assembly includes all mounting hardware, studs, and male or female connectors for attachment to one end of breaker. Studs are of different length, so by using proper combinations of PD1 and PD2 units, adequate electrical spacing will be assured between adjacent breakers; i.e., short-long-short (SLS) unit must be used adjacent to a long-short-long (LSL) unit. All Spectra RMS™ two-pole breakers are three-pole devices with the center pole omitted. When these breakers are to be mounted side by side, a short-open-short (SOS) unit must be used on one end and a long-open-long (LOL) on the other.

Horizontal studs are normally supplied with the flat surface of studs at right angles to the long axis of the breaker. If vertical studs are desired, substitute "C" for "D" in the catalog number, e.g., TE13PC1 (vertical) for TE13PD1 (horizontal). The optional mounting plate (TMP1, etc.), sup-

plied at no cost when ordered with a pair of plug-in mounting bases. It accurately locates and supports the line and load plug-in mounting-base assemblies, provides convenient means to attach the entire unit to a metal structure, and serves as a deadfront barrier.

## HANDLE-LOCKING, HANDLE-EXTENSION DEVICES

Table 16.2

Spectra RMS™ Breaker Type	Device	Cat. No.
SE150, SF250	Handle locking	SBD1
SK1200	Handle extension – replacement	252B1642G1

## PADLOCKING DEVICES

Table 16.3

Spectra RMS™ Breaker Type	Device Catalog Number
SE150 SF250	SEPLD
SG600	SGPLD
SK1200	SKPLD

Suitable for use with circuit breakers used in group-mounted panelboard construction only.

## BREAKER MOUNTING-SCREW KITS

Table 16.4

Application	Spectra RMS™ Breaker Type	Kit Catalog Number	Screw Size
For use on mounting plates with tapped holes (4 screws and lockwashers)	SE150	343L162G27	10-32x2 <sup>7</sup> / <sub>8</sub> (std.)
		343L162G8	8-32x2 <sup>7</sup> / <sub>8</sub> (opt.)
	SF250	343L162G16	12-24x3 <sup>3</sup> / <sub>4</sub> (std.)
		343L162G28	10-32x3 <sup>3</sup> / <sub>4</sub> (opt.)
For use on mounting plates with clearance holes (4 screws, lockwashers)	SE150	343L162G16	12-24x3 <sup>3</sup> / <sub>4</sub>
		343L162G13	5 <sup>9</sup> / <sub>16</sub> -18x1 <sup>1</sup> / <sub>4</sub>
	SF250	343L162G26	10-32x3 (std.)
		343L162G2	8-32x3 (opt.)
SK1200	343L162G21	12-24x4 (std.)	
	343L162G29	10-32x4 (opt.)	
	343L162G21	12-24x4	
SK1200	343L162G19	5 <sup>9</sup> / <sub>16</sub> -18-1 <sup>3</sup> / <sub>4</sub>	



### MECHANICAL INTERLOCKS

Contact GE sales office for availability.

### SPECIAL CALIBRATION

Spectra RMS™ breakers are ambient insensitive. Trip times will not vary over the range 10-50°C breaker ambient. Refer to GET-7002 for further application information.

### FUNGUS AND MOISTURE PROOFING

Spectra RMS™ circuit breakers contain no functional

parts that would support fungus growth and are, therefore, inherently fungusproof.

### OTHER RELEVANT PUBLICATIONS

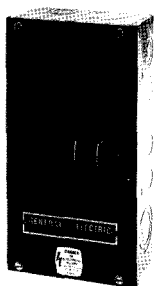
- GET-7002 Technical Application and Selection – Spectra RMS™ Breakers
- GET-3550 Short-Circuit Calculations
- GEP-1100G Buylog® Catalog – Low- and Medium-Voltage Components and Equipment

### TIME-CURRENT CURVE INDEX

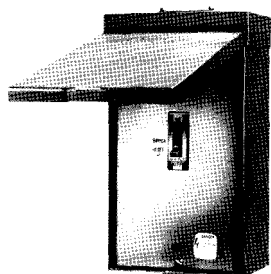
Table 17.1

Type	Breaker		Time-current Curve Number	
	Frame	Rating Plug	Circuit Breaker	Mag-Break™
SE	7	3, 7		K215-181
SE	30	15, 20	K215-165	K215-182
SE	30	25, 30	K215-166	K215-183
SE	60	40, 50	K215-167	K215-184
SE	60	60	K215-168	K215-185
SE	100	70, 80	K215-169	K215-186
SE	100	90, 100	K215-170	K215-187
SE	150	110, 125	K215-171	K215-188
SE	150	150	K215-172	K215-189
SF	250	70, 90, 100, 110 125, 150, 175 200, 225, 250	K215-173	K215-190
SG	400	125, 150, 175 200, 225, 250 300, 350, 400	K215-174	K215-191
SG	600	250, 300, 350 400, 450, 500, 600	K215-175	K215-192
SK	800	300, 400, 500, 600	K215-176	K215-193
SK	800	700, 800	K215-177	K215-194
SK	1200	600, 700	K215-178	K215-195
SK	1200	800, 1000	K215-179	K215-196
SK	1200	1200	K215-180	K215-197

UL-Listed File E11592. Suitable for use as service equipment. 60°C/75°C conductor ratings. Short-circuit ratings are equal to the rating of the installed breaker.



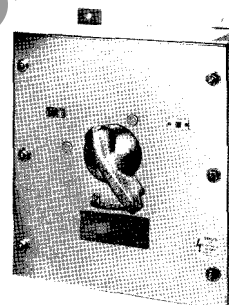
**Fig. 18.1.** Type 1, Indoor surface or flush mounting



**Fig. 18.2.** Type 3R outdoor, raintight



**Fig. 18.3.** Types 12K and 12 rotary handle integral with breaker



**Fig. 18.4.** Types 4/4X stainless steel, water-tight, dust-tight

**Table 18.1** 100-1200 Amps, 240-600 volts ac for 2-pole and 3-pole breakers

Spectra RMS™ Breaker Type	Max. Amp Rating	Type 1 <sup>Ⓞ</sup> Indoor	Type 3R <sup>Ⓟ</sup> Outdoor	Type 12 <sup>Ⓢ</sup> Oil-tight/ Dust-tight	Type 4 / 4X Stainless Steel	Neutral Catalog Number
SE150 <sup>Ⓢ</sup>	100	TE100F TE100S	TE100F	SE100D SE100J	SE100CS <sup>Ⓢ</sup>	Included
	150	TE150F TE150S	TE150R	—	—	Included
SF250	250	TF225F TF225S	TF225R	SF225D SF225J	SF225CS	TNIA225
SG600 <sup>Ⓢ</sup>	400	SG400F SG400S	SG400R	SG400D SG400J	SG400CS	TNIA400
	600	SG600F SG600S	SG600R	SG600J	—	TNIA600
SK1200 <sup>Ⓢ</sup>	1200	TK4V1200F TK4V1200S	TK4V1200R	SK1200J	—	TNIA800 TNIA1200

<sup>Ⓞ</sup>F-flush, S-Surface.

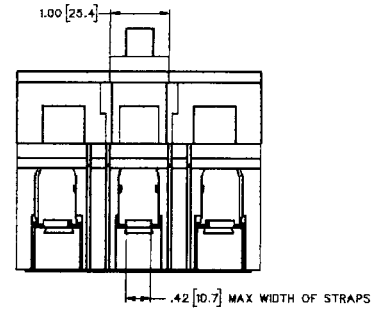
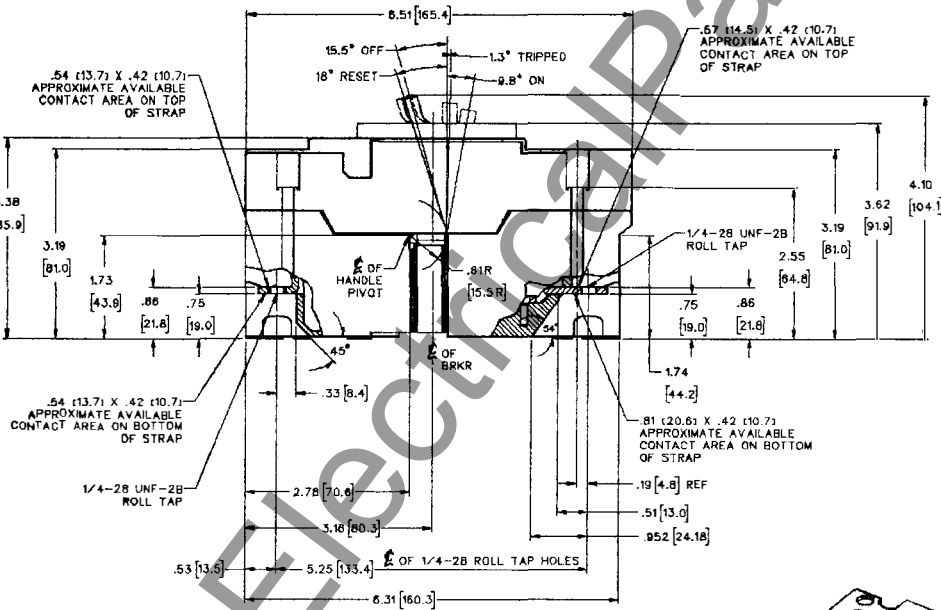
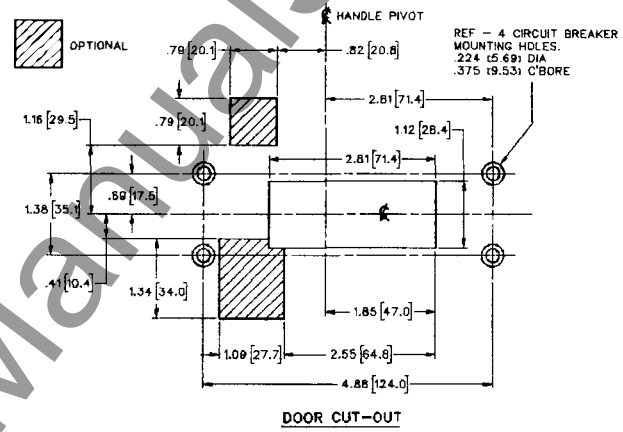
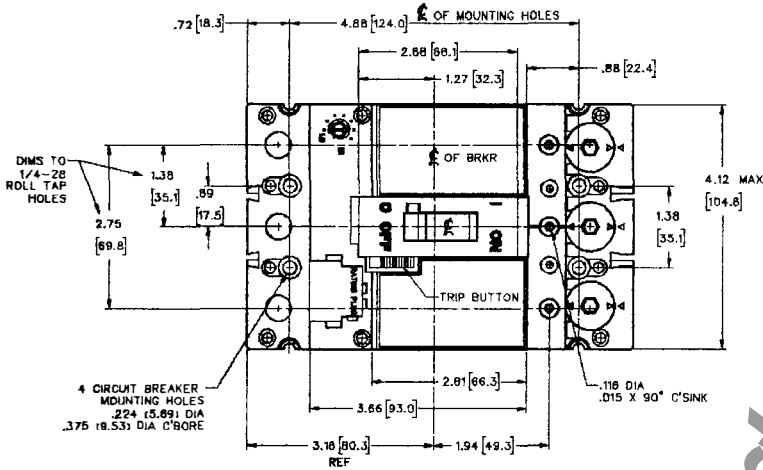
<sup>Ⓟ</sup>70-250 amp devices have removable closing cap. Larger amp devices require field cut openings. Order hubs separately.

<sup>Ⓢ</sup>D = Type 12K with KOs. J = Type 12 without KOs.

<sup>Ⓢ</sup>Neutral not included; if required, order Cat. No. TNIA100.

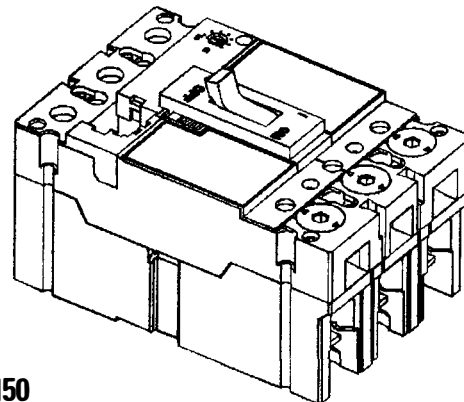
<sup>Ⓢ</sup>UL Listing pending. Contact GE sales office for availability.

# Outline Drawings



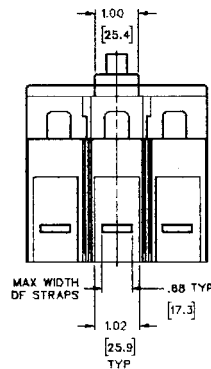
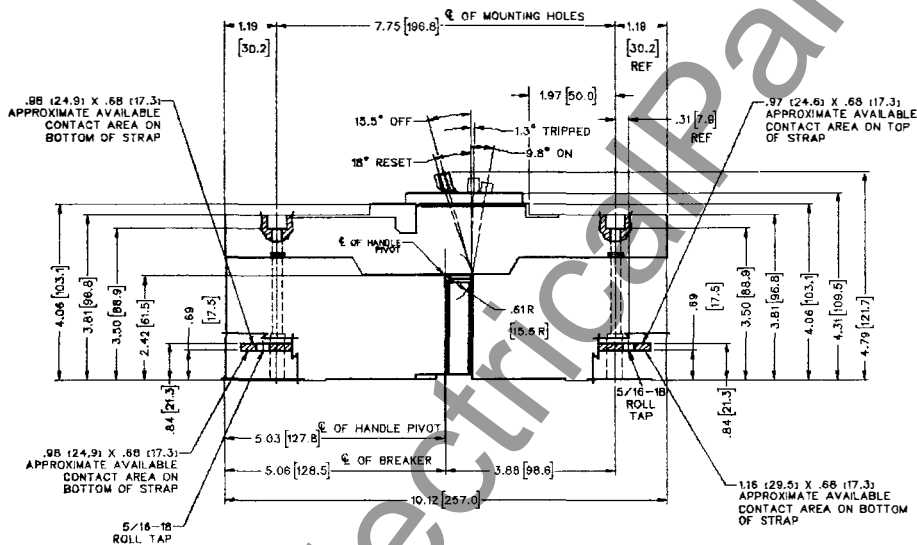
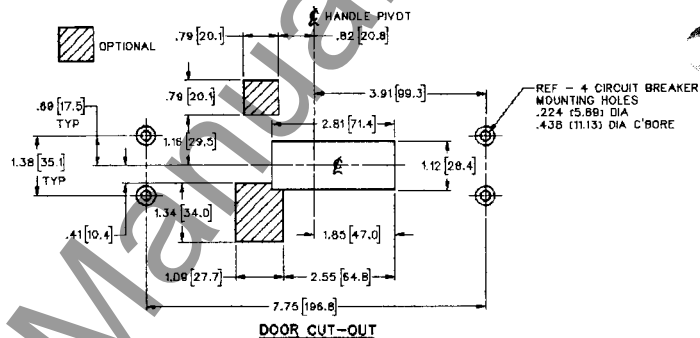
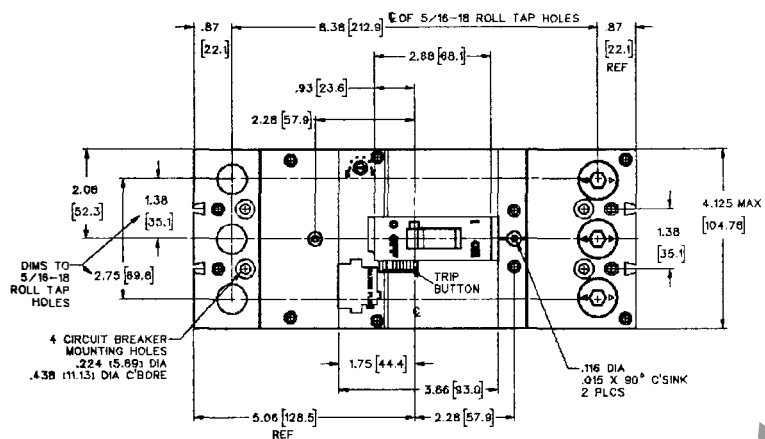
NOTE:  
L DIMENSIONS IN BRACKETS  
ARE IN MILLIMETERS.

OPERATING FORCES	
TRIPPED TO MAX RESET	28 LB (12.7 Kg)
OFF TO ON	13 LB (5.9 Kg)
ON TO OFF	14 LB (6.4 Kg)



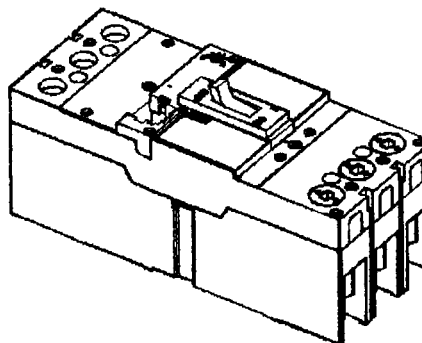
SE150

# Outline Drawings



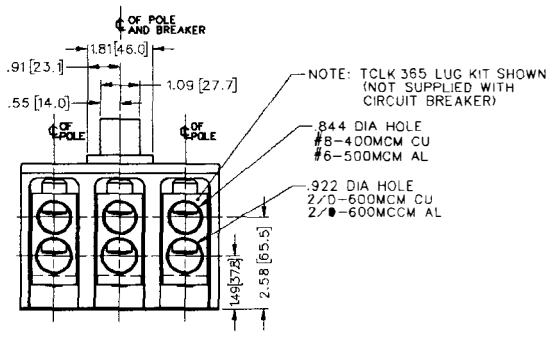
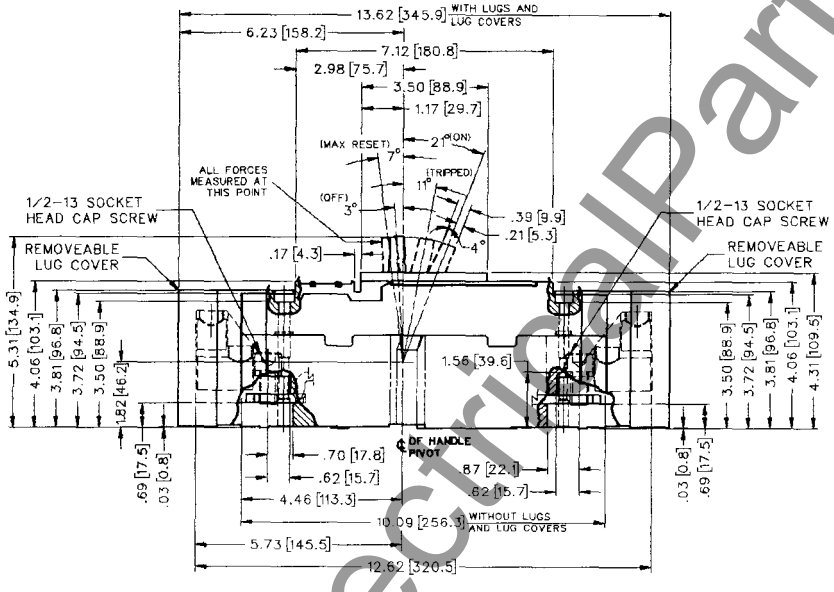
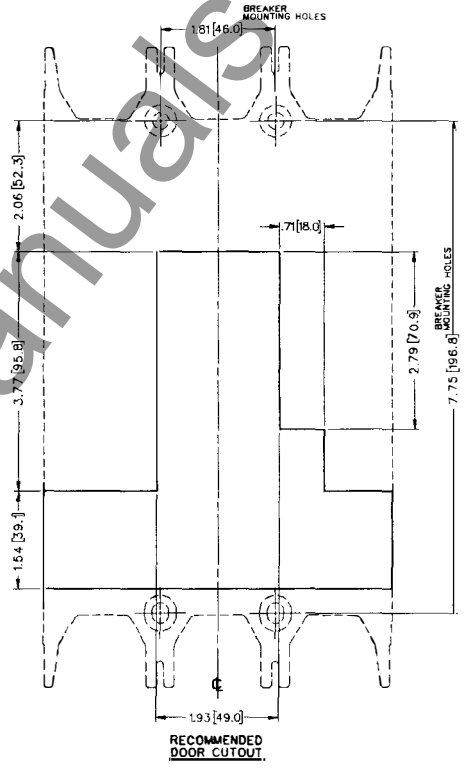
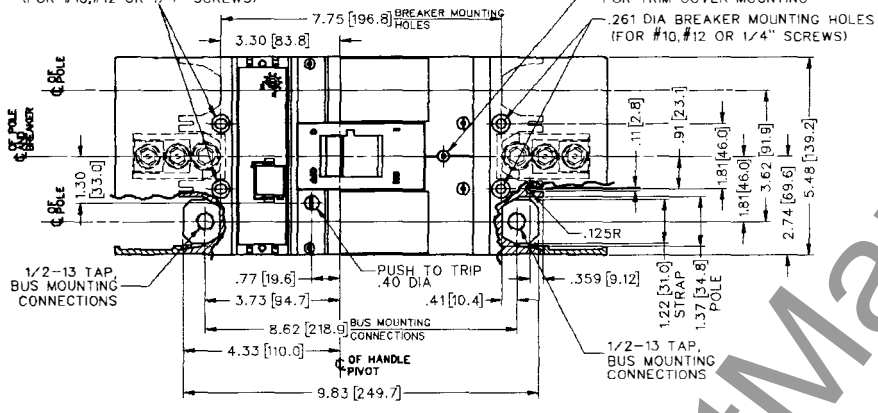
NOTE:  
1. DIMENSIONS IN BRACKETS  
ARE IN MILLIMETERS.

OPERATING FORCES	
TRIPPED TO MAX RESET	28 LB (12.7 Kg)
OFF TO ON	13 LB (5.9 Kg)
ON TO OFF	14 LB (6.4 Kg)

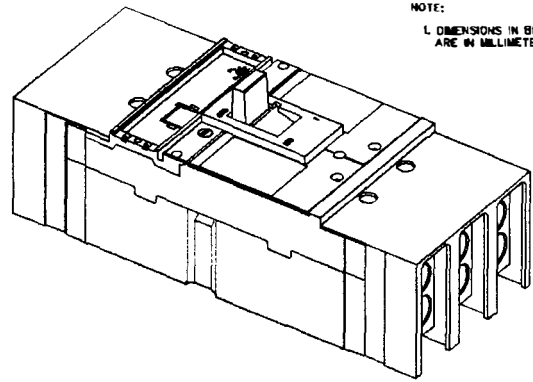


SF250

.261 DIA BREAKER MOUNTING HOLES  
(FOR #10, #12 OR 1/4" SCREWS)



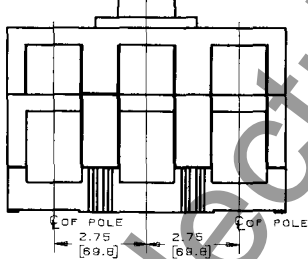
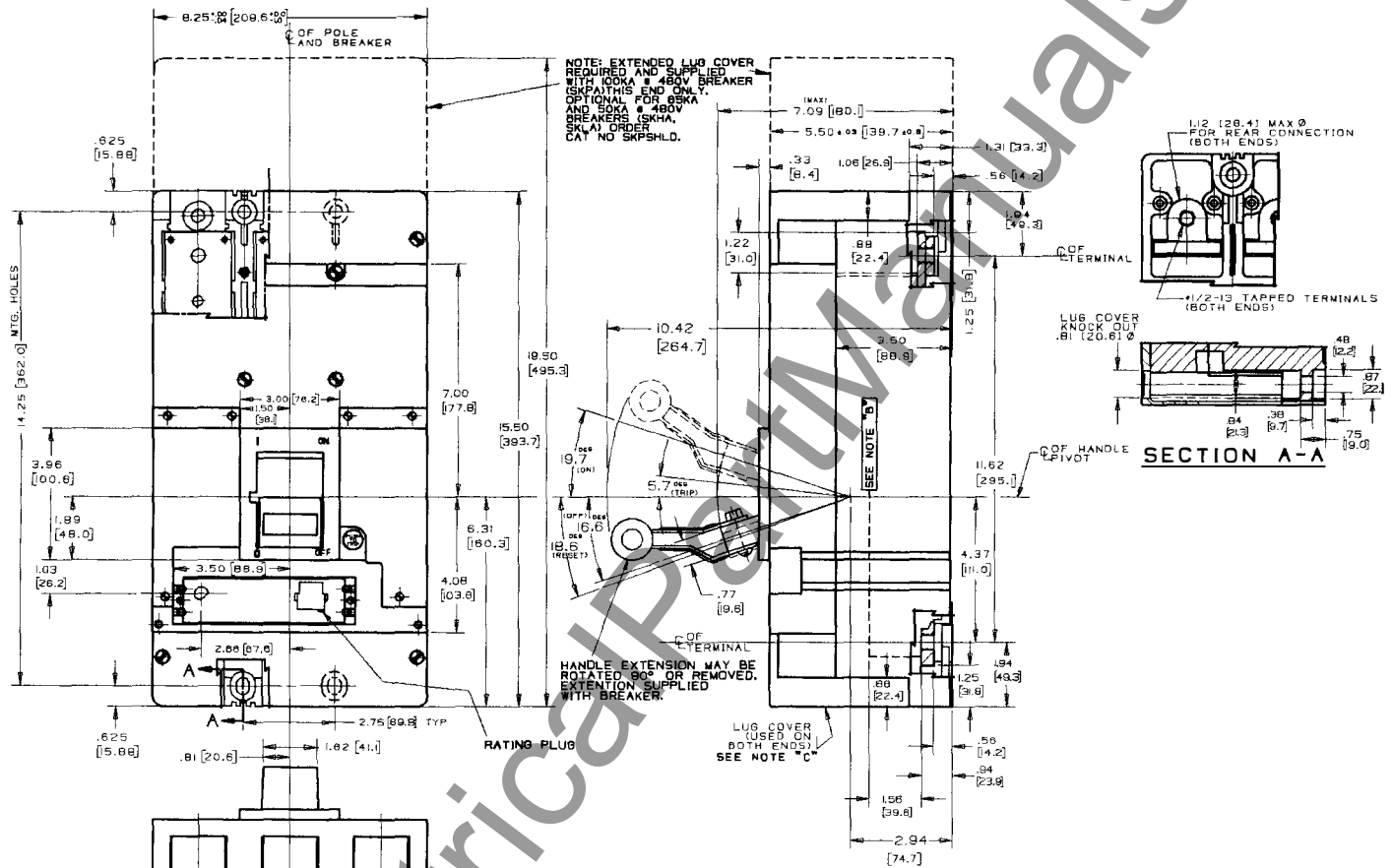
OPERATING FORCES	
TRIPPED TO MAX RESET	40 lb [18.1 kg]
OFF TO ON	40 lb [18.1 kg]
ON TO OFF	30 lb [13.6 kg]
PUSH-TO-TRIP BUTTON	3 lb [1.4 kg]



**SG60**  
**(PRELIMINARY)**

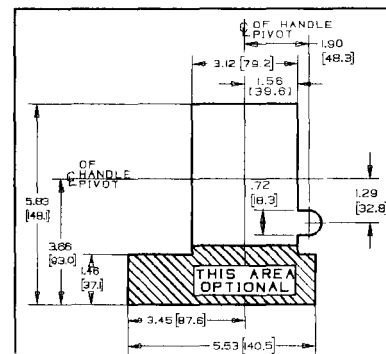
NOTE:  
L DIMENSIONS IN BRACKETS  
ARE IN MILLIMETERS.

# Outline Drawings



NOTE "A"- DIMENSIONS IN BRACKETS [ ] ARE IN MILLIMETERS. Ø DENOTES DIAMETER.  
 NOTE "B"- BUSS CONNECTIONS TO BE MADE AT THIS LEVEL. (PROGRAMMER END ONLY)  
 NOTE "C"- SEE DRAW 138C4987 SHEETS 3 & 4 FOR DETAILS OF LUGS. LUGS MUST BE ORDERED SEPARATELY.

NOMINAL HANDLE OPERATING FORCES (LBS)		
	WITHOUT EXTENSION	WITH EXTENSION
ON TO OFF	46	23
TRIP TO RESET	64	32
OFF TO ON	78	39



SK1200

# Guide Form Specifications

## **SPECTRA RMS™ CIRCUIT BREAKERS GUIDE FORM SPECIFICATIONS**

All molded-case circuit breakers shall have an over-center, toggle handle-operated, trip-free mechanism with quick-make, quick-break action independent of the speed of the toggle handle operation. The designs shall provide common tripping of all poles. The escutcheon area of the breaker cover shall have molded-in "ON" and "OFF" markings and corresponding "I" and "O" (for "ON" and "OFF" respectively) international markings.

All molded-case circuit breakers shall be GE Spectra RMS™ or equal with digital solid state, ambient insensitive tripping. All frames from 30A to 1200A shall use field-installed, UL Listed rating plugs to establish (or change) the ampere rating and shall be suitable for reverse feed (i.e., no line/load markings). The digital microprocessor trip system shall be applicable for 50 hertz through 400 hertz systems. It shall accurately sense sinusoidal and non-sinusoidal current waveforms (fundamental through the thirteenth harmonic order on a 60 hertz base) by continuously sampling each phase throughout every cycle.

All breaker frame sizes (SE150, SF250, SG600 and SK1200) shall have a single, customer-adjustable, instantaneous pickup knob to set the instantaneous response for all poles. In addition, there shall be a short time pickup with I<sup>2</sup>t slope delay that tracks the instantaneous pickup setting at approximately 50 to 80 percent of the instantaneous pickup.

(Where) (If) required, instantaneous-only breakers shall be Spectra RMS™ Mag-Break® motor circuit protectors or equal employing the same features as the molded-case breakers, except with the long-time (thermal) response omitted. The tracking short-time function and common rating plugs shall be provided on the instantaneous-only breakers.

Molded-case switches (where) (if) required, shall have a fixed, high-set instantaneous pickup set below the popping level of the contacts. The short circuit withstand ratings shall be 100kA @ 480 Vac and 25kA (minimum) @ 600 Vac when protected by any UL Listed circuit breaker or fuse of equal or lesser ampere rating.

Circuit breakers and instantaneous-only breakers shall have frame sizes as follows: 30A, 60A, 100A, 150A, 250A, 400A, 600A, 800A and 1200A. In addition a 7A instantaneous-only frame shall be available. Rating plugs shall cover all standard ampere ratings from one frame's maximum ampere rating down to the next lower frame ampere rating. A frame shall reject a rating plug not intended for use in it. Mag-Break® or equal breakers shall use the same rating plugs for 15A through 1200A ratings as the Spectra RMS™ circuit breakers and shall additionally have 3A and 7A plugs for the 7A frame.

The circuit breaker frames shall employ high-strength, molded-polyester, glass-reinforced cases and covers. The breaker frame shall have legible, tamper-proof nameplates containing catalog number; maximum frame ampere rating; maximum voltage ratings and interrupting ratings in accordance with UL Standard 489, International Electrotechnical Commission (IEC) Standard 947.2 and Japanese Industrial Standard (JIS) No. C8370; terminal lug catalog number, torque requirements and cable insulation rating and wire ranges; the rating plug type; and Underwriters' Laboratories, Inc. Listing mark (or Component Recognition symbol in the case of Mag-Break® instantaneous-only breakers). The IEC short-circuit ratings shall contain both service (Ics) and ultimate (Icu) values.

All breaker frame sizes shall have a Verifier™ or equal to provide an external means for manually tripping the breaker and exercising the mechanism and trip latch member.

Internal accessories shall be UL Listed for field installation and shall not require circuit breaker cover removal. All internal accessories shall be common to SE150, SF250, SG600 and SK1200 frame sizes. Shunt trips, undervoltage releases, auxiliary switches and bell alarms shall be available and shall install from the front of the circuit breaker, instantaneous-only breaker or molded-case switch.

External accessories, such as motor-operated mechanisms, various handle operators, plug-in base assemblies, back-connected studs, shall be UL Listed for field installation on circuit breakers (including instantaneous-only circuit breakers) and molded-case switches.

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