

240V Circuit Breakers



BQ Breakers

Selection and ordering data

	240V
BQ	10KAIC
BQH	22KAIC
HBQ	65KAIC

1-, 2- & 3-pole up to 125A for circuit protection up to 240 volt circuits (UL)

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QJ Breakers

Selection and ordering data

	240V
QJ2	10KAIC
QJH-2	22KAIC
QJ2-H	42KAIC
HQJ2-H	100KAIC

2- & 3-pole up to 225A for circuit protection up to 240 volt circuits (UL)

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600/347V Circuit Breakers



CQD Breakers

Selection and ordering data

	480V	600/347V
CQD	14KAIC	-
CQD-6	-	10KAIC

1-, 2- & 3-pole up to 100A for circuit protection up to 600/347V (CSA) & 480/277V (UL) circuits

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600/347V Circuit Breakers



NGG Breakers

Selection and ordering data

	480V	600/347V
NGG	25KAIC	14KAIC

1-, 2- & 3-pole up to 125A for circuit protection up to 600/347 volt circuits (UL/CSA/IEC)

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600V Circuit Breakers



DG VL Breakers

Selection and ordering data

	480V	600V
NDG	35KAIC	18KAIC
HDG	65KAIC	20KAIC
LDG	100KAIC	25KAIC

2- & 3-pole up to 150A for circuit protection up to 600 volt circuits (UL/CSA/IEC)

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FG VL Breakers

Selection and ordering data

	480V	600V
NFG	35KAIC	18KAIC
HFG	65KAIC	20KAIC
LFG	100KAIC	25KAIC

2- & 3-pole up to 250A for circuit protection up to 600 volt circuits (UL/CSA/IEC)

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Molded Case Circuit Breakers

600V Circuit Breakers



JG VL Breakers

Selection and ordering data

	480V	600V
NJG	35KAIC	25KAIC
HJG	65KAIC	25KAIC
LJG	100KAIC	25KAIC

2- & 3-pole up to 400A for circuit protection up to 600 volt circuits (UL/CSA/IEC)

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LG VL Breakers

Selection and ordering data

	480V	600V
NLG	35KAIC	25KAIC
HLG	65KAIC	25KAIC
LLG	100KAIC	25KAIC

2- & 3-pole up to 600A for circuit protection up to 600 volt circuits (UL/CSA/IEC)

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MG VL Breakers

Selection and ordering data

	480V	600V
NMG	35KAIC	25KAIC
HMG	65KAIC	35KAIC
LMG	100KAIC	50KAIC

2- & 3-pole up to 800A for circuit protection up to 600 volt circuits (UL/CSA/IEC)

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600V Circuit Breakers



NG VL Breakers

Selection and ordering data

	480V	600V
NNG	35KAIC	25KAIC
HNG	65KAIC	35KAIC
LNG	100KAIC	65KAIC

2- & 3-pole up to 1200A for circuit protection up to 600 volt circuits (UL/CSA/IEC)

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PG VL Breakers

Selection and ordering data

	480V	600V
NPG	35KAIC	25KAIC
HPG	65KAIC	35KAIC
LPG	100KAIC	65KAIC

2- & 3-pole up to 1600A for circuit protection up to 600 volt circuits (UL/CSA/IEC)

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600V Circuit Breakers



Sentron ED Breakers

Selection and ordering data

	240V	480V	600V
ED2	10KAIC	-	-
ED4	65KAIC	18KAIC	-
ED6	65KAIC	25KAIC	18KAIC

1-, 2- & 3-pole up to 125A for circuit protection up to 600 volt circuits (UL/CSA/IEC)

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Sentron HED/HHED Breakers

Selection and ordering data

	480V	600V
HED4	42KAIC	-
HHED6	65KAIC	18KAIC
CED6	200KAIC	100KAIC

1-, 2- & 3-pole up to 125A for circuit protection up to 600 volt circuits (UL/CSA/IEC)

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Sentron FD Breakers

Selection and ordering data

	480V	600V
FD6	35KAIC	22KAIC
HFD6	65KAIC	35KAIC
HHFD6	100KAIC	25KAIC
CFD6	200KAIC	100KAIC

2- & 3-pole up to 250A for circuit protection up to 600 volt circuits (UL/CSA/IEC)

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600V Circuit Breakers



Sentron JD Breakers

Selection and ordering data

	240V	480V	600V
JD2	65KAIC	-	-
JD6, SJD6-A	65KAIC	35KAIC	25KAIC
HJD6, SHJD6-A	100KAIC	65KAIC	35KAIC
HHJD6	200KAIC	100KAIC	50KAIC
CJD6, SCJD6-A	200KAIC	150KAIC	100KAIC

2- & 3-pole up to 400A for circuit protection up to 600 volt circuits (UL/CSA)

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Sentron LD Breakers

Selection and ordering data

	480V	600V
LD6, SLD6-A	35KAIC	25KAIC
HLD6, SHLD6-A	65KAIC	25KAIC
HHLD6	100KAIC	50KAIC
CLD6, SCLD6-A	150KAIC	100KAIC

2- & 3-pole up to 600A for circuit protection up to 600 volt circuits (UL/CSA)

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Sentron LMD Breakers

Selection and ordering data

	480V	600V
LMD6	50KAIC	25KAIC
HLMD6	65KAIC	50KAIC

2- & 3-pole up to 800A for circuit protection up to 600 volt circuits (UL/CSA)

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Molded Case Circuit Breakers

600V Circuit Breakers



Sentron MD Breakers

Selection and ordering data

	<u>480V</u>	<u>600V</u>
MD, SMD6	50KAIC	25KAIC
HMD, SHMD6	65KAIC	50KAIC
CMD, SCMD6	100KAIC	65KAIC

2- & 3-pole up to 800A for circuit protection up to 600 volt circuits (UL/CSA)

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Sentron ND Breakers

Selection and ordering data

	<u>480V</u>	<u>600V</u>
ND, SND6	50KAIC	25KAIC
HND, SHND6	65KAIC	50KAIC
CND, SCHD6	100KAIC	65KAIC

2- & 3-pole up to 1200A for circuit protection up to 600 volt circuits (UL/CSA)

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Sentron PD Breakers

Selection and ordering data

	<u>480V</u>	<u>600V</u>
PD, SPD6	50KAIC	25KAIC
HPD, SHPD6	65KAIC	50KAIC
CPD	100KAIC	65KAIC

2- & 3-pole up to 1600A for circuit protection up to 600 volt circuits (UL/CSA)

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600V Circuit Breakers



Sentron RD Breakers

Selection and ordering data

	<u>480V</u>	<u>600V</u>
RD	50KAIC	25KAIC
HRD	65KAIC	50KAIC

2- & 3-pole up to 2000A for circuit protection up to 600 volt circuits (UL/CSA)

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Sentron Circuit Breakers: Additional Information

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Ordering

In the FD through RD frames, you may order molded case circuit breakers three basic ways:

- As separately ordered frames, trip units and lugs
- As frame, trip unit and lugs ordered as one catalog number and shipped unassembled or assembled
- As Frame and Trip Unit shipped assembled and with the trip unit made non-removable, in compliance with UL 489 requirements that to be reverse fed the circuit breaker must not have an interchangeable trip unit.

These two options are described in the following:

Components Ordered Separately

To get the components for a 3-pole, 400 Amp standard interrupting circuit breaker, you would order the frame (JD63F400), the trip unit (JD63T400) and six lugs (TA2J6500). This option is normally useful only if you stock and use large volumes of product and wish to reduce your inventory cost. You may stock, for example, a smaller number of frames (JD63F400) and a variety of trip units (JD63T300, JD63T350, etc.) and assemble breakers as you need them.

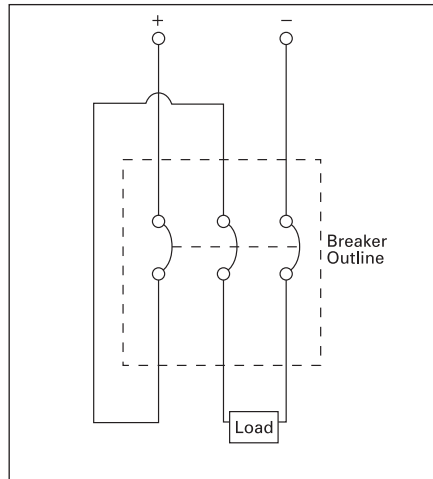
Frame, Trip Unit and Lugs Ordered Together

If you order the catalog number JD63B400, you will receive a frame, a trip unit and 6 lugs in separate packages. By suffixing this number with "L" (e.g. JD63B400L), you will receive frame, trip unit and lugs assembled in one container. Pursuant to UL 489, a product ordered thus will have the markings "LINE" and "LOAD", and may not be "reverse fed" (with power flowing from the "OFF" end of the breaker toward the "ON" end).

Non-Interchangeable Trip Breakers

If you place an "X" after the frame size designator (e.g. JXD63B400), you will receive a frame and trip unit assembled, with the trip unit made non-removable. If you suffix an "L" to this catalog number (e.g. JXD63B400L), you will receive the breaker, non-removable trip unit and lugs assembled. Unless you anticipate a specific need to change the breaker's ampere rating in the future, this is the preferred ordering method, as the products are assembled to Siemens' specifications in our factories. These breakers are suitable for use reverse fed according to UL 489, since the trip unit is not removable.

The smaller frames (QJ, ED and below) do not have removable trip units, and consequently are shipped only as assembled products. To add lugs, see the ordering instructions on each product's catalog page.



500V DC Wiring Configuration

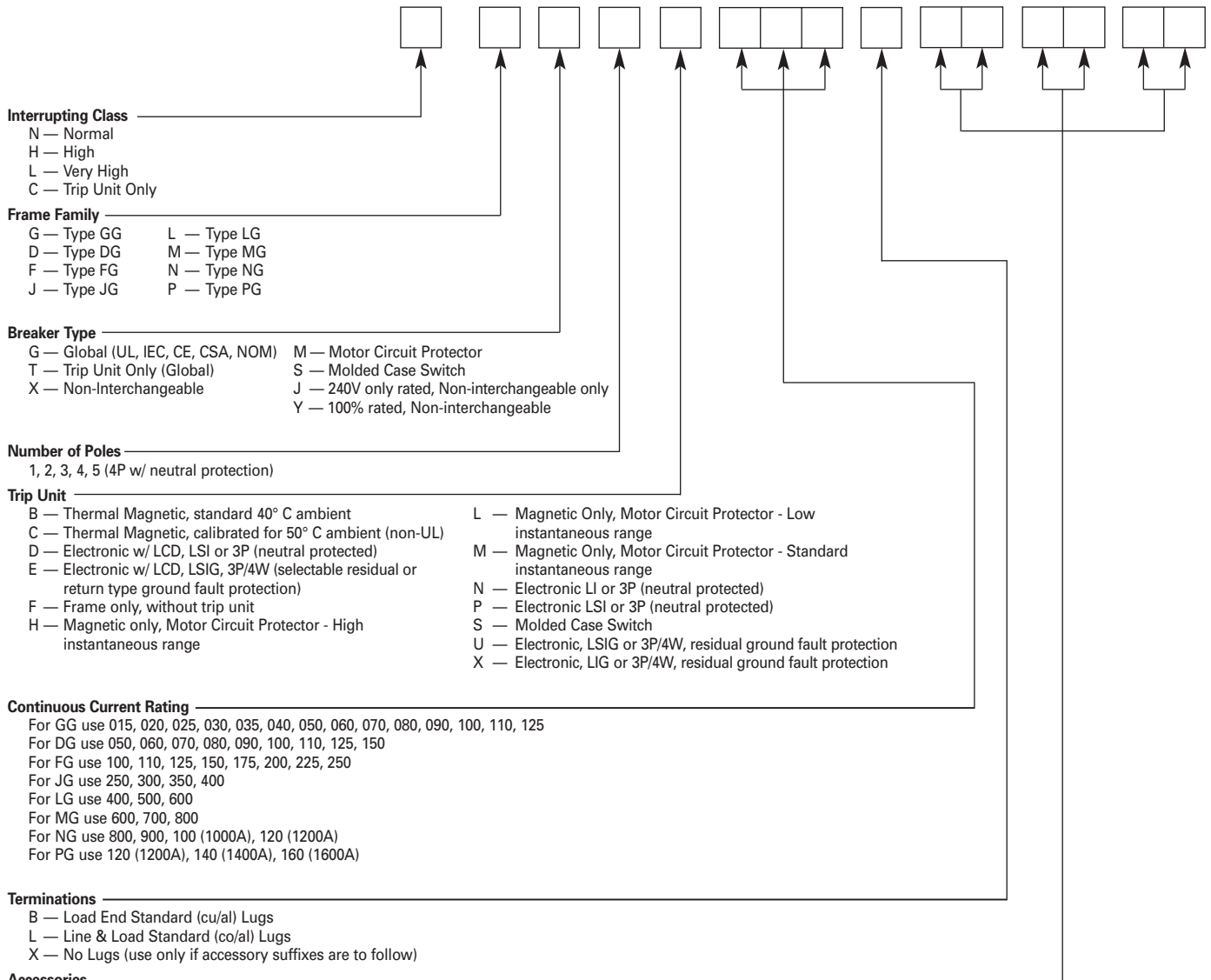
Connecting Breakers for DC Application

Most Siemens thermal magnetic trip MCCBs are applicable on direct current (dc) systems. Generally, for 250 V dc systems a two pole breaker is used, with one pole on each leg of the supply circuit. For three pole breakers applied on 500 V undergrounded DC systems, it is important to connect the power supply "zig-zag" through the breaker as shown in the figure below. This assures that the Voltage between phases on the breaker terminals is uniformly distributed.

VL Molded Case Circuit Breakers

Catalog Numbering System

Selection/Application



Auxiliary and Alarm Switch Combinations

Suffix Description

- A1 — 1 Alarm (includes 1NO & 1NC switch with a 2 Aux./1 Alarm Base, for frames DG to JG)
- A2 — 2 Aux (1NO & 1NC switch with a 3 Aux. Base, for frames DG to JG)
- A3 — 2 Aux + 1 Alarm (2NO & 2NC switches with a 2 Aux./1 Alarm Base, for frames DG to JG)
- A3 — 2 Aux + 2 Alarm (2NO & 2NC switches with a 2 Aux./2 Alarm Base, for frames LG to PG)
- A4 — 4 Aux (2NO & 2NC switches with a 4 Aux. Base, for frames LG to PG)

Shunt Trips

- RB — 24 VDC
- RC — 48-60 VDC
- RD — 110-127 VDC
- RE — 250 VDC
- RM — 48-60 VAC
- RN — 110-127 VAC
- RS — 208-277 VAC
- RV — 380-600 VAC

Under Voltage Releases

- UA — 12 VDC
- UB — 24 VDC
- UC — 48 VDC
- UD — 110-127 VDC
- UE — 220-250 VDC
- UG — 60 VDC
- UK — 24 VAC
- UN — 110-127 VAC
- UP — 208 VAC
- UR — 220-250 VAC
- US — 277 VAC
- UT — 380-415 VAC
- UU — 440-480 VAC
- UV — 600 VAC

Note: A1 and A3 include 1NO and 1NC switch for alarm purposes, only one of these switches may be used as there is only one space for an alarm.

LCD = Liquid Crystal Display

LS = Long Delay & Short Delay trip functions

LSI = Long Delay, Short Delay, & Instantaneous trip functions

LSIG = Long Delay, Short Delay, Instantaneous, & Ground Fault trip functions

GF = Ground Fault

3P = 3-pole

4W = 4-wire

VL Molded Case Circuit Breakers

Catalog Numbering System

Selection

If ordering factory-installed accessories or special modifications, you must order a 15-digit catalog number. See the examples below for a detailed explanation. The 15 digit number is achieved by placing X's in positions not being occupied by an accessory/modification.

Auxiliary Switch Example:

H F G 3 B 2 0 0 L A 2 X X X X

Standard 9-digit Aux. Switch Completes Cat #

Shunt Trip / UVR Example:

H F G 3 B 2 0 0 L X X U N X X

Standard 9-digit UVR Completes Cat #

Shunt Trip / Auxiliary Switch Example:

H F G 3 B 2 0 0 L A 2 R N X X

Standard 9-digit Aux. Switch Shunt Trip Completes Cat #

Factory Modification Example:

H F G 3 B 2 0 0 L X X X X Z 1

Standard 9-digit Completes Cat # Custom Mod.

→ These places could designate an enclosure or special modification. Siemens will define the factory modification suffixes.

Non-Interchangeable Trip Breakers Example:

H F X 3 B 2 0 0 L

Standard 9-digit

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

General Application Molded Case Circuit Breakers

Catalog Numbering System

Selection/Application

If used on 250A frame and above means non-interchangeable trip breaker with factory assembled frame and trip. Solid state trip and current limiting (S or C in first character) are non-interchangeable only, and the "X" is omitted.

Trip Unit Type

- Omitted – Thermal-Magnetic
- S — Sensitrip® Electronic Trip

Sentron Series Type/Interrupting Range

- Omitted – Standard Rating
- H — High IC Rating
- HH — Extra High IC Rating
- C — Highest IC Rating and Current Limiting

Frame Identifier

- | | |
|---------------|-------------|
| E — Type ED | M — Type MD |
| F — Type FD | N — Type ND |
| J — Type JD | P — Type PD |
| L — Type LD | R — Type RD |
| LM — Type LMD | T — Type TD |

Maximum Voltage

- 2 — 240 Vac
- 4 — 480 Vac
- 6 — 600 Vac

Number of Poles

- 1
- 2
- 3
- 9 used to indicate the max. functions for an electronic trip circuit breaker (always 3 poles)

(Specific Application Type)

- B — Standard 40°C Breaker
- M — Calibrated for 50°C Application
- F — Frame Only
- T — 40°C Trip Unit Only
- W — 50°C Trip Unit Only
- S — Molded Case Switch
- L — Low Instantaneous Range ETI Breaker
- A — Standard Range ETI Breaker
- H — High Instantaneous Range ETI Breaker

Maximum Continuous Current Rating

- ED Frame — 015, 020, 025, 030, 035, 040, 045, 050, 060, 070, 080, 090, 100, 110, 125
- FD Frame — 070, 080, 090, 100, 110, 125, 150, 175, 200, 225, 250
- JD Frame — 200, 225, 250, 300, 350, 400
- LD Frame — 250, 300, 350, 400, 450, 500, 600
- LMD Frame — 500, 600, 700, 800
- MD Frame — 500, 600, 700, 800
- ND Frame — 900, 100 (1000A), 120 (1200A)
- PD Frame — 120 (1200A), 140 (1400A), 160 (1600A)
- RD Frame — 160 (1600A), 180 (1800A), 200 (2000A)
- TD Frame — 2000, 2500, 3200

Suffix

- L — where applicable indicates a breaker shipped with line/load lugs installed
- A — used with a switch to show automatic self protection
- Y — 400 Hertz
- H — 100% rated
- P — Load side lugs only

NOTE:

- Position omitted if not used.



General Application Molded Case Circuit Breakers

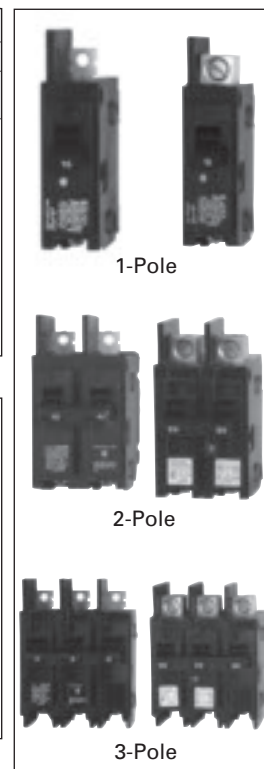
Lug-In/Lug-Out with INSTA-WIRE

Selection

All BQ/BQH/HBQ circuit breakers are supplied with load side lugs. If line side lugs are required, add suffix "L" to catalog number. Consult Siemens for any additional charge. All standard circuit breakers are calibrated for 40°C maximum ambient application.

1-Pole Plug-In (120V AC)^{①⑤}

Continuous Current Rating @ 40° C	Type BQ		Type BQH		Type HBQ	
	10,000A IR		22,000A IR		65,000A IR	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
10	BQ1B010		BQ1B010H	—	HB1B010	—
15	BQ1B015 ^②		BQ1B015H ^②		HB1B015 ^②	
20	BQ1B020 ^②		BQ1B020H ^②		HB1B020 ^②	
25	BQ1B025		BQ1B025H		HB1B025	
30	BQ1B030		BQ1B030H		HB1B030	
35	BQ1B035■		BQ1B035H■		HB1B035■	
40	BQ1B040		BQ1B040H		HB1B040	
45	BQ1B045■		BQ1B045H■		HB1B045■	
50	BQ1B050		BQ1B050H		HB1B050	
60	BQ1B060■		BQ1B060H■		HB1B060■	
70	BQ1B070■		BQ1B070H■		HB1B070■	



2-Pole Plug-In (Common-Trip 120/240V AC)^{①⑥}

10	BQ2B010		—	—	HB2B010■	
15	BQ2B015		BQ2B015H	—	HB2B015■	
20	BQ2B020		BQ2B020H		HB2B020■	
25	BQ2B025		BQ2B025H■		HB2B025■	
30	BQ2B030		BQ2B030H		HB2B030■	
35	BQ2B035		BQ2B035H■		HB2B035■	
40	BQ2B040		BQ2B040H		HB2B040■	
45	BQ2B045		BQ2B045H■		HB2B045■	
50	BQ2B050		BQ2B050H		HB2B050■	
60	BQ2B060		BQ2B060H		HB2B060■	
70	BQ2B070		BQ2B070H■		HB2B070■	
80	BQ2B080		BQ2B080H■		HB2B080■	
90	BQ2B090		BQ2B090H■		HB2B090■	
100	BQ2B100		BQ2B100H		HB2B100■	
110	BQ2B110		BQ2B110H■		HB2B110■	
125	BQ2B125		BQ2B125H		HB2B125■	

2-Pole Plug-In (Common-Trip 240V AC)^{①③⑥}

15	BQ2H015		—	—	—	—
20	BQ2H020		—	—	—	—
30	BQ2H030		—	—	—	—
40	BQ2H040■		—	—	—	—
50	BQ2H050		—	—	—	—
60	BQ2H060		—	—	—	—
70	BQ2H070■		—	—	—	—
80	BQ2H080■		—	—	—	—
90	BQ2H090■		—	—	—	—
100	BQ2H100■		—	—	—	—

3-Pole Plug-In (Common-Trip 240V AC)^{①⑦}

10	BQ3B010		—	—	HB3B010	
15	BQ3B015		BQ3B015H	—	HB3B015■	
20	BQ3B020		BQ3B020H		HB3B020■	
25	BQ3B025■		BQ3B025H■		HB3B025■	
30	BQ3B030		BQ3B030H		HB3B030	
35	BQ3B035■		BQ3B035H		HB3B035	
40	BQ3B040		BQ3B040H		HB3B040	
45	BQ3B045■		BQ3B045H		HB3B045	
50	BQ3B050		BQ3B050H		HB3B050	
60	BQ3B060		BQ3B060H		HB3B060	
70	BQ3B070		BQ3B070H		HB3B070■	
80	BQ3B080		BQ3B080H■		HB3B080■	
90	BQ3B090		BQ3B090H■		HB3B090■	
100	BQ3B100		BQ3B100H		HB3B100	

MP-T / MP-HT / MP-MT Accessories

Description	Catalog Number	Field/Factory Installed	List Price \$
120V Shunt Trip	add suffix...00S01■	Factory	(adder)
24V Shunt Trip	add suffix...00S07■	Factory	(adder)
120V Auxiliary Switch	add suffix...01■ ^②	Factory	(adder)
1-Pole Padlocking Device	ECPLD1	Field	
2-Pole Padlocking Device	ECPLD2	Field	
3-Pole Padlocking Device	ECQLD3 (Pkg of 10)	Field	
Handle Block	ECHBD1	Field	

Factory Modifications

Description	Catalog Number	List Price \$
Line Side Lugs	add suffix...L	Consult Siemens
Quick Connect Lug	add suffix...QX	(adder per pole)
400Hz Calibration	add suffix...Y ^③	(adder)
415V 50Hz Calibration	add suffix...E ^{④⑤}	No adder
Marine 50° C Ambient Calibration	add suffix...M	No adder
Fungus Proofing	add suffix...F	(adder per pole)

① UL Listed for use with 60/75° wire through 125 amps, HACR rated.
 ② 1A and 1B contacts.
 ③ UL Listed for use on 3-phase grounded "B" systems — 10,000 for this application.

④ UL Listed for frequent switching applications (SWD). 120V AC Fluorescent Lighting.
 ⑤ Shipped 12 per sleeve.
 ⑥ Shipped 6 per sleeve.
 ⑦ Shipped 4 per sleeve.

⑧ UL Listed 5KA IR.
 ⑨ Not UL Listed.
 ⑩ 1 & 2 Poles only.

■ Built to order. Allow 2-3 weeks for delivery

General Application Molded Case Circuit Breakers

DIN Rail Mounted Circuit Breakers

Selection/Dimensions

1-Pole DIN Rail (120V AC)

Breaker Type	Ampere Rating	Catalog Number	Load Side Connector	List Price \$	"Interrupting Ratings (KA) (RMS Symmetrical Amperes)" Volts AC	
					120	120/240
"BQXD 1-Pole 120V DIN Rail"	10	BQ1B010QLD	TC1Q1		10	
	15	BQ1B015QLD	TC1Q1		10	
	20	BQ1B020QLD	TC1Q1		10	
	25	BQ1B025QLD	TC1Q1		10	
	30	BQ1B030QLD	TC1Q1		10	
	35	BQ1B035QLD	TC1Q1		10	
	40	BQ1B040QLD	TC1Q1		10	
	45	BQ1B045QLD	TA1Q1		10	
	50	BQ1B050QLD	TA1Q1		10	
	60	BQ1B060QLD	TA1Q1		10	
		10	BQ1B010QXD	Quick-Connect		10
15		BQ1B015QXD	Quick-Connect		10	
20		BQ1B020QXD	Quick-Connect		10	
25		BQ1B025QXD	Quick-Connect		10	
30		BQ1B030QXD	Quick-Connect		10	
35		BQ1B035QXD	Quick-Connect		10	
40		BQ1B040QXD	Quick-Connect		10	
45		BQ1B045QXD	Quick-Connect		10	
50		BQ1B050QXD	Quick-Connect		10	
60		BQ1B060QXD	Quick-Connect		10	

2-Pole DIN Rail (120/240V AC)

"BQXD 2-Pole 120/240V DIN Rail"	10	BQ2B010QLD	TC1Q1		10
	15	BQ2B015QLD	TC1Q1		10
	20	BQ2B020QLD	TC1Q1		10
	25	BQ2B025QLD	TC1Q1		10
	30	BQ2B030QLD	TC1Q1		10
	35	BQ2B035QLD	TC1Q1		10
	40	BQ2B040QLD	TC1Q1		10
	45	BQ2B045QLD	TA1Q1		10
	50	BQ2B050QLD	TA1Q1		10
	60	BQ2B060QLD	TA1Q1		10
		10	BQ2B010QXD	Quick-Connect	
15		BQ2B015QXD	Quick-Connect		10
20		BQ2B020QXD	Quick-Connect		10
25		BQ2B025QXD	Quick-Connect		10
30		BQ2B030QXD	Quick-Connect		10
35		BQ2B035QXD	Quick-Connect		10
40		BQ2B040QXD	Quick-Connect		10
45		BQ2B045QXD	Quick-Connect		10
50		BQ2B050QXD	Quick-Connect		10
60		BQ2B060QXD	Quick-Connect		10

Lugs-For Use with BQ, BQH, HBQ®

Circuit Breaker Amp. Rtg.	Cab. Per Lug	Lug Wire Range AWG	Catalog Number	List Price \$ (Qty. 6)
Line Side				
10-40	1	#16-#6 Cu #12-#6 Al	TC1Q1 ^{①②}	
45-100	1	#8-#1 Cu #6-#1/0 Al	TA1Q1	
Load Side				
10	2	#16 Cu	Connectors are Supplied with Circuit Breaker	
15-20	1	#14-#10 Cu #12-#10 Al		
25-35	1	#14-#6 Cu #12-#10 Al		
40-50	1	#8-#6 Cu #8-#4 Al		
55-70	1	#8-#4 Cu #8-#2 Al		
80-100	1	#4-#1/0 Cu #2-#1/0 Al		
110-125	1	#2-#1/0 Cu #1/0-#2/0 Al		

For inches / millimeters conversion, see Application Data section.

■ Built to order. Allow 2-3 weeks for delivery.

① Terminals are UL Listed for 60°/75°C conductors. Also CSA Listed.

② Connector has steel construction.

③ Surface mounted indoor. If flush mounting is required, replace suffix "S" in catalog number with suffix "F".

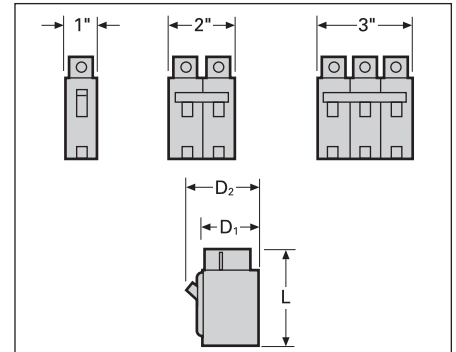
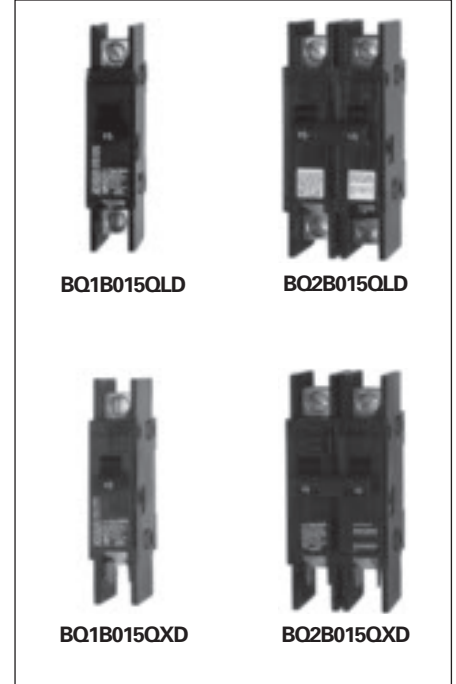
④ Discount Schedule B.

⑤ Does not include circuit breaker. Order circuit breaker separately.

⑥ Neutral included in enclosure.

⑦ Enclosure will not accept circuit breakers with shunt trips or auxiliary switches installed.

® Type BQXD uses TA1Q1 or TC1Q1 lugs on line side of circuit breaker.



Breaker Type	Amperes	Dimensions (inches)		
		L	D1	D2
BQ, BQH	15-50	3%	2%	3
BQ, BQH	55-125	4	2%	3
HBQ	15-125	4	2%	3
BQXD	15-60	4%	2%	3

Finger Safe Terminal Shield

Protects against accidental contact with lugs-1 per lug. Fits line and load end.

Catalog Number	Qty	List Price \$ each
BQFS2	2	
BQFS1K	1000	

Enclosures		
Type	Catalog Number ^①	List Price \$ ^{②③}
1	EB3100S ^{③⑦}	
3R	WB3100	

Accessories pages 17/103 to 17/108

General Application Molded Case Circuit Breakers

QJ 225A Frame

Selection/Dimensions

Type QJ2^②

Continuous Current Rating @ 40°C	2-Pole		3-Pole	
	240V AC		240V AC	
	Catalog Number	List Price \$	Catalog Number	List Price \$
60	QJ22B060■		QJ23B060	
70	QJ22B070■		QJ23B070	
80	QJ22B080■		QJ23B080■	
90	QJ22B090■		QJ23B090■	
100	QJ22B100		QJ23B100	
110	QJ22B110■		QJ23B110	
125	QJ22B125		QJ23B125	
150	QJ22B150		QJ23B150	
175	QJ22B175		QJ23B175	
200	QJ22B200		QJ23B200	
225	QJ22B225		QJ23B225	

Type QJH2^②

60	QJH22B060■		QJH23B060■	
70	QJH22B070■		QJH23B070■	
80	QJH22B080■		QJH23B080■	
90	QJH22B090■		QJH23B090■	
100	QJH22B100■		QJH23B100	
110	QJH22B110■		QJH23B110	
125	QJH22B125		QJH23B125	
150	QJH22B150		QJH23B150	
175	QJH22B175■		QJH23B175	
200	QJH22B200		QJH23B200	
225	QJH22B225		QJH23B225	

Type QJ2H^②

60	QJ22B060H■		QJ23B060H■	
70	QJ22B070H■		QJ23B070H■	
80	QJ22B080H■		QJ23B080H■	
90	QJ22B090H■		QJ23B090H■	
100	QJ22B100H■		QJ23B100H	
110	QJ22B110H■		QJ23B110H■	
125	QJ22B125H		QJ23B125H	
150	QJ22B150H		QJ23B150H	
175	QJ22B175H■		QJ23B175H	
200	QJ22B200H		QJ23B200H	
225	QJ22B225H		QJ23B225H	

Type HQJ2H^②

100	—	—	HQJ23B100H	▲
110	—	—	HQJ23B110H	▲
125	—	—	HQJ23B125H	▲
150	—	—	HQJ23B150H	
175	—	—	HQJ23B175H	▲
200	—	—	HQJ23B200H	
225	—	—	HQJ23B225H	▲

QJ2

Internal Accessories (Factory installed only) (3-pole only)^③

Add suffix to catalog number and adder to list price.

Control Voltage		Shunt Trip		Auxiliary Switches				Shunt Trip and 1A and 1B Auxiliary Switch	
				1A and 1B		2A and 2B			
AC	DC	Suffix	List Adder \$	Suffix	List Adder \$	Suffix	List Adder \$	Suffix	List Adder \$
120/240		00S01■		A01■		A02■		01S01■	
	24	00S07■		A01■		A02■		01S07■	
	125	00S11■		A01■		A02■		01S11■	

■ Built to order. Allow 2-3 weeks for delivery.

▲ Built to order. Allow 6-8 weeks for delivery.

③ See Note: A page 17/100.

Note: QJ breakers are UL Listed for reverse feed applications.

② HACR rated.

③ Internal accessories are not available on 2-pole QJ breakers.

Ordering Information

Load side TA1Q300 lugs are mounted and included when circuit breaker is ordered. For line and load lugs (TA1Q300) installed at no additional charge, add suffix "L" to catalog number.

50°C Calibration - See page 17/110.

400HZ. - See page 17/110.

Shipping Weights

QJ2, QJH2, QJ2H, HQJ2H		
Number of Poles	Number per Carton	Shipping Weight (lbs.)
2	10	30
3	10	41

Lugs For 75°C Wire^①

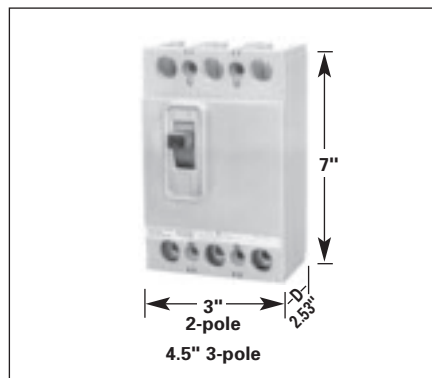
Catalog Number	Lug Body	Lug Wire Range
TA1Q300	Al	(1) #6—300 kcmil Cu (1) #4—300 kcmil Al
TC1Q250	Cu	(1) #6—250 kcmil Cu

Enclosures (Neutral Included)

Type	Catalog Number	List Price \$
1	EB3225(S)(F)	
3R (2-pole)	WB2225	
3R (3-pole)	WB3225	

UL 489 Interrupting Ratings

Breaker Type	AIR @ 240V AC
QJ2	10,000
QJH2	22,000
QJ2H	42,000
HQJ2H	100,000



General Application Molded Case Circuit Breakers

CQD 100A Frame

Selection/Dimensions

Type CQD (Cable In - Cable Out) DIN Rail Mount^③

Continuous Current Rating @ 40°C	1-Pole		2-Pole		3-Pole	
	277V AC		480Y/277V AC 125/250V DC		480Y/277V AC	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	CQD115 ^{①②}		CQD215 ^②		CQD315 ^②	
20	CQD120 ^{①②}		CQD220 ^②		CQD320 ^②	
25	CQD125 ^②		CQD225 ^②		CQD325 ^②	
30	CQD130 ^②		CQD230 ^②		CQD330 ^②	
35	CQD135 ^②		CQD235 ^②		CQD335 ^②	
40	CQD140 ^②		CQD240 ^②		CQD340 ^②	
45	CQD145 ^②		CQD245 ^②		CQD345 ^②	
50	CQD150 ^②		CQD250 ^②		CQD350 ^②	
60	CQD160 ^②		CQD260		CQD360	
70	CQD170		CQD270		CQD370	
80	CQD180		CQD280		CQD380	
90	CQD190		CQD290		CQD390	
100	CQD1100		CQD2100		CQD3100	

Type CQD6 (Cable In - Cable Out) CSA Certified, not UL

Continuous Current Rating @ 40°C	1-Pole		2-Pole		3-Pole	
	347V AC 125V DC		600Y/347V AC 125/250V DC		600Y/347V AC	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	—	—	CQD6215		CQD6315	
20	CQD6120 ^②		CQD6220		CQD6320	
25	CQD6125 ^②		CQD6225		CQD6325	
30	CQD6130 ^②		CQD6230		CQD6330	
35	CQD6135		CQD6235		CQD6335	
40	CQD6140		CQD6240		CQD6340	
45	CQD6145		CQD6245		CQD6345	
50	CQD6150		CQD6250		CQD6350	
60	CQD6160		CQD6260		CQD6360	
70	CQD6170		CQD6270		—	—

Interrupting Ratings

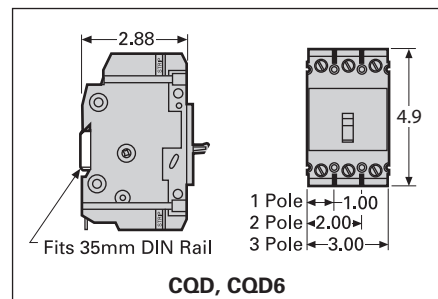
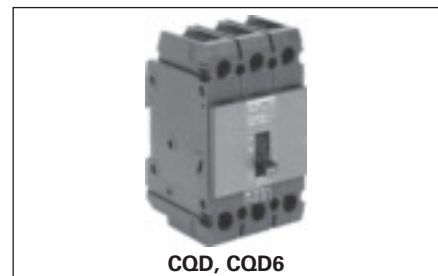
Breaker Type	Number of Poles	RMS Symmetrical Amperes (KA)						
		Volts AC (50/60 Hz)					Volts DC	
		120	240	277	480/277	600/347	125	125/250
CQD (UL)	1	65	—	14	—	—	14	—
	2	—	65	—	14	—	—	14
	3	—	65	—	14	—	—	—
CQD6 (CSA)	1	65	—	14	—	10	14	—
	2	—	65	—	—	10	—	14
	3	—	65	—	—	10	—	—

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight lbs. (kg)
1	1	0.5 (0)
2	1	1.0 (0)
3	1	1.5 (1)

Lugs For 60/75°C Wire

Amps	Wire Size
15-40	#14-#6 AWG Cu #12-#6 AWG Al
45-100	#8-#1 AWG Cu #6-#1/0 AWG Al



For inches / millimeters conversion, see Application Data section.

■ Built to order. Allow 2-3 weeks for delivery.

② HID rated.

① SWD rated.

③ HACR rated.

Note: CQD breakers are UL Listed for reverse feed applications.

Accessories pages 17/14 and 17/103 to 17/108

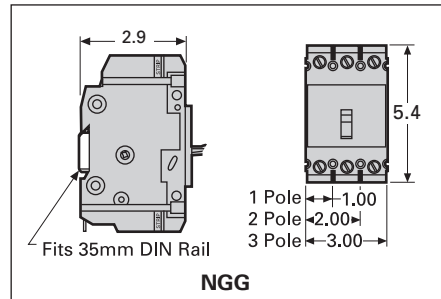
General Application Molded Case Circuit Breakers

NGG 125A Frame

Selection/Dimensions

Type NGG (Cable In - Cable Out)

Continuous Ampere Rating @ 40°C	1-Pole		2-Pole		3-Pole	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	NGG1B015L ^{①②}		NGG2B015L ^②		NGG3B015L ^②	
20	NGG1B020L ^{①②}		NGG2B020L ^②		NGG3B020L ^②	
25	NGG1B025L ^②		NGG2B025L ^②		NGG3B025L ^②	
30	NGG1B030L ^②		NGG2B030L ^②		NGG3B030L ^②	
35	NGG1B035L ^②		NGG2B035L ^②		NGG3B035L ^②	
40	NGG1B040L ^②		NGG2B040L ^②		NGG3B040L ^②	
45	NGG1B045L ^②		NGG2B045L ^②		NGG3B045L ^②	
50	NGG1B050L ^②		NGG2B050L ^②		NGG3B050L ^②	
60	NGG1B060L		NGG2B060L		NGG3B060L	
70	NGG1B070L		NGG2B070L		NGG3B070L	
80	NGG1B080L		NGG2B080L		NGG3B080L	
90	NGG1B090L		NGG2B090L		NGG3B090L	
100	NGG1B100L		NGG2B100L		NGG3B100L	
110	NGG1B110L		NGG2B110L		NGG3B110L	
125	NGG1B125L		NGG2B125L		NGG3B125L	



Line and load lugs are included as standard. If no lugs are required, remove the "L" suffix. HACR rated.

Suitable for screws or DIN rail mounting.

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight lbs. (kg)
1	1	.75 (0.34)
2	1	1.3 (0.59)
3	1	2.0 (0.98)

Lugs For 60/75°C Wire

NGG			
Ampere Rating	Wire Size	Catalog Number	List Price \$
15-30A	#14-#6 AWG Cu	TC1Q1 (qty. 1)	
	#12-#6 AWG Al	3TC1Q1 (qty. 3)	
35-125A	#8-1/0 AWG Cu #4-2/0 AWG Al	3TC1GG20 (qty. 3)	
15-125A	Nut Keeper plate w/ screw (for crimp terminals)	TNKG3 (qty. 3)	

Interrupting Ratings

Breaker Type	Number of Poles	UL 489 AIR							IEC 947-2					
		RMS Symmetrical Amperes (KA)							Volts AC (50/60Hz)					
		Volts AC(50/60Hz)							220/240		380/415		Volts DC	
		120	240	277	347	480	600/347	125	125/250	Icu	Ics	Icu	Ics	125/250
NGG	1	65	—	25	14	—	—	14	—	25	12.5	—	—	—
	2, 3	—	65	—	—	25	14	—	14 ^③	65	33	25	12.5	14

For inches / millimeters conversion, see Application Data section.

① SWD rated.

② HID rated at 15-50A 1-pole @ 277 VAC; 2 & 3-pole @ 480 VAC

③ 125/250V DC rating applies to 2-pole NGG only.

Accessories pages 17/14 and 17/103 to 17/108

General Application Molded Case Circuit Breakers

Accessories for CQD 100A Frame, NGG and NGB 125A Frame^①

Selection

Shunt Trip

Control Voltage		CQD, CQD6, NGG, NGB Catalog Number	List Price \$
V AC	V DC		
120	—	CQDST120	
240	—	CQDST240▲	
277	—	CQDST277▲	
480	—	CQDST480▲	
600	—	CQDST600	
—	12	CQDST12	
—	24	CQDST24	
—	48	CQDST48	
—	125	CQDST125	

Auxiliary Switch

Maximum Voltage		Number of Contacts	CQD, CQD6, NGG, NGB Catalog Number	List Price \$
AC	DC			
240	125	1A-1B	CQDA1	
240	125	2A-2B	CQDA2	

Alarm Switch

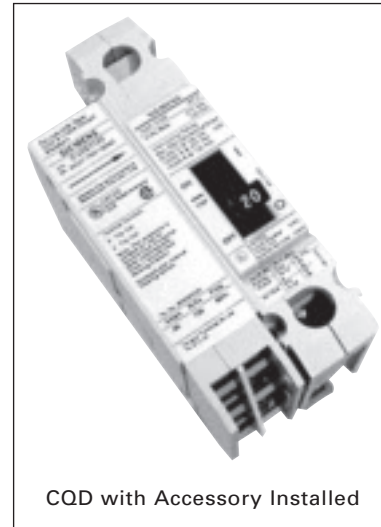
Maximum Voltage		CQD, CQD6, NGG, NGB Catalog Number	List Price \$
AC	DC		
240	125	CQDBA	

Shunt Trip and Auxiliary Switch Combinations

Shunt Trip Voltage		CQD, CQD6, NGG, NGB Catalog Number	List Price \$
AC	DC		
24		CQDST24AAS▲	
120		CQDST120AAS▲	
240		CQDST240AAS▲	
277		CQDST277AAS▲	
480		CQDST480AAS▲	
600		CQDST600AAS▲	
	12	CQDST12DAS▲	
	24	CQDST24DAS▲	
	48	CQDST48DAS▲	
	125	CQDST125DAS▲	

Alarm and Auxiliary Switch Combinations

For Breaker	Catalog Number	List Price
CQD, CQD6, NGG, NGB	CQDA1BA▲	



▲ Built to order. Allow 6-8 weeks for delivery.

① Adds 1-pole space for accessory.

VL Molded Case Circuit Breakers

Trip Unit Overview

Selection

The interchangeability of the VL circuit breaker trip units allow for easy conversion from any of 3 types of protection. They are thermal-magnetic, electronic, or electronic with a built-in LCD display. The thermal-magnetic trip unit features an adjustable magnetic trip setting. The electronic trip units are microprocessor based true RMS sensing devices and are available with a variety of adjustable trip settings, configurations, and infor-

mation menus. With precise control over the circuit breaker functions and access to system status, diagnostics, and information, these trip units allow for unsurpassed flexibility in circuit coordination.

An example of coordination is the out of the box Ground Fault function on the Model 545 trip units. The pick-up and time delay settings are fixed for each

frame and do not overlap with the settings on the other frames. Therefore, when VL breakers are used together in a system the GF protection is automatically coordinated. The user also has the ability to program a custom coordination scheme with the high level of adjustability available on the Model 576 trip units.

Trip Unit Functions	VL Trip Units						
	Model 525	Model 545				Model 576	
	Thermal-Magnetic	Electronic LI	Electronic LIG	Electronic LSI	Electronic LSIG	Electronic with LCD LSI	Electronic with LCD LSIG
Continuous Current Setting (I_r)	Fixed	◆	◆	◆	◆	◆	◆
Long Time Delay (t_r)	□	◆	◆	Fixed	Fixed	◆	◆
Instantaneous Overcurrent Setting (I_i)	◆	◆	◆	Fixed	Fixed	◆	◆
Short Time Pick-up (I_{sd})	□	□	□	◆	◆	(ON/OFF)	(ON/OFF)
Short Time Delay (t_{sd})	□	□	□	◆	◆	◆	◆
Short Time I^2t Pick-up	□	□	□	◆	◆	◆	◆
Ground Fault Pick-up (I_g)	□	□	Fixed	□	Fixed	□	◆
Ground Fault Delay (t_g)	□	□	Fixed	□	Fixed	□	◆
Alarm & Status LEDs	□	●	●	●	●	□	□
Built-in Display (LCD)	□	□	□	□	□	●	●
Pre-Trip Alarm ^①	□	□	□	□	□	●	●
Last trip information ^①	□	□	□	□	□	●	●
Zone Selective ^①	□	□	□	□	□	●	●
Communications ^①	□	□	□	□	□	●	●

◆ - Adjustable setting.

● - This feature is included.

“fixed” - Non-Adjustable setting.

□ - Feature is not included.

① - Requires the trip unit to be connected to a PC (via a COMPRO or COMMODO communications module) for access or programming.

Continuous Amps Rating (I_r)

This setting is the continuous current that the breaker will carry without tripping. It can be set up to 100% of the trip unit's nominal rating (I_n).

Long Time Delay (t_r)

Sometimes referred to as the “overload” position, this function controls the breaker's “pause-in-tripping” time. It allows low level, temporary inrush currents such as those encountered when starting a motor to pass without tripping. The time delay begins when the current reaches $6 \times I_r$.

Instantaneous Pick-up (I_i)

This function sets the breaker to trip instantaneously during high fault conditions. On Model 545 trip units this set-

ting is fixed on LSI and LSIG trip units and adjustable on LI and LIG trip units. These features are fully adjustable on Model 576 trip units.

Short Time Pick-Up (I_{sd})

This function controls the level of fault current the breaker will carry for a short time without tripping, thus allowing downstream devices to clear short circuits ahead of up-stream protection. It may be defeated (turned-off) on Model 576 trip units.

Short Time Delay (t_{sd})

This controls the interval of time the breaker will remain closed against a fault (at the Short Time Pick-up current level) without tripping. The time delay may be set at fixed points or at short time intervals based on I^2t curves. This function is

used with the Short Time Pick-up to achieve selectivity and better system coordination.

Ground Fault Pick-Up (I_g)

This setting controls the level of ground fault current that will cause the breaker to trip. Model 545 Electronic Trip Units act on the residual current to sense ground current. The Model 576 Electronic Trip Unit is programmable and allows the user to select either the residual current method or direct detection (via a separate current transformer) to detect ground current.

Ground Fault Time Delay (t_g)

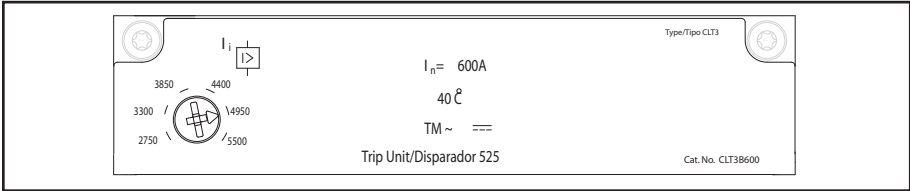
This controls the interval of time the breaker will remain closed after a ground fault is detected (at the Ground Fault Pick-up current level) without tripping.

VL Molded Case Circuit Breakers

General Information

Selection

Thermal-Magnetic trip units, Model 525, combine the inverse time element design for low level overloads, and instantaneous magnetic action for short circuit protection. The standard unit has preset overload protection and an adjustable instantaneous trip setting, with 6 set points. Thermal-Magnetic trip units are available throughout the VL family, from 15 to 1600A.



Electronic Trip Units

Electronic trip units are available through the VL family, from 60A (which can be set as low as 30A) up through 1600A . They are also available in four trip configurations (LI, LIG, LSI, LSIG) and features can include a built-in LCD display.

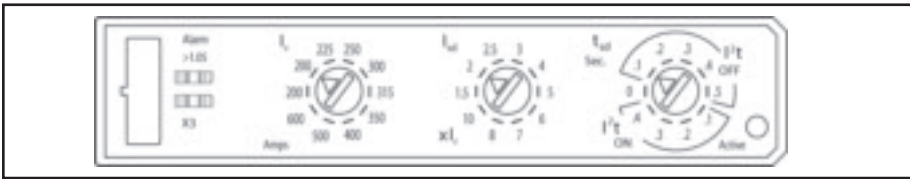
microprocessor in operating and another indicates an overload condition. For ease-of-use and to insure proper coordination, the set points for the continuous current are shown on the face of these trip units in amps.

displays, no secondary or auxiliary voltage is required as long as the breaker is energized and a minimal load current is present. These trip units can also indicate the "last trip" status (date, time, amps) when they're connected to a PC via one of our communications modules.

On the Model 545 Electronic Trip Unit a flashing LED confirms that the

On the Model 576, the LCD version, the current in each phase is continuously shown on the display. Unlike many

Typical Trip Unit Labeling and Adjustment Positions



Model 545 Electronic Trip Unit with LSIG trip functions



Model 576 Electronic Trip Unit has an LCD display

VL Molded Case Circuit Breakers

DG 150A Frame, VL Series

Selection

Ordering Information

Complete Assembled Breaker

Prices for a complete factory assembled DG breaker include the frame, trip unit, and standard line and load connectors, all factory installed and shipped as a complete breaker. Assembled breakers are only available with standard connectors.

For any other configuration, order the frame, trip unit, and terminals as separate items.

For DC applications, use thermal magnetic trip unit only.

For reverse feed applications, select non-interchangeable trip breakers only. For non-interchangeable trip breakers, change the third digit of the catalog number to "X" for standard breakers.

For special applications, refer to page 17/62.^A

Mounting hardware is included with each frame or complete breaker.

For 100% rated breakers with a non-interchangeable trip unit, change the 3rd character of the catalog number to "Y".



Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)										
	UL 489					IEC 60947-2					
	Volts AC (50/60 Hz)			Volts DC		Volts AC (50/60 Hz)					
	240	480	600	250	500	220/240		380/415		690	
					I _{CU}	I _{CS}	I _{CU}	I _{CS}	I _{CU}	I _{CS}	
NDG	65	35	18	30	18	65	65	40	40	12	6
HDG	100	65	20	30	18	100	75	70	70	12	6
LDG	200	100	25	30	18	200	150	100	75	12	6

Connectors for 75°C Wire

Construction	Ampere Rating	Wire Range	No. of cables per connector	Catalog Number	List Price \$
Steel	30-150	#8-1/0 Cu	1	3TW1DG20 ^②	
Aluminum ^①	30-150	#6-3/0 Al/Cu	1	3TA1DG30 ^②	
Copper ^②	30-150	#6-3/0 Cu	1	3TC1DG30 ^②	
Distribution Lugs					
	30-150	#14-#2 Cu (3pcs. Max)	3	3TA3DG02 ^②	
	30-150	#14-#4 Cu	6	3TA6DG04 ^②	
Compression Lugs					
	30-150	#14-2/0 kcmil Al/Cu	-	2CLD20 ^③	
	30-150	#14-2/0 kcmil Al/Cu	-	3CLD20 ^④	

- ① Standard connector supplied with complete breakers.
- ② Kit consists of 3 terminal connectors.
- ③ 2 Lugs for 2-pole breakers.
- ④ 3 Lugs for 3-pole breakers.

DG Thermal-Magnetic, Instantaneous Trip Adjustment Range

Trip Unit Continuous Amp Rating (I _n)	Instantaneous Overcurrent Setting (I _i)	
	Min.	Max.
50	450	700
60	450	700
70	450	700
80	450	800
90	500	1000
100	500	1000
110	550	1100
125	625	1250
150	800	1600

Note: Each breaker has 6 trip settings in this range.

A - Consult with Siemens for availability.

Dimensions, inches (mm)

Number of Poles	Width	Length	Depth	To Handle D1
2, 3	4.1 (105)	6.9 (175)	3.4 (81)	4.2(107)

Approx. Shipping Weight, lbs. (kg)

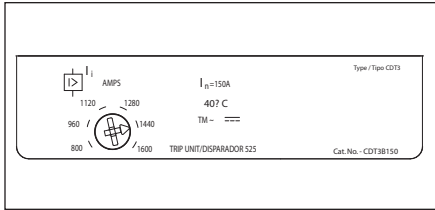
Poles	Frame	Trip Unit		Complete Breaker
		Thermal-Mag.	Electronic	
2, 3	3.7 (1.7)	2.2 (1.0)	2.6 (1.2)	5.9 (2.7)

External Accessories pages 17/43 to 17/57

VL Molded Case Circuit Breakers

DG 150A Thermal-Magnetic Trip Unit

Selection



Model 525 Trip Unit

DG 150A Frame 2-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$		
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$				
	FRAME ONLY								TRIP UNIT ONLY	
	NDG2F150		HDG2F150		LDG2F150				COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER	
50	NDG2B050L		HDG2B050L		LDG2B050L		CDT2B050			
60	NDG2B060L		HDG2B060L		LDG2B060L		CDT2B060			
70	NDG2B070L		HDG2B070L		LDG2B070L		CDT2B070			
80	NDG2B080L		HDG2B080L		LDG2B080L		CDT2B080			
90	NDG2B090L		HDG2B090L		LDG2B090L		CDT2B090			
100	NDG2B100L		HDG2B100L		LDG2B100L		CDT2B100			
110	NDG2B110L		HDG2B110L		LDG2B110L		CDT2B110			
125	NDG2B125L		HDG2B125L		LDG2B125L		CDT2B125			
150	NDG2B150L		HDG2B150L		LDG2B150L		CDT2B150			

DG 150A Frame 3-Pole with Thermal-Magnetic Trip Unit

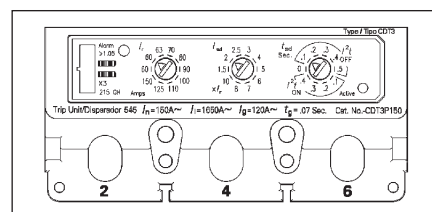
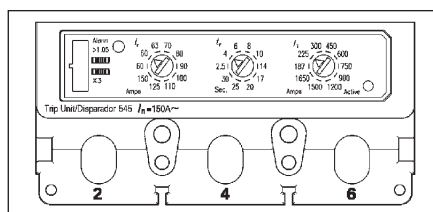
Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$		
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$				
	FRAME ONLY								TRIP UNIT ONLY	
	NDG3F150		HDG3F150		LDG3F150				COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER	
50	NDG3B050L		HDG3B050L		LDG3B050L		CDT3B050			
60	NDG3B060L		HDG3B060L		LDG3B060L		CDT3B060			
70	NDG3B070L		HDG3B070L		LDG3B070L		CDT3B070			
80	NDG3B080L		HDG3B080L		LDG3B080L		CDT3B080			
90	NDG3B090L		HDG3B090L		LDG3B090L		CDT3B090			
100	NDG3B100L		HDG3B100L		LDG3B100L		CDT3B100			
110	NDG3B110L		HDG3B110L		LDG3B110L		CDT3B110			
125	NDG3B125L		HDG3B125L		LDG3B125L		CDT3B125			
150	NDG3B150L		HDG3B150L		LDG3B150L		CDT3B150			

A - Consult with Siemens for availability.

VL Molded Case Circuit Breakers

DG 150A Electronic 3-Knob & LCD Trip Unit

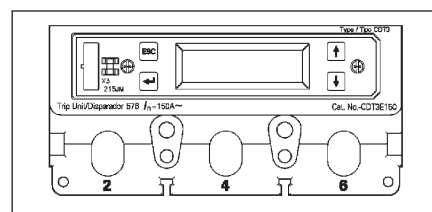
Selection



Model 545 Trip Units

DG 150A Frame 3-Pole Electronic Trip Unit^①

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NDG3F150		HDG3F150		LDG3F150		COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER	
	ELECTRONIC LI TRIP						TRIP UNIT ONLY	
60	NDG3N060L		HDG3N060L		LDG3N060L		CDT3N060	
100	NDG3N100L		HDG3N100L		LDG3N100L		CDT3N100	
150	NDG3N150L		HDG3N150L		LDG3N150L		CDT3N150	
	ELECTRONIC LSI TRIP							
60	NDG3P060L		HDG3P060L		LDG3P060L		CDT3P060	
100	NDG3P100L		HDG3P100L		LDG3P100L		CDT3P100	
150	NDG3P150L		HDG3P150L		LDG3P150L		CDT3P150	
	ELECTRONIC LSIG TRIP							
60	NDG3U060L		HDG3U060L		LDG3U060L		CDT3U060	
100	NDG3U100L		HDG3U100L		LDG3U100L		CDT3U100	
150	NDG3U150L		HDG3U150L		LDG3U150L		CDT3U150	
	ELECTRONIC LIG TRIP							
60	NDG3X060L		HDG3X060L		LDG3X060L		CDT3X060	
100	NDG3X100L		HDG3X100L		LDG3X100L		CDT3X100	
150	NDG3X150L		HDG3X150L		LDG3X150L		CDT3X150	



Model 576 Trip Unit

DG 150A Frame 3-Pole Electronic LCD Trip Unit^①

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NDG3F150		HDG3F150		LDG3F150		COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER	
	LCD ELECTRONIC LSI TRIP							
60	NDG3D060L		HDG3D060L		LDG3D060L		CDT3D060	
100	NDG3D100L		HDG3D100L		LDG3D100L		CDT3D100	
150	NDG3D150L		HDG3D150L		LDG3D150L		CDT3D150	
	LCD ELECTRONIC LSIG TRIP							
60	NDG3E060L		HDG3E060L		LDG3E060L		CDT3E060	
100	NDG3E100L		HDG3E100L		LDG3E100L		CDT3E100	
150	NDG3E150L		HDG3E150L		LDG3E150L		CDT3E150	

① Mag-Latch included, see page 17/58.

VL Molded Case Circuit Breakers

FG 250A Frame, VL Series

Selection/Dimensions

Ordering Information

Complete Assembled Breaker

Prices for a complete factory assembled FG breaker include the frame, trip unit, and standard line and load connectors, all factory installed and shipped as a complete breaker. Assembled breakers are available only with standard connectors.

For any other configuration, order the frame, trip unit, and terminals as separate items.

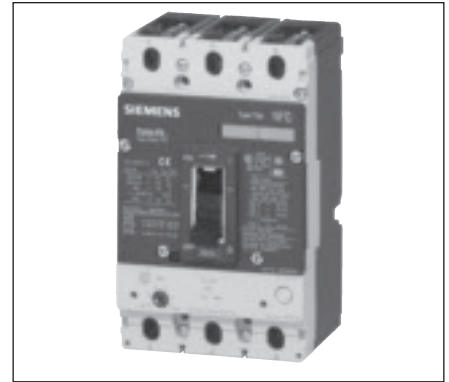
For DC applications, use thermal magnetic trip unit only.

For reverse feed applications, select non-interchangeable trip breakers only. For non-interchangeable trip breakers, change the third digit of the catalog number to "X" for standard breakers.

For special applications, refer to page 17/62.^A

Mounting hardware is included with each frame or complete breaker.

For 100% rated breakers with a non-interchangeable trip unit, change the 3rd character of the catalog number to "Y". Available with ETU only.



Dimensions, inches (mm)

Number of Poles	Width	Length	Depth	To Handle D1
2, 3	4.1 (105)	6.9 (175)	3.4 (81)	4.2 (107)

Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)										
	UL 489					IEC 60947-2					
	Volts AC (50/60 Hz)			Volts DC		Volts AC (50/60 Hz)					
	240	480	600	250	500	220/240		380/415		690	
					I _{CU}	I _{CS}	I _{CU}	I _{CS}	I _{CU}	I _{CS}	
NFG	65	35	18	30	18	65	65	40	40	12	6
HFG	100	65	20	30	25	100	75	70	70	12	6
LFG	200	100	25	30	30	200	150	100	75	12	6

Shipping Weight, lbs. (kg)

Poles	Frame	Trip Unit		Complete Breaker
		Thermal-Mag.	Electronic	
2, 3	4.0 (1.8)	2.2 (1.0)	2.6 (1.2)	6.2 (2.8)

Connectors for 75°C Wire

Construction	Ampere Rating	Wire Range	No. of cables per connector	Catalog Number	List Price \$
Steel	50-250	#4-350 kcmil Cu	1	3TW1FG350 ^②	
Aluminum ^①	50-250	#4-350 kcmil Al/Cu	1	3TAW1FG350 ^②	
Copper	50-250	#4-350 kcmil Cu	1	3TCW1FG350 ^②	
Distribution Lugs					
	50-250	#12-2/0 Cu	3	3TA3FG20 ^②	
	50-250	#14-#4 Cu	6	3TA6FG04 ^②	

^① Standard connector supplied with complete breakers.

^② Kit consists of 3 terminal connectors.

^③ 2 Lugs for 2-pole breakers.

^④ 3 Lugs for 3-pole breakers.

FG Thermal-Magnetic, Instantaneous Trip Adjustment Range

Trip Unit Continuous Amp Rating (I _n)	Instantaneous Overcurrent Setting (I _t)	
	Min.	Max.
100	625	1250
110	800	1600
125	800	1600
150	800	1600
175	1000	2000
200	1000	2000
225	1250	2500
250	1250	2500

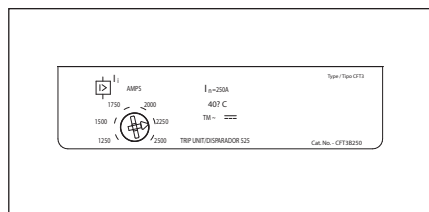
Note: Each breaker has 6 trip settings in this range.

External Accessories pages 17/43 to 17/57

VL Molded Case Circuit Breakers

FG 250A Thermal-Magnetic Trip Unit

Selection



Model 525 Trip Unit

FG 250A Frame 2-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$			
	FRAME ONLY								TRIP UNIT ONLY
	NFG2F250		HFG2F250		LFG2F250				
COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER									
100	NFG2B100L		HFG2B100L		LFG2B100L		CFT2B100		
110	NFG2B110L		HFG2B110L		LFG2B110L		CFT2B110		
125	NFG2B125L		HFG2B125L		LFG2B125L		CFT2B125		
150	NFG2B150L		HFG2B150L		LFG2B150L		CFT2B150		
175	NFG2B175L		HFG2B175L		LFG2B175L		CFT2B175		
200	NFG2B200L		HFG2B200L		LFG2B200L		CFT2B200		
225	NFG2B225L		HFG2B225L		LFG2B225L		CFT2B225		
250	NFG2B250L		HFG2B250L		LFG2B250L		CFT2B250		

FG 250A Frame 3-Pole with Thermal-Magnetic Trip Unit

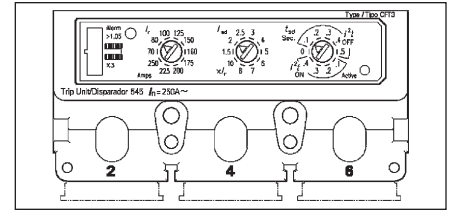
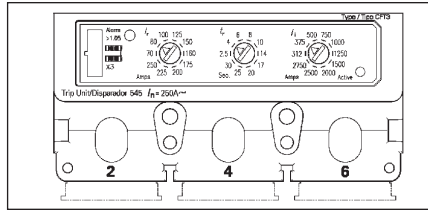
Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$			
	FRAME ONLY								TRIP UNIT ONLY
	NFG3F250		HFG3F250		LFG3F250				
COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER									
100	NFG3B100L		HFG3B100L		LFG3B100L		CFT3B100		
110	NFG3B110L		HFG3B110L		LFG3B110L		CFT3B110		
125	NFG3B125L		HFG3B125L		LFG3B125L		CFT3B125		
150	NFG3B150L		HFG3B150L		LFG3B150L		CFT3B150		
175	NFG3B175L		HFG3B175L		LFG3B175L		CFT3B175		
200	NFG3B200L		HFG3B200L		LFG3B200L		CFT3B200		
225	NFG3B225L		HFG3B225L		LFG3B225L		CFT3B225		
250	NFG3B250L		HFG3B250L		LFG3B250L		CFT3B250		

A - Consult with Siemens for availability.

VL Molded Case Circuit Breakers

FG 250A Electronic 3-Knob & LCD Trip Units

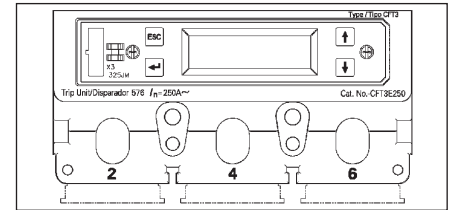
Selection



Model 545 Trip Units

FG 250A Frame 3-Pole Electronic Trip Unit^①

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NFG3F250		HFG3F250		LFG3F250			
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER							
	ELECTRONIC LI TRIP							
100	NFG3N100L		HFG3N100L		LFG3N100L		CFT3N100	
150	NFG3N150L		HFG3N150L		LFG3N150L		CFT3N150	
250	NFG3N250L		HFG3N250L		LFG3N250L		CFT3N250	
	ELECTRONIC LSI TRIP							
100	NFG3P100L		HFG3P100L		LFG3P100L		CFT3P100	
150	NFG3P150L		HFG3P150L		LFG3P150L		CFT3P150	
250	NFG3P250L		HFG3P250L		LFG3P250L		CFT3P250	
	ELECTRONIC LSIG TRIP							
100	NFG3U100L		HFG3U100L		LFG3U100L		CFT3U100	
150	NFG3U150L		HFG3U150L		LFG3U150L		CFT3U150	
250	NFG3U250L		HFG3U250L		LFG3U250L		CFT3U250	
	ELECTRONIC LIG TRIP							
100	NFG3X100L		HFG3X100L		LFG3X100L		CFT3X100	
150	NFG3X150L		HFG3X150L		LFG3X150L		CFT3X150	
250	NFG3X250L		HFG3X250L		LFG3X250L		CFT3X250	



Model 576 Trip Unit

FG 250A Frame 3-Pole Electronic LCD Trip Unit^①

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NFG3F250		HFG3F250		LFG3F250			
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER							
	LCD ELECTRONIC LSI TRIP							
100	NFG3D100L		HFG3D100L		LFG3D100L		CFT3D100	
150	NFG3D150L		HFG3D150L		LFG3D150L		CFT3D150	
250	NFG3D250L		HFG3D250L		LFG3D250L		CFT3D250	
	LCD ELECTRONIC LSIG TRIP							
100	NFG3E100L		HFG3E100L		LFG3E100L		CFT3E100	
150	NFG3E150L		HFG3E150L		LFG3E150L		CFT3E150	
250	NFG3E250L		HFG3E250L		LFG3E250L		CFT3E250	

① Mag-Latch included, see page 17/58.

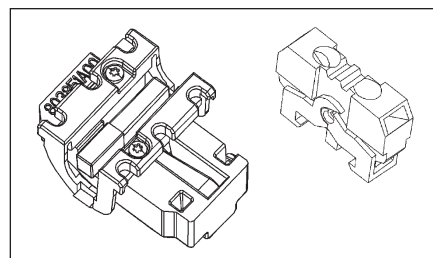
VL Molded Case Circuit Breakers

Internal Accessories for DG 150A and FG 250A Frames

Selection

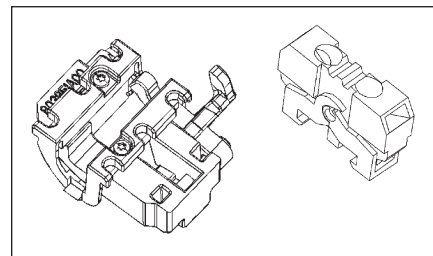
Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket ^①	Catalog Number	List Price \$
1 Alarm Switch 1A/B ^③ Bases AMBL2 & AMBL3	Left, Right ^②	ASKL1	
2 Aux. Switches 1A + 1B Bases AMBL1	Left, Right, Neutral	ASKL2	
2 Aux. + 1 Alarm Switches 1A + 1B, 1A/B ^③ Bases AMBL2 & AMBL3	Left, Right ^②	ASKL3	



Auxiliary/Alarm Switch Mounting Base Only

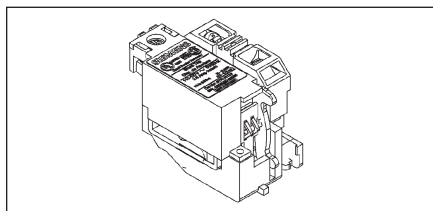
Description	Mounting Pocket	Catalog Number	List Price \$
Up to 3 Auxiliary Switches	Left, Right, Neutral	AMBL1	
2 Aux. + 1 Alarm Switch	Left Pocket Only	AMBL2	
2 Aux. + 1 Alarm Switch	Right Pocket Only	AMBL3	



Auxiliary/Alarm Switch Only

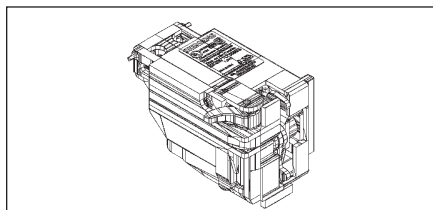
Common to DG - PG Frames

Description	Catalog Number	List Price \$
1 Normally Open Contact (1A)	ASWPA	
1 Normally Closed Contact (1B)	ASWPB	



Shunt Trips

Description	Mounting Pocket	Catalog Number	List Price \$
24 VDC	Right Pocket Only	STRLB24DC	
48-60 VDC		STRLC60DC	
110-127 VDC		STRLD125DC	
220-250 VDC		STRLE250DC	
48-60 VAC		STRLM60	
110-127 VAC		STRLN120	
208-277 VAC		STRLS277	
380-600 VAC		STRLV600	



Undervoltage Release

Description	Mounting Pocket	Catalog Number	List Price \$
12 VDC	Right Pocket Only	UVRLA12DC	
24 VDC		UVRLB24DC	
48 VDC		UVRLC48DC	
60 VDC		UVRLG60DC	
110-127 VDC		UVRLD125DC	
220-250 VDC		UVRLE250	
24 VAC		UVRLI24	
110-127 VAC		UVRLN120	
220-240 VAC		UVRLR240	
208 VAC		UVRLP208	
277 VAC		UVRLS277	
380-415 VAC		UVRLT415	
440-480 VAC		UVRLU480	



'A' refers to a normally open contact (open when the breaker contacts are open).

'B' refers to a normally closed contact (closed when the breaker contacts are open).

① Refer to the "Accessory Locations" chart for guidelines and limitations about which pockets may be used for accessory combinations.

② These kits include two bases, one for mounting switches in the left pocket and another for mounting in the right.

③ Includes 1A and 1B contact for alarm purposes, only one of which may be installed at any time.

External Accessories pages 17/43 to 17/57

VL Molded Case Circuit Breakers

JG 400A Frame, VL Series

Selection/Dimensions

Ordering Information

Complete Assembled Breaker

Prices for a complete factory assembled JG breaker include the frame, trip unit, and standard line and load connectors, all factory installed and shipped as a complete breaker. Assembled breakers are available only with standard connectors.

For any other configuration, order the frame, trip unit, and terminals as separate items.

For DC applications, use thermal magnetic trip unit only.

For reverse feed applications, select non-interchangeable trip breakers only. For non-interchangeable trip breakers, change the third digit of the catalog number to "X" for standard breakers.

For 100% rated breakers with a non-interchangeable trip unit, change the 3rd character of the catalog number to "Y".

For special applications, refer to page 17/62.^A

Mounting hardware is included with each frame or complete breaker.



Dimensions, inches (mm)

Number of Poles	Width	Length	Depth	To Handle D1
2, 3	5.5 (139)	11 (279)	4.2 (102)	5.4 (138)

Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)										
	UL 489 AIR (File E10848)					IEC 60947-2					
	Volts AC (50/60 Hz)			Volts DC		Volts AC (50/60 Hz)					
	240	480	600	250	500	220/240		380/415		690	
					I _{CU}	I _{CS}	I _{CU}	I _{CS}	I _{CU}	I _{CS}	
NJG	65	35	25	30	25	65	65	45	45	12	6
HJG	100	65	25	30	35	100	75	70	70	15	8
LJG	200	100	25	30	35	200	150	100	75	15	8

Shipping Weight, lbs. (kg)

Poles	Frame	Trip Unit		Complete Breaker
		Thermal-Mag.	Electronic	
2, 3	9.3 (4.2)	4.0 (1.8)	4.0 (1.8)	12.6 (5.7)

Connectors for 75°C Wire

Construction	Ampere Rating	Wire Range	No. of cables per connector	Catalog Number	List Price \$
Steel	70-400	1/0-600 kcmil Cu	1	3TW1JG600 ^②	
Aluminum ^①	70-400	3/0-250 kcmil Al/Cu	2	3TA2JG250 ^②	
Aluminum	70-400	250-750 kcmil Al	1	3TA1JG750 ^②	
Aluminum	70-400	3/0-600 kcmil Cu	1	3TA1JG750 ^②	
Copper	70-400	3/0-750 kcmil Cu	1	TC1JG750 ^③	
Copper	70-400	3/0-250 kcmil Cu	2	TC2JG250	
Distribution Lugs					
	70-400	#14-4 Cu	12	3TA12JG04 ^④	
	70-400	#14-2/0 Cu	6	3TA6JG20 ^④	
Compression Lugs					
	70-400	#6-350 kcmil	-	3CLJ350	

^① Standard construction supplied for each breaker.

^② Kit consists of 3 terminal connectors.

^③ 3 Lugs for 3-pole breakers.

^④ For 100% rate applications, 90°C.

JG Thermal-Magnetic, Instantaneous Trip Adjustment Range

Trip Unit Continuous Amp Rating (I _n)	Instantaneous Overcurrent Setting (I _i)	
	Min.	Max.
250	1250	2500
300	1500	3000
350	1750	3500
400	2000	4000

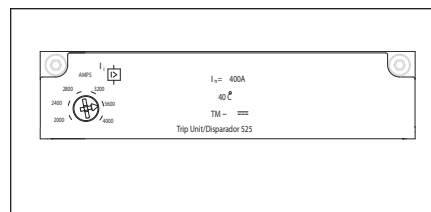
Note: Each breaker has 6 trip settings in this range.

External Accessories pages 17/43 to 17/57

VL Molded Case Circuit Breakers

JG 400A Thermal-Magnetic Trip Unit

Selection



Model 525 Trip Unit

JG 400A Frame 2-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$		
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$				
	FRAME ONLY								TRIP UNIT ONLY	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER									
250	NJG2B250L		HJG2B250L		LJG2B250L		CJT2B250			
300	NJG2B300L		HJG2B300L		LJG2B300L		CJT2B300			
350	NJG2B350L		HJG2B350L		LJG2B350L		CJT2B350			
400	NJG2B400L		HJG2B400L		LJG2B400L		CJT2B400			

JG 400A Frame 3-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$		
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$				
	FRAME ONLY								TRIP UNIT ONLY	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER									
250	NJG3B250L		HJG3B250L		LJG3B250L		CJT3B250			
300	NJG3B300L		HJG3B300L		LJG3B300L		CJT3B300			
350	NJG3B350L		HJG3B350L		LJG3B350L		CJT3B350			
400	NJG3B400L		HJG3B400L		LJG3B400L		CJT3B400			

JJ 400A Frame 240V max., 2-pole with Thermal-Magnetic Non-Interchangeable Trip Unit

Continuous Ampere Rating	N-Interrupting Class	
	Catalog Number	List Price \$
	COMPLETE BREAKER	
250	NJJ2B250L	
300	NJJ2B300L	
350	NJJ2B350L	
400	NJJ2B400L	

JJ 400A Frame 240V max., 3-pole with Thermal-Magnetic Non-Interchangeable Trip Unit

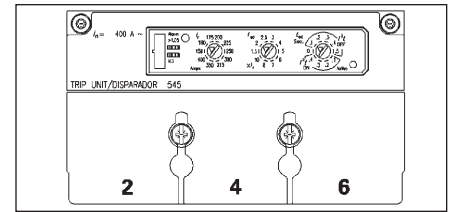
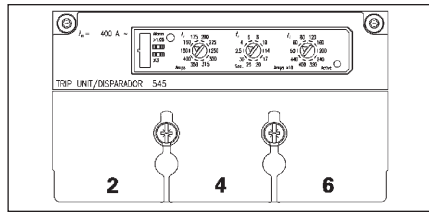
Continuous Ampere Rating	N-Interrupting Class	
	Catalog Number	List Price \$
	COMPLETE BREAKER	
250	NJJ3B250L	
300	NJJ3B300L	
350	NJJ3B350L	
400	NJJ3B400L	

A - Consult with Siemens for availability.

VL Molded Case Circuit Breakers

JG 400A Electronic 3-Knob & LCD Trip Units

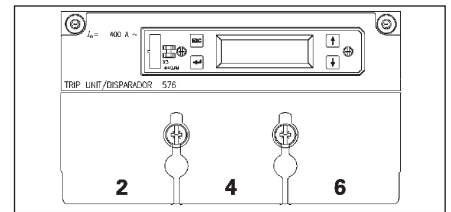
Selection



Model 545 Trip Units

JG 400A Frame 3-Pole Electronic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NJG3F400		HJG3F400		LJG3F400			
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER							
	ELECTRONIC LI TRIP							
250	NJG3N250L		HJG3N250L		LJG3N250L		CJT3N250	
400	NJG3N400L		HJG3N400L		LJG3N400L		CJT3N400	
	ELECTRONIC LSI TRIP							
250	NJG3P250L		HJG3P250L		LJG3P250L		CJT3P250	
400	NJG3P400L		HJG3P400L		LJG3P400L		CJT3P400	
	ELECTRONIC LSIG TRIP							
250	NJG3U250L		HJG3U250L		LJG3U250L		CJT3U250	
400	NJG3U400L		HJG3U400L		LJG3U400L		CJT3U400	
	ELECTRONIC LIG TRIP							
250	NJG3X250L		HJG3X250L		LJG3X250L		CJT3X250	
400	NJG3X400L		HJG3X400L		LJG3X400L		CJT3X400	



Model 576 Trip Unit

JG 400A Frame 3-Pole Electronic LCD Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NJG3F400		HJG3F400		LJG3F400			
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER							
	LCD ELECTRONIC LSI TRIP							
250	NJG3D250L		HJG3D250L		LJG3D250L		CJT3D250	
400	NJG3D400L		HJG3D400L		LJG3D400L		CJT3D400	
	LCD ELECTRONIC LSIG TRIP							
250	NJG3E250L		HJG3E250L		LJG3E250L		CJT3E250	
400	NJG3E400L		HJG3E400L		LJG3E400L		CJT3E400	

VL Molded Case Circuit Breakers

LG 600A Frame, VL Series

Selection/Dimensions

Ordering Information

Complete Assembled Breaker

Prices for a complete factory assembled LG breaker include the frame, trip unit, and standard line and load lugs, all factory installed and shipped as a complete breaker. Assembled breakers are available only with standard connectors.

For any other configuration, order the frame, trip unit, and terminals as separate items.

For DC applications, use thermal magnetic trip unit only.

For reverse feed applications, select non-interchangeable trip breakers only. Change the third digit of the catalog number to "X" for non-interchangeable trip unit.

For special applications, refer to page 17/62.^A

Mounting hardware is included with each frame or complete breaker.

For 100% rated breakers with a non-interchangeable trip unit, change the 3rd character of the catalog number to "Y". Available on 400/500 Amp only.



Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)										
	UL 489					IEC 60947-2					
	Volts AC (50/60 Hz)			Volts DC		Volts AC (50/60 Hz)					
	240	480	600	250	500	220/240		380/415		690	
NLG	65	35	25	30	25	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}
HLG	100	65	25	30	35	65	65	45	45	12	6
LLG	200	100	25	30	35	100	75	70	70	15	8
						200	150	100	75	15	8

Connectors for 75°C Wire

Construction	Ampere Rating	Wire Range	No. of cables per connector	Catalog Number ^②	List Price \$
Aluminum ^①	150-600	#2/0-600 kcmil Al/Cu	2 (load side)	3TA2LG600LD	
Aluminum ^①	150-600	#2/0-600 kcmil Al/Cu	2 (line side)	3TA2LG600LN	
Copper	150-600	#2/0-600 kcmil Cu	2 (load side)	3TC2LG600LD	
Copper	150-600	#2/0-600 kcmil Cu	2 (line side)	3TC2LG600LN	
Compression Lugs					
	150-600	#6-350 kcmil Al/Cu	-	6CLL350 ^③	

^① Standard construction supplied for each breaker.

^② Kit consists of 3 terminal connectors.

^③ Kit consists of 6 lugs for Line or Load end.

LG Thermal-Magnetic, Instantaneous Trip Adjustment Range

Trip Unit Continuous Amp Rating (I _n)	Instantaneous Overcurrent Setting (I _i)	
	Min.	Max.
400	2000	4000
500	2500	5000
600	2750	5500

Note: Each breaker has 6 trip settings.

Dimensions, inches (mm)

Number of Poles	Width	Length	Depth	To Handle D1
2, 3	5.5 (139)	11 (279)	4.2 (102)	5.4 (138)
Ext. Shield		13.6 (345.5)		

Shipping Weight, lbs. (kg)

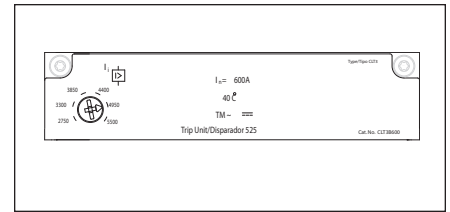
Poles	Frame	Trip Unit		Complete Breaker
		Thermal-Mag.	Electronic	
2, 3	17.4 (7.9)	3.5 (1.6)	4.2 (1.9)	20.9 (9.5)

External Accessories pages 17/43 to 17/57

VL Molded Case Circuit Breakers

LG 600A Thermal-Magnetic Trip Unit

Selection



Model 525 Trip Unit

LG 600A Frame 2-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NLG2F600		HLG2F600		LLG2F600			
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER						TRIP UNIT ONLY	
400	NLG2B400L		HLG2B400L		LLG2B400L		CLT2B400	
500	NLG2B500L		HLG2B500L		LLG2B500L		CLT2B500	
600	NLG2B600L		HLG2B600L		LLG2B600L		CLT2B600	

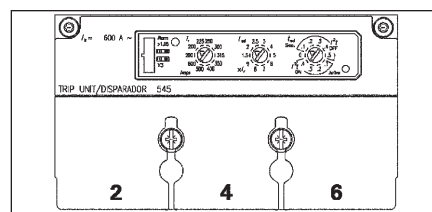
LG 600A Frame 3-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NLG3F600		HLG3F600		LLG3F600			
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER						TRIP UNIT ONLY	
400	NLG3B400L		HLG3B400L		LLG3B400L		CLT3B400	
500	NLG3B500L		HLG3B500L		LLG3B500L		CLT3B500	
600	NLG3B600L		HLG3B600L		LLG3B600L		CLT3B600	

VL Molded Case Circuit Breakers

LG 600A Electronic 3-Knob & LCD Trip Units

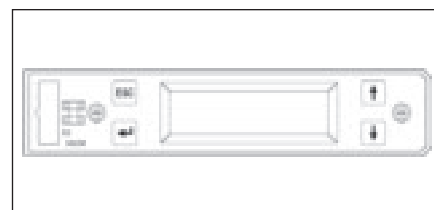
Selection



Model 545 Trip Unit

LG 600A Frame 3-Pole Electronic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NLG3F600		HLG3F600		LLG3F600		COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER	
	ELECTRONIC LI TRIP						TRIP UNIT ONLY	
400	NLG3N400L		HLG3N400L		LLG3N400L		CLT3N400	
600	NLG3N600L		HLG3N600L		LLG3N600L		CLT3N600	
	ELECTRONIC LSI TRIP							
400	NLG3P400L		HLG3P400L		LLG3P400L		CLT3P400	
600	NLG3P600L		HLG3P600L		LLG3P600L		CLT3P600	
	ELECTRONIC LSIG TRIP							
400	NLG3U400L		HLG3U400L		LLG3U400L		CLT3U400	
600	NLG3U600L		HLG3U600L		LLG3U600L		CLT3U600	
	ELECTRONIC LIG TRIP							
400	NLG3X400L		HLG3X400L		LLG3X400L		CLT3X400	
600	NLG3X600L		HLG3X600L		LLG3X600L		CLT3X600	



Model 576 Trip Unit

LG 600A Frame 3-Pole Electronic LCD Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NLG3F600		HLG3F600		LLG3F600		COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER	
	LCD ELECTRONIC LSI TRIP							
400	NLG3D400L		HLG3D400L		LLG3D400L		CLT3D400	
600	NLG3D600L		HLG3D600L		LLG3D600L		CLT3D600	
	LCD ELECTRONIC LSIG TRIP							
400	NLG3E400L		HLG3E400L		LLG3E400L		CLT3E400	
600	NLG3E600L		HLG3E600L		LLG3E600L		CLT3E600	

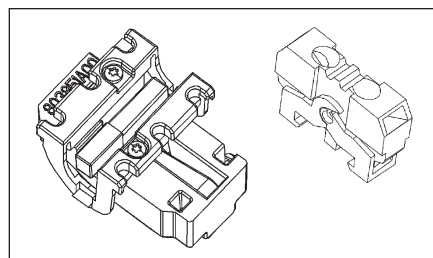
VL Molded Case Circuit Breakers

Internal Accessories for JG 400A and LG 600A Frames

Selection

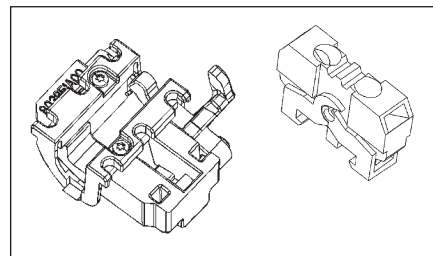
Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket ^①	Catalog Number	List Price \$
1 Alarm Switch 1A/B ^③ Bases AMBL2 & AMBL3	Left, Right ^②	ASKL1	
2 Aux. Switches 1A + 1B Bases AMBL1	Left, Right, Neutral	ASKL2	
2 Aux. + 1 Alarm Switches 1A + 1B, 1A/B ^③ Bases AMBL2 & AMBL3	Left, Right ^②	ASKL3	



Auxiliary/Alarm Switch Mounting Base Only

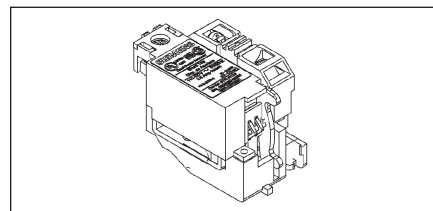
Description	Mounting Pocket	Catalog Number	List Price \$
Up to 3 Auxiliary Switches	Left, Right, Neutral	AMBL1	
2 Aux. + 1 Alarm Switch	Left Pocket Only	AMBL2	
2 Aux. + 1 Alarm Switch	Right Pocket Only	AMBL3	



Auxiliary/Alarm Switch Only

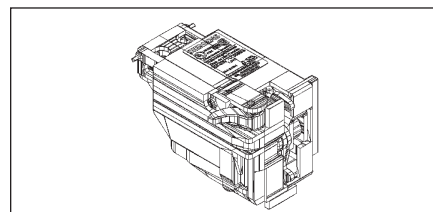
Common to DG - PG Frames

Description	Catalog Number	List Price \$
1 Normally Open Contact (1A)	ASWPA	
1 Normally Closed Contact (1B)	ASWPB	



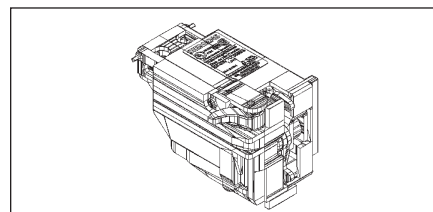
Shunt Trips

Description	Mounting Pocket	Catalog Number	List Price \$
24 VDC	Right Pocket Only	STRLB24DC	
48-60 VDC		STRLC60DC	
110-127 VDC		STRLD125DC	
220-250 VDC		STRLE250DC	
48-60 VAC		STRLM60	
110-127 VAC		STRLN120	
208-277 VAC		STRLS277	
380-600 VAC		STRLV600	



Undervoltage Release

Description	Mounting Pocket	Catalog Number	List Price \$
12 VDC	Right Pocket Only	UVRLA12DC	
24 VDC		UVRLB24DC	
48 VDC		UVRLC48DC	
60 VDC		UVRLG60DC	
110-127 VDC		UVRLD125DC	
220-250 VDC		UVRLE250DC	
24 VAC		UVRL24	
110-127 VAC		UVRLN120	
220-240 VAC		UVRLR240	
208 VAC		UVRLP208	
277 VAC		UVRLS277	
380-415 VAC		UVRLT415	
440-480 VAC		UVRLU480	



^① 'A' refers to a normally open contact (open when the breaker contacts are open).

^② 'B' refers to a normally closed contact (closed when the breaker contacts are open).

^③ Refer to the "Accessory Locations" chart for guidelines and limitations about which pockets may be used for accessory combinations.

^④ Includes 1A and 1B contact for alarm purposes, only one of which may be installed at any time.

VL Molded Case Circuit Breakers

MG 800A Frame, VL Series

Selection/Dimensions

Ordering Information

Complete Assembled Breaker

Prices for a complete factory assembled MG breaker include the frame, trip unit, and standard line and load lugs, all factory installed and shipped as a complete breaker. Assembled breakers are available only with standard connectors.

For any other configuration, order the frame, trip unit, and terminals as separate items.

For DC applications, use thermal magnetic trip unit only.

For reverse feed applications, select non-interchangeable trip breakers only. For non-interchangeable trip breakers, change the third digit of the catalog number to "X" for standard breakers.

100% Rated: For 100% rated breakers (or frames) with an interchangeable trip unit, change the 3rd character of the catalog name to "H".

For 100% rated breakers with a non-interchangeable trip unit, change the 3rd character of the catalog number to "Y".

For 50°C and special applications, refer to page 17/62.^A

Mounting hardware is included with each frame or complete breaker.



Dimensions, inches (mm)

Number of Poles	Width	Length	Depth	To Handle D1
2, 3	7.5 (190)	16 (406)	4.5 (114)	5.9 (151)

Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)										
	UL 489					IEC 60947-2					
	Volts AC (50/60 Hz)			Volts DC		Volts AC (50/60 Hz)					
	240	480	600	250	500	220/240		380/415		690	
					I _{CU}	I _{CS}	I _{CU}	I _{CS}	I _{CU}	I _{CS}	
NMG	65	35	25	22	35	65	65	50	50	20	10
HMG	100	65	35	25	50	100	75	70	70	30	15
LMG	200	100	50	42	65	200	150	100	75	35	17

Shipping Weight, lbs. (kg)

Poles	Frame	Trip Unit	Complete Breaker
2, 3	31.3 (14.2)	4.0 (1.8)	35.3 (16.0)

Connectors for 75°C Wire

Construction	Ampere Rating	Wire Range	No. of cables per connector	Catalog Number	List Price \$
Aluminum ^①	200-800A	1/0-500 kcmil Al/Cu	3	3TA3MG500 ^②	
Aluminum	200-800A	500-750 kcmil Al/Cu	2	3TA2MG750 ^②	
Copper	200-800A	1/0-500 kcmil Cu	3	TC3MG500 ^{③④}	
Aluminum	200-800A	#2-600 kcmil Al/Cu	3	3TA3MG600 ^{②④}	

① Total of 9 connectors (3 per phase Line or Load).

② Kit consists of 3 terminal connectors.

③ Standard connector supplied with complete breakers.

④ Includes extended terminal cover.

⑤ Consists of one terminal.

⑥ For 100% rated applications.

MG Thermal-Magnetic, Instantaneous Trip Adjustment Range

Trip Unit Continuous Amp Rating (I _n)	Instantaneous Overcurrent Setting (I _t)	
	Min.	Max.
600	3000	6000
700	3250	6500
800	3250	6500

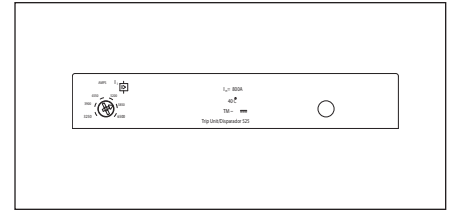
Note: Each breaker has 6 trip settings.

External Accessories pages 17/43 to 17/57

VL Molded Case Circuit Breakers

MG 800A Thermal-Magnetic Trip Unit

Selection



Model 525 Trip Unit

MG 800A Frame 2-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NMG2F800		HMG2F800		LMG2F800			
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER						TRIP UNIT ONLY	
600	NMG2B600L		HMG2B600L		LMG2B600L		CMT2B600	
700	NMG2B700L		HMG2B700L		LMG2B700L		CMT2B700	
800	NMG2B800L		HMG2B800L		LMG2B800L		CMT2B800	

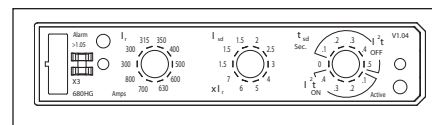
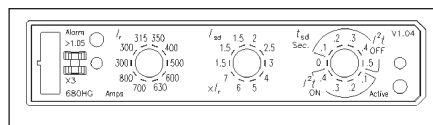
MG 800A Frame 3-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NMG3F800		HMG3F800		LMG3F800			
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER						TRIP UNIT ONLY	
600	NMG3B600L		HMG3B600L		LMG3B600L		CMT3B600	
700	NMG3B700L		HMG3B700L		LMG3B700L		CMT3B700	
800	NMG3B800L		HMG3B800L		LMG3B800L		CMT3B800	

VL Molded Case Circuit Breakers

MG 800A Electronic 3-Knob & LCD Trip Units

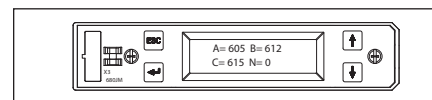
Selection



Model 545 Trip Units

MG 800A Frame 3-Pole Electronic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NMG3F800		HMG3F800		LMG3F800		COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER	
	ELECTRONIC LI TRIP						TRIP UNIT ONLY	
600	NMG3N600L		HMG3N600L		LMG3N600L		CMT3N600	
800	NMG3N800L		HMG3N800L		LMG3N800L		CMT3N800	
	ELECTRONIC LSI TRIP						TRIP UNIT ONLY	
600	NMG3P600L		HMG3P600L		LMG3P600L		CMT3P600	
800	NMG3P800L		HMG3P800L		LMG3P800L		CMT3P800	
	ELECTRONIC LSIG TRIP						TRIP UNIT ONLY	
600	NMG3U600L		HMG3U600L		LMG3U600L		CMT3U600	
800	NMG3U800L		HMG3U800L		LMG3U800L		CMT3U800	
	ELECTRONIC LIG TRIP						TRIP UNIT ONLY	
600	NMG3X600L		HMG3X600L		LMG3X600L		CMT3X600	
800	NMG3X800L		HMG3X800L		LMG3X800L		CMT3X800	



Model 576 Trip Unit

MG 800A Frame 3-Pole Electronic LCD Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NMG3F800		HMG3F800		LMG3F800		COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER	
	LCD ELECTRONIC LSI TRIP						TRIP UNIT ONLY	
600	NMG3D600L		HMG3D600L		LMG3D600L		CMT3D600	
800	NMG3D800L		HMG3D800L		LMG3D800L		CMT3D800	
	LCD ELECTRONIC LSIG TRIP						TRIP UNIT ONLY	
600	NMG3E600L		HMG3E600L		LMG3E600L		CMT3E600	
800	NMG3E800L		HMG3E800L		LMG3E800L		CMT3E800	

A - Consult with Siemens for availability.

VL Molded Case Circuit Breakers

NG 1200A Frame, VL Series

Selection/Dimensions

Ordering Information

Complete Assembled Breaker with Lugs

Prices for a complete factory assembled NG breaker include the frame, trip unit, and standard line and load lugs, all factory installed and shipped as a complete breaker. Assembled breakers are available only with standard connectors.

For any other configuration, order the frame, trip unit, and terminals as separate items.

For DC applications, use thermal magnetic trip unit only.

For reverse feed applications, select non-interchangeable trip breakers only. For non-interchangeable trip breakers, change the third digit of the catalog number to "X" for standard breakers.

For 100% rated breakers with a non-interchangeable trip unit, change the 3rd character of the catalog number to "Y".

For special applications, refer to page 17/62.^A

Mounting hardware is included with each frame or complete breaker.

A Toggle Handle Extension is included with each frame or complete breaker.



Dimensions, inches (mm)

Number of Poles	W	L	D	To Handle D1
2, 3	9 (229)	16 (406)	6 (152)	8.1 (207)

Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)										
	UL 489					IEC 60947-2					
	Volts AC (50/60 Hz)			Volts DC		Volts AC (50/60 Hz)					
	240	480	600	250	500	220/240		380/415		690	
					I _{CU}	I _{CS}	I _{CU}	I _{CS}	I _{CU}	I _{CS}	
NNG	65	35	25	22	35	65	35	50	25	20	10
HNG	100	65	35	25	50	100	50	70	35	30	15
LNG	200	100	65	42	65	200	100	100	50	35	17

Shipping Weight, lbs. (kg)

Poles	Frame	Trip Unit	Complete Breaker
2, 3	46.3 (21.0)	8.8 (4.0)	55.1 (25.0)

Connectors for 75°C Wire

Construction	Ampere Rating	Wire Range	No. of cables per connector	Catalog Number	List Price \$
Aluminum	300-1200A	1/0-500 kcmil Al/Cu	4	3TA4NG500 ^{③④}	
Aluminum	300-1200A	500-750 kcmil Al/Cu	3	3TA3NG750 ^④	
Copper	300-1200A	1/0-500 kcmil Cu ^②	4	3TC4NG500 ^④	
Aluminum	300-1200A	1/0-500 kcmil Al/Cu	4	3TA4NG500H ^④	

① Total of 12 connectors (4 per phase Line or Load).

② 90 °C for 100% rated breakers.

③ Standard connector provided with complete breakers.

④ Kit consists of 3 terminal connectors.

NG Thermal-Magnetic, Instantaneous Trip Adjustment Range

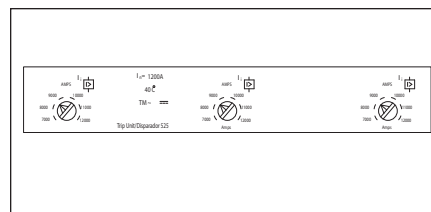
Trip Unit Continuous Amp Rating (I _n)	Instantaneous Overcurrent Setting (I _t)	
	Min.	Max.
800	4000	8000
900	5000	10000
1000	5000	10000
1200	7000	12000

Note: Each breaker has 6 trip settings.

External Accessories pages 17/43 to 17/57

VL Molded Case Circuit Breakers NG 1200A Thermal-Magnetic Trip Unit

Selection



Model 525 Trip Unit

NG 1200A Frame 2-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$		
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$				
	FRAME ONLY								TRIP UNIT ONLY	
	NNG2F120		HNG2F120		LNG2F120					
COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER										
800	NNG2B800L		HNG2B800L		LNG2B800L		CNT2B800			
900	NNG2B900L		HNG2B900L		LNG2B900L		CNT2B900			
1000	NNG2B100L		HNG2B100L		LNG2B100L		CNT2B100			
1200	NNG2B120L		HNG2B120L		LNG2B120L		CNT2B120			

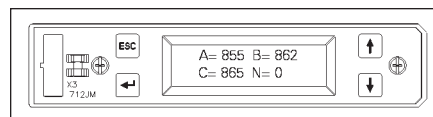
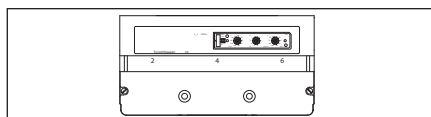
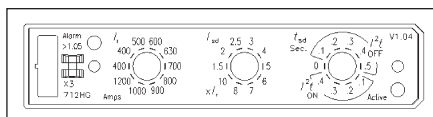
NG 1200A Frame 3-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$		
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$				
	FRAME ONLY								TRIP UNIT ONLY	
	NNG3F120		HNG3F120		LNG3F120					
COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER										
800	NNG3B800L		HNG3B800L		LNG3B800L		CNT3B800			
900	NNG3B900L		HNG3B900L		LNG3B900L		CNT3B900			
1000	NNG3B100L		HNG3B100L		LNG3B100L		CNT3B100			
1200	NNG3B120L		HNG3B120L		LNG3B120L		CNT3B120			

VL Molded Case Circuit Breakers

NG 1200A Electronic 3-Knob & LCD Trip Units

Selection



Model 545 Trip Units

Model 576 Trip Unit

NG 1200A Frame 3-Pole Electronic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NNG3F120		HNG3F120		LNG3F120			
COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER								
ELECTRONIC LI TRIP								
800	NNG3N800L		HNG3N800L		LNG3N800L		CNT3N800	
1000	NNG3N100L		HNG3N100L		LNG3N100L		CNT3N100	
1200	NNG3N120L		HNG3N120L		LNG3N120L		CNT3N120	
ELECTRONIC LSI TRIP								
800	NNG3P800L		HNG3P800L		LNG3P800L		CNT3P800	
1000	NNG3P100L		HNG3P100L		LNG3P100L		CNT3P100	
1200	NNG3P120L		HNG3P120L		LNG3P120L		CNT3P120	
ELECTRONIC LSIG TRIP								
800	NNG3U800L		HNG3U800L		LNG3U800L		CNT3U800	
1000	NNG3U100L		HNG3U100L		LNG3U100L		CNT3U100	
1200	NNG3U120L		HNG3U120L		LNG3U120L		CNT3U120	
ELECTRONIC LIG TRIP								
800	NNG3X800L		HNG3X800L		LNG3X800L		CNT3X800	
1000	NNG3X100L		HNG3X100L		LNG3X100L		CNT3X100	
1200	NNG3X120L		HNG3X120L		LNG3X120L		CNT3X120	

NG 1200A Frame 3-Pole Electronic LCD Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NNG3F120		HNG3F120		LNG3F120			
COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER								
LCD ELECTRONIC LSI TRIP								
800	NNG3D800L		HNG3D800L		LNG3D800L		CNT3D800	
1000	NNG3D100L		HNG3D100L		LNG3D100L		CNT3D100	
1200	NNG3D120L		HNG3D120L		LNG3D120L		CNT3D120	
LCD ELECTRONIC LSIG 4-W TRIP								
800	NNG3E800L		HNG3E800L		LNG3E800L		CNT3E800	
1000	NNG3E100L		HNG3E100L		LNG3E100L		CNT3E100	
1200	NNG3E120L		HNG3E120L		LNG3E120L		CNT3E120	

A - Consult with Siemens for availability.

VL Molded Case Circuit Breakers

PG 1600A Frame, VL Series & Thermal-Magnetic Trip Unit

Selection/Dimensions

Ordering Information

Prices for a complete factory assembled PG breaker include the frame and trip unit only. The connectors must be ordered as separate items.

For any other configuration, order the frame, trip unit, and connectors as separate items.

Connectors require a Breaker Lug Mounting Assembly or Breaker Mounting Base and must be ordered as a separate item.

For DC applications, use Thermal magnetic trip unit only.

For reverse feed applications select non-interchangeable trip breakers only. Change the third digit of the catalog number to "X" for non-interchangeable trip breakers.

For 100% rated breakers with a non-interchangeable trip unit, change the 3rd character of the catalog number to "Y".

For special applications, refer to page 17/62.^A

Mounting hardware is included with each frame or complete breaker.

A Toggle Handle Extension is included with each frame or complete breaker.



Dimensions, inches (mm)

Number of Poles	W	L	D	To Handle D1
2, 3	9 (229)	16 (406)	6 (152)	8.1 (207)

Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)										
	UL 489					IEC 60947-2					
	Volts AC (50/60 Hz)			Volts DC		Volts AC (50/60 Hz)					
	240	480	600	250	500	220/240		380/415		690	
					I _{CU}	I _{CS}	I _{CU}	I _{CS}	I _{CU}	I _{CS}	
NPG	65	35	25	22	35	65	35	50	25	20	10
HPG	100	65	35	25	50	100	50	70	35	30	15
LPG	200	100	65	42	65	200	100	100	50	35	17

Shipping Weight, lbs. (kg)

Poles	Frame	Trip Unit	Complete Breaker
2, 3	60.2 (27.3)	8.8 (4.0)	69.0 (31.3)

Connectors for 75°C Wire

Construction	Ampere Rating	Wire Range	No. of cables per phase	Catalog Number	List Price \$
Aluminum	1200-1600A	1/0-750 kcmil Al/Cu	6	3TA6PG750 ^{①③}	
Aluminum	1200-1600A	300-600 kcmil	5	TA5P600 ^{②④}	
Aluminum	1200-1600A	600-750 kcmil	4	TA4P750 ^{②④}	
Aluminum	1200-1600A	300-600 kcmil	6	TA6R600 ^{②④}	
Copper	1200-1600A	300-600 kcmil	5	TC5R600 ^{②④⑤}	

① Requires Lug Mounting Assembly LMAP1600.

② Requires Breaker Mounting Base MBPG1600 Kit or MBPG1601.

③ Consists of 3 connectors.

④ Consists of 1 connector.

⑤ For 100% rated applications, 90°C.

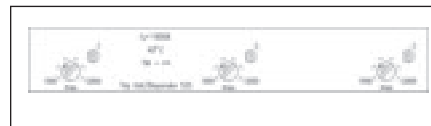
PG Thermal-Magnetic, Instantaneous Trip Adjustment Range

Trip Unit Continuous Amp Rating (I _n)	Instantaneous Overcurrent Setting (I _i)	
	Min.	Max.
1200	7000	12000
1400	7000	12000
1600	7000	12000

Note: Each breaker has 6 trip settings in this range.

Mounting Arrangement

Description	Catalog Number	List Price \$
Lug Mounting Assembly	LMAP1600	
Breaker Mounting Base (Front Connect)	MBPG1600	
Breaker Mounting Base (Rear Connect)	MBPG1601	



Model 525 Trip Unit

PG 1600A Frame 3-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NPG3F160		HPG3F160		LPG3F160			
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER							
1200	NPG3B120		HPG3B120		LPG3B120		CPT3B120	
1400	NPG3B140		HPG3B140		LPG3B140		CPT3B140	
1600	NPG3B160		HPG3B160		LPG3B160		CPT3B160	

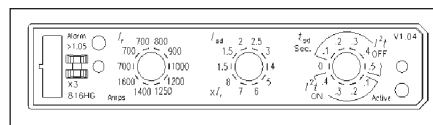
A - Consult with Siemens for availability.

External Accessories pages 17/43 to 17/57

VL Molded Case Circuit Breakers

PG 1600A Electronic 3-Knob & LCD Trip Units

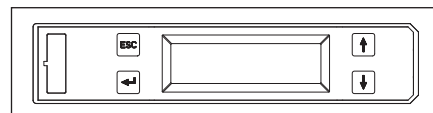
Selection



Model 545 Trip Unit

PG 1600A Frame 3-Pole Electronic Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NPG3F160		HPG3F160		LPG3F160		COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER	
	ELECTRONIC LI TRIP							
1200	NPG3N120		HPG3N120		LPG3N120		CPT3N120	
1600	NPG3N160		HPG3N160		LPG3N160		CPT3N160	
	ELECTRONIC LSI TRIP							
1200	NPG3P120		HPG3P120		LPG3P120		CPT3P120	
1600	NPG3P160		HPG3P160		LPG3P160		CPT3P160	
	ELECTRONIC LSIG TRIP							
1200	NPG3U120		HPG3U120		LPG3U120		CPT3U120	
1600	NPG3U160		HPG3U160		LPG3U160		CPT3U160	
	ELECTRONIC LIG TRIP							
1200	NPG3X120		HPG3X120		LPG3X120		CPT3X120	
1600	NPG3X160		HPG3X160		LPG3X160		CPT3X160	



Model 576 Trip Unit

PG 1600A Frame 3-Pole Electronic LCD Trip Unit

Continuous Ampere Rating	N-Interrupting Class		H-Interrupting Class		L-Interrupting Class		Catalog Number	List Price \$
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$		
	FRAME ONLY							
	NPG3F160		HPG3F160		LPG3F160		COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER	
	LCD ELECTRONIC LSI TRIP							
1200	NPG3D120		HPG3D120		LPG3D120		CPT3D120	
1600	NPG3D160		HPG3D160		LPG3D160		CPT3D160	
	LCD ELECTRONIC LSIG TRIP							
1200	NPG3E120		HPG3E120		LPG3E120		CPT3E120	
1600	NPG3E160		HPG3E160		LPG3E160		CPT3E160	

A - Consult with Siemens for availability.

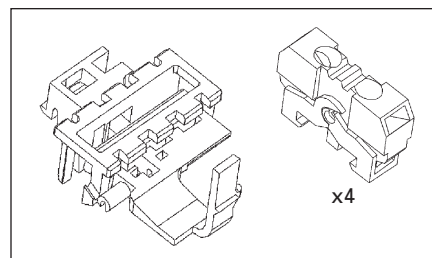
VL Molded Case Circuit Breakers

Internal Accessories for MG 800A, NG 1200A, and PG 1600A Frames

Selection

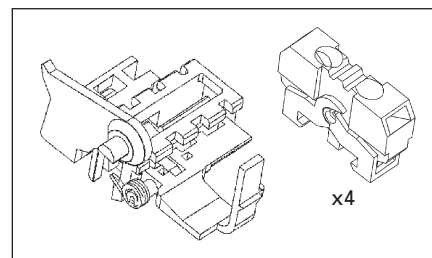
Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket [Ⓢ]	Catalog Number	List Price \$
2 Aux. + 2 Alarm Switches 2A + 2B Base AMBP2	Left Pocket Only	ASKP3	
4 Aux. Switches 2A + 2B Base AMBP1	Left, Right, Neutral	ASKP4	



Auxiliary/Alarm Switch Mounting Base Only

Description	Mounting Pocket [Ⓢ]	Catalog Number	List Price \$
Up to 4 Auxiliary Switches 2 Aux. + 2 Alarm Switches	Left, Right, Neutral Left Pocket Only	AMBP1 AMBP2	



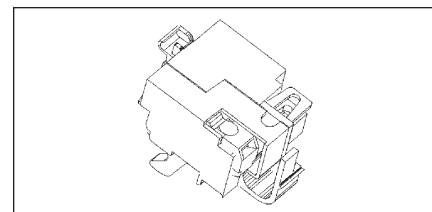
Auxiliary/Alarm Switch Only

Common to DG-PG Frames

Description	Catalog Number	List Price \$
1 Normally Open Contact (1A)	ASWPA	
1 Normally Closed Contact (1B)	ASWPB	

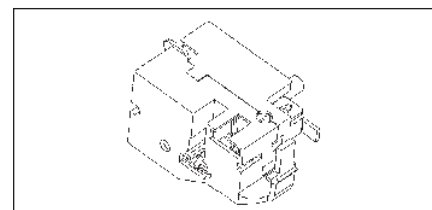
Shunt Trips

Description	Mounting Pocket	Catalog Number	List Price \$
24 VDC	Right Pocket Only	STRPB24DC	
48-60 VDC		STRPC60DC	
110-127 VDC		STRPD125DC	
220-250 VDC		STRPE250DC	
48-60 VAC		STRPM60	
110-127 VAC		STRPN120	
208-277 VAC		STRPS277	
380-600 VAC		STRPV600	



Undervoltage Release

Description	Mounting Pocket	Catalog Number	List Price \$
12 VDC	Right Pocket Only	UVRPA12DC	
24 VDC		UVRPB24DC	
48 VDC		UVRPC48DC	
60 VDC		UVRPG60DC	
110-127 VDC		UVRPD125DC	
220-250 VDC		UVRPE250DC	
110-127 VAC		UVRPN120	
220-240 VAC		UVRPR240	
208 VAC		UVRPP208	
277 VAC		UVRPS277	
380-415 VAC		UVRPT415	
440-480 VAC		UVRPU480	



'A' refers to a normally open contact (open when the breaker contacts are open).

'B' refers to a normally closed contact (closed when the breaker contacts are open).

Ⓢ Refer to the "Accessory Locations" chart for guidelines and limitations about which pockets may be used for accessory combinations.

VL Molded Case Circuit Breakers

Molded Case Switch

Selection

General

Typically a molded case switch is used when a compact load-break switch is needed for disconnect purposes. The VL line of molded case switches from Siemens is made of the same materials and components as the VL circuit breakers but do not provide overcurrent protection. Each molded case

switch has a fixed instantaneous self-protecting trip element which may open the switch under high fault conditions.

Application Note

Overcurrent protection must be provided by an appropriate overcurrent protective device located upstream from

the molded case switch. Also, the short-circuit current rating of the switch is limited to the interrupting rating of the upstream protective device or the ratings in the table below, **whichever is less.**

Ordering Information

Each type VL molded case switch accepts the same terminals and accessories as the equivalent VL circuit breakers.

All type VL molded case switches are suitable for reverse feed applications.

Mounting hardware and standard line and load terminals are included on ratings through 250A. For 400 – 1600A ratings, order the lugs separately.

All ratings are UL listed and CSA certified.

Molded Case Switch

Maximum Ampere Rating / Frame	Catalog Number	List Price \$	Catalog Number	List Price \$	Short-Circuit Current Rating*			Self Protective Instantaneous Override
					2-Pole	3-Pole		
					240V	480V	600V	
150A / DG 250A / FG	HDS2S150L HFS2S250L		HDS3S150L HFS3S250L		100k 100k	65k 65k	20k 35k	2,500A 3,500A
400A / JG 600A / LG	HJS2S400 HLS2S600		HJS3S400 HLS3S600		100k 100k	65k 65k	35k 35k	4,400A 5,500A
800A / MG 1200A / NG	HMS2S800 HNS2S120		HMS3S800 HNS3S120		100k 100k	65k 65k	35k 35k	6,500A 12,000A
1600A / PG	—	—	HPS3S160		100k	65k	35k	12,000A

Maximum Ampere Rating / Frame	Catalog Number	List Price \$	Short-Circuit Current Rating*			Self Protective Instantaneous Override
			3-Pole			
			240V	480V	600V	
250A / FG	LFS3S250L		200k	100k	25k	3,500A
400A / JG 600A / LG	LJS3S400 LLS3S600		200k 200k	100k 100k	42k 42k	4,400A 5,500A
800A / MG 1200A / NG	LMS3S800 LNS3S120		200k 200k	100k 100k	50k 65k	6,500A 12,000A
1600A / PG	LPS3S160		200k	100k	65k	12,000A

* The Short-Circuit Current Rating is the maximum available current of the circuit where the switch is used, when protected by an appropriate overcurrent protective device. Above 250A, terminals are not included and must be ordered separately. For terminal information and the variety of lugs available for VL breakers.

VL Molded Case Circuit Breakers Motor Circuit Protectors

Selection

General

Protection of Motor Circuits

Molded case circuit breakers are used in motor circuits as a disconnecting means and for short-circuit protection. They should be used in conjunction with motor-running, over-current protection devices, and should permit the motor to start without nuisance tripping from motor-inrush current. The circuit breaker should have a continuous current rating of not less than 115% of the motor full-load current.

The recommended motor circuit protectors listed have continuous-current ratings of at least 115% of motor full-load currents. The trip setting positions are approximately 11 times motor full-load current. The suggested trip settings may need to be adjusted upward to no higher than 1300% of full-load current for non-design E type motors, and no greater than 1700% of full-load current for design E motors, to allow for motor startup due to in-rush current.

Breaker Mounted Immediately Ahead of Motor Starter

Siemens motor circuit protectors are recommended for use in combination motor starters to provide selective short-circuit protection for the motor branch circuit. The adjustable instantaneous trip feature of the Siemens motor circuit protector provides for a trip setting slightly above the peak motor in-rush current. With this setting, no delay is introduced in opening the circuit when a fault occurs. This circuit breaker has no time-delay trip element. Therefore it must be used in conjunction with, and immediately ahead of, the motor-running overcurrent protection device.

Important: The information below does not apply to all motor applications: it is recommended that the user refer to the National Electrical Code (NEC) for specific needs.

Table 1 (When Breaker is Mounted Immediately Ahead of Motor Starter)

3-Phase Induction Type Motors (Siemens motor circuit protectors for branch circuit use with alternating-current combination, full voltage motor starters)

Motor Full Load Amperes	Trip Setting (A)	Catalog Number ^①	List Price \$
35-50	450	HDM3L150L	
42-60	540		
48-70	630		
55-80	720		
62-90	810		
69-100	900		
58-83	750	HDM3M150L	
69-100	900		
81-117	1050		
92-133	1200		
104-150	1350		
115-150 ^②	1500		
96-139	1250	HDM3H150L	
115-150 ^②	1500		
135-150 ^②	1750		
135-150 ^②	2000		
135-150 ^②	2250		
135-150 ^②	2500		
46-67	600	HFM3L250L	
55-80	720		
65-93	840		
74-107	960		
83-120	1080		
92-133	1200		
77-111	1000	HFM3M250L	
92-133	1200		
108-156	1400		
123-178	1600		
138-200	1800		
154-222	2000		
135-194	1750	HFM3H250L	
162-210	2100		
188-220	2450		
215-241	2800		
242-250 ^②	3150		
242-250 ^②	3500		

Motor Full Load Amperes	Trip Setting (A)	Catalog Number ^①	List Price \$
96-139	1250	HJM3L400	
115-167	1500		
135-194	1750		
154-222	2000		
173-250	2250		
192-278	2500		
154-222	2000	HJM3M400	
185-267	2400		
215-311	2800		
246-356	3200		
277-400	3600		
308-400 ^②	4000		
154-222	2000	HLM3L600	
185-267	2400		
215-311	2800		
246-356	3200		
277-400	3600		
308-444	4000		
212-306	2750	HLM3M600	
254-367	3300		
296-428	3850		
338-489	4400		
381-550	4950		
423-600	5500		
250-361	3250	HMM3M800	
292-422	3800		
335-483	4350		
385-556	5000		
442-638	5740		
500-722	6500		
385-556	5000	HNM3M120	
462-667	6000		
538-778	7000		
615-889	8000		
692-1000	9000		
769-1111	10,000		

^① Motor circuit protectors rated 150A and 250A are supplied with line and load lugs installed. If lugs are required on 400A to 1200A motor circuit breakers, order required lugs separately.

^② These settings are provided for starting currents greater than 11X but not to exceed 17X. Full Load Amps (FLA) not to exceed ampere rating of MCP.

VL Molded Case Circuit Breakers

600 Volt DC Circuit Breakers

Selection

General

Siemens UL Listed non-interchangeable trip DC Thermal/magnetic Molded Case Circuit Breakers shown below are for use in grounded & ungrounded general DC circuits and ungrounded battery supply circuits of UPS systems. These breakers are rated at 600Vdc closed circuit and feature rated interruption levels from 42,000 to 65,000 amperes as indicated in

the table. This family of circuit breakers is rated from 50 to 1600 Amperes.

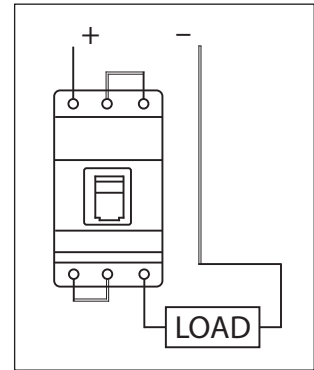
Types HDGD through HPGD circuit breakers are provided with an adjustable magnetic over-current function located on the face of the circuit breaker. Contact Siemens for specific magnetic over-current values.

To properly use these UL Listed circuit breakers at 600Vdc and the indicated

interruption level, it is necessary to connect the terminals of the 3 pole circuit breaker in a series configuration as shown in the diagram below.

Types HDGD through HPGD use the same internal and external accessories as the standard DG through PG frames and associated types. Consult the individual frame section for accessory information.

Frame	Type	Continuous Ampere Rating	Catalog Number (3-pole) ^①	List Price \$	Short-Circuit Current Rating 600VDC ^②
DG	HDGD	50	HDC3B050		42K
		60	HDC3B060		42K
		70	HDC3B070		42K
		80	HDC3B080		42K
		90	HDC3B090		42K
		100	HDC3B100		42K
		110	HDC3B110		42K
		125	HDC3B125		42K
FG	HFGD	100	HFC3B100		42K
		150	HFC3B150		42K
		250	HFC3B250		42K
JG	HJGD	250	HJC3B250		65K
		300	HJC3B300		65K
		350	HJC3B350		65K
		400	HJC3B400		65K
LG	HLGD	400	HLC3B400		65K
		600	HLC3B600		65K
MG	HMGD	600	HMC3B600		65K
		700	HMC3B700		65K
		800	HMC3B800		65K
NG	HNGD	800	HNC3B800		65K
		900	HNC3B900		65K
		1000	HNC3B100		65K
		1200	HNC3B120		65K
PG	HPCGD	1200	HPC3B120		65K
		1400	HPC3B140		65K
		1600	HPC3B160		65K

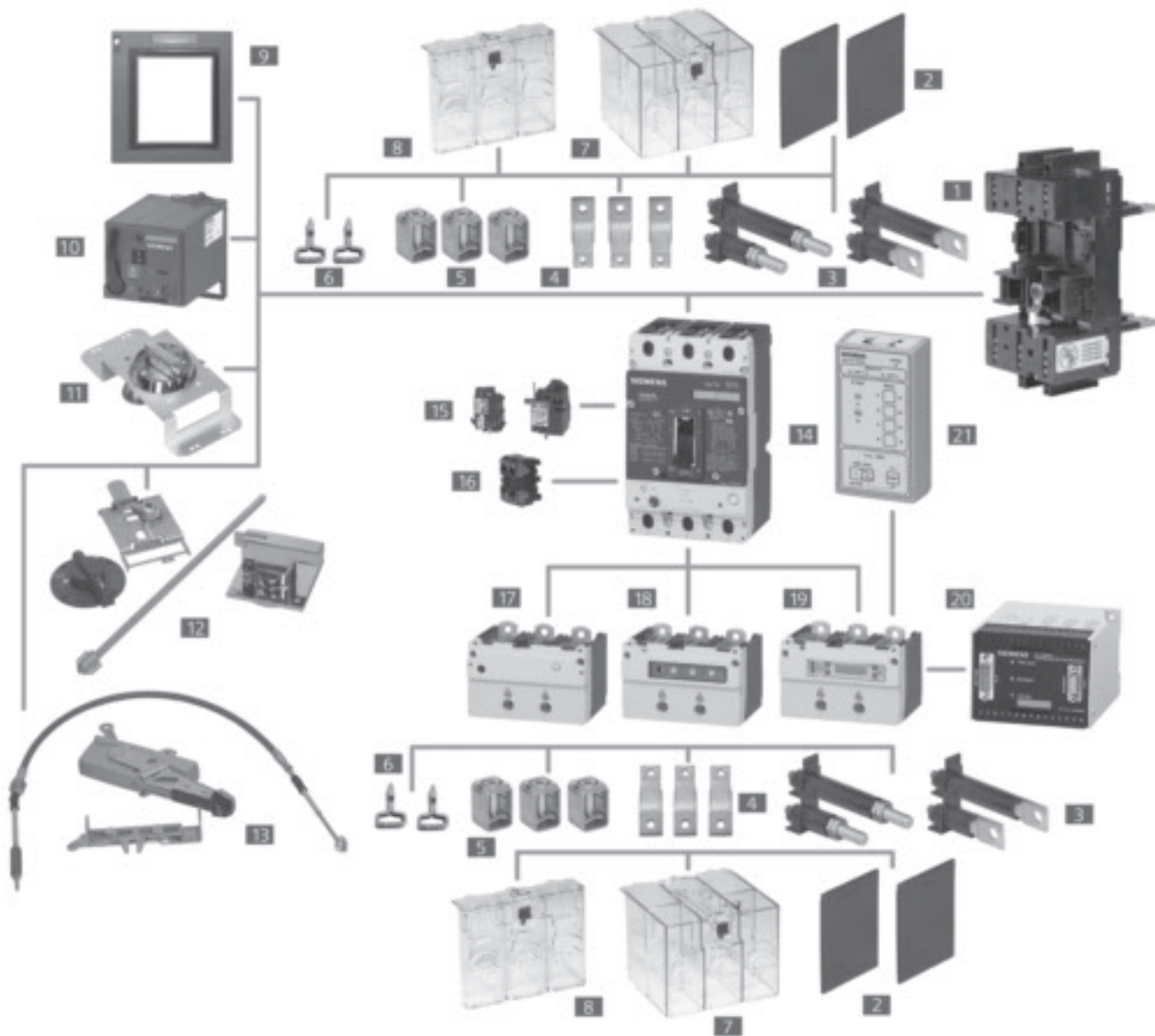


^① Terminal connectors must be ordered separately; see pg. 17/52.

^② Standard VL breakers DG - PG feature DC ratings up to 500V for ungrounded UPS applications. Consult the individual frame section for more information.

Modularity To Support All Your Application Needs

Modules and More: VL Circuit Breakers with Optional Accessories



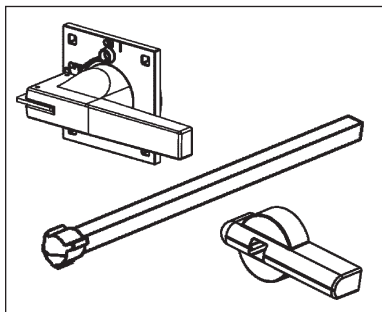
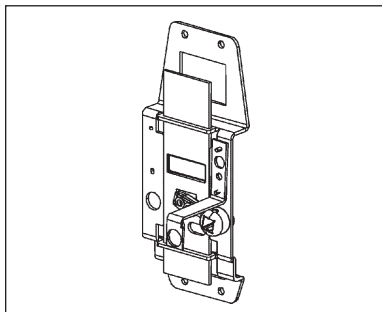
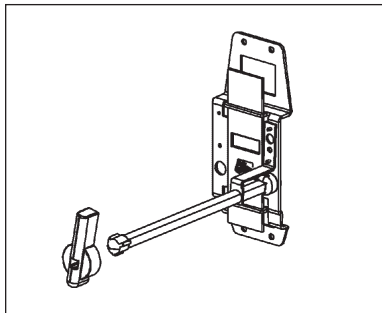
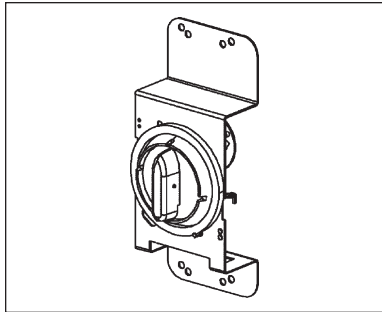
- 1 Base for Plug-In or Draw-Out
- 2 Interphase Barriers
- 3 Rear Terminals – Flat and Round
- 4 Bus Extensions
- 5 Terminal Connectors
- 6 Plug-In Terminal Blades
- 7 Extended Terminal Shield
- 8 Standard Terminal Shield

- 9 Cover Frame for Door Cutout
- 10 Stored Energy Operator
- 11 Rotary Handle Operator
- 12 Variable Depth Rotary Operator
- 13 Max Flex Operator
- 14 Circuit Breaker
- 15 Shunt Trip or Undervoltage Releases
- 16 Auxiliary/Alarm Switches

- 17 Thermal-Magnetic Trip Unit (525)
- 18 Electronic Trip Unit (545)
- 19 Elec. Trip Unit with LCD (576)
- 20 Communication Module with ZSI
- 21 Electronic Trip Unit Test Kit

VL Molded Case Circuit Breakers Operating Mechanisms

Selection



Description	For DG to FG Frame 150 to 250 A		For JG to LG Frame 400 A to 600 A	
	Catalog Number	List Price \$	Catalog Number	List Price \$
Through-Door Rotary Handle Operator Kit Fixed depth and the handle is mounted directly on the circuit breaker. Lockable knob (for up to 3 padlocks). NEMA 1, 12 Red Handle Version with red knob, yellow indicator plate NEMA 1, 12	RHFF		RHFL	
	RHFFEM		RHFLEM	
Door-Mounted Rotary Handle Operator Kit Variable depth, door mounted handle. Includes knob with masking frame, indicator plate, detachable door coupling, 12" shaft, and breaker mounted rotary operator. Lockable knob (for up to 3 padlocks). NEMA 1, 12	RHVF12		RHVL12	
Auxiliary Switch Kits For Direct or Extended Rotary Handle Operators (RHF and RHV). Form C, Early Break type2 Aux. Switch Kit [Ⓞ] Includes 1 switch with 5' wire For Door-Mounted Operator For Through-Door Operator Includes 2 switches with 5' wire For Door-Mounted Operator For Through-Door Operator	RHSLA1 RHSFA1F		RHSLA1 RHSLA1F	
	RHSLA2 RHSFA2F		RHSLA2 RHSLA2F	
Door-Mounted Rotary Operator Mechanism Breaker mechanism only	RHVFBM		RHVLBM	
Door-Mounted Rotary Handle Only Standard version NEMA 1, 12 NEMA 3R NEMA 4X Red Handle version	RHVM12H RHVM3RH RHVM4XH RHVMEMH		RHVM12H RHVM3RH RHVM4XH RHVMEMH	
Extension Shaft Only, for Door Mounted Operator 2 inches (50.8mm) 3 inches (76.2mm) 12 inches (304.8 mm) 16 inches (406.4 mm) 24 inches (609.6mm) w/ support bracket	RHVMS02 — RHVMS12 RHVMS16 RHVMS24	—	RHVMS02 — RHVMS12 RHVMS16 RHVMS24	—

[Ⓞ] During manual operation, Early Break auxiliary switch contacts open before the breaker opens.
CSO - Consult Sales Office for pricing.

VL Molded Case Circuit Breakers Operating Mechanisms

Selection

Description	For MG Frame 800 A		For NG to PG Frame 1200 to 1600 A	
	Catalog Number	List Price \$	Catalog Number	List Price \$
Through-Door Rotary Handle Operator Kit Fixed depth, breaker mounted. For direct fitting to the circuit breaker. Lockable with up to 3 padlocks. NEMA 1, 12	—	—	—	—
Red Handle version with red knob, yellow indicator plate NEMA 1, 12	—	—	—	—
Door-Mounted Rotary Handle Operator Kit Variable depth, door mounted handle. Includes knob with masking frame, indicator plate, detachable door coupling, 12" shaft, and breaker mounted rotary operator. Lockable knob (for up to 3 padlocks). NEMA 1, 12	RHVM12	—	—	—
Auxiliary Switch Kits For Direct or Extended Rotary Handle Operators (RHF and RHV). Early Break type2 Aux. Switch Kit Includes 1 switch with 5' wire For Door-Mounted Operator For Through-Door Operator	RHSMA1 —	—	RHSPA1 —	—
Includes 2 switches with 5' wire For Door-Mounted Operator For Through-Door Operator	RHSMA2 —	—	RHSPA2 —	—
Door-Mounted Rotary Operator Mechanism Breaker mechanism only	RHVMBM	—	RHVPBM	—
Door-Mounted Rotary Handle Only Standard version NEMA 1, 12 NEMA 3R NEMA 4X Red Handle version	RHVM12H RHVM3RH RHVM4XH RHVMEMH	—	RHVP3RH RHVP3RH RHVP4XH RHVP4XH	—
Extension Shaft Only, for Door Mounted Operator 2 inches (50.8mm) 3 inches (76.2mm) 12 inches (304.8 mm) 16 inches (406.4 mm) 24 inches (609.6mm) w/ support bracket	RHVMS02 — RHVMS12 RHVMS16 RHVMS24	—	— RHVPS03 RHVPS12 — RHVPS24	—

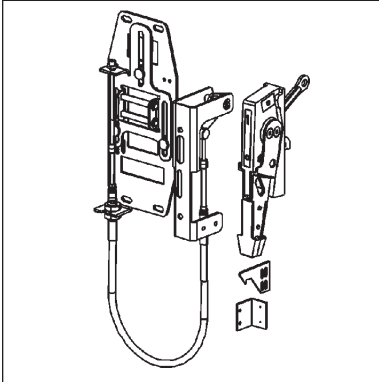
CSO - Consult Sales Office for pricing.

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VL Molded Case Circuit Breakers

Operating Mechanisms

Selection



Description	For DG and FG Frame 150 to 250 A		For JG and LG Frame 400 to 600 A	
	Catalog Number	List Price \$	Catalog Number	List Price \$
Max-Flex™, Variable Depth Flange Mounted Operator Kit Complete kit, includes plastic handle, breaker operator, and cable. NEMA 1, 3R, 12 For DG and FG operators, the cable is 36", all others are 48"	MFKF3R		MFKL3R	
Handle Only, for Max-Flex™ Variable Depth NEMA 1, 3R, 12 Plastic NEMA 1, 3R, 12 Steel - epoxy coated NEMA 4, 4X Steel - chrome plated Solid color (all gray) Plastic ^① NEMA 1, 3R, 12 Solid color (black handle) Steel epoxy coated ^① NEMA 1, 3R, 12	MFHM3R MFHM3RS MFHM4X		MFHM3R MFHM3RS MFHM4X	
Breaker Operator Mechanism Only, for Max-Flex™	MFMF		MFML	
Cable Only, for Max-Flex™ Variable Depth 36" 48" 60" 72" 84" 96" 120" 144"	MFCF036 MFCF048 MFCF060 MFCF072 MFCF084 MFCF096 MFCF120 MFCF144		MFCM036 MFCM048 MFCM060 MFCM072 MFCM084 MFCM096 MFCM120 MFCM144	
Handle Auxiliary Switch Form C (1NO - 1NC), early break ^② 1 Aux. switch 2 Aux. switch	MFSFA1 MFSFA2		MFSLA1 MFSLA2	

① Max-Flex™ handles are available with solid gray or black handles instead of the customary "Red for On" flange handle.

The black handle is preferred for IEC markets, where red handles have a specific meaning.

② During manual operation, Early Break aux. contacts open before the breaker opens.

CSO - Consult Sales Office for pricing.

VL Molded Case Circuit Breakers Operating Mechanisms

Selection

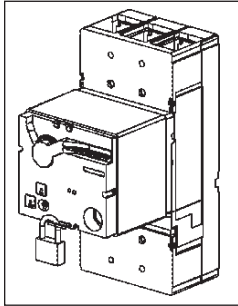
Description	For MG Frame 800 A		For NG Frame 1200 A		For PG Frame 1600 A	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
Max-Flex™, Variable Depth Flange Mounted Operator Kit Complete kit, includes plastic handle, breaker operator, and cable. NEMA 1, 3R, 12 For DG and FG operators, the cable is 36", all others are 48"	MFKM3R		MFKP3RS		MFKP3RS	
Handle Only, for Max-Flex™ Variable Depth NEMA 1, 3R, 12 Plastic NEMA 1, 3R, 12 Steel - epoxy coated NEMA 4, 4X Steel - chrome plated Solid color (all gray) Plastic ^① NEMA 1, 3R, 12 Solid color (black handle) Steel epoxy coated ^① NEMA 1, 3R, 12	MFHM3R MFHM3RS MFHM4X MFHM3RB MFHM3RSB		— MFHP3RS MFHP4X — MFHP3RSB	— —	— MFHP3RS MFHP4X — MFHP3RSB	— —
Breaker Operator Mechanism Only, for Max-Flex™	MFMM		MFMP		MFMP	
Cable Only, for Max-Flex™ Variable Depth 36" 48" 60" 72" 84" 96" 120" 144"	MFCM036 MFCM048 MFCM060 MFCM072 MFCM084 MFCM096 MFCM120 MFCM144		— MFCP048 MFCP060 MFCP072 MFCP084 MFCP096 MFCP120 MFCP144	— —	— MFCP048 MFCP060 MFCP072 MFCP084 MFCP096 MFCP120 MFCP144	— —
Handle Auxiliary Switch Form C (1NO - 1NC), early break ^② 1 Aux. switch 2 Aux. switch	MFSPA1 MFSPA2		MFSPA1 MFSPA2		MFSPA1 MFSPA2	

CSO - Consult Sales Office for pricing.

VL Molded Case Circuit Breakers

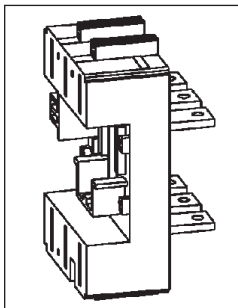
Operating Mechanisms

Selection

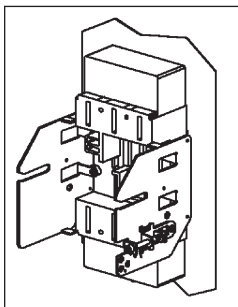
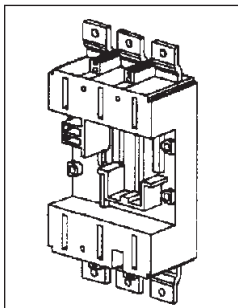


Description	For DG to FG Frame 150 to 250 A	
	Catalog Number	List Price \$
Stored Energy and Motor Operators Lockable with up to 3 padlocks.		
AC Voltage DC Voltage	Stored Energy Type	
— 24	SEAFB	
42-48 42-48	SEAFM	
60 60	SEAFY	
110-127 110-127	SEAFN	
220-250 220-250	SEAFR	
Cylinder Locks for Field Installation	CLKF	

Plug-In and Draw-Out Bases



Description	For DG Frame 150 A	For FG Frame 250 A	
	Catalog Number	List Price \$	Catalog Number
Plug-in Mounting Base Assembly Includes base, terminal blade kit, sec. terminal block assembly, base trip interlock, and mounting hardware.			
Rear Connected 3-pole	PCBDRC3		PCBFRC3
Front Connected 3-pole	PCBDFC3		PCBFFC3
Draw-out Assembly Includes base, position indicator switch, socket, base trip interlock, crank handle, connectors, and necessary shields.			
Rear Connected 3-pole	DCADRC3		DCAFRC3
Front Connected 3-pole (Draw-out assembly includes side plates and all hardware)	DCADFC3		DCAFFC3
Hex Wrench for racking draw-out assembly and position indicator	DCHP		DCHP
Position Indicator Switch Form "C" switch to indicate breaker engaged/de-engaged position. ^①	DCIP		DCIP
Secondary Terminal Block Assy. Accessory connections for plug-in or draw-out breakers. Pre-wired plug and block with 8 terminal points. ^②	PCTF83		PCTF83
90° Connection Adapter Kit For rear connected 3-pole plug-in base	PCAF390		PCAF390
Plug-In Spare Breaker Kit Set of 6 terminal blades, 2 terminal shield, & 1 trip interlock	PCXD3		PCXF3
Draw-out Spare Breaker Kit Set of 6 terminal blades, & 1 trip interlock	DCXD3		DCXF3
Spare Breaker Trip Interlock	PCXFT		PCXFT



① Up to 2 position indicator switches may be mounted per plug-in or draw-out base.

② Up to 2 plugs per breaker (16 terminal points) may be mounted on DG, and FG breakers. Up to 3 plugs per breaker (24 terminal points) may be mounted on JG, LG, MG, NG, and PG breakers.

CSO - Consult Sales Office for pricing.

VL Molded Case Circuit Breakers

Operating Mechanisms

Selection

For JG to LG Frame
400 to 600 A

For MG Frame
800 A

For NG to PG Frame
1200 to 1600 A

Catalog Number List Price \$

Catalog Number List Price \$

Catalog Number List Price \$

Stored Energy Type
SEALB
SEALM
SEALY
SEALN
SEALR
CLKP

Stored Energy Type
SEAMB
SEAMM
SEAMY
SEAMN
SEAMR
CLKP

Motor Operator Type
MTRPB
MTRPM
MTRPY
MTRPN
MTRPR
CLKP

For JG Frame
400 A

For LG Frame
600 A

For MG Frame
800 A

For NG Frame
1200 A

For PG Frame
1600 A

Catalog Number List Price \$

Catalog Number List Price \$

Catalog Number List Price \$

Catalog Number List Price \$

Catalog Number List Price \$

PCBJRC3

PCBLRC3

PCBMRC3

PCBNRC3

—

—

PCBJFC3

PCBLFC3

—

—

—

—

—

—

DCAJRC3

DCALRC3

DCAMRC3

DCANRC3

—

—

DCAJFC3

DCALFC3

DCAMFC3

DCANFC3

—

—

DCHP

DCHP

DCHP

DCHP

DCHP

DCIP

DCIP

DCIP

DCIP

DCIP

PCTL83

PCTL83

PCTM83

PCTN83

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PCXJ3

PCXL3

PCXM3

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DCXJ3

DCXL3

DCXM3

DCXN3

—

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PCXLT

PCXLT

PCXMT

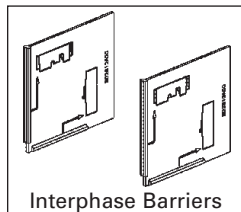
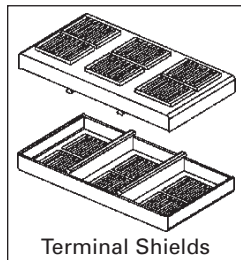
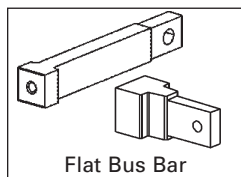
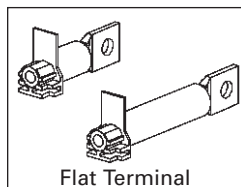
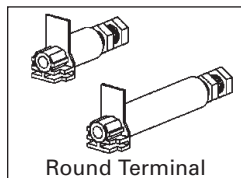
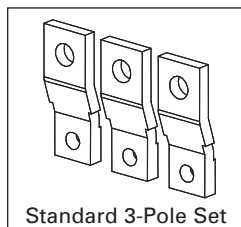
PCXPT

PCXPT

VL Molded Case Circuit Breakers

Connections

Selection



Description	For DG Frame 150 A		For FG Frame 250 A	
	Catalog Number	List Price \$	Catalog Number	List Price \$
Front Bus Bar Connections^① Includes nut keeper plates and shield. Standard (straight) 3-Pole Set Bus Bar Connection Strap Kit Includes 6 - Bus Bars, 6 Nut Keepers & Shields 100% rated applications	FBCD3 — —	— — —	FBCF3 — —	— — —
Rear-Connecting Studs Short length round term. (1piece) Long length round term. (1piece) 3-Pole round term. kit, 2 short + 1 long Short length flat term. (1piece) Long length flat term. (1piece) 3-Pole flat term. kit, 2 short + 1 long Flat bus bar type (1 piece) 3-Pole set of flat bus bar	RTLDSR RTLDLR SRTDR3 RTLDSF RTLDLF SRTDF3 — —	— — — — — — — —	RTLFSR RTLFLR SRTFR3 RTLFSF RTLFLF SRTFF3 — —	— — — — — — — —
Terminal Shields^① Includes 2 terminal shields. 3-Pole Standard Shield 3-Pole Extended Shield	TSSF3 TSLF3	— —	TSSF3 TSLF3	— —
Interphase Barriers^① Set of 2 barriers Also fits plug-in and draw-out bases.	IPBF	—	IPBF	—
Lug Mounting Assy.	—	—	—	—
Breaker Mounting Base Front connected Rear connected	— —	— —	— —	— —

① Not UL listed.
② Only fits standard terminal covers.
CSO - Consult Sales Office for pricing.

VL Molded Case Circuit Breakers

Connections

Selection

For JG Frame 400 A		For LG Frame 600 A		For MG Frame 800 A		For NG Frame 1200 A		For PG Frame 1600 A	
Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
FBCJ3A —	—	FBCL3A —	—	FBCM3A —	—	FBCP3A SSBP SSBPH	—	FBCP3A SSBP SSBPH	—
RTLJSR RTLJLR SRTJR3 RTLJSF RTLJLF SRTJF3 — —	— — — — — — — —	— — — — — — RTLLSF SRTL3F	— — — — — — — —	— — — — — — RTLMSF SRTMF3	— — — — — — — —	— — — — — — RTLNSF SRTNF3	— — — — — — — —	— — — — — — — —	— — — — — — — —
TSSL3 TSSL3	— —	TSSL3 [®] TSSL3 [®]	— —	TSSM3 TSLM3	— —	TSSP3 TSLP3	— —	TSSP3 TSLP3	— —
IPBM	—	IPBM	—	IPBM	—	IPBP	—	IPBP	—
—	—	—	—	—	—	—	—	LMAP1600	—
— —	— —	— —	— —	— —	— —	— —	— —	MBPG1600 MBPG1601	— —

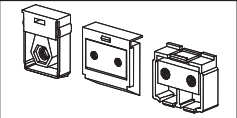
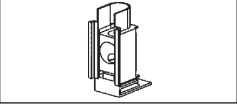
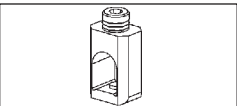
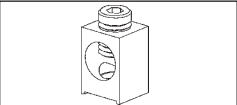
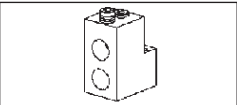
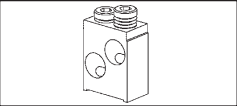
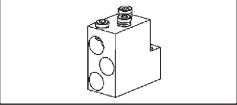
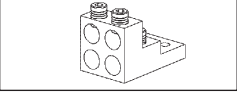
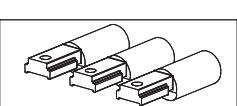

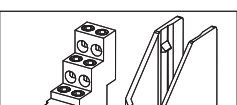
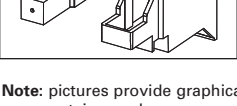
CSO - Consult Sales Office for pricing.

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VL Molded Case Circuit Breakers

Connections

Selection

	Discription	For DG Frame 150 A		For FG Frame 250 A	
		Catalog Number	List Price \$	Catalog Number	List Price \$
 	Nut Keeper Plates For ring/tongue terminal or bus bar connections. (For metric threads on other than the JG or LG frame, change "TNK" to "TMK") 1 Nut Keeper Plate Kit of 3	TNKD TNKD3		TNKF TNKF3	
	Mechanical Lugs <i>Steel Wrap Around Body (Cu Wire Only)</i> Cable Size; (cables per phase) Single Lug Kit of 3	#8-1/0; 1-hole TW1DG20 3TW1DG20		#4-350 kcmil; 1-hole TW1FG350 3TW1FG350	
	<i>Aluminum Body (Al or Cu Wire)</i> Cable Size; (cables per phase) Single Lug Kit of 2	#6-3/0; 1-hole TA1DG30 —	—	#4-350 kcmil; 1-hole TAW1FG350 —	—
	Kit of 3	3TA1DG30		3TAW1FG350	
	Cable Size; (cables per phase) Single Lug Kit of 2 Kit of 3	— — —	— — —	— — —	— — —
	Cable Size; (cables per phase) Single Lug Kit of 3	— — —	— — —	— — —	— — —
	<i>Copper Body (Cu Wire Only)</i> Cable Size; (cables per phase) Single Lug Kit of 2	#6-3/0; 1-hole TC1DG30 —	—	#4-350 kcmil; 1-hole TCW1FG350 —	—
	Kit of 3	3TC1DG30		3TCW1FG350	
	Cable Size; (cables per phase) Single Lug Kit of 3	— — —	— — —	— — —	— — —
	Compression Lugs Cable Size; (cables per phase) Kit of 2 Kit of 3	#14-2/0; 1-cable 2CLD20 3CLD20		#6-350 kcmil; 1-cable — —	— —
	Cable Size; (cables per phase) Kit of 2 Kit of 3	— — —	— — —	— — —	— — —
	Cable Size; (cables per phase) Kit of 3	— —	— —	— —	— —
	Distribution Lugs Cable Size; (cables per phase) Single Lug Kit of 3	#14-#2; 3-hole TA3DG02 3TA3DG02		#14-#1; 2-hole and #14-2/0; 1-hole TA3FG20 3TA3FG20	
	Cable Size; (cables per phase) Single Lug Kit of 3	#14-#4; 6-hole TA6DG04 3TA6DG04		#14-#4; 6-hole TA6FG04 3TA6FG04	
	Control Wire Terminals Control Wire Terminal (Single) Control Wire Terminal (Kit of 3)	— —	— —	— —	— —

Note: pictures provide graphical representations only.

VL Molded Case Circuit Breakers

Connections

Selection

For JG Frame 400 A		For LG Frame 600 A		For MG Frame 800 A		For NG Frame 1200 A		For PG Frame 1600 A	
Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
TMKJ TMKJ3		TNKL TNKL3		TNKM TNKM3		TNKP TNKP3		TNKP TNKP3	
1/0-500 kcmil; 1-hole TW1JG600 3TW1JG600		—	—	—	—	—	—	—	—
3/0-250 kcmil; 2-hole TA2JG250 — 3TA2JG250	—	#2-600 kcmil; 2-hole — — 3TA2LG600LD ^① 3TA2LG600LN ^②	—	1/0-500 kcmil, 3-hole TA3MG500 3TA3MG500	—	1/0-500 kcmil; 4-hole — 2TA4NG500 3TA4NG500 3TA4NG500H ^③	—	1/0-750 kcmil; 6-hole — — 3TA6PG750 ^④	—
AL: 250-750 kcmil CU: 3/0-600 kcmil; 1-hole TA1JG750 3TA1JG750 — — —	—	AL: 250-750 kcmil CU: 3/0-600 kcmil; 1-hole TA1JG750 (400A max) 3TA1JG750 (400A max) — — —	—	500 -750 kcmil; 2-hole TA2MG750 3TA2MG750 — #2-600 kcmil; 3-hole — 3TA3MG600 ^⑤	—	500 -750 kcmil; 3-hole — 2TA3NG750 3TA3NG750 — —	—	600-750 kcmil; 4-hole TA4P750 ^⑥ — 300-600 kcmil; 5; 6-hole TA5P600 ^⑥ TA6R600 ^⑥ —	—
3/0-250 kcmil; 2-hole TC2JG250 — —	—	#2-600 kcmil; 2-hole — 2TC2LG600LD ^① 2TC2LG600LN ^② 3TC2LG600LD ^① 3TC2LG600LN ^②	—	1/0-500 kcmil; 3-hole TC3MG500 — —	—	1/0-500 kcmil; 4-hole — — 3TC4NG500	—	1/0-750 kcmil; 6-hole — — — 300-600 kcmil; 5-hole TC5R600 ^⑥	—
3/0-750 kcmil; 1-hole TC1JG750	—	— —	—	— —	—	1/0-500 kcmil; 3-hole TC3NG500	—	— —	—
#6-350 kcmil; 1-cable 3CLJ350 — — —	—	#6-350 kcmil; 2-cable 6CLL350 — — —	—	1/0-500 kcmil; 3-cable — — — —	—	1/0-500 kcmil; 4-cable — — — —	—	#2-600 kcmil; 8-cable — — — —	—
#14-#4; 12-hole TA12JG04 3TA12JG04 #14-2/0; 6-hole TA6JG20 3TA6JG20	—	— — — —	—	— — — —	—	— — — —	—	— — — —	—
TA2JG250PT —	—	— 3TA2LG600LNPT	—	TA3MG500PT —	—	— 3TA4NG500PT	—	— —	—

All lug kits include the nut keepers.
^① Mounted on Load Side Only.
^② Mounted on Line Side Only.

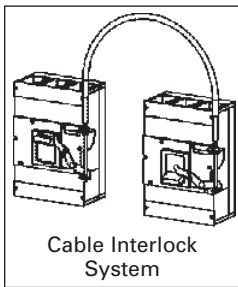
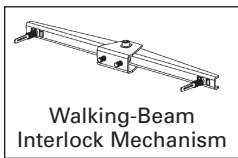
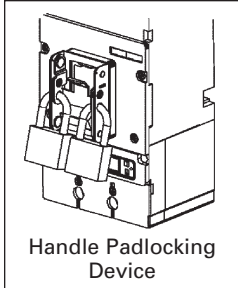
^③ Rated 90° for 100% Applications.
^④ Requires extended modified shield.
^⑤ Used only with LMAP 1600 mounting base.

^⑥ Used with MBPG 1600 or 1601 mounting base.
 CSO - Consult Sales Office for pricing.

VL Molded Case Circuit Breakers

General

Selection



Description	For DG Frame 150 A		For FG Frame 250 A	
	Catalog Number	List Price \$	Catalog Number	List Price \$
Handle Padlocking Device To padlock breaker toggle in the "OFF" position. Accepts up to 3 padlocks with 5–8 mm shackles.	HPLF		HPLF	
Handle Blocking Device For holding the handle in the "ON" position. Not a lockout/tagout device.	HBDF		HBDF	
Walking-Beam Interlock Mechanism Provides mechanical interlocking between two adjacent circuit breakers. Fixed mounted breakers	WBMFFM		WBMFFM	
Note: Both breakers must be of the same frame size.				
Cable Interlock Mechanism Provides mechanical interlocking between 2 circuit-breakers - includes operator mechanism for one circuit breaker only. Combination with the next larger or smaller frame size is possible.	CBTF		CBTF	
Interlock Cable Cable only, to connect 2 circuit breakers. Cable length 18 in. .46m (recommended up to 250A) Cable length 36 in. .91m (recommended from 400–800A) Cable length 54 in. 1.37m (recommended from 1200–1600A)	CBCF18 CBCM36 CBCP54		CBCF18 CBCM36 CBCP54	
Mounting Screw Kit Includes the necessary hardware to mount a circuit breaker to the user's prepared surface Kit with 2 screws (SAE thread) Kit with 4 screws (SAE thread) Kit with 4 screws (metric)	MSKF2 MSKF4 MSKF4M		MSKF2 MSKF4 MSKF4M	
Trip Adjustment Sealing Cover Includes a trip unit cover to prevent tampering or adjustment of trip settings. Seal not included. Electronic Trip Units Thermal-Magnetic Trip Units	TSCPET TSCFTM		TSCPET TSCFTM	

VL Molded Case Circuit Breakers

General

Selection

For JG Frame 400 A		For LG Frame 600 A		For MG Frame 800 A		For NG Frame 1200 A		For PG Frame 1600 A	
Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
HPLL		HPLL		HPLM		HPLP		HPLP	
HBDL		HBDL		HBDM		HBDP		HBDP	
WBMLFM		WBMLFM		WBMMFM		WBMPFM		WBMPFM	
CBTL		CBTL		CBTM		CBTP		CBTP	
— CBCM36 CBCP54	—	— CBCM36 CBCP54	—	— CBCM36 CBCP54	—	— CBCP54	—	— CBCP54	—
— MSKL4 MSKL4M	—	— MSKL4 MSKL4M	—	— MSKM4 MSKM4M	—	— MSKP4 MSKP4M	—	— MSKP4 MSKP4M	—
TSCPET TSLTMM		TSCPET TSLTMM		TSCPET TSCMTM		TSCPET —	—	TSCPET —	—

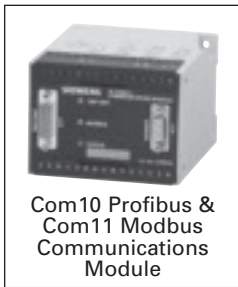
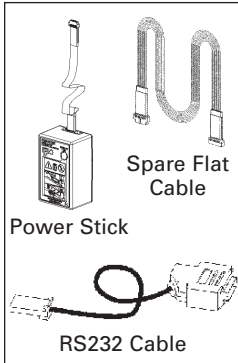
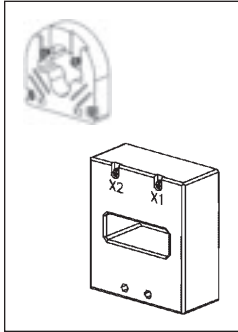
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CSO - Consult Sales Office for pricing.

VL Molded Case Circuit Breakers

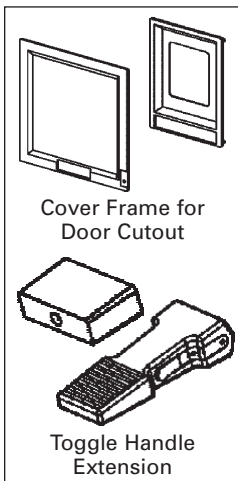
Ground Sensors & Electronic Accessories

Selection



Description	For DG Frame 150 A		For FG Frame 250 A	
	Catalog Number	List Price \$	Catalog Number	List Price \$
Neutral Current Transformer (Ground Sensor, N-pole)				
Neutral = 35/60A	NGSD060		—	—
Neutral = 100A	NGSF100		NGSF100	
Neutral = 150A	NGSF150		NGSF150	
Neutral = 250A	—	—	NGSJ250	
Neutral = 400A	—	—	—	—
Neutral = 600A	—	—	—	—
Neutral = 800A	—	—	—	—
Neutral = 1000/1200A	—	—	—	—
Neutral = 1600A	—	—	—	—
Communications & Electronics				
Power Stick - Hand held, battery operated power supply for LCD trip units. (Requires two -9V batteries) For programming and trip testing only.	EPSP18V		EPSP18V	
Test Kit - Portable power supply for programming, trip test, and checking CT's plus a port for local communications of currents flow and trip settings. (Requires two 9V batteries)	ELTPHB		ELTPHB	
Universal Power Supply - 120/240Vac adapter used in lieu of 9V batteries for Test Kit ELTPHB (includes necessary cables)	UPAPELTK		UPAPELTK	
Power Supply with ZSI (for Model 576 trip units only).	COMPS		COMPS	
Com10 Profibus Communications Module with ZSI for LCD Trip Model 576 only	COMPRO		COMPRO	
Com11 Modbus Communications Module with ZSI for LCD Trip Model 576 only	COMMOD		COMMOD	
Communications Adapter - Interface with a laptop or PC to test or program Model 545 & 576 trip units	CSAPELTU		CSAPELTU	
Cable for COM10/11 and Model 576 external power supply.....5ft. (1.5m)	COMKIT1		COMKIT1	
Extension cable for COMKIT1 & COMKIT2, adds 5 ft.	COMEXT		COMEXT	
Spare flat cable for Test Kits or Communications Adapters	COMPCA		COMPCA	
RS232 type cable for Test Kits or Communications Adapters	COMP232		COMP232	

Door Cutouts & Extensions



Cover Frame for Door Cutout For fixed or plug-in mounted circuit breakers. (IP30) 2-Pole & 3-Pole	BZLF3		BZLF3	
For breakers with stored energy operator. (IP40)	BZLFRHSE		BZLFRHSE	
Circuit-breaker draw-out mounted and toggle handle operated. Kit includes cover frame (bezel) and escutcheon as needed. (IP40) (not for use with rotary handle or stored energy operator)	BZLFBDC		BZLFBDC	
Toggle Handle Extension For spare or replacement. (One is included with each NG - PG frame.)	—	—	—	—

VL Molded Case Circuit Breakers Ground Sensors & Electronic Accessories

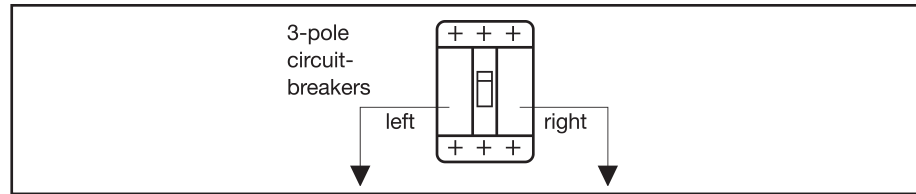
Selection

For JG Frame 400 A		For LG Frame 600 A		For MG Frame 800 A		For NG Frame 1200 A		For PG Frame 1600 A	
Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
NGSJ250	—	—	—	—	—	—	—	—	—
NGSL400	—	NGSL400	—	—	—	—	—	—	—
—	—	NGSM600	—	NGSM600	—	—	—	—	—
—	—	—	—	NGSN800	—	NGSN800	—	—	—
—	—	—	—	—	—	NGSP120	—	NGSP120	—
—	—	—	—	—	—	—	—	NGSP160	—
EPSP18V	—	EPSP18V	—	EPSP18V	—	EPSP18V	—	EPSP18V	—
ELTPHB	—	ELTPHB	—	ELTPHB	—	ELTPHB	—	ELTPHB	—
UPAPELTK	—	UPAPELTK	—	UPAPELTK	—	UPAPELTK	—	UPAPELTK	—
COMPS	—	COMPS	—	COMPS	—	COMPS	—	COMPS	—
COMPRO	—	COMPRO	—	COMPRO	—	COMPRO	—	COMPRO	—
COMMOD	—	COMMOD	—	COMMOD	—	COMMOD	—	COMMOD	—
CSAPELTU	—	CSAPELTU	—	CSAPELTU	—	CSAPELTU	—	CSAPELTU	—
COMKIT2	—	COMKIT2	—	COMKIT2	—	COMKIT1	—	COMKIT1	—
COMEXT	—	COMEXT	—	COMEXT	—	COMEXT	—	COMEXT	—
COMPCA	—	COMPCA	—	COMPCA	—	COMPCA	—	COMPCA	—
COMP232	—	COMP232	—	COMP232	—	COMP232	—	COMP232	—
BZLL3	—	BZLL3	—	BZLM3	—	BZLP3	—	BZLP3	—
BZLLRHSE	—	BZLLRHSE	—	BZLMRHSE	—	BZLPRHSE	—	BZLPRHSE	—
BZLLBDC	—	BZLLBDC	—	BZLMBDC	—	BZLPBDC	—	BZLPBDC	—
THEL	—	THEL	—	THEM	—	THEP	—	THEP	—

VL Molded Case Circuit Breakers

Accessory Locations

Selection



Locations of Internally Mounted Accessories

Frame Family	Left Pocket	Right Pocket
DG*, FG*, JG, LG 150 to 600A	Up to 3 Auxiliary Switches	Shunt Trip or UVR or up to 3 Auxiliary Switches or up to 2 Auxiliary Switches + 1 Alarm Switch
	Up to 2 Auxiliary Switches + 1 Alarm Switch	Shunt Trip or UVR or up to 3 Auxiliary Switches or up to 2 Auxiliary Switches + 1 Alarm Switch
MG, NG, PG 800 to 1600A	Up to 4 Auxiliary Switches	Shunt Trip or UVR or up to 4 Auxiliary Switches
	Up to 2 Auxiliary Switches + 2 Alarm Switches	Shunt Trip or UVR or up to 4 Auxiliary Switches

* Except DG and FG breakers with Electronic Trip Units. Due to the location of the Magnetic Latch, the Left Pocket is not available for accessories.

Accessory Information

- Aux. Switch is an Auxiliary Switch, 1A or 1B contact
- Alarm Switch has 1A or 1B contact
- UVR is an Undervoltage Release
- The standard location for factory mounted Auxiliary and Alarm Switches is the Left Pocket

Accessory Maximums

DG, FG, JG, LG Maximum Accessories:

- Maximum of six (6) switches total
- DG, FG Maximum of two (2) Alarm Switches, one each in the Left and Right Pockets. JG, LG Max. of 1 Alarm, Left only

MG, NG, PG Maximum Accessories:

- Maximum of eight (8) switches total
- Maximum of two (2) Alarm Switches, Left Pocket only

Suffix for factory mounted Switch Combinations

If the frame is:	And you need these functions:	Then add this suffix:	Device Catalog Number
DG, FG, JG or LG	1 Alarm Switch 1 NO Alarm 1 NC Alarm	A1	ASKL1
DG, FG, JG or LG	2 Aux. Switches 1 NO + 1 NC Aux. Contacts	A2	ASKL2
DG, FG, JG or LG	2 Aux. + 1 Alarm Switches 1NO + 1NC Aux. and 1NO Alarm 1NO + 1NC Aux. and 1NC Alarm 2NO Aux. and 1NC Alarm 2NC Aux. and 1NO Alarm	A3	ASKL3
MG, NG or PG	2 Aux. + 2 Alarm Switches 1NO + 1NC Aux. and 1NO + 1NC Alarm 2NO Aux. and 2NC Alarm 2NC Aux. and 2NO Alarm	A3	ASKP3
MG, NG or PG	4 Aux. Switches 2NO + 2NC Aux.	A4	ASKP4

Suffix for factory mounted Shunt Trips

If the frame is:	And you need these functions:	Then add this suffix:	Device Catalog Number
DG, FG, JG or LG	24V DC 48-60V DC 110-127V DC 220-250V DC 48-60V AC 110-127V AC 208-277V AC 380-600V AC	RB RC RD RE RM RN RS RV	STRLB24DC STRLC60DC STRLD125DC STRLE250DC STRLM60 STRLN120 STRLS277 STRLV600
MG, NG or PG	24V DC 48-60V DC 110-127V DC 220-250V DC 48-60V AC 110-127V AC 208-277V AC 380-600V AC	RB RC RD RE RM RN RS RV	STRPB24DC STRPC60DC STRPD125DC STRPE250DC STRPM60 STRPN120 STRPS277 STRPV600

Suffix for factory mounted Under Voltage Releases

If the frame is:	And you need these functions:	Then add this suffix:	Device Catalog Number
DG, FG, JG or LG	12V DC 24V DC 48V DC 60V DC 110-127V DC 220-250V DC 24V AC 110-127V AC 220-240V AC 208V AC 277V AC 380-415V AC 440-480V AC	UA UB UC UG UD UE UL UN UR UP US UT UU	UVRLA12DC UVRLB24DC UVRLC48DC UVRLG60DC UVRLD125DC UVRLE250DC UVRL24 UVRLN120 UVRLR240 UVRLP208 UVRLS277 UVRLT415 UVRLU480
MG, NG or PG	12V DC 24V DC 48V DC 60V DC 110-127V DC 220-250V DC 110-127V AC 220-240V AC 208V AC 277V AC 380-415V AC 440-480V AC	UA UB UC UG UD UE UN UR UP US UT UU	UVRPA12DC UVRPB24DC UVRPC48DC UVRPG60DC UVRPD125DC UVRPE250DC UVRPN120 UVRPR240 UVRPP208 UVRPS277 UVRPT415 UVRPU480

VL Molded Case Circuit Breakers

Technical Data

Selection

		DG	FG	JG	LG	MG	NG	PG
Max rated continuous current		150	250	400	600	800	1200	1600
Rated operational voltage								
NEMA	V AC	600	600	600	600	600	600	600
IEC	V AC	690	690	690	690	690	690	690
Rated Impulse Withstand Voltage								
Main conducting paths	kV	8	8	8	8	8	8	8
Auxiliary circuits	kV	4	4	4	4	4	4	4
Ambient Temperature Range	°C	-25 to +75	-25 to +75	-25 to +75	-25 to +75	-25 to +75	-25 to +75	-25 to +75
High Ambient Derating (thermal-mag.)	50°C	93%	93%	93%	93%	95%	95%	95%
	60°C	86%	86%	86%	86%	86%	86%	80%
	70°C	80%	80%	80%	80%	80%	80%	74%
Operating Cycles		20,000	20,000	20,000	10,000	5,000	3,000	3,000
Max switching rate (per hour)		120	120	120	60	60	30	30
Power loss (at max. rated current)								
Thermal-magnetic	W	15 – 48	32 – 80	60 – 175	85 – 230	170 – 250	150 – 220	200 – 260
Electronic trip unit	W	40	60	90	160	250	210	260
IEC ^①								
Time constant t = 10 ms								
1 current path								
2 current paths in series								
3 current paths in series								
Up to 250V DC		—	—	—	—	—	—	—
440V DC								
600V DC								
NEMA								
Time constant t = 8 ms								
2 poles switching								
1 current path								
250V DC Max. ^②		30	30	30	30	42	42	42
3 poles switching								
2 current paths in series								
500V DC Max. ^②		18	25	35	35	65	65	65
Accessories								
Auxiliary/Alarm Switch								
Current rating (1 or 2 switches)		10	10	10	10	10	10	10
Current rating (3 or 4 same switch)	A	5	5	5	5	5	5	5
Shunt Trip								
Pick-up voltage	V	0.7 – 1.1	0.7 – 1.1	0.7 – 1.1	0.7 – 1.1	0.7 – 1.1	0.7 – 1.1	0.7 – 1.1
Power Consumption (short-time) at:								
48 – 60 V AC	VA	401 – 501	401 – 501	401 – 501	401 – 501	401 – 501	401 – 501	401 – 501
110 – 127 V AC	VA	424 – 489	424 – 489	424 – 489	424 – 489	424 – 489	424 – 489	424 – 489
208 – 277 V AC	VA	533 – 736	533 – 736	533 – 736	533 – 736	533 – 736	533 – 736	533 – 736
380 – 600 V AC	VA	408 – 645	408 – 645	408 – 645	408 – 645	408 – 645	408 – 645	408 – 645
24 V DC	W	594	594	594	594	594	594	594
48 – 60 V DC	W	740 – 925	740 – 925	740 – 925	740 – 925	740 – 925	740 – 925	740 – 925
110 – 127 V DC	W	559 – 648	559 – 648	559 – 648	559 – 648	559 – 648	559 – 648	559 – 648
220 – 250 V DC	W	722 – 820	722 – 820	722 – 820	722 – 820	722 – 820	722 – 820	722 – 820
Max. Operating time	ms	50	50	50	50	50	50	50

^① Consult Siemens for short circuit values.

^② Review individual frame and type values.

VL Molded Case Circuit Breakers

Technical Data

Selection

		DG	FG	JG	LG	MG	NG	PG
Undervoltage Trip								
Drop voltage (percentage)	V	35% – 70%	35% – 70%	35% – 70%	35% – 70%	35% – 70%	35% – 70%	35% – 70%
Pick-up voltage (percentage)	V	70% – 85%	70% – 85%	70% – 85%	70% – 85%	70% – 85%	70% – 85%	70% – 85%
Power consumption (continuous) at:								
110 – 127 V AC	VA	1	1	1	1	1.1	1.1	1.1
220 – 250 V AC	VA	2.1	2.1	2.1	2.1	2.1	2.1	2.1
208 V AC	VA	1.2	1.2	1.2	1.2	1.2	1.2	1.2
277 V AC	VA	1.4	1.4	1.4	1.4	1.4	1.4	1.4
380 – 415 V AC	VA	1.9	1.9	1.9	1.9	1.9	1.9	1.9
440 – 480 V AC	VA	2.2	2.2	2.2	2.2	2.2	2.2	2.2
500 – 525 V AC	VA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
600 V AC	VA	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Max. opening time	ms	50	50	50	50	50	50	50
Motorized Operating Mechanism								
Motor with stored energy mechanism (synchronizable)		X	X	X	X			
Motor Operator						X	X	X
Max. switching rate (per hour)		120	120	120	60	60	30	30
Command duration	ms	20 – 50	20 – 50	20 – 50	20 – 50	20 – 50	—	—
Closing time	ms	<100	<100	<100	<100	<100	<5,000	<5,000
Charging time	s	<5	<5	<5	<5	<5	<5	<5
Break time	s	<5	<5	<5	<5	<5	<5	<5
Power consumption	VA/W	<500						
Inrush (A)								
Control Voltages 110 – 127 V AC								
220 – 250 V AC								
24 V DC								
48 V DC								
60 V DC								
Operating Range 85 – 110% of rated control voltage								

VL Molded Case Circuit Breakers

Unusual Operating Conditions

Reference

Note: The information provided on this and the next page is intended for reference and recommendation only. Because several variables can act on a circuit breaker's performance at the same time, the data below is based less on controlled testing, than on experience and engineering judgment. Contact Siemens for further information on special conditions and treatment.

High Ambient Temperatures

Because thermal-magnetic trip breakers are temperature sensitive and calibrated for a specific ambient of 40° C (104° F) (average enclosure temperature), a higher ambient will cause the breaker to trip at lower current than its nameplate rating, in other words, causing the breaker to "derate" (see Table 1). Similarly, the current carrying capacity of a circuit conductor is based upon a certain ambient temperature, a higher ambient will reduce its current carrying capacity, causing it to "derate." Thus, with a fluctuating temperature, a thermal-magnetic breaker will derate nearly parallel with its connected circuit conductors and maintain close circuit protection. If the application temperature exceeds 40° C (104° F) and is known, either a breaker specially calibrated for the higher ambient or one oversized according to Table 1 may be selected. In a case such as this, the circuit conductors should be oversized as well. Siemens Electronic Trip Unit Breakers are insensitive to temperature changes. However, they do include circuitry to protect the components from abnormally high temperatures.

Moisture — Corrosion

For atmospheres having high moisture content and / or where fungus growth is prevalent, a special preventive treatment may be required.

Where the air is heavily laden with corrosive elements, breakers made with special corrosion-resistant finishes may be required.

Altitude

Reduced air density at altitudes greater than 6600 ft. (2000 meters) affects the ability of a molded case circuit breaker to transfer heat and interrupt faults. Therefore, circuit breakers applied at these altitudes should have interrupting, insulation and continuous currents derated as indicated in Figure 1.

Table 1 — Temperature Derating Data for Thermal-Magnetic Breakers

Reference Ampere Rating at 40° C (104° F)	Ampere Rating at:			Siemens Breaker Frames
	25° C (77° F)	50° C (122° F)	60° C (140° F)	
15	17	13	11	BQ, BL, BQD, CQD, NGG, NGB, EG, EB
20	22	18	16	
25	28	23	21	
30	33	28	26	
35	39	30	25	
40	44	37	34	
50	55	46	42	
60	66	56	52	
70	77	65	60	
90	99	84	78	
100	110	94	87	
125	137	114	100	
150	165	136	120	
175	192	159	140	
200	220	182	160	
225	247	205	180	
250	275	235	220	
300	330	276	252	
350	385	325	301	
400	440	372	340	
500	550	468	435	
600	660	564	525	
700	770	658	613	
800	880	754	704	
900	990	828	749	
1000	1100	900	825	
1200	1320	1090	1000	
1400	1540	1304	1148	
1600	1760	1500	1320	
1800	1980	1690	1485	
2000	2200	1880	1650	

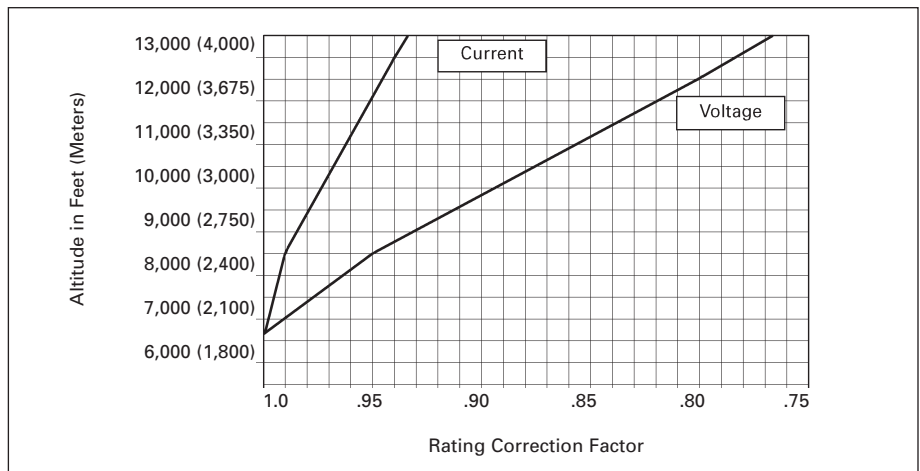


Figure 1 — Altitude Adjustment

Sentron Molded Case Circuit Breakers

ED 125A Frame, Sentron Series

Selection

Ordering Instructions

- All ED Frame Sentron circuit breakers are supplied with load side lugs. If line side lugs are required, add "L" suffix to catalog number. Consult Siemens sales office for any additional charge
- 50°C Calibration, 400HZ - see page 17/110. All ED frame circuit breakers may be reverse connected

Type ED2[®]

Blue Label

Continuous Current Rating @ 40°C	1-Pole		2-Pole		3-Pole	
	120V AC	125V DC	240V AC	125V DC 250V DC	240V AC	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	ED21B015 [®]		ED22B015		ED23B015	
20	ED21B020 [®]		ED22B020		ED23B020	
25	ED21B025		ED22B025		ED23B025	
30	ED21B030		ED22B030		ED23B030	
35	ED21B035		ED22B035		ED23B035	
40	ED21B040		ED22B040		ED23B040	
45	ED21B045		ED22B045		ED23B045	
50	ED21B050		ED22B050		ED23B050	
60	ED21B060		ED22B060		ED23B060	
70	ED21B070		ED22B070		ED23B070	
80	ED21B080		ED22B080		ED23B080	
90	ED21B090		ED22B090		ED23B090	
100	ED21B100		ED22B100		ED23B100	

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
ED2, ED4, ED6, HED4, HHED6		
1	30	38
2	10	25
3	10	38
CED6		
2	5	20
3	5	30

Type ED4[®]

Blue Label

Continuous Current Rating @ 40°C	1-Pole		2-Pole		3-Pole	
	120V AC 277V AC	125V DC	480V AC	250V DC	480V AC	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	ED41B015 [®]		ED42B015		ED43B015	
20	ED41B020 [®]		ED42B020		ED43B020	
25	ED41B025		ED42B025		ED43B025	
30	ED41B030		ED42B030		ED43B030	
35	ED41B035		ED42B035		ED43B035	
40	ED41B040		ED42B040		ED43B040	
45	ED41B045		ED42B045		ED43B045	
50	ED41B050		ED42B050		ED43B050	
60	ED41B060		ED42B060		ED43B060	
70	ED41B070		ED42B070		ED43B070	
80	ED41B080		ED42B080		ED43B080	
90	ED41B090		ED42B090		ED43B090	
100	ED41B100		ED42B100		ED43B100	
110	—		ED42B110		ED43B110	
125	—		ED42B125		ED43B125	

Type ED6[®]

Blue Label

Continuous Current Rating @ 40°C	1-Pole [®]		2-Pole		3-Pole	
	347V AC		600V AC	250V DC	600V AC	500V DC
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	ED61B015		ED62B015		ED63B015	
20	ED61B020		ED62B020		ED63B020	
25	ED61B025		ED62B025		ED63B025	
30	ED61B030		ED62B030		ED63B030	
35	ED61B035		ED62B035		ED63B035	
40	ED61B040		ED62B040		ED63B040	
45	ED61B040		ED62B045		ED63B045	
50	ED61B050		ED62B050		ED63B050	
60	ED61B060		ED62B060		ED63B060	
70	ED61B070		ED62B070		ED63B070	
80	ED61B080		ED62B080		ED63B080	
90	ED61B090		ED62B090		ED63B090	
100	ED61B100		ED62B100		ED63B100	
110	—		—		ED63B110	
125	—		—		ED63B125	

Lugs

Ampere Rating	No. of Poles	Catalog Number	Wire Range
Aluminum Body Lugs			
All 15-25A	1, 2, 3	Line/Load SA1E025	#14-#10 Cu #12-#10 Al
All 30-100A	1, 2, 3	Line Side LN1E100	#10-1/0 Cu/Al
ED2, 4, CED6 30-60A	1	Load Side LD1E060	#10-#4 Cu/Al
ED2, 4, CED6 70-100A	1	Load Side LD1E100	#6-#1/0 Cu/Al
ED2, 4, 6, HED4, HHED6 30-100A	2, 3	Load Side LN1E100	#10-1/0 Cu/Al
All 110, 125A	2, 3	Line/Load TA1E6125	#3-3/0 Cu #1-2/0 Al
Copper Body Lugs			
All 30-125A	1, 2, 3	Line/Load TC1ED6150 [®]	#10-1/0 Cu only
Compression Lugs			
All ED, HHED, CED		CCE125	2/0

Enclosures (Neutral Included)

Type	Catalog Number	List Price \$
1 (Surface)	E2N1S (15-100A)	
1 (Flush)	E2N1F (15-100A)	
3R	E2N3R (15-100A)	
4-4X	ED6SS4 (15-100A)	
7-9	EA (15-60A)	
7-9	EB (70-100A)	
12	E2N12 (15-100A)	
1 (Surface)	CED6N1S [®]	
1 (Flush)	CED6N1F [®]	
3R	CED6N3R [®]	
12	CED6N12 [®]	

Modifications page 17/110
Accessories pages 17/65 and 17/103 to 17/108

Note: ED frame circuit breakers qualified to UL 489 Supplement SB "Naval"— See page 17/110 for additional information

■ Built to order. Allow 2-3 weeks for delivery.

- ® CSA Certified only (Not UL)
- ® For CED types and all 110-125 ampere ED frames.
- ® See Note: A, page 17/100.
- ® SWD rated.
- ® HACR rated.

Sentron Molded Case Circuit Breakers

ED 125A Frame, Sentron Series

Selection/Dimensions

Type HED4[Ⓞ]

Black Label

Continuous Current Rating @ 40°C	1-Pole		2-Pole		3-Pole	
	277V AC		125V DC		480V AC	
	250V DC	480V AC	250V DC	480V AC	480V AC	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	HED41B015 [Ⓞ]		HED42B015		HED43B015	
20	HED41B020 [Ⓞ]		HED42B020		HED43B020	
25	HED41B025		HED42B025		HED43B025	
30	HED41B030		HED42B030		HED43B030	
35	HED41B035		HED42B035		HED43B035	
40	HED41B040		HED42B040		HED43B040	
45	HED41B045		HED42B045		HED43B045	
50	HED41B050		HED42B050		HED43B050	
60	HED41B060		HED42B060		HED43B060	
70	HED41B070		HED42B070		HED43B070	
80	HED41B080		HED42B080		HED43B080	
90	HED41B090		HED42B090		HED43B090	
100	HED41B100		HED42B100		HED43B100	
110	—	—	HED42B110		HED43B110	
125	—	—	HED42B125		HED43B125	

FIGURE 1 - ED, HED, HHED

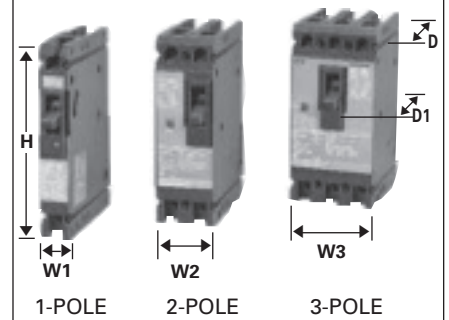
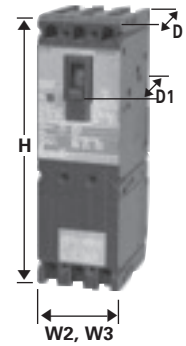


FIGURE 2 - CED (3-Pole shown)



Type HHED6[Ⓞ]

Black Label

Fuseless Current Limiting

Type CED6[Ⓞ]

Red Label

Continuous Current Rating @ 40°C	2-Pole		3-Pole		2-Pole		3-Pole	
	600V AC		600V AC		600V AC, 250V DC		600V AC, 500V DC [Ⓢ]	
	Catalog Number	List Price \$	Catalog Number [Ⓢ]	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	HHED62B015		HHED63B015A		CED62B015		CED63B015	
20	HHED62B020		HHED63B020		CED62B020		CED63B020	
25	HHED62B025		HHED63B025		—	—	—	—
30	HHED62B030		HHED63B030		CED62B030		CED63B030	
35	HHED62B035		HHED63B035		—	—	—	—
40	HHED62B040		HHED63B040		CED62B040		CED63B040	
45	HHED62B045		HHED63B045		—	—	—	—
50	HHED62B050		HHED63B050		CED62B050		CED63B050	
60	HHED62B060		HHED63B060		CED62B060		CED63B060	
70	HHED62B070		HHED63B070		CED62B070		CED63B070	
80	HHED62B080		HHED63B080		CED62B080		CED63B080	
90	HHED62B090		HHED63B090		CED62B090		CED63B090	
100	HHED62B100		HHED63B100		CED62B100		CED63B100	
110	HHED62B110		HHED63B110		—	—	CED63B110	
125	HHED62B125		HHED63B125		CED62B125		CED63B125	

Dimensions (in inches)

Breaker Type	W1	W2	W3	H	D	D1
Figure 1 ED2, ED4, ED6, HED4, ED6 ETI [Ⓢ]	1	2	3	6.35	3.92	4.56
Figure 1 HHED6	—	2	3	6.53	3.92	4.56
Figure 2 CED6, CED6 ETI [Ⓢ]	—	2	3	9.58	3.92	4.56

Interrupting Ratings

Breaker Type	UL 489 AIR (File #E10848)									IEC 947-2					
	RMS Symmetrical Amperes (KA)									Volts AC (50/60Hz)					
	Volts AC					Volts DC				220/240		380/415		500	
	120	240	277	347	480	600	125	250	500 [Ⓢ]	Icu	Ics	Icu	Ics	Icu	Ics
ED2 (1-P)	10	—	—	—	—	—	5	—	—	—	—	—	—	—	—
ED2 (2, 3-P)	—	10	—	—	—	—	—	5 (2-P)	—	—	—	—	—	—	—
ED4 (1-P)	65	—	22	—	—	—	30	—	—	—	—	—	—	—	—
ED4 (2, 3-P)	—	65	—	—	18	—	—	30 (2-P)	—	—	—	—	—	—	—
ED6 (1P)	—	—	—	30 [Ⓢ]	—	—	—	—	—	—	—	—	—	—	—
ED6 (2, 3-P)	—	65	—	—	25	18	—	—	18 (3-P)	65	17	35	9	18	5
HED4 (1-P) (15-30A)	100	—	65	—	—	—	30	—	—	—	—	—	—	—	—
HED4 (1-P) (35-100A)	100	—	25	—	—	—	30	—	—	—	—	—	—	—	—
HED4 (2, 3-P) [Ⓢ]	—	100	—	—	42	—	—	30 (2-P)	—	—	—	—	—	—	—
HHED6 (2, 3-P) [Ⓢ]	—	100	—	—	65	18 [Ⓢ]	—	—	—	—	—	—	—	—	—
CED6 (2, 3-P)	—	200	—	—	200	100	—	50 (2-P)	50 (3-P)	—	—	—	—	—	—

■ Built to order. Allow 2-3 weeks for delivery.

Ⓞ SWD rated.

Ⓢ When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems.

Ⓢ HED4 and HHED6 type circuit breakers meet the UL criteria for "current limiting" at 240V AC.

Ⓢ ED6-ETI, CED6-ETI, see page 17/88 for ordering information.

Ⓢ Single Pole 15-30A 30KA @ 347V non-UL.
35-100A 18KA @ 347V non-UL.

Ⓢ HACR rated.

Ⓢ HHED63B015A is rated 18KAIC at 600/347V.

Accessories for:

ED 125A Frame



Combinations

Available only when ordered together. Only one module can be added to a breaker. Additional accessories, which always attach to the left pole, cannot be added to the combination later. Adds 1 inch pole space.

Equipment Ground Sensing

A field addable kit containing 30mA or 5 mA ground fault accessory module, current transformer with 24 inch leads, and current transformer mounting equipment. Current transformer to mount in gutter of lighting panel or any control panel. Accessory module operates from separate 120V control power source.

Both 30MA and 5MA devices are equipment protection devices only. Do not use for personnel protection.



Shunt Trip Combinations

Control Voltage		1 Shunt Trip	1 Shunt Trip and 1 Auxiliary Switch	1 Shunt Trip 1 Auxiliary Switch and 1 Alarm Switch	1 Shunt Trip and 1 Alarm Switch	1 Shunt Trip and 2 Auxiliary Switches
AC	DC	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number
24		S17ED60	—	—	—	—
48		S18ED60	—	—	—	—
120		S01ED60	S01ED62A	S01ED62AB	S01ED62B	S01ED62AA
208		—	S02ED62A▲	S02ED62AB▲	S02ED62B▲	S02ED62AA▲
240		S03ED60	S03ED62A	S03ED62AB	S03ED62B	S03ED62AA
277		S15ED60▲	S15ED64A▲	S15ED64AB▲	S15ED64B▲	—
480		S04ED60	S04ED64A▲	S04ED64AB▲	S04ED64B▲	—
	12	S16ED60▲	S16ED62A▲	—	—	—
	24	S07ED60	S07ED62A	S07ED62AB▲	S07ED62B▲	S07ED62AA▲
	48	S09ED60▲	S09ED62A▲	S09ED62AB▲	S09ED62B▲	S09ED62AA▲
	125	S11ED60▲	S11ED62A▲	S11ED62AB▲	S11ED62B▲	S11ED62AA▲
	250	S13ED60▲	S13ED62A▲	S13ED62AB▲	S13ED62B▲	S13ED62AA▲
List Price \$:						

Undervoltage Trip Combinations

Control Voltage		1 Undervoltage Trip	1 Undervoltage Trip and 1 Auxiliary Switch	1 Undervoltage Trip and 1 Auxiliary Switch and 1 Alarm Switch	1 Undervoltage Trip and 1 Alarm Switch	1 Undervoltage Trip and 2 Auxiliary Switches
AC	DC	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number
120		U01ED60	U01ED62A	U01ED62AB▲	U01ED62B▲	U01ED62AA▲
208		U02ED60▲	U02ED62A▲	U02ED62AB▲	U02ED62B▲	U02ED62AA▲
240		U03ED60	U03ED62A▲	U03ED62AB▲	U03ED62B▲	U03ED62AA▲
277		U16ED60▲	U16ED64A▲	U16ED64AB▲	U16ED64B▲	—
480		U06ED60▲	U06ED64A▲	U06ED64AB▲	U06ED64B▲	—
600		U08ED60▲	—	—	—	—
	24	U13ED60	U13ED62A▲	U13ED62AB▲	U13ED62B▲	U13ED62AA▲
	48	U14ED60▲	U14ED62A▲	U14ED62AB▲	U14ED62B▲	U14ED62AA▲
	125	U10ED60▲	U10ED62A▲	U10ED62AB▲	U10ED62B▲	U10ED62AA▲
	250	U12ED60▲	U12ED62A▲	—	—	U12ED62AA▲
List Price \$:						

Auxiliary Switch Combinations

Maximum Voltage		1 Auxiliary Switch	1 Alarm Switch and 1 Auxiliary Switch	2 Auxiliary Switches	1 Alarm Switch and 2 Auxiliary Switches
AC	DC	Catalog Number	Catalog Number	Catalog Number	Catalog Number
240	250	A01ED62	A01ED62B	A02ED62	A02ED62B
480		A01ED64	A01ED64B	—	—
List Price \$:					

Maximum Voltage		1 Auxiliary Switch	
AC	DC	Catalog Number	List Price \$
	12	A01EDLV	Gold Plated Contacts—for PLC use

Alarm Switch Only

Maximum Voltage		1 Alarm Switch	
AC	DC	Catalog Number	List Price \$
240	250	B00ED62	
480		B00ED64	

Ground Fault Sensing Relay Kit — Equipment Protection Only

For Use With Breaker Frame	Number of Poles	Description	Catalog Number		List Price \$
			30mA	5mA	
CED6, ED2, ED4 ED6, EFC, EFF, HED4, HHED6	1, 2, 3	Basic Kit	GF01ED60	GF01ED65	
		Basic Kit with Normally Open Bell Alarm	GF01ED60B0	GF01ED65B0▲	
		Basic Kit with Normally Closed Bell Alarm	GF01ED60BC	GF01ED65BC▲	

▲ Built to order. Allow 6–8 weeks for delivery.

Sentron Molded Case Circuit Breakers

Accessories

Selection

Type FXD6-A^{①⑦}

Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker – Without Lugs)				
Continuous Current Rating @ 40°C	2-Pole ^②		3-Pole	
	Catalog Number	List Price \$	Catalog Number	List Price \$
70	FXD62B070		FXD63B070	
80	FXD62B080		FXD63B080	
90	FXD62B090		FXD63B090	
100	FXD62B100		FXD63B100	
110	FXD62B110		FXD63B110	
125	FXD62B125		FXD63B125	
150	FXD62B150		FXD63B150	
175	FXD62B175		FXD63B175	
200	FXD62B200		FXD63B200	
225	FXD62B225		FXD63B225	
250	FXD62B250		FXD63B250	

Type FD6-A^⑦

Blue Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled with Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$

2-Pole 600V AC, 250V DC^②

70	FD62B070				FD62T070	
80	FD62B080				FD62T080	
90	FD62B090				FD62T090	
100	FD62B100				FD62T100	
110	FD62B110				FD62T110	
125	FD62B125		FD62F250		FD62T125	
150	FD62B150				FD62T150	
175	FD62B175				FD62T175	
200	FD62B200				FD62T200	
225	FD62B225				FD62T225	
250	FD62B250				FD62T250	

3-Pole 600V AC, 500V DC^③

70	FD63B070				FD63T070	
80	FD63B080				FD63T080	
90	FD63B090				FD63T090	
100	FD63B100				FD63T100	
110	FD63B110				FD63T110	
125	FD63B125		FD63F250		FD63T125	
150	FD63B150				FD63T150	
175	FD63B175				FD63T175	
200	FD63B200				FD63T200	
225	FD63B225				FD63T225	
250	FD63B250				FD63T250	

Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)										
	UL 489 AIR (File E10848)					IEC 947-2					
	Volts AC (50/60Hz)			Volts DC		Volts AC (50/60Hz)					
	240	480	600	250	500 ^④	220/240		380/415		500	
						lcu	lcs	lcu	lcs	lcu	lcs
FXD6-A, FD6-A	65	35	22	30 (2-P)	18 (3-P)	65	33	35	9	20	10
HFXD6 ^⑤ , HFD6 ^⑤	100	65	25	30 (2-P)	25 (3-P)	100	50	65	33	42	21
HHFD6 ^⑤ , HHFXD6 ^⑤	200	100	25	—	—	200	100	100	50	65	33
CFD6	200	200	100	30 (2-P)	50 (3-P)	—	—	—	—	—	—

Instantaneous Adjustment Trip Range

Breaker Ampere Rating	Nominal Instantaneous Values							
	±20% Tolerance Low	2	3	4	5	6	7	±20% Tolerance High
	70-90	600	640	690	730	770	810	850
100-110	700	770	840	920	990	1060	1140	1200
125-150	800	900	1000	1100	1200	1300	1400	1500
175-200	900	1060	1210	1370	1520	1780	1930	2000
225-250	1100	1300	1500	1700	1900	2100	2300	2500

Note: FD frame qualified to UL489 supplement SB "NAVAL". See page 17/110 for additional information.

Ordering Information

Complete Breaker Unassembled with Lugs

Prices of FD6, HFD6, and HHFD6 breakers includes frame, trip and both line and load lugs (TA1FD350A). When ordered by these catalog numbers, the customer will receive the frame, trip, and lugs separately packaged. For applications requiring different lugs, order individual items as needed.

Complete Breaker Assembled with Lugs

Prices of FXD6, HFXD6, HHFXD6, and CFD6 includes frame with non-interchangeable trip unit installed only. Order required lugs separately. For line and load lugs (TA1FD350A) installed, add suffix "L" to catalog number (add 2 times list price of lugs for each pole).

50°C Applications see page 17/110.

400 Hz Applications see page 17/110.

Lugs For 75°C Wire^⑤

Catalog Number	Wire Range	List Price \$
TA1FD350A	#6—350 kcmil Cu #4—350 kcmil Al	
TC1FD350	#6—350 kcmil Cu	
Compression Lug		
CCF250	350 kcmil Cu/Al	

Enclosures

Type	Catalog Number	List Price \$
1	F6N1S(F)	
3R	F6N3R	
4-4X	FD6SS4	
7-9	EC2	
12	F6N12	
Neutral ^⑥	N250	

Modifications page 17/110
Accessories pages 17/68 and 17/103 to 17/108

■ Built to order. Allow 2-3 weeks for delivery.

① Type FXD6-A circuit breakers are UL Listed for reverse fed applications.

② 2-pole units are 3-pole width.

③ When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

④ Order neutral as separate item.

⑤ See Note: A, page 17/100.

⑥ HFD6 and HHFD6 type circuit breakers meet the

UL criteria for "current limiting" at 240 and 480V AC.

⑦ HACR rated.

Sentron Molded Case Circuit Breakers

FD 250A Frame, Sentron Series

Selection/Dimensions

Type HFD6, Type HFXD6^{②③④⑤⑥}

Black Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled with Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
2-Pole 600V AC, 250V DC (3-Pole Width)						
70	HFD62B070■		HFD62F250		FD62T070■	
80	HFD62B080■			FD62T080■		
90	HFD62B090■			FD62T090■		
100	HFD62B100■			FD62T100■		
110	HFD62B110■			FD62T110■		
125	HFD62B125■			FD62T125■		
150	HFD62B150■			FD62T150■		
175	HFD62B175■			FD62T175■		
200	HFD62B200■			FD62T200■		
225	HFD62B225■			FD62T225■		
250	HFD62B250■		FD62T250■			

3-Pole 600V AC, 500V DC^①

70	HFD63B070■		HFD63F250		FD63T070■	
80	HFD63B080■			FD63T080■		
90	HFD63B090■			FD63T090■		
100	HFD63B100■			FD63T100■		
110	HFD63B110■			FD63T110■		
125	HFD63B125■			FD63T125■		
150	HFD63B150■			FD63T150■		
175	HFD63B175■			FD63T175■		
200	HFD63B200■			FD63T200■		
225	HFD63B225■			FD63T225■		
250	HFD63B250■		FD63T250■			

Type HHFD, HHFXD6^{②③④⑥}

3-Pole 600V AC, Extra High Interrupting

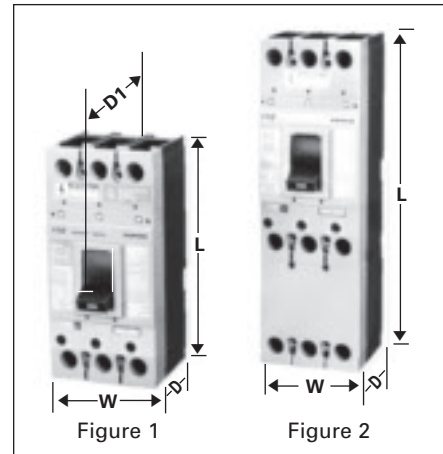
70	HHFD63B070■		HHFD63F250		FD63T070■	
80	HHFD63B080■			FD63T080■		
90	HHFD63B090■			FD63T090■		
100	HHFD63B100■			FD63T100■		
110	HHFD63B110■			FD63T110■		
125	HHFD63B125■			FD63T125■		
150	HHFD63B150■			FD63T150■		
175	HHFD63B175■			FD63T175■		
200	HHFD63B200■			FD63T200■		
225	HHFD63B225■			FD63T225■		
250	HHFD63B250■		FD63T250■			

Type CFD6^{③⑥}

Fuseless Current Limiting

Red Label

Non-Interchangeable Trip (Assembled Circuit Breaker Without Lugs)		
Continuous Current Rating @ 40°C	3-Pole 600V AC/500V DC	
	Catalog Number	List Price \$
70	CFD63B070■	
80	CFD63B080■	
90	CFD63B090■	
100	CFD63B100■	
110	CFD63B110■	
125	CFD63B125■	
150	CFD63B150■	
175	CFD63B175■	
200	CFD63B200■	
225	CFD63B225■	
250	CFD63B250■	



Dimensions (in inches)

Breaker Type	W	L	D	D1 (to handle)
Figure 1 FXD6-A, FD6-A, HFD6, HFXD6, HHFD6, FD6-ETI ^⑤	4.50	9.50	4	5.25
Figure 2 CFD6, CFD6-ETI ^⑤	4.50	14.25	4	5.25

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
FD6-A, HFD6, HHFD6, FXD6-A Assembled Circuit Breaker (less connectors)		
2	1	8.6
3	1	10
FD6-A, HFD6, HHFD6 Frame Only		
2	1	7.5
3	1	8.7
FD6 Trip Unit Only		
2	1	1.1
3	1	1.3
CFD6 Assembled Circuit Breaker (less terminals)		
2	1	31
3	1	34

■ Built to order. Allow 2-3 weeks for delivery.

① When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems.

② For non-interchangeable trip 3-pole HFD6 type circuit

breaker, change prefix identifier from HFD6 to HFXD6. Price equals frame and trip prices combined, e.g. price of HFXD63B250 equals price of HFD63F250 plus price of FD63T250. Order lugs separately.

③ Type HFXD6, HHFXD6, CFD6 are UL Listed for reverse feed applications.

④ Type HFXD6, HFD6, HHFD6, HHFXD6 meet the UL criteria for "Current Limiting" at 240 VAC and 480V AC.

⑤ FXD6, ETI, CFD6, ETI — See page 17/88 for ordering information.

⑥ HACR rated.

Sentron Molded Case Circuit Breakers

Internal Accessories

Selection

Accessories:
for FD, FFC & FFF 250A Frames



Shunt Trip Combinations

Control Voltage		1 Shunt Trip	
AC	DC	Catalog Number	List Price \$
24 120 240 277 480 600		S17FD60 S01FD60 S03FD60 S15FD60▲ S04FD60 S06FD60▲	
	12 24 48 125 250	S16FD60▲ S07FD60 S09FD60▲ S11FD60 S13FD60▲	

Undervoltage Trip Combinations

Control Voltage		1 Undervoltage Trip		1 Undervoltage Trip and 1 Auxiliary Switch [Ⓞ]	
AC	DC	Catalog Number	List Price \$	Catalog Number	List Price \$
120 208 240 277 480 600		U01FD60 U02FD60▲ U03FD60 U16FD60▲ U06FD60▲ U08FD60▲		W01FD64 W02FD64▲ W03FD64▲ W16FD64▲ W06FD64▲ —	
	24 48 125 250	U13FD60 U14FD60▲ U10FD60▲ U12FD60▲		W13FD64 W14FD64▲ W10FD64▲ W12FD64▲	

Auxiliary Switch Combinations

Voltage		1 Auxiliary Switch		2 Auxiliary Switches	
		Catalog Number	List Price \$	Catalog Number	List Price \$
AC	DC				
240		A01FD62		A02FD62	
480		A01FD64		A02FD64	
	12	A01FDLV		Gold Plated Contacts - for PLC use	

Alarm Switch Combinations

Maximum Voltage		1 Alarm Switch		1 Alarm Switch and 1 Auxiliary Switch	
AC	DC	Catalog Number	List Price \$	Catalog Number	List Price \$
480	250	B00FD64		C01FD64	

▲ Built to order. Allow 6–8 weeks for delivery.

Ⓞ Auxiliary switch application is for 480V AC maximum.

Note: Old F-frame accessories cannot be used in new Sentron line. Likewise, new FD-frame accessories cannot be used on old F-frame circuit breakers.

Sentron Molded Case Circuit Breakers

JD 400A Frame, Sentron Series

Selection

Type JXD2-A^⑤

240V AC, 2-Pole 250V DC Only

Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker without Lugs)				
Continuous Current Rating @ 40°C	2-Pole (3-Pole Width)		3-Pole	
	Catalog Number	List Price \$	Catalog Number	List Price \$
200	JXD22B200■		JXD23B200	
225	JXD22B225■		JXD23B225	
250	JXD22B250■		JXD23B250	
300	JXD22B300		JXD23B300	
350	JXD22B350■		JXD23B350	
400	JXD22B400		JXD23B400	

Type JXD6-A^{①⑤}

600V AC, 2-Pole 250V DC, 3-Pole 500V DC^②

Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker without Lugs)				
Continuous Current Rating @ 40°C	2-Pole (3-Pole Width)		3-Pole	
	Catalog Number	List Price \$	Catalog Number	List Price \$
200	JXD62B200■		JXD63B200	
225	JXD62B225■		JXD63B225	
250	JXD62B250■		JXD63B250	
300	JXD62B300		JXD63B300	
350	JXD62B350■		JXD63B350	
400	JXD62B400		JXD63B400	

Type JD6-A^⑤

Blue Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled with Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
200	JD62B200■		JD62F400		JD62T200■	
225	JD62B225■				JD62T225■	
250	JD62B250■				JD62T250■	
300	JD62B300■				JD62T300■	
350	JD62B350■				JD62T350■	
400	JD62B400				JD62T400	

2-Pole 600V AC, 250V DC (3-Pole Width)

200	JD62B200■		JD62F400		JD62T200■	
225	JD62B225■				JD62T225■	
250	JD62B250■				JD62T250■	
300	JD62B300■				JD62T300■	
350	JD62B350■				JD62T350■	
400	JD62B400				JD62T400	

3-Pole 600V AC, 500V DC^②

200	JD63B200		JD63F400		JD63T200	
225	JD63B225				JD63T225	
250	JD63B250				JD63T250	
300	JD63B300				JD63T300	
350	JD63B350				JD63T350	
400	JD63B400				JD63T400	

Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)										
	UL 489 AIR (File E10848)					IEC 947-2					
	Volts AC (50/60Hz)			Volts DC		Volts AC (50/60Hz)					
	240	480	600	250	500 ^⑥	220/240		380/415		500	
	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	
JXD2-A	65	—	—	30 (2-P)	—	—	—	—	—	—	
JXD6-A, JD6-A	65	35	25	30 (2-P)	25 (3-P)	65	33	40	20	30	15
HJD6-A, HJXD6-A	100	65	35	30 (2-P)	35 (3-P)	100	50	65	33	42	21
HHJD6, HHJXD6 ^⑥	200	100	50	—	—	200	100	100	50	65	33
CJD6-A	200	150	100	50 (2-P)	50 (3-P)	—	—	—	—	—	—

Instantaneous Adjustment Trip Range

Breaker Ampere Rating	Nominal Instantaneous Values							±20% Tolerance High
	±20% Tolerance Low	2	3	4	5	6	7	
200-300	1250	1430	1610	1790	1960	2140	2320	2500
350-400	2000	2290	2570	2860	3140	3430	3710	4000

■ Built to order. Allow 2-3 weeks for delivery.

① Type JXD2 and JXD6 circuit breakers are UL Listed for reverse feed applications.

② When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

③ See Note: A, page 17/100.

④ HHJD6 type circuit breakers meet the UL criteria for "current limiting" at 240 and 480V AC.

⑤ HACR rated.

⑥ Note: JD frame qualified to UL489 supplement B "NAVAL." See page 17/110 for additional information.

Ordering Information

Complete Breaker Unassembled with Lugs

Prices of JD6, HJD6, and HHJD6 breakers include frame, trip and both line and load lugs (TA2J6500). When ordered by these catalog numbers, the customer will receive the frame, trip, and lugs separately packaged. For applications requiring different lugs, order individual items as needed.

Complete Breaker Assembled with Lugs

Prices of JXD6, HJXD6, HHJXD6, and CJD6 include frame with non-interchangeable trip unit installed only. Order required lugs separately. For line and load lugs (TA2J6500) installed, add suffix "L" to catalog number (add 2 times list price of lugs for each pole).

100% Rated

Types JXD6 and HJXD6 breakers are available with 100% ratings. To order add suffix "H" to catalog number, and 10% to list price. ■ 100% rated JD breakers require the use of 90°C Cu cable sized at 75°C ampacity and lugs TC1J6600 or TC2J6500.

50°C Applications see page 17/110.

400Hz Applications see page 17/110.

Lugs For 75°C Wire^③

Catalog Number	Cables per Lug	Wire Range	List Price \$
TA2J6500	1, 2	#3/0-500 kcmil Cu #4/0-500 kcmil Al	
TA1L6750	1	500-750 kcmil Al 500-600 kcmil Cu	
TC1J6600	1	#3/0-600 kcmil Cu	
TC2J6500	1, 2	#3/0-500 kcmil Cu	
Compression Lug			
CCL600	1	500 kcmil Cu/Al	

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Accessories pages 17/77 and 17/103 to 17/108

Sentron Molded Case Circuit Breakers

JD 400A Frame, Sentron Series

Selection/Dimensions

Type HJD6-A, HJXD6-A^{②④⑥}

Black Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled with Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$

2-Pole 600V AC, 250V DC (3-Pole Width)

200	HJD62B200■		HJD62F400■		JD62T200■	
225	HJD62B225■				JD62T225■	
250	HJD62B250■				JD62T250■	
300	HJD62B300■				JD62T300■	
350	HJD62B350■				JD62T350■	
400	HJD62B400■				JD62T400■	

3-Pole 600V AC, 500V DC^{①②⑤}

200	HJD63B200■		HJD63F400■		JD63T200■	
225	HJD63B225■				JD63T225■	
250	HJD63B250■				JD63T250■	
300	HJD63B300■				JD63T300■	
350	HJD63B350■				JD63T350■	
400	HJD63B400■				JD63T400■	

Type HHJD6, HHJXD6^{②④⑥}

2-Pole 600V AC (3-Pole Width)

Black Label

200	HHJD62B200■		HHJD62F400■		JD62T200■	
225	HHJD62B225■				JD62T225■	
250	HHJD62B250■				JD62T250■	
300	HHJD62B300■				JD62T300■	
350	HHJD62B350■				JD62T350■	
400	HHJD62B400■				JD62T400■	

3-Pole 600V AC

200	HHJD63B200■		HHJD63F400■		JD63T200■	
225	HHJD63B225■				JD63T225■	
250	HHJD63B250■				JD63T250■	
300	HHJD63B300■				JD63T300■	
350	HHJD63B350■				JD63T350■	
400	HHJD63B400■				JD63T400■	

Type CJD6-A^{⑤⑥}

Fuseless Current Limiting

Red Label

Continuous Current Rating @ 40°C	Non-Interchangeable Trip (Assembled Circuit Breakers Without Lugs)			
	2-Pole		3-Pole	
	600V AC/250V DC		600V AC/500V DC	
			Catalog Number	List Price \$
200	For 2-pole application use outside poles of 3-pole circuit breaker		CJD63B200■	
225			CJD63B225■	
250			CJD63B250■	
300			CJD63B300■	
350			CJD63B350■	
400			CJD63B400■	

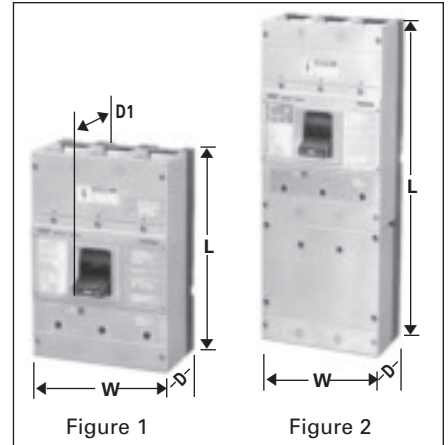


Figure 1

Figure 2

Dimensions (in inches)

Breaker Type	W	L	D	To Handle D1
Figure 1 JXD2-A, JXD6-A, JD6-A HJD6-A, HJXD6-A, HHJD6, HJD6, HJXD6, HHJXD6, JXD6-ETI [®] , SJD6, SHJD6	7.5	11	4	5.44
Figure 2 CJD6, CJD6-ETI [®] , SCJD6	7.5	17.86	4	5.44

Enclosures (Except SCJD6)

Type	Catalog Number	List Price \$
1	J6N1	
3R	J6N3R	
12	J6N12	
4X	LD6SS4	
7, 9 (200-250A)	EC4	
7, 9 (300-400A)	EE	
Neutral	W60992	

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
JXD2, JXD6, JD6, HJD6, HHJD6 Assembled Breaker (less terminals)		
2	1	17.5
3	1	19.5
JD6, HJD6, HHJD6 Frame Only		
2	1	14
3	1	15.5
JD6 Trip Unit Only		
2	1	3.5
3	1	4
CJD6 Complete Assembled Breaker (less terminals)		
2	1	29.5
3	1	31.5

For inches / millimeters conversion, see Application Data section.

■ Built to order. Allow 2-3 weeks for delivery.
2-pole units available in 3-pole construction.

① When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

② For non-interchangeable 3-pole HJD6 or HHJD6 type circuit breaker change the prefix identifier to HJXD6 or HHJXD6. Price equals price of frame plus price of trip, e.g. price of HJXD63B400 equals price of HJD63F400 plus price of JD63T400. Order lugs separately.

③ JXD6-ETI, CJD6-ETI see page 17/88 for ordering information.

④ Type HJXD6, HHJXD6 Circuit Breakers are UL listed for reverse fed applications.

⑤ CE applies to non-interchangeable type HJXD6-A only.

⑥ HACR rated.

Sentron Molded Case Circuit Breakers

SJD 400A Frame, Digital Solid State Sentron Sensitrip III Series

Selection

Type SJD6-A

Blue Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SJD69200■	200	
SJD69300■	300	
SJD69400■	400	
SJD69200G■	200	
SJD69300G■	300	
SJD69400G■	400	
SJD69200NT■	200	
SJD69300NT■	300	
SJD69400NT■	400	
SJD69200NGT■	200	
SJD69300NGT■	300	
SJD69400NGT■	400	

Type SHJD6-A

Black Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SHJD69200■	200	
SHJD69300■	300	
SHJD69400■	400	
SHJD69200G■	200	
SHJD69300G■	300	
SHJD69400G■	400	
SHJD69200NT■	200	
SHJD69300NT■	300	
SHJD69400NT■	400	
SHJD69200NGT■	200	
SHJD69300NGT■	300	
SHJD69400NGT■	400	

Current Limiting Type SCJD6-A

Red Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SCJD69200■	200	
SCJD69300■	300	
SCJD69400■	400	
SCJD69200G■	200	
SCJD69300G■	300	
SCJD69400G■	400	
SCJD69200NT■	200	
SCJD69300NT■	300	
SCJD69400NT■	400	
SCJD69200NGT■	200	
SCJD69300NGT■	300	
SCJD69400NGT■	400	

Ordering Information

Pricing information for all Digital Sentron Series SJD frames is for complete breaker only – price required lugs as separate items – lugs are suitable for 75° C wire.

SJD6 and SCJD6 are acceptable for reverse connection application.

SHJD6 are not acceptable for reverse connection application.

Shipping Weights

Breaker Type	Number per Carton	Shipping Weight (lbs)
SJD6-A	1	20
SHJD6-A	1	20
SCJD6-A	1	33

SJD 400A Frame – 100% Rated^②

Type SJD6-A

Blue Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SJD69200H■	200	
SJD69300H■	300	
SJD69400H■	400	
SJD69200GH■	200	
SJD69300GH■	300	
SJD69400GH■	400	
SJD69200NTH■	200	
SJD69300NTH■	300	
SJD69400NTH■	400	
SJD69200NGTH■	200	
SJD69300NGTH■	300	
SJD69400NGTH■	400	

Type SHJD6-A

Black Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SHJD69200H■	200	
SHJD69300H■	300	
SHJD69400H■	400	
SHJD69200GH■	200	
SHJD69300GH■	300	
SHJD69400GH■	400	
SHJD69200NTH■	200	
SHJD69300NTH■	300	
SHJD69400NTH■	400	
SHJD69200NGTH■	200	
SHJD69300NGTH■	300	
SHJD69400NGTH■	400	

Lugs for 75° C Wire^①

Catalog Number	No of Cables per Connector	Wire Range	List Price \$
TA2J6500	2	#3/0-500 kcmil Cu #4/0-500 kcmil Al	
TA1L6750	1	500-750 kcmil Al 500-600 kcmil Cu	
TC1J6600	1	#3/0-600 kcmil Cu	
TC2J6500	2	#3/0-500 kcmil Cu	
TA2J630	2	#4-#3/0-Cu/Al	
Compression Lug			
CCL600	(1 pc.)	#1/0-500 kcmil Cu/Al	

Trip Unit Adjustable Functions

Suffix Letter Code	Trip Type	Cont Current Setting	Long Time Delay	Instantaneous Setting	Short Time Pick Up	Short Time Delay	Short Time I ² t Pick Up	Ground Fault Pick Up	Ground Fault Delay
None	LI	✓	✓	✓					
G	LIG	✓	✓	✓				✓	✓
NT	LSI	✓	✓	✓	✓	✓	✓		
NGT	LSIG	✓	✓	✓	✓	✓	✓	✓	✓

Interrupting Ratings

Breaker Type	RMS Symmetrical kA UL 489 (File E10848)		
	240V AC	480V AC	600V AC
SJD6-A	65	35	25
SHJD6-A	100	65	35
SCJD6-A	200	150	100

Neutral Transformers

Ampere Rating	Catalog Number	List Price \$
200	N02SJD	
300	N03SJD	
400	N04SJD	

Note: "G" suffix in catalog number denotes circuit breaker for 3-phase, 3-wire systems.
For 3-phase, 4-wire, order correct 4th wire (neutral) transformer as separate and additional item.

■ Built to order. Allow 2-3 weeks for delivery.

① For additional information, see **Note: A**, page 17/100.
② Refer to the NEC for proper application of 100% rated devices.

Accessories pages 17/77 and 17/103 to 17/108

Sentron Molded Case Circuit Breakers

LD 600A Frame, Sentron Series

Selection

Type LXD6-A^{①④}

Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker without Lugs)				
Continuous Current Rating @ 40°C	2-Pole (3-Pole Width)		3-Pole	
	600V AC	250V DC	600V AC	500V DC
	Catalog Number	List Price \$	Catalog Number	List Price \$
450	LXD62B450■		LXD63B450	
500	LXD62B500■		LXD63B500	
600	LXD62B600		LXD63B600	

Type LD6-A^④

Blue Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled w/Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$

2-Pole 600V AC, 250V DC (3-Pole Width)

250	LD62B250■				JD62T250■	
300	LD62B300■				JD62T300■	
350	LD62B350■				JD62T350■	
400	LD62B400		LD62F600		JD62T400	
450	LD62B450■				LD62T450■	
500	LD62B500■				LD62T500■	
600	LD62B600				LD62T600	

3-Pole 600V AC, 500V DC^②

250	LD63B250				JD63T250	
300	LD63B300				JD63T300	
350	LD63B350				JD63T350	
400	LD63B400		LD63F600		JD63T400	
450	LD63B450				LD63T450	
500	LD63B500				LD63T500	
600	LD63B600				LD63T600	

Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)						IEC 947-2					
	UL 489 AIR (File E10848)						IEC 947-2					
	Volts AC (50/60Hz)			Volts DC			220/240		380/415		500	
	240	480	600	250	500 ^③		(Icu)	(Ics)	(Icu)	(Ics)	(Icu)	(Ics)
LD6-A, LXD6-A	65	35	25	30 (2-P)	25 (3-P)		65	33	40	20	30	15
HLD6-A, HLXD6-A	100	65	35	30 (2-P)	35 (3-P)		100	50	65	33	42	21
HHL6, HHLXD6	200	100	50	—	—		200	100	100	50	65	33
CLD6-A	200	150	100	—	50 (3-P)		—	—	—	—	—	—

Instantaneous Adjustment Trip Range

Breaker Ampere Rating	Nominal Instantaneous Values							
	±20% Tolerance Low	2	3	4	5	6	7	±20% Tolerance High
250-300	1250	1430	1610	1790	1960	2140	2320	2500
350-450	2000	2290	2570	2860	3140	3430	3710	4000
500-600	3000	3430	3800	4290	4710	5140	5570	6000

■ Built to order. Allow 2-3 weeks for delivery.

① Type LXD6A circuit breakers are UL Listed for reverse fed applications.

② When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

③ See Note: A, page 17/100.

④ HACR rated.

Note: LD frame qualified to UL489 supplement SB "NAVAL". See page 17/110 for additional information.

Modifications page 17/110
Accessories pages 17/77 and 17/103 to 17/108

Ordering Information

Complete Breaker Unassembled with Lugs

Prices of LD6, HLD6, and HHL6 breakers include frame, trip, and both line and load lugs (TA2J6500). When ordered by these catalog numbers, the customer will receive the frame, trip and lugs separately packaged. For applications requiring different lugs, order individual items as needed.

Complete Breaker Assembled without Lugs

Prices of LXD6, HLXD6, HHLXD6, and CLD6 include frame with non-interchangeable trip unit installed only. Order required lugs separately. For line and load lugs (TA2J6500) installed, add suffix "L" to catalog number (add 2 times list price of lugs for each pole).

100% Rated

Types LXD6 and HLXD6 breakers are available with 100% ratings. To order add suffix "H" to catalog number, and 10% to list price. 100% rated LD breakers require the use of 90°C Cu cable sized at 75°C ampacity and lugs TC1J6600 or TC2J6500.

50°C Applications see page 17/110.

400Hz Applications see page 17/110.

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
LXD6, LD6, HLD6, HHL6 Assembled Breaker (less terminals)		
2	1	17.5
3	1	19.5
LD6, HLD6, HHL6 Frame Only		
2	1	14
3	1	15.5
LD6, HHL6 Trip Unit Only		
2	1	3.5
3	1	4
CLD6 Complete Assembled Breaker (less terminals)		
2	1	29.5
3	1	31.5

Lugs For 75°C Wire^③

Catalog Number	Cables per Lug	Wire Range	List Price \$
TA2J6500	1, 2	#3/0 500 kcmil Cu #4/0 500 kcmil Al	
TC2J6500	2	#3/0-500 kcmil Cu	
TA1L6750	1	500-750 kcmil Al	
	1	500-600 kcmil Cu	
TC1J6600	1	#3/0-600 kcmil Cu	
Compression Lug			
CCL600	1	500 kcmil Cu/Al	

Sentron Molded Case Circuit Breakers

LD 600A Frame, Sentron Series

Selection/Dimensions

Type HLD6-A, HLXD6-A^{②③④}

Black Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled w/Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$

2-Pole 600V AC, 250V DC (3-Pole Width)

Continuous Current Rating @ 40°C	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
250	HLD62B250■		HLD62F600■		JD62T250■	
300	HLD62B300■			JD62T300■		
350	HLD62B350■			JD62T350■		
400	HLD62B400■			JD62T400■		
450	HLD62B450■			LD62T450■		
500	HLD62B500■			LD62T500■		
600	HLD62B600■		LD62T600■			

3-Pole 600V AC, 500V DC^{①⑤}

Continuous Current Rating @ 40°C	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
250	HLD63B250■		HLD63F600■		JD63T250■	
300	HLD63B300■			JD63T300■		
350	HLD63B350■			JD63T350■		
400	HLD63B400■			JD63T400■		
450	HLD63B450■			LD63T450■		
500	HLD63B500■			LD63T500■		
600	HLD63B600■		LD63T600■			

Type HHLD6, HHLXD6^{②③④}

Black Label

2-Pole 600V AC (3-Pole Width)

Continuous Current Rating @ 40°C	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
250	HHL62B250■		HHL62F600■		JD62T250■	
300	HHL62B300■			JD62T300■		
350	HHL62B350■			JD62T350■		
400	HHL62B400■			JD62T400■		
450	HHL62B450■			HHL62T450■		
500	HHL62B500■			HHL62T500■		
600	HHL62B600■		HHL62T600■			

3-Pole 600V AC

Continuous Current Rating @ 40°C	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
250	HHL63B250■		HHL63F600■		JD63T250■	
300	HHL63B300■			JD63T300■		
350	HHL63B350■			JD63T350■		
400	HHL63B400■			JD63T400■		
450	HHL63B450■			HHL63T450■		
500	HHL63B500■			HHL63T500■		
600	HHL63B600■		HHL63T600■			

Type CLD6-A^{③④}

Red Label

Fuseless Current Limiting

Non-Interchangeable Trip (Assembled Circuit Breaker)				
Continuous Current Rating @ 40°C	2-Pole		3-Pole	
	600V AC/250V DC		600V AC/500V DC	
	Catalog Number	List Price \$	Catalog Number	List Price \$
450			CLD63B450■	
500			CLD63B500■	
600			CLD63B600■	

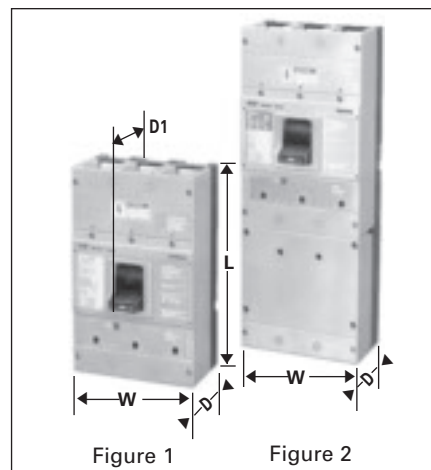


Figure 1 Figure 2

Dimensions (in inches)

Breaker Type	W	L	D	To Handle D1
Figure 1 LXD6-A, LD6-A HLD6-A HHL6, HHLXD6, LXD6-ETI [®] , SLD6, SHLD6	7.5	11	4	5.44
Figure 2 CLD6, CLD6-ETI [®] , SCLD6	7.5	17.86	4	5.44

Enclosures: (except SCLD6)

Type	Catalog Number	List Price \$
1	LD6N1	
3R	LD6N3R	
12	LD6N12	
4X	LD6SS4	
7,9	ED6	
Neutral	W60993	

For inches / millimeters conversion, see Application Data section.

■ Built to order. Allow 2-3 weeks for delivery.

① When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

② For complete assembled 3-pole HLD6 or HHL6 type circuit breaker change the prefix identifier HLD6 or

HHL6 to HXL6 or HHL6. Price is sum of frame and trip units prices, e.g. price of HXL63B400 is the price of HLD63F600 plus the price of LD63T600. Order the terminal connectors separately.■

③ Type HXL6, HHL6, & CLD6 Circuit Breakers are UL Listed for reverse feed applications.

④ LXD6-ETI, CLD6-ETI see page 17/88 for ordering information.

⑤ CE Applies to non-interchangeable type HXL6 only.

⑥ HACR rated.

Sentron Molded Case Circuit Breakers

SLD 600A Frame, Digital Solid State Sentron Sensitrip III Series

Selection

Type SLD6-A

Blue Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SLD69300■	300	
SLD69400■	400	
SLD69500■	500	
SLD69600■	600	
SLD69300G■	300	
SLD69400G■	400	
SLD69500G■	500	
SLD69600G■	600	
SLD69300NT■	300	
SLD69400NT■	400	
SLD69500NT■	500	
SLD69600NT■	600	
SLD69300NGT■	300	
SLD69400NGT■	400	
SLD69500NGT■	500	
SLD69600NGT■	600	

Type SHLD6-A

Black Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SHLD69300■	300	
SHLD69400■	400	
SHLD69500■	500	
SHLD69600■	600	
SHLD69300G■	300	
SHLD69400G■	400	
SHLD69500G■	500	
SHLD69600G■	600	
SHLD69300NT■	300	
SHLD69400NT■	400	
SHLD69500NT■	500	
SHLD69600NT■	600	
SHLD69300NGT■	300	
SHLD69400NGT■	400	
SHLD69500NGT■	500	
SHLD69600NGT■	600	

Current Limiting

Type SCLD6-A

Red Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SCLD69300■	300	
SCLD69400■	400	
SCLD69500■	500	
SCLD69600■	600	
SCLD69300G■	300	
SCLD69400G■	400	
SCLD69500G■	500	
SCLD69600G■	600	
SCLD69300NT■	300	
SCLD69400NT■	400	
SCLD69500NT■	500	
SCLD69600NT■	600	
SCLD69300NGT■	300	
SCLD69400NGT■	400	
SCLD69500NGT■	500	
SCLD69600NGT■	600	

Ordering Information

Pricing information for all Digital Sentron Series SLD frames is for complete breaker only – price required lugs as separate items – lugs are suitable for 75° C wire.

SLD6 and SCLD6 are suitable for reverse connection application.
SHLD6 are not suitable for reverse connection application.

Shipping Weights

Breaker Type	Number per Carton	Shipping Weight (lbs)
SLD6-A	1	20
SHLD6-A	1	20
SCLD6-A	1	33

Trip Unit Adjustable Functions

Suffix Letter Code	Trip Type	Cont Current Setting	Long Time Delay	Instantaneous Setting	Short Time Pick Up	Short Time Delay	Short Time I ² t Pick Up	Ground Fault Pick Up	Ground Fault Delay
None	LI	✓	✓	✓					
G	LIG	✓	✓	✓				✓	✓
NT	LSI	✓	✓	✓	✓	✓	✓		
NGT	LSIG	✓	✓	✓	✓	✓	✓	✓	✓

Neutral Transformers

Ampere Rating	Catalog Number	List Price \$
300	N03SJD	
400	N04SJD	
500	N05SLD	
600	N06SLD	

Interrupting Ratings

Breaker Type	RMS Symmetrical kA UL 489 (File E10848)		
	240V AC	480V AC	600V AC
SLD6-A	65	35	25
SHLD6-A	100	65	35
SCLD6-A	200	150	100

Note: "G" suffix in catalog number denotes circuit breaker for 3-phase, 3-wire circuits.
 For 3-phase, 4-wire, order correct 4th wire (neutral) transformer as separate and additional item.

For ordering information and terminal connectors see page 17/72; for enclosures, see page 17/73.

100% Rated – Not available in SLD6 Frame.

■ Built to order. Allow 2–3 weeks for delivery.

Sentron Molded Case Circuit Breakers

LMD 800A Frame, Sentron Series

Selection

Type LMXD6^{①④}

Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker without Lugs)				
Continuous Current Rating @ 40°C	2-Pole (3-Pole Width)		3-Pole	
	Catalog Number	List Price \$	Catalog Number	List Price \$
500	—	—	LMXD63B500■	
600	LMXD62B600■		LMXD63B600	
700	LMXD62B700■		LMXD63B700	
800	LMXD62B800		LMXD63B800	

Type LMD6^④

Blue Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled w/Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$

2-Pole 600V AC, 250V DC (3-Pole Width)

500	LMD62B500■		LMD62F800■		LMD62T500■	
600	LMD62B600■				LMD62T600■	
700	LMD62B700■				LMD62T700■	
800	LMD62B800■				LMD62T800■	

3-Pole 600V AC, 500V DC^②

500	LMD63B500■		LMD63F800		LMD63T500■	
600	LMD63B600■				LMD63T600■	
700	LMD63B700■				LMD63T700■	
800	LMD63B800				LMD63T800	

Instantaneous Adjustment Trip Range

Ampere Rating	Nominal Instantaneous Values							
	Low +/- 20% Tolerance	2	3	4	5	6	7	High +/- 20% Tolerance
500-600	3000	3430	3860	4290	4710	5140	5570	6000
700-800	3200	3500	3700	4200	4700	6400	7300	8000

Ordering Information

Complete Breaker Unassembled with Lugs

Prices of LMD6 and HLMD6 breakers include frame, trip, and both line and load lugs (TA3K500). These catalog numbers include the frame, trip and lugs separately packaged. For applications requiring different lugs, order individual items as needed.

Complete Breaker Assembled without Lugs

Prices of LMXD6 and HLMXD6 include frame with non-interchangeable trip unit installed only. Order required lugs separately. For line and load lugs (TA3K500) installed, add suffix "L" to catalog number (add 2 times list price of lugs for each pole).

50°C Applications see page 17/110.

400Hz Applications see page 17/110.

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
LMD6, HLMD6, LMXD6, HLMXD6 Complete Breaker (less terminals)		
2	1	53
3	1	61.5
LMD6, HLMD6 Frame Only		
2	1	42.25
3	1	46
LMD6, HLMD6 Trip Unit Only		
2	1	4.5
3	1	6.5

Lugs^③ for 75°C Wire

Catalog Number	Cables per Lug	Wire Range	List Price \$
TA2K500	1, 2	#1-500 kcmil Cu/Al	
TA3K500	1-3	#1/0-500 kcmil Cu/Al	
TA2N750	1, 2	500-750 kcmil Cu/Al	

■ Built to order. Allow 2-3 weeks for delivery.

① LMXD6 circuit breakers are UL Listed for reverse connected applications.

② When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500VDC ungrounded UPS systems only.

③ See **Note: A**, page 17/100.

④ HACR rated.

Modifications page 17/110

Accessories pages 17/77 and 17/103 to 17/108

Sentron Molded Case Circuit Breakers

LMD 800A Frame, Sentron Series

Selection/Dimensions

Type HLMXD6^{①④}

Black Label

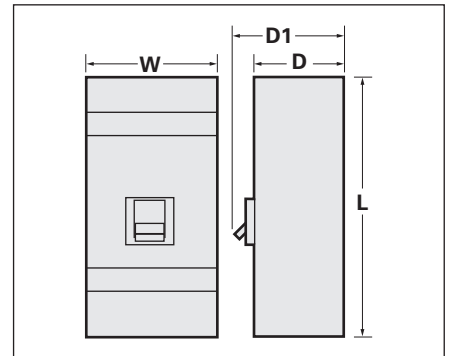
Non-Interchangeable Trip (Assembled Circuit Breaker Without Lugs)				
Continuous Current Rating @ 40°C	2-Pole		3-Pole	
	600V AC/250V DC		600V AC/500V DC	
	Catalog Number	List Price \$	Catalog Number	List Price \$
500	For 2-pole application use outside poles of 3-pole circuit breaker		HLMXD63B500■	
600			HLMXD63B600■	
700			HLMXD63B700■	
800			HLMXD63B800■	



Type HLMD6^④

Black Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
2-Pole 600V AC, 250V DC (3-Pole Width)						
500	HLMXD62B500■		HLMD62F800■		LMD62T500■	
600	HLMXD62B600■			LMD62T600■		
700	HLMXD62B700■			LMD62T700■		
800	HLMXD62B800■			LMD62T800■		



3-Pole 600V AC, 500V DC^③

500	HLMXD63B500■		HLMD63F800■		LMD63T500■	
600	HLMXD63B600■			LMD63T600■		
700	HLMXD63B700■			LMD63T700■		
800	HLMXD63B800■			LMD63T800■		

Dimensions (in inches)

Breaker Type	W	L	D	D1
LMD6, LMXD6, HLMD6, HLMXD6, LMXD6-ETI ^②	7.5	16	4.5	5.93

Interrupting Ratings

Breaker Type	UL 489A IR					IEC 947-2					
	RMS Symmetrical Amperes (KA)					Volts AC (50/60HZ)					
	Volts AC			Volts DC		220/240		380/415		500	
	240	480	600	250	500 ^②	(lcu)	(lcs)	(lcu)	(lcs)	(lcu)	(lcs)
LMD6, LMXD6	65	50	25	30 (2-P)	25 (3-P)	65	33	40	20	30	15
HLMD6, HLMXD6	100	65	50	30 (2-P)	50 (3-P)	100	50	65	33	42	21

Enclosures

Type	Catalog Number	List Price \$
1	LMD1	
3R	LMD3R	
12	LMD12■	
Neutral	W63623	

For inches / millimeters conversion, see Application Data section.

■ Built to order. Allow 2–3 weeks for delivery.

① HLMXD6 circuit breakers are UL Listed for reverse connection applications.

② LMXD6-ETI, see page 17/88 for catalog information.

③ When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500VDC ungrounded UPS systems only.

④ HACR rated.

Sentron Molded Case Circuit Breakers

Internal Accessories

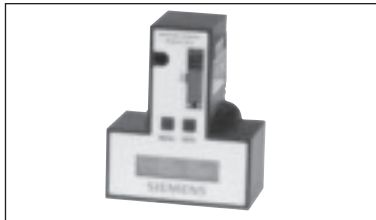
Selection

Accessories for:

JD 400A Frame
LD 600A Frame
LMD 800A Frame
SJD 400A Frame
SLD 600A Frame



Sensitrip Ammeter



The Ammeter Display Units plug into the Sensitrip Trip Unit and displays the phrase current flowing in the SADU breaker. They are powered by the breaker's CT's with replaceable battery back-up for maintaining trip and max logs.

The SADU reads currents, current imbalance, current demand, and trip status.

Ammeter Mounting Kit

The Ammeter may also be panel or door mounted using the SADURMK18 remote mounting kit.

Shunt Trip Combinations

Control Voltage		1 Shunt Trip		1 Shunt Trip and 1 Auxiliary Switch	
AC	DC	Catalog Number	List Price \$	Catalog Number	List Price \$
24		S17JLD6		—	—
48		S18JLD6▲		—	—
120		S01JLD6		S01JLD62A	
240		S03JLD6		S03JLD62A	
277		S15JLD6▲		S15JLD64A▲	
480		S04JLD6		—	—
	12	S16JLD6▲		S16JLD62A▲	
	24	S07JLD6		S07JLD62A	
	48	S09JLD6▲		S09JLD62A	
	125	S11JLD6		S11JLD62A▲	
	250	S13JLD6▲		S13JLD62A▲	

Undervoltage Trip Combinations

Control Voltage		1 Undervoltage Trip		1 Undervoltage Trip and 1 Auxiliary Switch		1 Undervoltage Trip and 2 Auxiliary Switches	
AC	DC	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
120		U01JLD6		U01JLD62A		U01JLD62AA	
208		U02JLD6▲		U02JLD62A▲		U02JLD62AA▲	
240		U03JLD6		U03JLD62A▲		U03JLD62AA▲	
480		U06JLD6		U06JLD64A▲		U06JLD64AA▲	
	24	U13JLD6		U13JLD62A		U13JLD62AA	
	48	U14JLD6▲		U14JLD62A▲		U14JLD62AA▲	
	125	U10JLD6▲		U10JLD62A▲		U10JLD62AA▲	
	250	U12JLD6▲		U12JLD62A▲		U12JLD62AA▲	

Auxiliary Switch Combinations

Maximum Voltage		1 Form C		2 Form C	
AC	DC	Catalog Number	List Price \$	Catalog Number	List Price \$
480	250	A01JLD64		A02JLD64	
—	12	A01JLDLV		A02JLDLV	

Alarm Switch Combinations

Maximum Voltage		1 Alarm Switch		1 Alarm Switch and 1 Auxiliary Switch		1 Alarm Switch and 2 Auxiliary Switches	
AC	DC	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
480	250	B01JLD64		A01JLD64B		A02JLD64B	

Plug-in Ammeter Display Units

Breaker Type	Description	Catalog Number	List Price \$
SJD, SLD	Display Unit	SADU	
	Remote Mounting Kit	SADURMK18	

Note: Accessory modules can only be added to right side pole of solid state SJD and SLD frame circuit breakers. No accessories can be added if mechanical interlock is used. All accessories on this page are useable on superseded JD2, JJ6, JL6, HJ6, SJL, LJ6, LL6, HL6 and SLL circuit breakers.

▲ Built to order. Allow 6-8 weeks for delivery.

Sentron Molded Case Circuit Breakers

MD 800A Frame, Sentron Series

Selection

Type MXD6^{①②}

Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker Without Lugs)				
Continuous Current Rating @ 40°C	2-Pole ^②		3-Pole	
	Catalog Number	List Price \$	Catalog Number	List Price \$
600	MXD62B600■		MXD63B600	
700	MXD62B700■		MXD63B700	
800	MXD62B800■		MXD63B800	

Type MD6^③

Blue Label

Interchangeable Trip						
Continuous Current Setting @ 40°C	Complete Breaker Unassembled with Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$

2-Pole 600V AC, 250V DC^②

500	MD62B500■				MD62T500■	
600	MD62B600■		MD62F800■		MD62T600■	
700	MD62B700■				MD62T700■	
800	MD62B800■				MD62T800■	

3-Pole 600V AC, 500V DC^③

500	MD63B500				MD63T500	
600	MD63B600		MD63F800		MD63T600	
700	MD63B700				MD63T700	
800	MD63B800				MD63T800	

Lugs^④

Catalog Number	Cables Per Lug	Lugs Per Kit	Wire Range	List Price \$
TA2K500	1-2	1	#1-500 kcmil Cu/Al	
TA3K500	1-3	1	1/0-500 kcmil Cu/Al	
TC2K500	1-2	1	#1-500 kcmil Cu	
TC3K350	1-3	1	#1-350 kcmil Cu	
Kits				
2TA2N8750	1-2	2	500-750 kcmil Cu/Al	
3TA2N8750		3		
2TA3N8750	1-3	2	500-750 kcmil Cu/Al	
3TA3N8750		3		
2TA4N8500	1-4	2	250-500 kcmil Cu/Al	
3TA4N8500		3		
2TA4P8500	1-4	2	250-500 kcmil Cu/Al	
3TA4P8500		3		

Instantaneous Adjustment Trip Range

Ampere Rating	Nominal Instantaneous Values							
	Low +/- 20% Tolerance	2	3	4	5	6	7	High +/- 20% Tolerance
500-600	3000	3430	3860	4280	4710	5140	5570	6000
700-800	4000	4570	5140	5710	6280	6850	7420	8000

■ Built to order. Allow 2-3 weeks for delivery.

①MXD6 circuit breakers are UL Listed for reverse connection applications.

②2-pole units available in 3-pole width only.

③ When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems.

④ See **Note: A**, page 17/100.

⑤ 80% rated breakers with the CE mark will also be marked in the 100% rated version.

⑥ HACR rated.

Note: MD frame qualified to UL489 supplement B "NAVAL". See page 17/110 for additional information.

Ordering Information

Complete Breaker Unassembled with Lugs

Pricing information for MD6 and HMD6 breakers includes frame, trip, and both line and load lugs (TA3K500). When ordered by these catalog numbers, the customer will receive the frame, trip and lugs separately packaged. For applications requiring different lugs, order individual items as needed.

Complete Breaker Assembled with-out Lugs

Prices of MXD6, HMXD6 and CMD6 include frame with non-interchangeable trip units installed only. Order required lugs separately. For line and load lugs (TA3K500) installed, add suffix "L" to catalog number (add 2 times list price of lugs for each pole).

100% Rated^⑤

Types MXD6, HMXD6 and CMD6 breakers are available with 100% ratings. To order add suffix "H" to catalog number, and 10% to list price. 100% rated MD breakers require the use of 90°C Cu cable sized at 75°C ampacity and lugs 2TA4P8500 or 2TA2N8750 for 2-pole; 3TA4P8500 or 3TA2N8750 for 3-pole.

50°C Applications see page 17/110.

400Hz Applications see page 17/110.

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
MD6, HMD6, HMXD6, CMD6 Complete Breaker Assembled (less lugs)		
2	1	53
3	1	61.5
MD6, HMD6 Frame Only		
2	1	42.25
3	1	46
MD6, HMD6 Trip Unit Only		
2	1	4.5
3	1	6.5

Enclosures

Type	Catalog Number	List Price \$
1	MND61	
3R	MND63	
12	MND612■	
Neutral	W63623	

Modifications page 17/110

Accessories pages 17/87 and 17/103 to 17/108

Sentron Molded Case Circuit Breakers

MD 800A Frame, Sentron Series

Selection/Dimensions

Type HMXD6^{①⑤}

Black Label

Non-Interchangeable Trip (Assembled Circuit Breaker Without Lugs)				
Continuous Current Rating @ 40°C	2-Pole		3-Pole	
	600V AC/250V DC		600V AC/500V DC	
	Catalog Number	List Price \$	Catalog Number	List Price \$
600 700 800	For 2-pole application use outside poles of 3-pole circuit breaker		HMXD63B600■ HMXD63B700■ HMXD63B800	



Type HMD6^⑥

Black Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled with Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$

2-Pole 600V AC, 250V DC^②

Continuous Current Rating @ 40°C	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
500 600 700 800	HMD62B500■ HMD62B600■ HMD62B700■ HMD62B800■		HMD62F800■		MD62T500■ MD62T600■ MD62T700■ MD62T800■	

3-Pole 600V AC, 500V DC^④

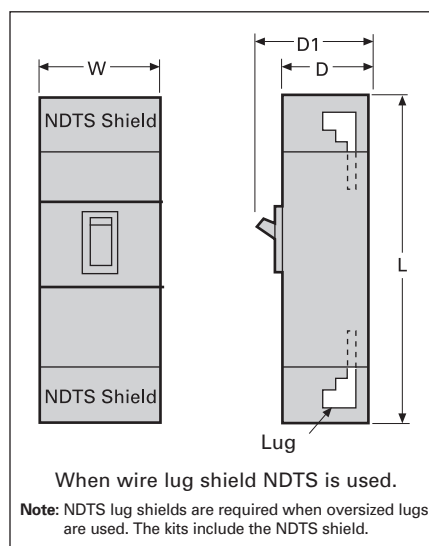
Continuous Current Rating @ 40°C	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
500 600 700 800	HMD63B500 HMD63B600 HMD63B700 HMD63B800		HMD63F800		MD63T500 MD63T600 MD63T700 MD63T800	

Type CMD6^{①⑤}

Fuseless Current Limiting

Red Label

Non-Interchangeable Trip (Assembled Circuit Breaker Without Lugs)				
Continuous Current Rating @ 40°C	2-Pole		3-Pole	
	600V AC/250V DC		600V AC/500V DC	
	Catalog Number	List Price \$	Catalog Number	List Price \$
600 700 800	For 2-pole application use outside poles of 3-pole circuit breaker		CMD63B600■ CMD63B700■ CMD63B800■	



Interrupting Ratings

Breaker Type	UL 489 AIR—File E10848					IEC 947-2 AIR					
	RMS Symmetrical Amperes (KA)					Volts AC (50/60HZ)					
	Volts AC			Volts DC		220/240		380/415		500	
	240	480	600	250	500 ^③	(lcu)	(lcs)	(lcu)	(lcs)	(lcu)	(lcs)
MD6, MXD6	65	50	25	30 (2-P)	25 (3-P)	65	33	40	20	30	15
HMD6, HMXD6	100	65	50	30 (2-P)	50 (3-P)	100	50	65	33	42	21
CMD6	200	100	65	—	50 (3-P)	200	100	100	50	65	33

Dimensions (in inches)

Breaker Type	W	L	D	(To Handle) D1
MD6, MXD6, HMD6, HMXD6, CMD6, MXD6-ETI, CMD6-ETI, SMD6, SHMD6, and SCMD6	9	16	6	8.25
with lug shields	9	24	6	8.25

For inches / millimeters conversion, see Application Data section.

■ Built to order. Allow 2-3 weeks for delivery.

① HMXD6 and CMD circuit breakers are UL listed for reverse connection applications.

② 2-pole units available in 3-pole width only.

③ MXD6-ETI, CMD6-ETI see page 17/88 for catalog information.

④ When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

⑤ HACR rated.

Sentron Molded Case Circuit Breakers

SMD 800A Frame, Digital Solid State Sentron Sensitrip III Series³

Selection

Type SMD6

Blue Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SMD69600A■	600	
SMD69700A■	700	
SMD69800A■	800	
SMD69600AG■	600	
SMD69700AG■	700	
SMD69800AG■	800	
SMD69600ANT■	600	
SMD69700ANT■	700	
SMD69800ANT■	800	
SMD69600ANGT■	600	
SMD69700ANGT■	700	
SMD69800ANGT■	800	

Type SHMD6

Black Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SHMD69600A■	600	
SHMD69700A■	700	
SHMD69800A■	800	
SHMD69600AG■	600	
SHMD69700AG■	700	
SHMD69800AG■	800	
SHMD69600ANT■	600	
SHMD69700ANT■	700	
SHMD69800ANT■	800	
SHMD69600ANGT■	600	
SHMD69700ANGT■	700	
SHMD69800ANGT■	800	

Current Limiting Type SCMD6

Red Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SCMD69600A■	600	
SCMD69700A■	700	
SCMD69800A■	800	
SCMD69600AG■	600	
SCMD69700AG■	700	
SCMD69800AG■	800	
SCMD69600ANT■	600	
SCMD69700ANT■	700	
SCMD69800ANT■	800	
SCMD69600ANGT■	600	
SCMD69700ANGT■	700	
SCMD69800ANGT■	800	

Ordering Information

Pricing information for all Digital Sentron Series MD frames is for complete breaker only. Price requires lugs or lug kits as separate items. Lugs are suitable for 75°C wire or as noted. Connector wire ranges and cavities are established in conjunction with Table 6.1.4.2.1 of UL 489 standards. Choose actual connector for circuit breakers based on customer requirements.

Recommended Terminal Connectors

Breaker Frame	Ampere Rating	Connector or Connector Kit
MD	500–600	TA2K500
MD	700–800	TA3K500

Types SMD6 and SHMD6 are acceptable for reverse connection applications.

SMD 800A Frame – 100% Rated¹

Type SMD6-H

Blue Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SMD69600AH■	600	
SMD69700AH■	700	
SMD69800AH■	800	
SMD69600AGH■	600	
SMD69700AGH■	700	
SMD69800AGH■	800	
SMD69600ANTH■	600	
SMD69700ANTH■	700	
SMD69800ANTH■	800	
SMD69600ANGTH■	600	
SMD69700ANGTH■	700	
SMD69800ANGTH■	800	

Type SHMD6-H

Black Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SHMD69600AH■	600	
SHMD69700AH■	700	
SHMD69800AH■	800	
SHMD69600AGH■	600	
SHMD69700AGH■	700	
SHMD69800AGH■	800	
SHMD69600ANTH■	600	
SHMD69700ANTH■	700	
SHMD69800ANTH■	800	
SHMD69600ANGTH■	600	
SHMD69700ANGTH■	700	
SHMD69800ANGTH■	800	

Current Limiting Type SCMD6-H

Red Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SCMD69600AH■	600	
SCMD69700AH■	700	
SCMD69800AH■	800	
SCMD69600AGH■	600	
SCMD69700AGH■	700	
SCMD69800AGH■	800	
SCMD69600ANTH■	600	
SCMD69700ANTH■	700	
SCMD69800ANTH■	800	
SCMD69600ANGTH■	600	
SCMD69700ANGTH■	700	
SCMD69800ANGTH■	800	

Shipping Weights

Breaker Type	Number per Carton	Shipping Weight (lbs)
All types	1	61.5

Lugs for 75°C Wire²

Catalog Number	Cables per Lug	Wire Range	List Price \$
TA2K500	2	#1-500 kcmil Cu/Al	
TA3K500	3	#1-500 kcmil Cu/Al	
TC2K500	2	#1-500 kcmil Cu	
TC3K350	3	#1-350 kcmil Cu	
Kits (3 lugs/kit)			
3TA4N8500	4	250–500 kcmil Cu/Al	
3TA4P8500	4	250–500 kcmil Cu/Al	
3TA2N8750	2	500–750 kcmil Cu/Al	
3TA3N8750	3	500–750 kcmil Cu/Al	

Each kit contains the following:
 3TA4P8500—3 connectors plus 1 NDTs end barrier
 3TA3N8750—3 connectors plus 1 NDTs end barrier
 3TA2N8750—3 connectors plus 1 NDTs end barrier

Trip Unit Adjustable Functions

Suffix Letter Code	Trip Type	Cont Current Setting	Long Time Delay	Instantaneous Setting	Short Time Pick Up	Short Time Delay	Ground Fault Pick Up	Ground Fault Delay
A	LI	✓	✓	✓				
AG	LIG	✓	✓	✓			✓	✓
ANT	LSI	✓	✓	✓	✓	✓		
ANGT	LSIG	✓	✓	✓	✓	✓	✓	✓

Interrupting Ratings

Breaker Type	RMS Symmetrical kA UL 489 (File E10848)		
	240V AC	480V AC	600V AC
SMD6	65	50	25
SHMD6	100	65	50
SCMD6	200	100	65

Neutral Transformers

Ampere Rating	Catalog Number	List Price \$
600	N06SMDA	
700	N07SMDA	
800	N08SMDA	

Enclosures

Type	Catalog Number	List Price \$
1	MND61	
3R	MND63	
12	MND612	
Neutral	W63623	

Note: "G" suffix in catalog number denotes circuit breaker for 3-phase, 3-wire circuits.
 For 3-phase, 4-wire, order correct 4th wire (neutral) transformer as separate and additional item.

■ Built to order. Allow 2–3 weeks for delivery.

① Use 2-3TA4P8500 for 3-pole. These kits are rated for 90°C wire. 90°C Cu only cable must be used, and sized per 75°C ampacity.

② For additional information, see Note: A, page 17/100.

③ SMD6, SHMD6 and SCMD6 circuit breakers are UL Listed for reverse connection applications.

Accessories pages 17/87 and 17/103 to 17/108

Sentron Molded Case Circuit Breakers

ND 1200A Frame, Sentron Series

Selection

Type NXD6^{①⑧}

Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker Without Lugs)				
Continuous Current Rating @ 40°C	2-Pole 600V AC 250V DC		3-Pole 600V AC 500V DC	
	Catalog Number	List Price \$	Catalog Number	List Price \$
900	NXD62B900■		NXD63B900	
1000	NXD62B100■		NXD63B100	
1200	NXD62B120■		NXD63B120	

Type ND6^⑧

Blue Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled with Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
			ND62F120		MD62T800■ ND62T900■ ND62T100■ ND62T120	

2-Pole 600V AC, 250V DC^②

800	ND62B800■				MD62T800■	
900	ND62B900■				ND62T900■	
1000	ND62B100■				ND62T100■	
1200	ND62B120				ND62T120	

3-Pole 600V AC, 500V DC^③

800	ND63B800				MD63T800	
900	ND63B900				ND63T900	
1000	ND63B100				ND63T100	
1200	ND63B120				ND63T120	

Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (KA)										
	UL 489 A IR					IEC 947-2					
	Volts AC			Volts DC		Volts AC (50/60HZ)					
	240	480	600	250	500 ^④	220/240		380/415		500	
					(lcu)	(lcs)	(lcu)	(lcs)	(lcu)	(lcs)	
ND6, NXD6	65	50	25	30 (2-P)	25 (3-P)	65	33	40	20	30	15
HND6, HNXD6	100	65	50	30 (2-P)	50 (3-P)	100	50	65	33	42	21
CND6	200	100	65	—	50 (3-P)	200	100	100	50	65	33

Instantaneous Adjustment Trip Range

Breaker Ampere Rating	Nominal Instantaneous Values							
	±20% Tolerance Low	2	3	4	5	6	7	±20% Tolerance High
800	4000	4570	5140	5710	6280	6850	7420	8000
900-1200	5000	5715	6430	7145	7860	8575	9290	10000

Ordering Information

Complete Breaker Unassembled with Lugs

Prices of ND6 and HND6 breakers include frame, trip, and both line and load lugs (3TA4N8500). These catalog numbers are the frame, trip and lugs separately packaged. For applications requiring different lugs, order individual items as needed.

Complete Breaker Assembled without Lugs

Prices of NXD6, HNXD6, and CND6 include frame with non-interchangeable trip units installed only. Order required terminal connectors separately. For line and load lugs (3TA4N8500) installed, add suffix "L" to catalog number (add 2 times list price of lug kit).

100% Rated (3-Pole only)^⑦

Types NXD6, HNXD6 and CND6 breakers are available with 100% ratings. To order, add suffix "H" to catalog number, and add 10% to list price. 100% rated ND breakers require 90°C Cu cable sized at 75°C ampacity and lug kit 3TA4P8500 or 3TA3N8750.

50°C Applications see page 17/110.

400Hz Applications see page 17/110.

Lugs^⑥

Catalog Number	Cables per Lug	Wire Range	List Price \$
TA2K500	2	#1-500 kcmil Cu/Al	
TA3K500	3	#1-500 kcmil Cu/Al	
TC2K500	2	#1-500 kcmil Cu	
TC3K350	3	#1-350 kcmil Cu	

Kits (2 Kits required per breaker)

2TA4P8500 ^⑥ 3TA4P8500 ^⑥	4	250-500 kcmil Cu/Al	
2TA4N8500 ^⑥ 3TA4N8500 ^⑥	4	250-500 kcmil Cu/Al	
2TA2N8750 3TA2N8750	2	500-750 kcmil Cu/Al	
2TA3N8750 3TA3N8750	3	500-750 kcmil Cu/Al	

Enclosures

Type	Catalog Number	List Price \$
1	MND61	
3R	MND63	
12	MND612■	
Neutral	W63623	

■ Built to order. Allow 2-3 weeks for delivery.

①NXD6 circuit breakers are UL listed for reverse connection applications.

②2-pole units available in 3-pole width only.

③When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500VDC ungrounded UPS systems only.

④Use 2 - 3TA4P8500 kits for 3-pole, or 2 - 2TA4P8500 kits for 2-pole. Use for 100% rated breakers.

⑤Use 2 - 3TA4N8500 for 3-pole or 2 - 2TA4N8500 for 2-pole. Rated for 75°C cable.

⑥See **Note: A**, page 17/100.

⑦80% rated breakers with the CE mark will also be marked in the 100% rated version.

⑧HACR rated.

Note: ND frame qualified to UL489 supplement B "NAVAL". See page 17/110 for additional information.

Modifications page 17/110
Accessories pages 17/87 and 17/103 to 17/108

Sentron Molded Case Circuit Breakers

ND 1200A Frame, Sentron Series

Selection/Dimensions

Type HNXD6^{①④}

Black Label

Non-Interchangeable Trip (Assembled Circuit Breaker Without Lugs)				
Continuous Current Rating @ 40°C	2-Pole		3-Pole	
	600V AC/250V DC		600V AC/500V DC	
	Catalog Number	List Price \$	Catalog Number	List Price \$
900 1000 1200	For 2-pole application use outside poles of 3-pole circuit breaker		HNXD63B900 HNXD63B100 HNXD63B120	



Type HND6^④

Black Label

Interchangeable Trip						
Continuous Current Rating @ 40°C	Complete Breaker Unassembled with Lugs		Frame Only		Trip Unit Only	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
800 900 1000 1200	For 2-pole application use outside poles of 3-pole circuit breaker					

2-Pole 600V AC, 250V DC^②

800 900 1000 1200	For 2-pole application use outside poles of 3-pole circuit breaker
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3-Pole 600V AC, 500V DC^③

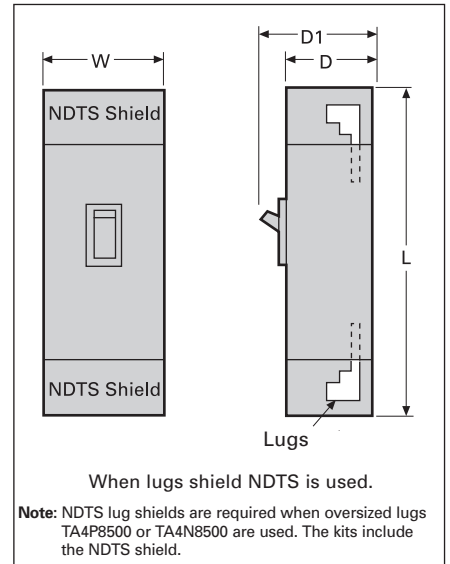
800 900 1000 1200	HND63B800 HND63B900 HND63B100 HND63B120	HND63F120	MD63T800 ND63T900 ND63T100 ND63T120
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Type CND6^{①④}

Fuseless Current Limiting

Red Label

Non-Interchangeable Trip (Assembled Circuit Breaker)				
Continuous Current Rating @ 40°C	2-Pole		3-Pole	
			Catalog Number	List Price \$
900 1000 1200	For 2-pole application, use outside poles of 3-pole circuit breaker		CND63B900 CND63B100 CND63B120	



Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
ND6, HND6, NXD6, HNXD6, CND6 Assembled Breaker (less terminals)		
2	1	53
3	1	61.5
ND6, HND6 Frame Only		
2	1	42.25
3	1	46
ND6, HND6 Trip Unit Only		
2	1	4.5
3	1	6.5

Dimensions (in inches)

Breaker Type	W	L	D	D1
ND6, NXD6, HND6, HNXD6, CND6, SND6, SHND6, and SCND6	9	16	6	8.25
with NDTs lug shield	9	24	6	8.25

For inches / millimeters conversion, see Application Data section.

■ Built to order. Allow 2–3 weeks for delivery.

① HNXD6 and CND6 circuit breakers are UL Listed for reverse connection applications.

② 2-pole units available in 3-pole width only.

③ When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

④ HACR rated.

Sentron Molded Case Circuit Breakers

SND 1200A Frame, Digital Solid State Sentron Sensitrip III Series[®]

Selection

Type SND6

Blue Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SND69800A	800	
SND69100A	1000	
SND69120A	1200	
SND69800AG	800	
SND69100AG	1000	
SND69120AG	1200	
SND69800ANT	800	
SND69100ANT	1000	
SND69120ANT	1200	
SND69800ANGT	800	
SND69100ANGT	1000	
SND69120ANGT	1200	

Type SHND6

Black Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SHND69800A	800	
SHND69100A	1000	
SHND69120A	1200	
SHND69800AG	800	
SHND69100AG	1000	
SHND69120AG	1200	
SHND69800ANT	800	
SHND69100ANT	1000	
SHND69120ANT	1200	
SHND69800ANGT	800	
SHND69100ANGT	1000	
SHND69120ANGT	1200	

Current Limiting

Type SCND6

Red Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SCND69800A	800	
SCND69100A	1000	
SCND69120A	1200	
SCND69800AG	800	
SCND69100AG	1000	
SCND69120AG	1200	
SCND69800ANT	800	
SCND69100ANT	1000	
SCND69120ANT	1200	
SCND69800ANGT	800	
SCND69100ANGT	1000	
SCND69120ANGT	1200	



SND 1200A Frame – 100% Rated[Ⓛ]

Type SND6-H

Blue Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SND69800AH	800	
SND69100AH	1000	
SND69120AH	1200	
SND69800AGH	800	
SND69100AGH	1000	
SND69120AGH	1200	
SND69800ANTH	800	
SND69100ANTH	1000	
SND69120ANTH	1200	
SND69800ANGTH	800	
SND69100ANGTH	1000	
SND69120ANGTH	1200	

Type SHND6H

Black Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SHND69800AH	800	
SHND69100AH	1000	
SHND69120AH	1200	
SHND69800AGH	800	
SHND69100AGH	1000	
SHND69120AGH	1200	
SHND69800ANTH	800	
SHND69100ANTH	1000	
SHND69120ANTH	1200	
SHND69800ANGTH	800	
SHND69100ANGTH	1000	
SHND69120ANGTH	1200	

Current Limiting

Type SCND6-H

Red Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SCND69800AH	800	
SCND69100AH	1000	
SCND69120AH	1200	
SCND69800AGH	800	
SCND69100AGH	1000	
SCND69120AGH	1200	
SCND69800ANTH	800	
SCND69100ANTH	1000	
SCND69120ANTH	1200	
SCND69800ANGTH	800	
SCND69100ANGTH	1000	
SCND69120ANGTH	1200	

Trip Unit Adjustable Functions

Suffix Letter Code	Trip Type	Cont Current Setting	Long Time Delay	Instantaneous Setting	Short Time Pick Up	Short Time Delay	Short Time I ² t Pick Up	Ground Fault Pick Up	Ground Fault Delay
A	LI	✓	✓	✓					
AG	LIG	✓	✓	✓				✓	✓
ANT	LSI	✓	✓	✓	✓	✓	✓		
ANGT	LSIG	✓	✓	✓	✓	✓	✓	✓	✓

Interrupting Ratings

Breaker Type	RMS Symmetrical kA UL 489 (File E10848)		
	240V AC	480V AC	600V AC
SND6	65	50	25
SHND6	100	65	50
SCND6	200	100	65

Neutral Transformers

Ampere Rating	Catalog Number	List Price \$
800	N08SMDA	
1000	N10SNDA	
1200	N12SNDA	

For inches / millimeters conversion, see Application Data section.

For ordering information and terminal connectors, and enclosures, see page 17/81.

Note: "G" suffix in catalog number denotes circuit breaker for 3-phase, 3-wire circuits.

For 3-phase, 4-wire, order correct 4th wire (neutral) transformer as separate and additional item.

■ Built to order. Allow 2-3 weeks for delivery.

Ⓛ Use 2-3TA4P8500 for 3-pole. These kits are rated for 90°C wire. 90°C Cu only cable must be used, and sized per 75°C ampacity.

Ⓢ SND6, SHND6 and SCND6 circuit breakers are UL Listed for reverse connection applications.

Sentron Molded Case Circuit Breakers

PD 1600A Frame, Sentron Series

Selection

Type PXD6^② Non-Interchangeable Trip^⑤ 3-Pole 600V AC, 250-500V DC^①

Blue Label

Continuous Current Rating 40°C	Complete Breaker Assembled (Frame/Trip Unit Only)		Mounting Assembly		Lugs (6 required)	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1200	PXD63B120■		MB9301		TA5P600	
1400	PXD63B140■		-or-			
1600	PXD63B160		MBR9302			

Type PD6 Interchangeable Trip^⑤ 3-Pole 600V AC, 250-500V DC^①

Blue Label

Continuous Current Rating 40°C	Complete Breaker Unassembled		Frame Only		Trip Unit Only		Mounting Assembly		Lugs (6 required)	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1200	PD63B120■		PD63F160		PD63T120■		MB9301 -or- MBR9302		TA5P600	
1400	PD63B140			PD63T140						
1600	PD63B160			PD63T160						

Type HPXD6^② Non-Interchangeable Trip^⑤ 3-Pole 600V AC, 250-500V DC^①

Blue Label

Continuous Current Rating 40°C	Complete Breaker Assembled (Frame/Trip Unit Only)	
	Catalog Number	List Price \$
1200	HPXD63B120■	
1400	HPXD63B140■	
1600	HPXD63B160	

Type HPD6 Interchangeable Trip^⑤ 3-Pole 600V AC, 250-500V DC^①

Black Label

Continuous Current Rating 40°C	Complete Breaker Unassembled		Frame Only		Trip Unit Only		Mounting Assembly		Lugs (6 required)	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1200	HPD63B120■		HPD63F160		PD63T120■		MB9301 -or- MBR9302		TA5P600	
1400	HPD63B140			PD63T140						
1600	HPD63B160			PD63T160						

Type CPD6 Non-Interchangeable Trip^⑤ Fuseless Current Limiting 3-Pole 600V AC, 250-500V DC^①

Red Label

Continuous Current Rating 40°C	Complete Breaker Assembled (Frame/Trip Unit Only)	
	Catalog Number	List Price \$
1200	CPD63B120■	
1400	CPD63B140■	
1600	CPD63B160■	

Ordering Instructions

Complete Breaker Unassembled with Lugs

Prices of PD6, HPD6, RD6, and HRD6 type breakers include frame, trip, mounting base (MB9301), and both line and load lugs (PD Frame – TA5P600, RD Frame – TC5R600). When ordered by these catalog numbers, the customer will receive the frame, trip, mounting assembly and lugs separately packaged. For applications requiring different mounting base or lugs, order individual items as needed.

Complete Breaker Assembled without Lugs

Prices of PXD6, HPXD6, RXD6, HRXD6 and CPD6 type breakers include frame with non-interchangeable trip unit installed only. Order required mounting base and lugs separately.

100% Rated (3-Pole only)

Types PXD6, HPXD6 breakers are available with 100% ratings. To order add suffix "H" to catalog number, and 10% to list price. 100% PD breakers require 90° C cable sized at 75° C ampacity and TC5R600 lugs. RD 2000A Frames not available with 100% ratings.

50°C Applications see page 17/110.

400HZ Applications see page 17/110.

Lugs^④

Catalog Number	No of Cables per Connector	Wire Range	List Price \$
TA5P600	1-5 Pcs.	300-600 kcmil Cu/Al	
TC5R600	1-5 Pcs.	300-600 kcmil Cu only	
TA4P750▲	1-4 Pcs.	500-750 kcmil Cu/Al	
TA6R600	1-6 Pcs.	300-600 kcmil Cu/Al	

Interrupting Ratings

Breaker Type	UL 489 A IR					IEC 947-2					
	RMS Symmetrical KA					Volts AC (50/60HZ)					
	Volts AC			Volts DC ^①		220/240		380/415		500	
	240	480	600	250	500	(lcu)	(lcs)	(lcu)	(lcs)	(lcu)	(lcs)
PD6, PXD6	65	50	25	30 (2P)	25 (3P)	65	33	40	10	30	8
HPD6, HPXD6	100	65	50	30 (2P)	50 (3P)	100	50	65	17	42	11
CPD6	200	100	65	30 (2P)	50 (3P)	200	100	100	25	65	17

■ Built to order. Allow 2-3 weeks for delivery.

▲ Built to order. Allow 6-8 weeks for delivery.

① Use two outside poles of a 3-pole circuit breaker for 250V

② When wired as shown on page 17/5, this circuit breaker is

UL listed and rated for use on 500V DC ungrounded UPS systems only.

③ PXD6, HPXD6 and CPD6 type circuit breakers are UL Listed for reverse feed applications.

④ For additional information See **Note: A**, page 17/100.

⑤ HACR rated.

Note: PD frame qualified to UL489 supplement B "NAVAL". See page 17/110 for additional information.

Sentron Molded Case Circuit Breakers

SPD 1600A Frame, Digital Solid State Sentron Sensitrip III Series

Selection/Dimensions

Ordering Information

Pricing information for all Digital Sentron Series PD frame unit is for breaker only. Price required mounting block assembly and necessary terminal connectors as separate items.

SPD6 and SHPD6 are acceptable for reverse connection applications.

Type SPD6

Blue Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SPD69140■	1400	
SPD69160■	1600	
SPD69140G■	1400	
SPD69160G■	1600	
SPD69140NT■	1400	
SPD69160NT■	1600	
SPD69140NGT■	1400	
SPD69160NGT■	1600	

Type SHPD6

Black Label

3-Pole, 600V AC		
Catalog Number	Max Current Rating	List Price \$
SHPD69140■	1400	
SHPD69160■	1600	
SHPD69140G■	1400	
SHPD69160G■	1600	
SHPD69140NT■	1400	
SHPD69160NT■	1600	
SHPD69140NGT■	1400	
SHPD69160NGT■	1600	



Lugs^①

Catalog Number	No. of Cables per Connector	Wire Range	List Price \$
TA5P600	1-5 pcs.	300-600 kcmil Cu/Al	
TC5R600	1-5 pcs.	300-600 kcmil Cu Only	
TA6R600	1-5 pcs.	300-600 kcmil Cu/Al	

Suffix Letter Code	Trip Type	Cont Current Setting	Long Time Delay	Instantaneous Setting	Short Time Pick Up	Short Time Delay	Short Time I ² t Pick Up	Ground Fault Pick Up	Ground Fault Delay
None	LI	✓	✓	✓					
G	LIG	✓	✓	✓				✓	✓
NT	LSI	✓	✓	✓	✓	✓	✓		
NGT	LSIG	✓	✓	✓	✓	✓	✓	✓	✓

Neutral Transformers

Ampere Rating	Catalog Number	List Price \$
1400	N14SPD	
1600	N16SPD	

Enclosure

Type	Catalog Number	List Price \$
1	PRD6N1	

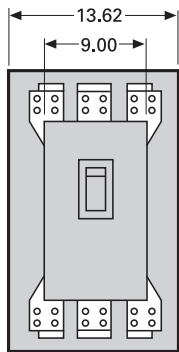
Interrupting Ratings

Breaker Type	RMS Symmetrical kA UL 489		
	240V AC	480V AC	600V AC
SPD6	65	50	25
SHPD6	100	65	50

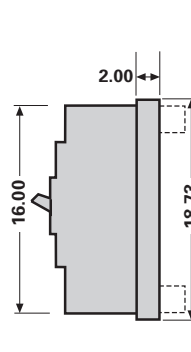
Mounting Block (Required)^①

Catalog Number	List Price \$
MB9301	
MBR9302	

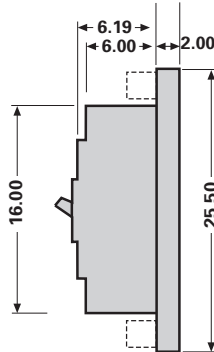
All PD, RD Frames:



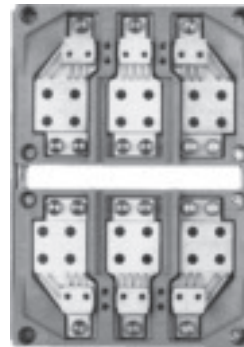
MB9301 (shown)
MBR9302



MBR9302



MB9301



MBR9302



MB9301

For inches / millimeters conversion, see Application Data section.

■ Built to order. Allow 2-3 weeks for delivery.

① For additional information, see Note A, page 17/100.

Note: The PD frame circuit breaker requires the use of a connect-all mounting assembly to allow for placing into service.

Note: "G" suffix in catalog number denotes circuit breaker for 3-phase, 3-wire circuits.

For 3-phase, 4-wire, order correct 4th wire (neutral) transformer as separate and additional item.

Sentron Molded Case Circuit Breakers

RD 2000A Frame, Sentron Series

Selection

Type RXD6^④

Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker Only Without Lugs)

3-Pole 600V AC, 250-500V DC^①

Continuous Current Rating 40°C	Complete Breaker Assembled (Frame/Trip Unit Only)		Mounting Assembly		Lugs (6 required)	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1600 1800 2000	RXD63B160 RXD63B180 RXD63B200		MB9301 -or- MBR9302		TC5R600	

Type RD6^④

Blue Label

Interchangeable Trip (Unassembled Circuit Breaker with Lugs)

3-Pole 600V AC, 250-500V DC^①

Continuous Current Rating 40°C	Complete Breaker Unassembled with Lugs		Frame Only		Trip Unit Only		Mounting Assembly		Lugs (6 required)	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1600 1800 2000	RD63B160 RD63B180 RD63B200		RD63F200		RD63T160 RD63T180 RD63T200		MB9301 -or- MBR9302		TC5R600	

Type HRXD6^④

Black Label

Continuous Current Rating 40°C	Complete Breaker Assembled (Frame / Trip Unit Only)	
	Catalog Number	List Price \$
1600 1800 2000	HRXD63B160 HRXD63B180 HRXD63B200	

Type HRD6^④

Black Label

Continuous Current Rating 40°C	Complete Breaker Unassembled with Lugs		Frame Only		Trip Unit Only		Mounting Assembly		Lugs (6 required)	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1600 1800 2000	HRD63B160 HRD63B180 HRD63B200		HRD63F200		RD63T160 RD63T180 RD63T200		MB9301 -or- MBR9302		TC5R600	

Interrupting Ratings

Breaker Type	UL 489 A IR					IEC 947-2					
	RMS Symmetrical KA					Volts AC (50/60HZ)					
	Volts AC			Volts DC ^①		220/240		380/415		500	
	240	480	600	250	500	(lcu)	(lcs)	(lcu)	(lcs)	(lcu)	(lcs)
RD6, RXD6	65	50	25	30 (2P)	25 (3P)	65	33	40	10	30	8
HRD6, HRXD6	100	65	50	30 (2P)	50 (3P)	100	50	65	17	42	11

Instantaneous Adjustment Trip Range (PD / RD Frames)

Breaker Ampere Rating	Nominal Instantaneous Values							
	±20% Tolerance Low	2	3	4	5	6	7	±20% Tolerance High
	1200-2000	5000	5715	6430	7145	7860	8575	9790

■ Built to order. Allow 2-3 weeks for delivery.

▲ Built to order. Allow 6-8 weeks for delivery.

① Use two outside poles of a 3-pole circuit breaker for 250V DC applications.

② When wired as shown on page 17/5, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

③ RXD6 and HRXD6 type circuit breakers are UL Listed for reverse feed applications.



Mounting Block

Catalog Number	Connection Points	List Price \$
MB9301	Front	
MBR9302	Rear	

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
PXD6, HPXD6, RXD6, HRXD6, CPD6 Assembled Breakers		
3	1	61.5
PD6, HPD6, RD6, HRD6 Frame Only		
3	1	55.0
PD6, RD6 Trip Unit Only		
3	1	6.5
Mounting Assembly		
MB9301	1	53.0
MBR9302	1	50.9

Lugs^⑤

Catalog Number	No of Cables per Connector	Wire Range	List Price \$
TA5P600	1-5 Pcs.	300-600 kcmil Cu/Al	
TC5R600	1-5 Pcs.	300-600 kcmil Cu only	
TA6R600	1-6 Pcs.	300-600 kcmil Cu/Al	

⑤ HACR rated.
 ⑥ For additional information See **Note: A**, page 17/100.
Note: RD frame qualified to UL489 supplement B "NAVAL".
 See page 17/110 for additional information.
Note: For required mounting base (MB9301 or MBR9302) see page 17/85.

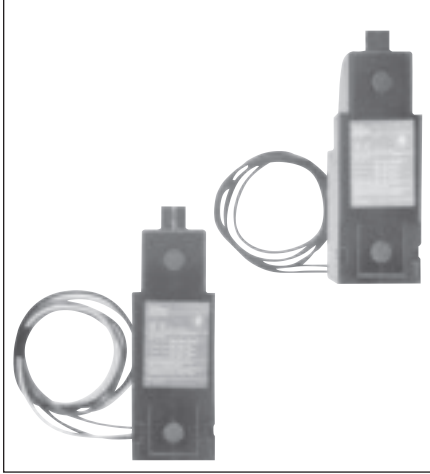
Sentron Molded Case Circuit Breakers

Internal Accessories

Selection

Accessories for:

MD/SMD 800A Frame
ND/SND 1200A Frame
PD/SPD 1600A Frame
RD 2000A Frame



Accessory modules can mount in either left hand or right hand poles of all circuit breakers, including solid state. Exception: when mechanical interlock is used. Accessories cannot be mounted in left pole.

Sensitrip Ammeter



The Ammeter Display Units plug into the Sensitrip Trip Unit and displays the phase current flowing in the breaker. They are powered by the breaker's CT's with replaceable battery back-up for maintaining trip and max logs.

The SADU reads currents, current imbalance, current demand, and trip status.

Ammeter Mounting Kit

The Ammeter may also be panel or door mounted using the SADURMK18 remote mounting kit.

Shunt Trip Combinations

Control Voltage		1 Shunt Trip		1 Shunt Trip and 1 Auxiliary Switch	
AC	DC	Catalog Number	List Price \$	Catalog Number	List Price \$
120		S01MN6		S01MN64A	
208		S02MN6▲		—	—
240		S03MN6		S03MN64A▲	
277		S15MN6▲		S15MN64A▲	
480		S04MN6▲		S04MN64A▲	
600		S06MN6▲		—	—
	12	S16MN6▲		S16MN64A▲	
	24	S07MN6		S07MN64A	
	48	S09MN6▲		—	—
	125	S11MN6		S11MN64A▲	
	250	S13MN6▲		S13MN64A▲	

Undervoltage Trip Combinations

Control Voltage		1 Undervoltage Trip		1 Undervoltage Trip and 1 Auxiliary Switch		1 Undervoltage Trip and 2 Auxiliary Switches	
AC	DC	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
120		U01MN6		U01MN64A		U01MN64AA	
208		U02MN6▲		U02MN64A▲		U02MN64AA▲	
240		U03MN6▲		U03MN64A▲		U03MN64AA▲	
277		U15MN6▲		U15MN64A▲		U15MN64AA▲	
480		U04MN6▲		U04MN64A▲		U04MN64AA▲	
600		U06MN6▲		—	—	—	—
	24	U07MN6		U07MN64A		U07MN64AA	
	48	U09MN6▲		U09MN64A▲		U09MN64AA▲	
	125	U11MN6▲		U11MN64A▲		U11MN64AA▲	
	250	U13MN6▲		U13MN64A▲		U13MN64AA▲	

Auxiliary Switch Combinations

Maximum Voltage		1 Form C		2 Form C	
AC	DC	Catalog Number	List Price \$	Catalog Number	List Price \$
480	250	A01MN64		A02MN64	
—	12	A01MNDLV▲		A02MNDLV▲	

Alarm Switch Combinations

Maximum Voltage		1 Alarm Switch		1 Alarm Switch and 1 Auxiliary Switch		1 Alarm Switch and 2 Auxiliary Switches	
AC	DC	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
480	250	B00MN64		A01MN64B		A02MN64B	

Plug-in Ammeter Display Units

Breaker Type	Description	Catalog Number	List Price \$
SMD, SND, SPD	Display Unit	SADU	
	Remote Mounting Kit	SADURMK18	

▲ Built to order. Allow 6-8 weeks for delivery.

Sentron Molded Case Circuit Breakers

Magnetic Trip Only — ETI Motor Circuit Protector

Selection

Breaker Type	Ampere Rating	Instantaneous Trip Range ^②		Complete Circuit Breaker Without Lugs				
		Minimum ^③	Maximum ^③	Catalog Number 2-Pole	List Price \$	Catalog Number 3-Pole	List Price \$	
ED6-A 600V AC 250V DC	1	2.6	9	—	—	ED63A001		
	2	7	22	—	—	ED63A002		
	3	10	35	—	—	ED63A003		
	5	16	54	—	—	ED63A005		
	10	30	100	—	—	ED63A010		
	25	55	180	—	—	ED63A025		
	30	80	270	—	—	ED63A030		
	40	115	375	—	—	ED63A040		
	50	180	600	—	—	ED63A050		
	100	315	1000	—	—	ED63A100		
	125	500	1250	—	—	ED63A125		
	SHIPPING:						3.8 lbs. each	
	CED6-A 600V AC 250V DC	1	2.6	9	—	—	CED63A001■	
2		7	22	—	—	CED63A001■		
3		10	35	—	—	CED63A003■		
5		16	54	—	—	CED63A005■		
10		30	100	—	—	CED63A010■		
25		55	180	—	—	CED63A025■		
30		80	270	—	—	CED63A030■		
40		115	375	—	—	CED63A040■		
50		180	600	—	—	CED63A050■		
100		315	1000	—	—	CED63A100■		
125		500	1250	—	—	CED63A125■		
SHIPPING:						6 lbs. each		
FXD6 ^④ 600V AC 250V DC		150	400	800	—	—	FXD63L150■	
	150	800	1500	—	—	FXD63A150		
	150	1100	2500	—	—	FXD63H150		
	250	1100	2500	—	—	FXD63A250		
	SHIPPING:						9 lbs. each	
CFD6 ^④ 600V AC 250V DC	150	400	800	—	—	CFD63L150■		
	150	800	1500	—	—	CFD63A150■		
	150	1100	2500	—	—	CFD63H150■		
	250	1100	2500	—	—	CFD63A250■		
	SHIPPING:						12 lbs. each	
JXD6(A) ^① 600V AC 250V DC	400	1250	2500	—	—	JXD63L400		
	400	2000	4000	JXD62H400■	—	JXD63H400		
	SHIPPING:						16 lbs. each	
CJD6 ^① 600V AC 250V DC	400	1250	2500	CJD62L400■	—	CJD63L400■		
	400	2000	4000	CJD62H400■	—	CJD63H400■		
	SHIPPING:						29.5 lbs. each	
LXD6(A) ^① 600V AC 250V DC	600	2000	4000	LXD62L600■	—	LXD63L600■		
	600	3000	6000	—	—	LXD63H600■		
	SHIPPING:						16 lbs. each	
CLD6 ^① 600V AC 250V DC	600	2000	4000	CLD62L600■	—	CLD63L600■		
	600	3000	6000	CLD62H600■	—	CLD63H600■		
	SHIPPING:						31.5 lbs. each	
LMXD6 ^④ 600V AC 250V DC	800	2800	6000	—	—	LMXD63L800■		
	800	3200	8000	—	—	LMXD63A800		
	SHIPPING:						35 lbs. each	
MXD6 ^④ 600V AC 250V DC	800	3000	6000	—	—	MXD63L800■		
	800	4000	8000	—	—	MXD63A800■		
	800	5000	10000	—	—	MXD63H800		
	SHIPPING:						33 lbs. each	
CMD6 ^④ 600V AC 250V DC	800	3000	6000	—	—	CMD63L800■		
	800	4000	8000	—	—	CMD63A800■		
	800	5000	10000	—	—	CMD63H800■		
	SHIPPING:						80 lbs. each	

Important Information

ETI interrupting ratings are determined through combination tests with properly sized overload relays and contactors.

⑤ Connectors included when ordering by circuit breaker catalog number for ED6 and CED6 ETI's. Order ETI circuit breaker and lugs (2 per pole) separately for the FXD6, CFD6, MXD6, CMD6, JXD6, CJD6, LXD6 and CLD6 ETI's.

Lug Information pages 17/100 to 17/102
Accessories pages 17/103 to 17/108
Application data pages 17/89 to 17/90

■ Built to order. Allow 2-3 weeks for delivery.
② 2-pole available in 3-pole width only.

③ When applied on DC Circuits — Trip levels will increase approximately +15 to 20%.
④ Tolerance -20/+30%

⑤ For 2-pole application use outside poles of 3-pole circuit breaker.

General

Protection of Motor Circuits

Molded case circuit breakers are used in motor circuits as a disconnecting means and for short-circuit protection. They should be used in conjunction with motor-running, over-current-protection devices, and should permit the motor to start without nuisance tripping from motor-inrush current. The circuit breaker should have a continuous-current rating of not less than 115% of the motor full-load current.

The recommended motor circuit protectors (Siemens ETI instantaneous only circuit breakers) listed have

continuous-current ratings of at least 115% of motor full-load currents. The trip-setting positions are approximately 11 times motor full-load currents. The suggested trip settings may have to be adjusted upward to no higher than 1300% of full-load current for non-design E type motors, and no greater than 1700% of full load current for design E motors, to allow for motor start-up due to inrush currents.

Breaker Mounted Immediately Ahead of Motor Starter

Siemens ETI motor circuit protectors are recommended for use in combination motor starters to provide selective short-circuit protection for the motor

branch circuit. The adjustable instantaneous-trip feature of the Siemens ETI motor circuit protector provides for a trip setting slightly above the peak motor-inrush current. With this setting, no delay is introduced in opening the circuit when a fault occurs. This circuit breaker has no time-delay trip element. Therefore it must be used in conjunction with, and immediately ahead of, the motor-running overcurrent protective device.

Important: The information below does not apply to all motor applications: it is recommended that the user refer to the National Electrical Code (NEC) for specific needs.

Table 1 (When Breaker is Mounted Immediately Ahead of Motor Starter)

3-Phase Induction Type Motors (Siemens ETI motor circuit protectors for branch circuit use with alternating-current combination, full voltage motor starters).

Motor Full Load Amperes	Catalog Number	ETI Trip Setting	
		Adjustment	Amperes
.20 – .33	ED63A001 CED63A001	Low	2.6
.34 – .45		2	4.5
.46 – .56		3	6
.57 – .68		4	7.5
.69 – .81		High	9
.53 – .83	ED63A002 CED63A002	Low	7
.84 – 1.14		2	11
1.15 – 1.45		3	15
1.46 – 1.68		4	19
1.69 – 2.00		High	22
.76 – 1.29	ED63A003 CED63A003	Low	10
1.30 – 1.75		2	17
1.76 – 2.29		3	23
2.30 – 2.68		4	30
2.69 – 3.18		High	35
1.23 – 1.99	ED63A005 CED63A005	Low	16
2.00 – 2.75		2	26
2.76 – 3.52		3	36
3.53 – 4.14		4	46
4.15 – 4.90		High	54
2.30 – 3.83	ED63A010 CED63A010	Low	30
3.84 – 5.37		2	50
5.38 – 6.52		3	70
6.53 – 7.68		4	85
7.69 – 9.10		High	100
4.23 – 6.91	ED63A025 CED63A025	Low	55
6.92 – 9.61		2	90
9.62 – 11.91		3	125
11.92 – 13.83		4	155
13.84 – 16.40		High	180
6.15 – 10.37	ED63A030 CED63A030	Low	80
10.38 – 14.22		2	135
14.23 – 18.06		3	185
18.07 – 20.75		4	235
20.76 – 24.50		High	270
8.84 – 14.22	ED63A040 CED63A040	Low	115
14.23 – 19.60		2	185
19.61 – 24.99		3	255
25.00 – 28.83		4	325
28.84 – 34.00		High	375
13.84 – 23.06	ED63A050 CED63A050	Low	180
23.07 – 31.52		2	300
31.53 – 39.99		3	410
40.00 – 46.14		4	520
46.15 – 54.50		High	600
24.23 – 41.52	ED63A100 CED63A100	Low	315
41.53 – 56.91		2	540
56.92 – 68.45		3	740
68.46 – 76.91		4	890
76.92 – 90.90		High	1000

Motor Full Load Amperes	Catalog Number	ETI Trip Setting	
		Adjustment	Amperes
38.46 – 55.37	ED63A125 CED63A125	Low	500
55.38 – 70.75		2	720
70.76 – 84.60		3	920
84.61 – 96.14		4	1100
96.15 – 113.60		High	1250
30.76 – 35.37	FXD63L150 CFD63L150	Low	400
35.38 – 39.99		2	460
44.51 – 49.23		4	580
53.84 – 58.45		6	700
58.46 – 63.06		7	760
63.07 – 74.50	High	820	
61.53 – 69.22	FXD63A150 CFD63A150	Low	800
69.23 – 76.91		2	900
84.61 – 92.29		4	1100
100.00 – 108.00		6	1300
108.00 – 115.00		7	1400
115.00 – 136.00	High	1500	
85.00 – 100.00	FXD63A250 CFD63A250	Low	1100
100.00 – 115.00		2	1300
131.00 – 146.00		4	1700
162.00 – 177.00		6	2100
177.00 – 192.00		7	2300
192.00 – 227.00	High	2500	
95.00 – 110.00	JXD63L400 CJD63L400	Low	1250
110.00 – 124.00		2	1430
138.00 – 151.00		4	1790
165.00 – 178.00		6	2140
178.00 – 192.00		7	2320
192.00 – 227.00	High	2500	
154.00 – 176.00	JXD63H400 CJD63H400	Low	2000
176.00 – 198.00		2	2290
220.00 – 242.00		4	2860
264.00 – 285.00		6	3430
285.00 – 308.00		7	3710
308.00 – 326.00	High	4000	
155.00 – 176.00	LXD63L600 CLD63L600	Low	2000
176.00 – 198.00		2	2290
220.00 – 242.00		4	2860
264.00 – 285.00		6	3430
285.00 – 308.00		7	3710
308.00 – 326.00	High	4000	

Motor Full Load Amperes	Catalog Number	ETI Trip Setting	
		Adjustment	Amperes
231.00 – 264.00	LXD63H600 CLD63H600	Low	3000
264.00 – 292.00		2	3430
330.00 – 362.00		4	4290
395.00 – 428.00		6	5140
428.99 – 462.00		7	5570
462.00 – 490.00		High	6000
215.00 – 238.00		LMXD63L800	Low
238.00 – 261.00	2		3100
261.00 – 284.00	3		3400
308.00 – 369.00	5		4000
369.00 – 423.00	6		4800
423.00 – 462.00	7		5500
462.00 – 490.00	High		6000
246.00 – 269.00	LMXD63A800	Low	3200
269.00 – 284.00		2	3500
284.00 – 323.00		3	3700
362.00 – 492.00		5	4700
492.00 – 562.00		6	6400
562.00 – 616.00		7	7300
616.00 – 660.00		High	8000
231.00 – 264.00	MXD63L800 CMD63L800	Low	3000
264.00 – 292.00		2	3430
292.00 – 330.00		3	3800
362.00 – 395.00		5	4710
428.00 – 462.00		7	5570
462.00 – 490.00		High	6000
308.00 – 352.00		MXD63A800 CMD63A800	Low
352.00 – 442.00	2		4570
442.00 – 447.00	3		5740
483.00 – 527.00	5		6280
571.00 – 616.00	7		7240
616.00 – 660.00	High		8000
385.00 – 440.00	MXD63H800 CMD63H800		Low
495.00 – 550.00		3	6430
605.00 – 660.00		5	7860
660.00 – 695.00		6	8575

Note: Low instantaneous settings have a ±20% tolerance and high settings have a ±20% tolerance

Sentron Molded Case Circuit Breakers

Motor Circuits

Application

Breaker Mounted at a Distance From Motor Starter

ET thermal-magnetic circuit breakers conform to the National Electrical Code table 430-152 requirements for motor branch and feeder circuit protection when properly applied in conjunction with motor-running overcurrent protective devices. The recommended

circuit-breaker ratings in Table 2 provide adequate time delay for starting the majority of three phase induction motors.

To determine the ampere ratings of the ET breaker to protect a motor feeder, add the rating of the ET breaker used to protect the largest motor branch circuit in the group to the full-load currents of the remaining motors in the group.

Interrupt Ratings

For normal commercial purposes, available fault current can conveniently be obtained in the Interrupting Selector Tables.

Table 2 (When Breaker is Mounted at a Distance From Motor Starter)

3-Phase Induction Type Motors (EQ and ET circuit breakers (thermal-magnetic trip) for branch breaker use with alternating-current combination motor starters).

Motor Horsepower Rating	200 and 208V Motors			230V Motors			460V Motors			575V Motors		
	240V Circuit Breaker Data ^①			240V Circuit Breaker Data ^①			480V Circuit Breaker Data ^①			600V Circuit Breaker Data ^①		
	Breaker Type	Catalog Number	Ampere Rating	Breaker Type	Catalog Number	Ampere Rating	Breaker Type	Catalog Number	Ampere Rating	Breaker Type	Catalog Number	Ampere Rating
½	BQ ^②	BQ3B015	15	BQ ^②	BQ3B015	15	ED4	ED43B015	15	ED6	ED63B015	15
¾		BQ3B015	15		BQ3B015	15		ED43B015	15		ED63B015	15
1		BQ3B015	15		BQ3B015	15		ED43B015	15		ED63B015	15
1½		BQ3B015	15		BQ3B015	15		ED43B015	15		ED63B015	15
2		BQ3B020	20		BQ3B015	15		ED43B015	15		ED63B015	15
3		BQ3B030	30		BQ3B020	20		ED43B015	15		ED63B015	15
5	BQ ^②	BQ3B040	40	BQ ^②	BQ3B030	30	ED4	ED43B015	15	ED6	ED63B015	15
7½		BQ3B060	60		BQ3B050	50		ED43B030	30		ED63B020	20
10		BQ3B070	70		BQ3B070	70		ED43B030	30		ED63B030	30
15		BQ3B100	100		BQ3B090	90		ED43B040	40		ED63B035	35
20					BQ3B100	100		ED43B050	50		ED63B050	50
25	FXD6	FXD63B125	125	FXD6	FXD63B125	125	FXD6	FXD63B090	90	FXD6	FXD63B060	60
30		FXD63B150	150		FXD63B150	150		FXD63B100	100		FXD63B070	70
40		FXD63B175	175		FXD63B175	175		FXD63B125	125		FXD63B090	90
50		FXD63B200	200		FXD63B200	200		FXD63B150	150		FXD63B100	100
50		FXD63B225	225									
60	JXD2	JXD23B300	300	—	—	—	FXD6, FD6	FXD63B150	150	FXD6	FXD63B100	100
75	JXD2	JXD23B400	400	JXD2	JXD23B350	350	FXD6, FD6	FXD63B200	200	FXD6, FD6	FXD63B125	125
100	JXD2	JXD23B400	400	JXD2	JXD23B400	400	FD6 ^③ JD6 ^③	FD63B250 JD63B250	250 250	FXD6, FD6	FD63B175	175
125	LD6 ^③ or LMD6	LD63B600 LMD63B600	600	LD6 ^③ or LMD6	LD63B500 or LMD63B500	500	JD6 ^③	JD63B300	300	FXD6, FD6 OR JD6 ^③	FXD63B200 JD63B200	200 200
150	LD6 ^③ or LMD6	LD63B600 or LMD63B600	600	LMD6	LD63B600 or LMD63B600	600	JD6 ^③	JD63B300	300	FXD6 or JD6 ^③	FXD63B225 JD63B225	225 225
200	LMD6	LMD63B800	800	LMD6	LMD63B800	800	JD6 ^③	JD63B350	350	JD6 ^③	JD63B300	300
250	—	—	—	—	—	—	JD6 ^③	JD63B400	400	JD6 ^③	JD63B400	400
300	—	—	—	—	—	—	LD6 ^③ or LMD6	LD63B600 or LMD63B600	600	JD6 ^③	JD63B400	400
350	—	—	—	—	—	—	LMD6	LMD63B700	700	LD6 ^③ or LMD6	LD63B500 or LMD63B500	500
400	—	—	—	—	—	—	LMD6	LMD63B800	800	LD6 ^③ or LMD6	LD63B600 or LMD63B600	600
500	—	—	—	—	—	—	—	—	—	LMD6	LMD63B800	800

① The selection of breakers for this table is in accordance with Article 430, 2005 National Electric Code. Recommended circuit breakers are for full voltage starting, special consideration is necessary for reduced voltage starting.

② For panelboard applications, substitute the BL breaker for the BQ, ED2 circuit breakers may also be used.

③ For non-interchangeable trip applications, substitute the FXD6 for the FD6, the JXD6 for the JD6, or the LXD6 for the LD6.

Sentron Molded Case Circuit Breakers

Molded Case Switch — Circuit Disconnect

Selection

Maximum Frame Amp Rating	2-Pole		3-Pole		Self-Protective Instantaneous Override $\pm 20\%$ ^③
	Catalog Number	List Price \$	Catalog Number	List Price \$	
100	BQ2S060 ■ BQ2S100 ■		BQ3S060 ■ BQ3S100 ■		1000 1000
125	ED22S100A ■ ED42S100A ■ ED42S125A ■ ED62S100A ■ — CED62S100A ■ CED62S125A ■ — —	— — — —	ED23S100A ED43S100A ED43S125A ED63S100A ED63S125A CED63S100A ■ CED63S125A ■ HES3S100L HES3S125L		1000 1000 1000 1000 1000 1000 1000 1250 1250
225	QJ22S225A ■		QJ23S225A		2000
250	FXD62S250A HFXD62S250A ■ ①	—	FXD63S250A HFXD63S250A ■ CFD63S250A ■		3200 3200 3200
400	JXD22S400A ■ — — ①	— — — —	JXD23S400A JXD63S400A HJXD63S400A ■ CJD63S400A ■		6000 6000 6000 6000
600	— — ①	— — —	LXD63S600A HLXD63S600A ■ CLD63S600A ■		6000 6000 6000
800	— — ①	— — —	LMXD63S800A ■ MXD63S800A CMD63S800A		8000 8000 8000
1200	— ①	— —	NXD63S120A CND63S120A ■		10000 10000
1600	①	—	PXD63S160A ^②		10000
2000	①	—	RXD63S200A ■ ^②		10000
Non Automatic Molded Case Switch					Withstand^④
2000	①	—	TD63S2000 ■		50kA
2500	①	—	TD63S2500 ■		50kA
3200	①	—	TD63S3200 ■		50kA
4000-5000	See "SB" Type Insulated Case Breakers				

Ordering Information

Order by catalog number. Switches include frame and self protective (except TD) trip unit only. Order lugs separately from pages 17/100 to 17/102.

■ Built to order. Allow 2–3 weeks for delivery.

① For 2-pole application use outside poles of 3-pole circuit breaker.

② For additional lugs see pages 17/100 to 17/102.

③ Molded case switches up to R frame contain a self protecting instantaneous element, which may open circuit above their override set point.

④ UL file E57556 Volume 1, section 2 and CSA LR 42022-51.

⑤ Requires mounting block MB9301 or MBR9302.

Lugs pages 17/100 to 17/102
Accessories pages 17/103 to 17/108

Feature Combinations

The available feature combinations are shown in the chart below. For applications requiring combinations of features not listed in this chart, consult the sales office for availability.

Breakers	Modules Per Breaker	Avail. On Breaker Poles	ST	ST/ AUX	ST/ ALSW	ST/ AUX/ ALSW	UVT	UVT/ AUX	UVT/ ALSW	UVT/ ST/ ALSW	AUX	AUX/ ALSW	ALSW	Elect. Bell Alarm	Ground fault	Grd fault w/Bell
QP, BQ, BL ^①	1	1, 2, 3	1	—	—	—	—	—	—	—	1,2	—	—	—	—	—
BQD, CQD, NGG	1	2, 3	1	1/1	—	—	—	—	—	—	1,2	1/1	1	—	—	—
QJ ^②	1	3	1	1/1	—	—	—	—	—	—	2	—	—	—	—	—
All ED	1	1, 2, 3	1	1/1,1/2	1/1	1/1/1	1	1/1, 1/2	1/1	1/1/1	1, 2	1/1, 2/1	1	—	1	1
All FD	2	2, 3	1	—	—	—	1	1/1	—	—	1, 2	1/1	1	—	—	—
All JD, LD, LMD ^③	2	2, 3	1	1	—	—	1	1/1, 1/2	—	—	1, 2	1/1, 1/2	1, 2	—	—	—
SJD6, SHJD6, SCJD6, SLD6, SHLD6, SCLD6 ^③	1	3	1	1	—	—	1	1/1, 1/2	—	—	1, 2	1/1, 1/2	1, 2	—	—	—
All MD, ND, PD, RD Including Electronic trip ^④	2	2, 3	1	1/1	—	—	1	1/1, 1/2	—	—	1, 2	1/1, 2/1	1, 2	—	—	—
STD ^⑤	6	3	1	—	—	—	1	—	—	—	1 NC / 1 NO, 2 NC / 2 NO, 3 NC / 3 NO, 4 NC / 4 NO, 5 NC / 5 NO, 6 NC / 6 NO	—	1	1	—	—

Shunt Trip (ST)

One or all critical circuit breakers may be tripped from a distant control point by use of a shunt trip device. A shunt trip operates through an auxiliary switch contact; when the breaker opens, current is not maintained on the shunt trip coil.

Undervoltage Trip (UVT)

When voltage drops to a value below 35% of the nominal coil rating, the undervoltage trip device automatically opens the breaker. The operation is instantaneous, and the circuit breaker cannot be reclosed until the

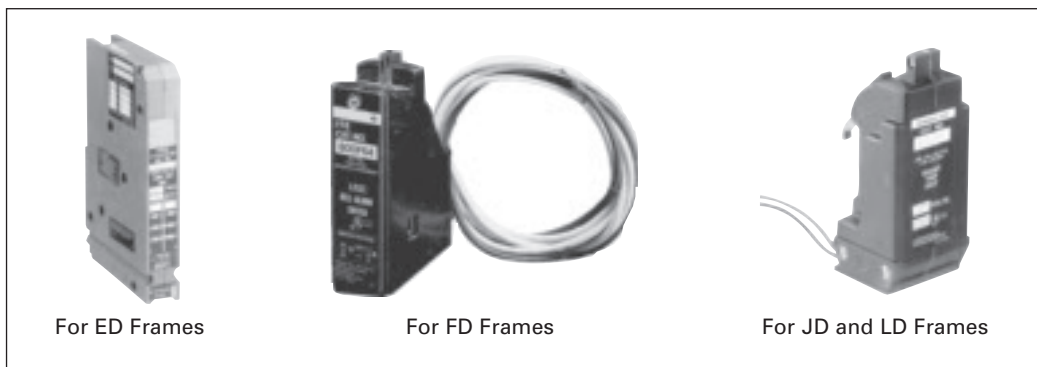
voltage returns to 85% of line voltage. The undervoltage trip, which is continuously energized, must be energized before the circuit breaker can be closed.

Auxiliary Switch (AUX)

For applications requiring remote "on" or "off" indication (or electrical interlocking), auxiliary switches are available. Each switch comprises an "A" (open when circuit breaker is open) and a "B" (closed when circuit breaker is open) contact with a common connection. (Form C)

Alarm Switch (ALSW)

The alarm switch contact is closed when the circuit breaker is opened automatically by an overload, short circuit, shunt trip or undervoltage trip. The alarm switch contact is open when the circuit breaker is reset.



① Factory assembled only

② If mechanical interlock is installed, no accessory module can be installed in the right pocket.

③ If mechanical interlock is installed, no accessory module can be installed.

④ If mechanical interlock is installed, no accessory module can be installed in the left pocket.

⑤ One module per column.

Sentron Molded Case Circuit Breakers

Digital Solid State Sentron Sensitrip III Series

Technical

The Sentron Sensitrip III circuit breaker is a true RMS current sensing device. Digital microprocessor circuitry within the electronic trip unit provides more precise control over the circuit breaker functions. This control allows circuit coordination flexibility not available with thermal magnetic circuit breakers.

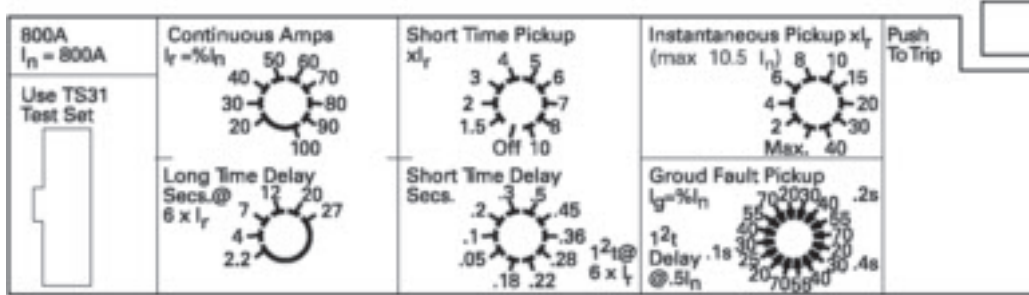
Functions available in Sentron Sensitrip circuit breakers

Catalog Number (Description + Suffix)	Trip Type	Cont Current Setting	Long Time Delay	Instantaneous Setting	Short Time Pick Up	Short Time Delay	Short Time I ² t Pick Up	Ground Fault Pick Up	Ground Fault Delay
Basic Unit + (A)	LI	✓	✓	✓					
Basic Unit + (A)G	LIG	✓	✓	✓				✓	✓
Basic Unit + (A)NT	LSI	✓	✓	✓	✓	✓	✓		
Basic Unit + (A)NGT	LSIG	✓	✓	✓	✓	✓	✓	✓	✓

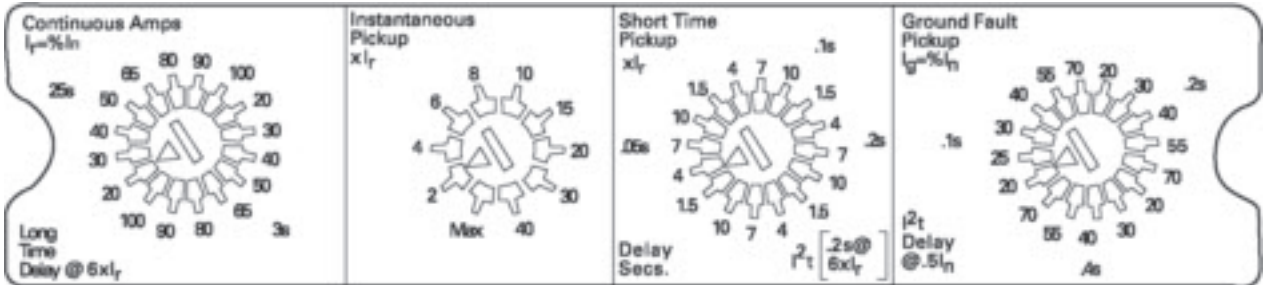
Letter "A" is used for MD and ND Solid State frame types only.

Typical Trip Unit Labeling and Adjustment Positions for the Sentron Sensitrip Circuit Breaker.

SMD6, SHMD6, SCMD6, SND6, SHND6, SCND6, SPD6, SHPD6



SJD6, SHJD6, SCJD6, SCD6, SHLD6, SCLD6



I_n = Maximum circuit breaker ampere rating.

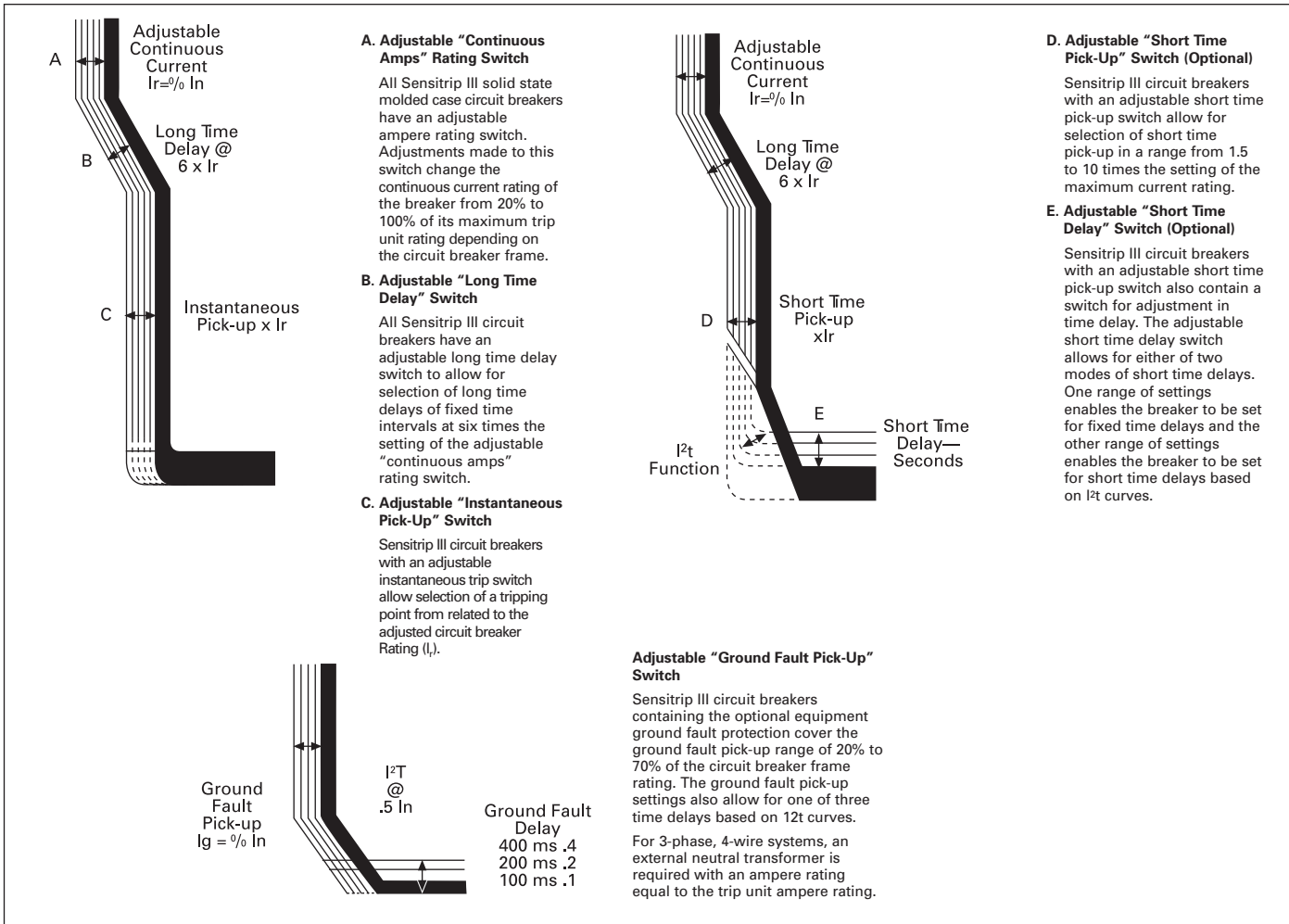
I_r = Current Rating — a function of continuous ampere adjustment setting expressed in % of I_n .

I_g = Ground Fault Pickup — a function of adjustment setting expressed in % of I_n .

Sentron Molded Case Circuit Breakers

Digital Solid State Sentron Sensitrip III Series

Technical



I_n = Maximum circuit breaker ampere rating.

I_r = Current Rating — a function of adjustment setting expressed in % of I_n .

I_g = Ground Fault Pick-up — a function of adjustment setting expressed in % of I_n .

Examples of Adjustment Settings

Catalog Number SMD69800A

$I_n = 800$	Continuous Current Setting	Long Time Delay Setting	Instantaneous Setting
$I_n = 800$ amperes Results	30 240 amperes $I_r = 30\%$ of 800	12 12 seconds trip at 6×240 amps = 1440.	8 1920 amperes $8 \times I_r = 8 \times 240$

Catalog Number SMD69800ANGT

I_n	I_r Setting	Long Time Delay	Short Time Pick-Up Off	Instantaneous Setting	Short Time Pick-Up On	Short Time Delay	I^2t Set	Ground Fault Pick-Up	Ground Fault Delay
800 amperes Results	70 560	20 20 sec.	— —	$10 I_r$ 5600A	$8 I_r$ 4480A	.5 .5 secs	.28 .28 sec @ 4480A	40 320A	.2 .2 sec
Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ	Ⓘ	Ⓚ

Ⓐ $I_n = 800$ amperes.

Ⓑ $I_r = 560$ amperes (70% of 800).

Ⓒ Delay = 20 seconds at 3360 amps ($6 \times I_r$).
Breaker will trip in 20 seconds with 3360 amperes.

Ⓓ Short Time Pick-Up Off — Instantaneous can be used.

Ⓔ Instantaneous set at $10 \times I_r = 10 \times 560 = 5600$ amperes.

Ⓕ Short Time Pick-Up On — Set at $8 \times 8 \times 560 = 4480$ amperes.

Ⓖ Short Time Delay = .5 seconds. (Definite Time)
Note: Ⓒ & Ⓗ are mutually exclusive.

Ⓗ I^2t switch on .28 seconds @ $6 \times 560 = 3360$ amperes. (Inverse time)

Ⓘ Ground Fault Pick-Up set at 40 = 40% of $I_n = 320$ amperes. (Definite Time)

Ⓚ Ground Fault Delay set at .2 seconds. Breaker will trip in 200 milliseconds with a 400 ampere ground fault.

Sentron Molded Case Circuit Breakers

Electronic and Communications Accessories

Selection

Electronic & Display Devices

Local Display Unit

Breaker Type	Catalog Number	List Price \$
SJD, SLD, SMD, SND, SPD	LDU-100	

The Local Display Unit (LDU) provides a centralized read-out of all Sensitrip III breakers. The device provides a panel mountable display for all trip unit data including phase currents and alarms for up to 32 breakers. Also communicates with other ACCESS™ devices.

Trip Unit Test Set

Type	Catalog Number	List Price \$
SJD, SLD, SMD, SND, SPD, Portable	TS31	
Spare TS-31 Test Set Interconnecting Cable	TS31CABLE	

The TS-31 test set is used to test the operation of the fault protection functions of the circuit breaker's trip unit, including long-time, short-time, instantaneous, and ground fault by means of secondary current injections.

Sensitrip Ammeter Display Unit

Breaker Type	Catalog Number	List Price \$
SJD, SLD, SMD	SADU	
SND, SPD	SADURMK18	

The Sensitrip Ammeter Display Unit (SADU) provides real-time metering for all Sentron-Sensitrip III Molded Case Circuit Breakers. The unit plugs directly onto the front of the trip unit and provides displays for individual phase currents flowing through the breaker. Additional features include Average, Demand, Ground and Unbalance Current displays, along with impending Trip Status. Current Metering Logs, and a unique diagnostic Trip Log that records the date, time and type of fault for the previous five breaker trips. The device is UL and CSSA certified.

The optional panel mount accessory (SADURMK18) allows easy device mounting external from the circuit breaker, in panelboard and switchboard spaces or gutters, with the flexibility of interior panel exterior panel, or wall mounting capability.

The 2 x 16 alphanumeric LCD display provides easy viewing of data, such as viewing all three phase currents simultaneously.

SADU Plug-in Mounting



SADU Ammeter Display Unit



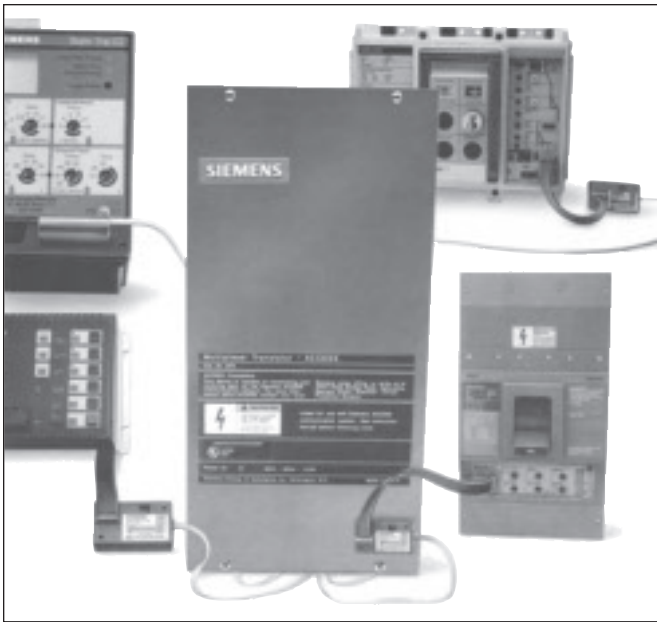
- Direct plug-in or Panel Mounting*
- Trip Unit Powered & Battery back-up
- 2 x 16 LCD Alphanumeric Display*
- Ammeter Display Functions
 - RMS Phase Currents
 - Average Current*
 - Current Demand*
 - Ground Current
 - Current Unbalance (%)*
- Breaker Status
 - Normal
 - Impending Trip*
- Time Stamped Trip Log (last 5)
 - Time & Date*
 - Trip Cause: LT, ST, GF, SC
- Max Log (with date & time)
 - Max Phase Current*
 - Max Average Current*
 - Max Ground Current*
 - Max Unbalance Current*
 - Max Current Demand*

* Unique Features

Sentron Molded Case Circuit Breakers

Communications Accessories

Selection



ACCESS™ Communications^①

Siemens electronic trip units feature two levels of communication: Zone Selective Interlocking and ACCESS™ System Open-protocol communications. The trip units are fully equipped for direct integration into ACCESS™ or compatible communication systems.

A multiplexor/Translator (MTA) and Expansion Plug area required for the TYPE "TL" and Sensitrip trip units when full Access™ communications is specified. The MTA also has Zone Selective Interlocking capability. Refer to Bulletin IPIM-2211A and Instruction Sheet Pc. No. 411152A00 for additional information.

Siemens WinPM.net power monitoring software delivers a powerful energy management system providing sophisticated monitoring capability to a host computer and other components in the electrical distribution system at an affordable cost. It also provides process control, including peak demand, trend analysis, waveform analysis, and harmonic calculations and displays. These functions help pinpoint energy consumption, power quality issues, and the energy cost of any process. Outages and potential outages can be quickly diagnosed and plans can be generated for expansion and preventative plant maintenance. Refer to Bulletins IPIM-2211A for additional information.

Communications is accomplished via RS-485 twisted pair wire or modem, providing communications to a remote site and allowing access to multiple plants. With integration of an Access™ Siemens Power Interface (SPI), communication with Modbus networks is enabled. This part provides the ability to communicate directly to a PC with WinPM.net or any Modbus master.

- Built to order. Allow 2-3 weeks for delivery.
- ▲ Built to order. Allow 6-8 weeks for delivery.

- ① Factory wired when ACCESS communications or ZSI is ordered for the SB breaker from the factory.
- ② When ordered with circuit breaker from the factory.

- ③ One MTA or MTZ per eight trip units when required.
- ④ Always required when multiple MT's are used. One additional cable per each additional MT.

Multiplexor Translator

Breaker Type	Features	Catalog No	List Price \$
SJD, SLD SMD, SND SPD, STD	Zone Interlocking Only	MTZ	
	Full Communications with Zone Interlocking	MTA	

The Multiplexor Translator MTZ is an interface device required in zone selective interlock schemes. The MTA combines the zone selective interlocking function with interface to ACCESS® Systems.

Cables & Connectors

Ribbon Cables

Breaker Type	Length	Catalog No	List Price \$
SJD, SLD SMD, SND SPD	6"	EPC06	
	8"	EPC08	
	12"	EPC12■	
	18"	EPC18	
	24"	EPC24■	

Telephone Cables

Breaker Type	Length	Catalog No	List Price \$
SJD, SLD SMD, SND, SPD	8'	MTC08	
	15'	MTC15	
	25'	MTC25	
	50'	MTC50	

The Expansion Plug EP is a required isolating device to connect the breaker with the Multiplexor Translator. It is connected to the trip unit on the breaker with a "Ribbon Cable", EPC08 e.g., and the Multiplexor Translator with the "Telephone Cable" (an RJ-11 cable) MTC50 e.g.

Expansion Plug Selection Guide

Breaker Type	Frame Size	Mounting Type	Catalog Number	List Price \$
Sensitrip	ALL	ALL	EP	

Component Selection Guide^②

Trip Units and Application		
Component Type	ZSI (only) with Sensitrip MCCB'S	Access and/or ZSI with Sensitrip MCCB's
EP	✓	✓
MTZ ^③	✓	
MTA ^③		✓
EPC Cable	✓	✓
MTC Cable ^④	✓	✓

Sentron Molded Case Circuit Breakers

Mechanical Lug

Selection

For Use With Type(s)	Circuit Breaker Ampere Rating	Cables Per Lug	Lug Wire Range	Catalog Number	List Price \$
BQ, BQH, BQHF BQE, BQF, BL, BLH, HBL, HBQ Switching Neutrals BG, BLG	Line Side				
	15-40	1	#14-#6 AWG Cu #12-#6 AWG Al	TC1Q1 ^{①②}	
	45-100	1	#8-#1 AWG Cu #6-#1/0 AWG Al	TA1Q1 ^②	
	Load Side				
	15-20	1	#14-#10 AWG Cu #12-#10 AWG Al	Lugs are integral to Circuit Breaker	
	25-35	1	#14-#6 AWG Cu #12-#6 AWG Al		
	40-50	1	#8-#6 AWG Cu #8-#4 AWG Al		
	55-70	1	#8-#4 AWG Cu #8-#2 AWG Al		
	80-100	1	#4-#1/0 AWG Cu #2-#1/0 AWG Al		
	110-125	1	#2-#1/0 AWG Cu #1/0-#2/0 AWG Al		
	1				
BQD, CQD BQD6, CQD6	Line Side (CQD, CQD6) & Load Side				
	15-40	1	#14-#6 AWG Cu #12-#6 AWG Al	Integral	
	45-100	1	#8-#1 AWG Cu #6-#1/0 AWG Al	Integral	
NGG	15-30	1	#14-#6 AWG Cu #12-#6 AWG Al	TC1Q1	
	15-30	1	#14-#6 AWG Cu #12-#6 AWG Al	3TC1Q1	(pkg. of 3)
	35-125	1	#8-#1/0 AWG Cu #8-#2/0 AWG Al	3TC1GG20	(pkg. of 3)
	15-125	—	NUT KEEPER PLATE	TNKG3 ^③	(pkg. of 3)

Connector wire ranges and cavities are established in conjunction with Table 6.1.4.2.1 of UL 489 standards.

Note:

(A) Molded case circuit breakers having a rated ampacity of 125 amperes or less are to be connected with 60 or 75°C wire. Circuit breakers having a rated ampacity greater than 125 amperes shall only be cabled with 75°C cable unless otherwise indicated on the circuit breaker label. Exceptions to this rule are outlined in article 110-14 C(1)(2) of the 2005 National Electrical Code.

(B) Connector wire ranges and cavities are established in conjunction with Table 6.1.4.2.1 of UL 489 standards.

① Lug is steel.

② Sold in package of six.

③ One nut keeper plate is required with each lug on the NGG breaker.

Sentron Molded Case Circuit Breakers

Aluminum Body Lugs for Copper or Aluminum Wire

Selection

For Use With Type(s)	Circuit Breaker Ampere Rating	Cables Per Lug	Lug Wire Range	Catalog Number	List Price \$
QJ2, QJH2 QJ2H, HQJ2H	60–225	1	#6 AWG–300 kcmil (Cu) #4 AWG–300 kcmil (Al)	TA1Q300	(pkg. of 3)
All 2, 3-pole ED2, ED4, ED6, ED6 ETI, HED4, HHED6	15–25	1	#14–#10 AWG (Cu) #12–#10 AWG (Al)	SA1E025	
	30–100	1	#10–#1/0 (Cu or Al)	LN1E100	
	110–125	1	#3–3/0 (Cu) #1–2/0 (Al)	TA1E6125	
CED6 All 1-pole ED, HED	30–60	1	#10–4 (Cu or Al)	LD1E060 (Load Side)	
	70–100	1	#4–#1/0 (Cu or Al)	LD1E100 (Load Side)	
FXD6-A, FD6-A, HFD6, CFD6 HHFD6	70–250	1	#6 AWG–350 kcmil (Cu) #4 AWG–350 kcmil (Al)	TA1FD350A	
SJD6(A), SHJD6(A) SCJD6	65–200	1–2	#4 AWG–3/0 (Cu or Al)	TA2J630	
JXD2(A), JXD6(A), JD6(A), SJD6(A), HJD6(A), HJXD6(A) HHJXD6, HHJD6, SHJD6(A), CJD6, SCJD6	200–400	1–2	3/0–500 kcmil (Cu) 4/0–500 kcmil (Al)	TA2J6500	
LXD6(A), LD6(A), SLD6(A), HLD6(A), HLXD6(A), HHLXD6, HHL6, SHLD6(A), CLD6, SCLD6	250–600	1–2	3/0–500 kcmil (Cu) 4/0–500 kcmil (Al)	TA2J6500	
LMD6 ^① , LMXD6 ^① , HLMD6 ^① , HLMXD6 ^① , MD6, MXD6, SMD6, HMD6, HMXD6, SHMD6, CMD6, SCHMD6	500–600	1–2	#1–500 kcmil (Cu or Al)	TA2K500	
		1–3	1/0–500 kcmil (Cu or Al)	TA3K500	
	500–800	1–2	500–750 kcmil (Cu or Al)	TA2N750 ^②	
ND6, NXD6, SND6, HND6, HNXD6, SHND6, CND6, SCND6	800–1200	1–4	250–500 kcmil (Cu or Al)	2TA4P8500 ^{③④} 3TA4P8500 ^④	
			250–500 kcmil (Cu or Al)	2TA4N8500 ^③ 3TA4N8500 ^④	
PD6, HPD6, CPD6 PXD6, HPXD6, SPD6, SHPD6	1200–1600	1–5	300–600 kcmil (Cu or Al)	TA5P600	
PD6, PXD6, HPD6, HPXD6, SPD6, SHPD6, RD6, RXD6, HRD6, HRXD6, STD	1200–2000	1–6	300–600 kcmil (Cu or Al)	TA6R600	

① Use TA2K500 or TA3K500 only.
② Used for 100% rated MD/ND frame breakers.

③ Contains 2 connectors plus 1 NDTs end barrier.
④ Contains 3 connectors plus 1 NDTs end barrier.

Sentron Molded Case Circuit Breakers

Optional Mechanical Lugs

Selection

For Use With Type	Circuit Breaker Ampere Rating	Cables Per Lug	Lug Material	Lug Wire Range	Qty Per Catalog No	Catalog Number	List Price \$
QJ2, QJH2, QJ2H, HQJ2H	60–225	1	Cu	#6 AWG–250 kcmil (Cu)	3	TC1Q250	(pkg. of 3)
ED, HED 1, 2 & 3-pole	1, 2 & 3-pole 30-125	1	Cu	#10–#1/0 (Cu)		TC1ED6150	
HFD6, HHFD6, CFD6, F(X)D6-A	70–250	1	Cu	#6 AWG–350 kcmil (Cu)	1	TC1FD350	
J(X)D2(A), J(X)D6(A), HJD6(A), HHJD6, SHJD6(A), L(X)D6(A), HHL6, SCD6, HLD6(A), SHLD6(A), CJD6, CLD6, SCJD6, SCLD6	200–600	1 1–2	Cu	3/0–600 kcmil (Cu) 3/0–500 kcmil (Cu)	1 1	TC1J6600 [Ⓞ] TC2J6500 [Ⓞ]	
	250–600	1 1	Al	500–750 kcmil (Al) 500–600 kcmil (Cu)	1	TA1L6750	
SMD6, M(X)D6, HM(X)D6, HMD6, CMD6, SCMD6, SND6, N(X)D6, HN(X)D6, SHND6, CND6, SCND6	500–600	1–2	Cu	#1 AWG–500 kcmil (Cu)	1	TC2K500	
	700–800	1–3	Cu	#1 AWG–350 kcmil (Cu)	1	TC3K350	
		1–2	Al	500–750 kcmil (Cu) 500–750 kcmil (Al)	2 3	2TA2N8750 3TA2N8750	
	800–1200	1–3	Al	500–750 kcmil (Cu) 500–750 kcmil (Al)	2 3	2TA3N8750 3TA3N8750	
R(X)D6, HR(X)D6	1600–2000	1–5	Cu	300–600 kcmil (Cu)	1	TC5R600	
P(X)D6, HP(X)D6, CPD6, SPD6, SHPD6	1200–1600	1–4	Al	600–750 kcmil (Cu/Al)	1	TA4P750▲	

Compression Lugs

For Circuit Breaker Types	Ampere Rating	Poles	Lugs Per Kit	Lug Wire Size	Catalog Number	List Price \$
Lugs (contains indicated number of lugs and necessary hardware per kit)						
ED2, ED4, ED6, HED4, HHED6, CED6	15–125	1, 2, 3	1	#2/0 AWG Cu/Al	CCE125	
QJ2, QJH2, QJ2-H	125–225	2, 3	1	350 kcmil Cu/Al	CCQ225	
F(X)D6-A, HF(X)D6, HHF(X)D6, CFD6	125–250	2, 3	1	350 kcmil	CCF250	
JXD2-A, J(X)D6-A, HJ(X)D6-A, HHJ(X)D6-A, CJD6, SJD6-A, SHJD6-A, SCJD6, L(X)D6-A, HL(X)D6-A, CLD6, SLD6-A, SHLD6-A, SCLD6	200–600	2, 3	1	500 kcmil	CCL600	
Kits (contain lugs and hardware for complete line or load end of 2 or 3-pole breaker)						
M(X)D6, HM(X)D6, CMD6, SMD6, SHMD6, SCMD6	500–800	2	6	500 kcmil	CCM800K2	
		3	9		CCM800K3	
N(X)D6, HN(X)D6, CND6, SND6, SHND6, SCND6	900–1200	2	8		CCN1200K2	
		3	12		CCN1200K3	

Distribution Lugs*

For Circuit Breaker Types	Ampere Rating	Poles	Lugs Per kit	Wires Per Lug	Lug Wire Size	Catalog Number	List Price \$
ED2, ED4, ED6, HED4, HHED6, CED6	15-125	1,2,3	1	6	#14-#4 AWG Cu #6-#4 AWG Al	TA6ED06	
F(X)D6-A, HF(X)D6, HHF(X)D6, CFD6	70-250	2,3	1	6	#14-#4 AWG Cu #6-#4 AWG Al	TA6FD04	
JXD2-A, J(X)D6-A, HJ(X)D6-A, HHJ(X)D6-A, CJD6-A, SJD6, SHJD6-A, SCJD6, L(X)D6-A, HL(X)D6-A, CLD6-A, SLD6-A, SHLD6-A, SCLD6	200-600	2,3	1	6	#14-2/0 AWG Cu #6-2/0 AWG Al	TA6JD20	

* Special purpose wire connectors, not for general use.

Ⓞ Used for 100% rated JD/LD frame circuit breakers.

▲ Built to order. Allow 6–8 weeks for delivery.

Sentron Molded Case Circuit Breakers

External Accessories

Selection

Handle Ties

Provide simultaneous switching of 2 adjacent handles. Do not provide common trip.

For Use With Breaker Frame(s)	Catalog Number	List Price \$ each	Standard Package	Wt Lb/Std Pkg
BQ, BQH, HBQ, BLH, HBL	ECQTH3	①	50	¼

Padlocking Devices

For locking breaker in "OFF" position.

BQXD, BL, BQ, BQH, HBQ, BLH, HBL	ECQLD3	①	10	¼
One pole BL, BLF, BE, BAF	ECPLD1		10	¼
Two pole BL, BLF and BE	ECPLD2		10	¼
All QJ	HL9419		10	¼
All BQD, CQD	BQDPLD		1	⅙
NGG	HPLG		1	¼
All ED	ED2HPL		1	¼
All FD	FD6PL1		1	¼
All JD, LD, LMD	JD6HPL		1	¼
All MD, ND, PD, RD	MN6PLD		1	¼
STD	STDPLD■		1	1

Filler Plates

BQ, BQH, HBQ	QF3		1	¼
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Handle Blocking Devices

For holding breaker in "ON" or "OFF" position. Not a lockout/tagout device.

BL, BLH, HBL, BQXD, BQ, BQH, HBQ	ECQL1	①	10	¼
QJ2, QJH2, QJ2H, HQJ2H	QJHS1	①	25	1
All BQD, CQD, NGG, NGB	BQDHBD		1	¼
All ED	E2HBL		1	¼
All FD	FD6HB1		1	½
All JD, LD, LMD	JD6HBL		1	½
All MD, ND, PD, RD	MN6BL		1	½

Handle Extensions

For replacement. One extension shipped with breaker.

All MD, ND, PD, RD	EX11		1	2
STD	EXSTD■			

Terminal Shields

Breaker Type	Poles	Catalog Number	List Price \$ each	Standard Package
NGG	3	TSSG3A		1



QTH3



FD Padlocking Device
FD6PL1



Padlocking Device
QLD3



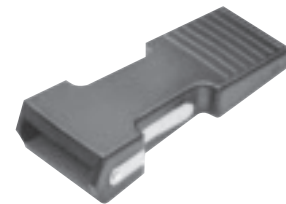
Filler Plate
QF3



FD Handle Blocking Device
FD6HB1



Handle Blocking Device
QL1



Handle Extension
EX11

■ Built to order. Allow 2-3 weeks for delivery.

① Sold only in standard package quantities.

CSO = Consult Sales Office for pricing.

Sentron Molded Case Circuit Breakers

External Accessories

Selection

Mounting Clips

For Use With Breaker Frame(s)	Number of Poles	Catalog Number	List Price \$ each	Standard Package	Wt Lb Std Pkg
BQ, BQH	1	MB120		20 ^②	¼

Face Mounting Plates

GFCI	1	FP9558		10 ^②	½
BQ, BQH, BQXD	1	FP9508		10 ^②	½
	2	FP9555		10 ^②	1
	3	FP9556		10 ^②	1½
CQD, CQD6	1	CQDFMB1		1	¼
	2	CQDFMB2■		1	¼
	3	CQDFMB3■		1	¼
NGG	1	FMPG1		1	¼
	2	FMPG2		1	¼
	3	FMPG3		1	¼

Shallow Mounting Brackets

BQ, BQH	1-6	SMB6R		30 ^{②③}	1½
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Back Mounting Plates

All QP 1 and 2-pole	1, 2	I0204ML1125		10	¼
All QP 3-pole	3	I0303ML3100		10	¼
BQ, BQH, BQXD	2	BR2		10 ^②	¼
	3	BR3		10 ^②	¼
	4	BR4		10 ^②	¼
ED2, ED4, ED6, HED4, HED6	1	E2BMB		1	¼

Mounting Screw Kits

CQD, CQD6		CQDSMK ^①		1	1¼
NGG		MSKG4 ^①		1	¼
All QJ		MSQJ ^①		1	1
All ED (CED6 requires 2 kits)		MSE6 ^①		1	¼
		MSE6100 ^②		100 ^②	1
All FD (CFD6 requires 2 kits)		MSF6 ^①		1	¼
		MSF650 ^③		50 ^③	1
All JD, LD		MSJ6 ^①		1	¼
All LMD		MSLMD		1	¼
All MD, ND,		MSMN		1	¼
All PD, RD		MSPR6		1	2

“MI” Mechanical Interlocks

For Use With Breaker Type(s)	Panel ^④ Mounted	Plug-in Mounted	List Price \$ each	Standard Package	Wt Lb Std Pkg
BQ	—	ECQML12		10 ^②	¼
All QJ	CSO	—	—	1	1
All FD	MI5444	MI5444			—
All JD, LD	MI5413 ^⑤	—		Complete with two breakers	1
All LMD	MI5406 ^⑥ ■	—		1	1
All MD	MI5404 ^⑥ ■	—		1	3
All ND	MI5404 ^⑥ ■	—		1	3
All PD, RD	MI5405 ^⑥ ▲	—		—	—
STD	STDMIF32▲	—		—	—

■ Built to order. Allow 2-3 weeks for delivery.

▲ Built to order. Allow 6-8 weeks for delivery.

① Kit consists of 4 screws and washers.

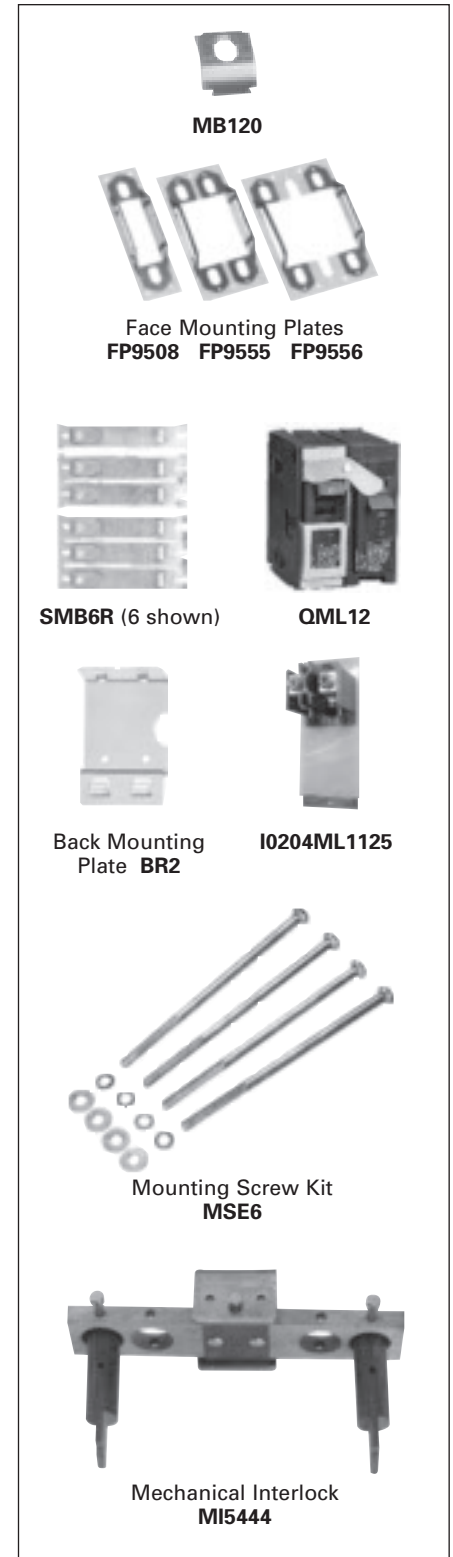
② Consists of 1 screw and washers (order 100).

③ Consists of 1 screw and washers (order 50).

④ With mechanical interlock in place, no accessory can be installed into circuit breaker right pole.

⑤ Addition of the mechanical interlock will prevent accessory installation in the left pole.

⑥ Sold only in standard package quantities. Multiply List Price Each times package quantity for full price.



⑦ Each package contains 5 strips of 6 each. Each strip can be broken at perforations for 1, 2 or 3-pole use.

⑧ Mechanical interlock is not designed for use within Siemens panelboards.

CSO = Consult Sales Office for pricing.

Sentron Molded Case Circuit Breakers

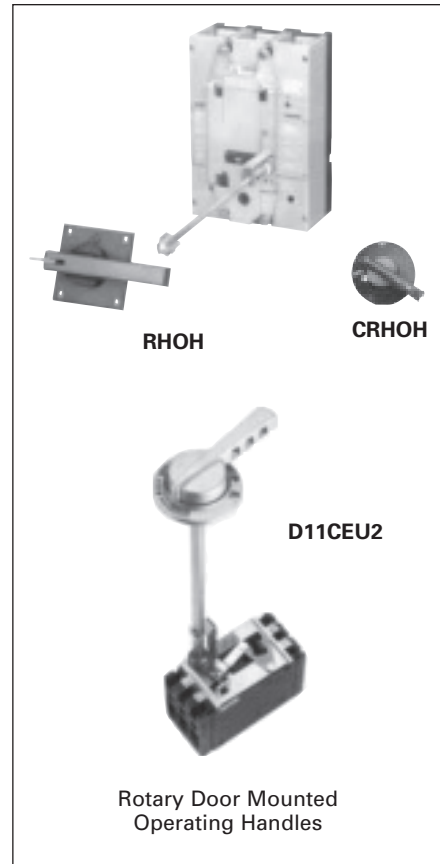
External Accessories

Selection

Rotary Door Mounted Operating Handles

Types 1, 3, 3R, 12, 4 4X

For Use With Breaker Frames	Complete Mechanism			Handle Only		Breaker Operator		Shaft Only		
	Standard Depth	Variable Depth	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Length (inches)	Catalog Number	List Price \$
ED ^①	CRHOESD	CRHOEVD		CRHOH ^③		RHOEBO		2	RHOSSD	
FD	CRHOFSD	CRHOFVD				RHOFBO		12	RHOSVD	
JD, LD	CRHOJSD	CRHOJVD				RHOJBO		16	RHOSXD	
LMD	CRHOLMSD	CRHOLMVD				RHOLMBO				
MD, ND PD, RD	RHONSD	RHONVD		RHOH		RHONBO ^④		3 12 24	RHONSSD▲ RHONSVD RHONSXD	



Rotary Door Mounted Operating Handles

Types 1 & 12

For Use With Breaker Frames	Standard Depth		Variable Depth		Handle and Shaft		Breaker Operator	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
CQD, NGG	—	—	RHOCQVD		RHOH62		CQDOP	
ED	D11CEU1		D11CEU2		—	—	—	—
FD	D11CFU1▲		D11CFU2		—	—	—	—
JD, LD	—	—	D11CJU2		—	—	—	—

For CQD and NGG red emergency handle, order assembly RHOCQVDE (includes handle and operator).▲
 For CQD and NGG in a NEMA 3R enclosure, order CQDOP34 operator (\$), RHOH handle and RHOSVD shaft.
 For CQD and NGG in a NEMA 4 or 4X enclosure, order CQDOP34 operator, RHOH4 handle and RHOSVD shaft.

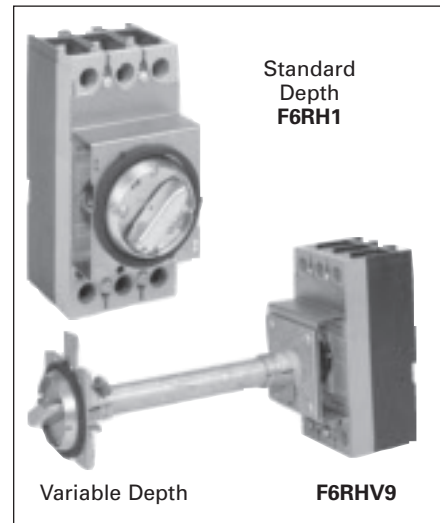
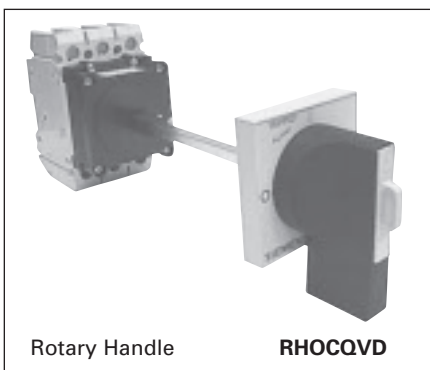
Through Door Mounted Operating Handles^②

Types 1 & 12

For Use With Breaker Frames	Standard Depth		Variable Depth	
	Catalog Number	List Price \$	Catalog Number	List Price \$
CQD, NGG	FMHOS		—	—
QJ	OH9498■		VH9499	
ED	E2RH1		E2RHV9	
FD	F6RH1		F6RHV9	

Door Latch Kits

Type	Catalog Number Right Hand	List Price \$	Catalog Number Left Hand	List Price \$
2 point latch	DKR2		DKL2■	
3 point latch	DKR3		DKL3■	



■ Built to order. Allow 2-3 weeks for delivery.

▲ Built to order. Allow 6-8 weeks for delivery.

① For use on 3-pole ED frame only.

② Meets the requirements of NFPA 79, section 5.3.3.1 for locking external operator disconnecting devices.

③ For 3 or 3R, order shaft and breaker operator as shown, and handle RHOH. For 4 & 4X, order handle RHOH4. List Price adder.

④ For extended shaft support order catalog number RHONSB2.

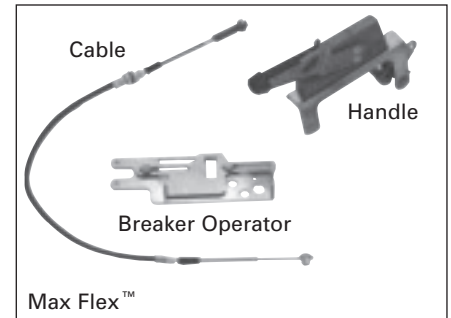
Sentron Molded Case Circuit Breakers

External Accessories

Selection

Max-Flex™, Flange Mounted Variable Depth Operators^③

Frames	NEMA Type	Complete Kit		Handle Only		Breaker Operator		36" Cable	
		Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
ED	1, 3 (R), 12	FHOE036 ^①		FHOH		FHOEBO ^①		FHOEC036	
	4 (x)	—	—	FHOH4					
FD	1, 3 (R), 12	FHOF036		FHOH		FHOFBO		FHOFC036	
	4 (x)	—	—	FHOH4					
JD, LD, SJD, SLD	1, 3 (R), 12	FHOJ036		FHOH		FHOJBO		FHOJC036	
	4 (x)	—	—	FHOH4					
LMD	1, 3 (R), 12	FHOLM036		FHOH		FHOLMBO		FHOJC036	
	4 (x)	—	—	FHOH4					
MD, ND, PD, RD, SMD, SND, SPD	1, 3 (R), 12	FHON048		FHOHN		FHONBO		FHONC048 ^②	
	4 (x)	—	—	FHOHN4					



Max-Flex™ handles are available with solid black handles instead of the customary “red for on” flange handle. These are preferred for use in IEC markets, where red handles have specific meaning. Order components separately, appending the letter “i” to the catalog number (e.g. FHOHI).

Alternate Length Cable Only

Inches	ED		FD		JD/LD/LMD		MD/ND/PD/RD	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
48	FHOEC048		FHOFC048		FHOJC048		FHONC048	
60	FHOEC060		FHOFC060		FHOJC060		FHONC060	
72	FHOEC072		FHOFC072		FHOJC072		FHONC072	
84	FHOEC084▲		FHOFC084▲		FHOJC084▲		FHONC084▲	
96	FHOEC096		FHOFC096		FHOJC096		FHONC096	
120	FHOEC120▲		FHOFC120		FHOJC120▲		FHONC120▲	
144	FHOEC144▲		FHOFC144▲		FHOJC144▲		FHONC144▲	

Handle Auxiliary Switch

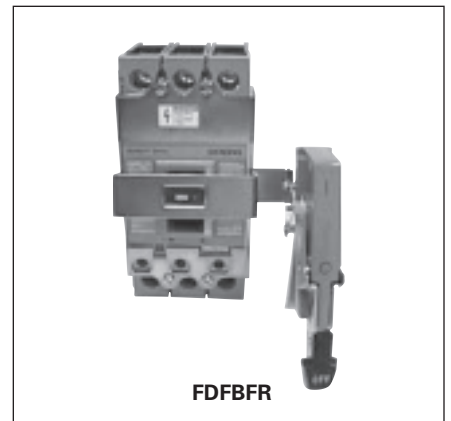
For use with Max-Flex and Rotary Door operators (FHOH and RHOH). 1 NO and 1 NC contact (Form C).

For Use With	Catalog Number	List Price \$
ED, FD, JD, LD, LMD, ND, PD, RD, SD, Max Flex	HAS1	

Fixed Depth Flange Mounting

Frames	Minimum Enclosure Depth	NEMA Type	Left Hand Mount		Right Hand Mount	
			Catalog Number	List Price \$	Catalog Number	List Price \$
ED	6.44	1, 3R, 12	FDFBEL▲		FDFBER▲	
			FDFBEL4▲		FDFBER4▲	
FD	6.44	1, 3R, 12	FDFBFL▲		FDFBFR▲	
			FDFBFL4▲		FDFBFR4▲	

Max-Flex™ handles are available with solid black handles instead of the customary “Red for On” flange handle. These are preferred for use in IEC markets, where red handles have specific meaning. Order components separately, appending the letter “i” to the catalog number (e.g. FHOHI).



▲ Built to order. Allow 6–8 weeks for delivery.

① For 1- or 2-pole breaker order FHOED036 complete kit or FHOEDBO breaker operator only. Use MFHM3R handle.

② 48 inch cable is standard length for M through R frame Max-Flex operators.

③ Meets requirements of NFPA 79, section 5.3.3.1 for locking external operator disconnecting devices

Sentron Molded Case Circuit Breakers

External Accessories

Selection/Dimensions

Telemand® Motor Operator

Breaker Frame	AC Voltage	Hinged to Open Down	List Price \$
ED except CED	120	MOE6120	
	240	MOE6240▲	

ED motor operator opens downward.

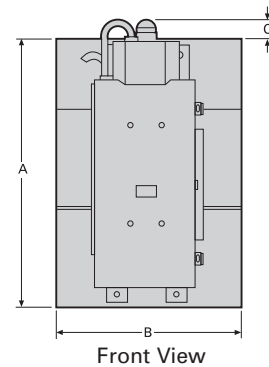
Breaker Frame	DC Voltage	Hinged to Open Right	List Price \$	AC Voltage	Hinged to Open Right	List Price \$
FD	24	MOF6024DC▲		120	MOF6120	
	48	MOF6048DC▲		240	MOF6240	
	125	MOF6125DC▲				
JD, LD	24	MOJ6024DC▲		120	MOJ6120	
	48	MOJ6048DC▲		240	MOJ6240	
	125	MOJ6125DC▲				
LMD	24	MOLMD6024DC▲		120	MOLMD6120	
	48	MOLMD6048DC▲		240	MOLMD6240	
	125	MOLMD6125DC▲				
MD, ND, PD, RD	—	—	—	120	MOMN6120	
	—	—	—	240	MOMN6240	

To order FD through RD motor operators with Left side hinges, add "L" to catalog number (e.g. MOF6120L). List prices are the same.▲

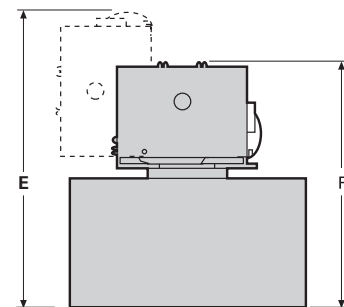


Telemand Motor Operator

FD, JD, LD, LMD, MD, ND, PD, RD Frames



Front View



Bottom View

Dimensions

Frame	A	B	C	D	E	F
ED	7.04	4.31	—	4.31	13.84	8.84
FD	9.50	4.55	1.60	6.84	9.70	7.58
JD, LD, LMD	11.00	7.50	0.79	8.34	9.85	7.74
MD, ND, PD, RD	16.00	9.00	—	9.83	13.13	10.13

Operating Currents

Catalog Number	On			Off			Reset (Amps)
	In-Rush (Amps)	Running (Amps)	Time (msec)	In-Rush (Amps)	Running (Amps)	Time (msec)	
MOE6120	10.25	2.3	550	10	2.3	400	2.3
MOE6240	5.2	1.1	500	5	1	330	1.1
MOF6120/L	13.6	5.5	200	13.6	5.5	175	5.5
MOF6240/L	7.6	3.5	200	7.6	3.5	185	3.5
MOLMD6120/L	13.6	6	210	13.6	6	185	6
MOJ6120/L	13.6	6	210	13.6	6	185	6
MOJ6240/L	7.6	3.5	217	7.6	3.5	185	3.5
MOMN6120/L	30.2	13.2	240	30.2	13.2	210	13.2
MOMN6240/L	14.7	6	260	14.7	6	230	6

For inches / millimeters conversion, see Application Data section.

▲ Built to order. Allow 6–8 weeks for delivery.

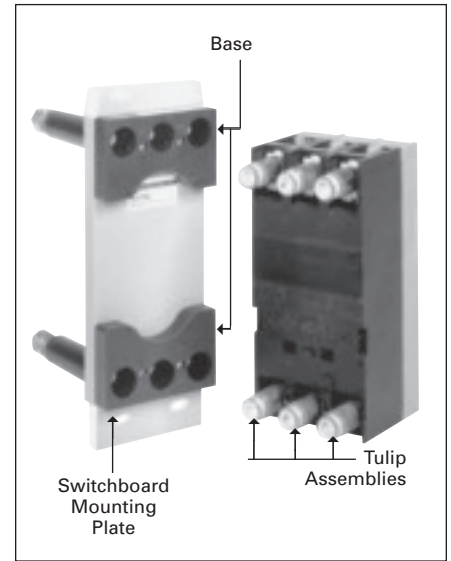
Sentron Molded Case Circuit Breakers

External Accessories

Selection

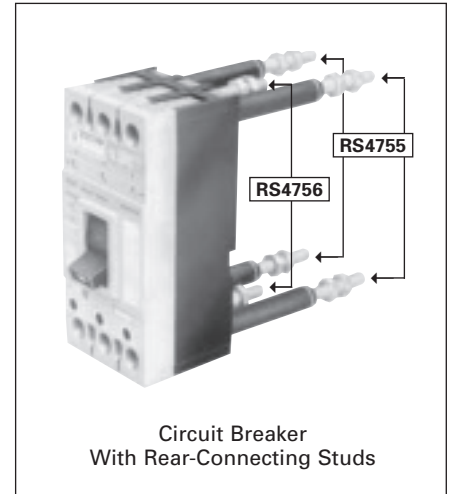
Plug-In Mounting Assemblies, Including Base and Tulip Assemblies

For Use With Breaker Frames	Poles	Line Side		Load Side		Steel Switchboard Mounting Plate ^① Catalog Number
		Catalog Number ^②	List Price \$	Catalog Number ^②	List Price \$	
All ED except CED	2	PC2637▲		PC2638▲		PL2616
	3	PC2657		PC2658		
CED	2	PC2637▲		PC2638▲		PL2617
	3	PC2657		PC2658		
All FD except CFD	2	PC4753▲		PC4753▲		PL4762
	3	PC4754		PC4754		
CFD	2	PC4753▲		PC4753▲		PL4763
	3	PC4754		PC4754		
All JD except CJD	2	PC5777▲		PC5777▲		PL5796
	3	PC5778		PC5778		
Kit CJD, SCJD	3	PCCJD		PCCJD		PL5797
All LD except CLD	2	PC5660▲		PC5660▲		PL5680
	3	PC5661		PC5661		
Kit CLD, SCLD	3	PCCLD		PCCLD		PL5797
All MD	2	PC5662▲		PC5662▲		PL9698
	3	PC5663		PC5663		
All ND	2	PC5664 ^③ ▲		PC5664 ^③ ▲		PL9699
	3	PC5666 ^③		PC5666 ^③		



Tulip Assemblies Separately

For Frame	2-Pole		3-Pole	
	Catalog Number	List Price \$	Catalog Number	List Price \$
ED	TCE2▲		TCE3▲	
FD	TCF2▲		TCF3▲	
JD	TCJ2▲		TCJ3▲	
LD	TCL2▲		TCL3▲	
MD	TCM2▲		TCM3▲	
ND	TCN2▲		TCN3▲	



Rear-Connecting Studs

For Use With Breaker Frames	Ampere Rating	Description	Extension Behind Breaker (inches)	Line Side		Load Side	
				Catalog Number	List Price \$ ^④	Catalog Number	List Price \$ ^④
All ED	100	Line Side (Short)	2.38	RS2643 ^⑤ ▲	—	—	—
	100	Load Side (Short)	2.38	—	—	RS2644 ^⑤ ▲	—
	100	Line Side (Long)	4.88	RS2641 ^⑤ ▲	—	—	—
	100	Load Side (Long)	4.88	—	—	RS2642 ^⑤ ▲	—
All FD	250	Short	3.12	RS4756 ^⑤ ▲		RS4756 ^⑤ ▲	
	250	Long	7.06	RS4755 ^⑤ ▲		RS4755 ^⑤ ▲	
All JD	400	Short	5.85	RS5774▲		RS5774▲	
	400	Long	11.20	RS5773▲		RS5773▲	
All LD	600	Short	5.85	RS5784▲		RS5784▲	
	600	Long	11.20	RS5783▲		RS5783▲	
CJD, SCJD CLD, SCLD	Add required shield kit.					CLRSJL3	
LM(X)D6, HLM(X)D6	800	Short	5.85	RS5788▲		RS5788▲	
		Long	11.20	RS5787▲		RS5787▲	
All MD, ND	1200	Short	5.50	RS5786▲		RS5786▲	
		Long	8.00	RS5785▲		RS5785▲	

▲ Built to order. Allow 6–8 weeks for delivery.

①Furnished at no extra charge when ordered with plug-in mounting assembly.

②Each piece catalog number consists of (1) mounting block assembly and required tulip assemblies (2) for 2-pole, (3) for 3-pole

③For vertical bus mounting — for horizontal, substitute PC5665 for PC5664 and PC5667 for PC5666.

④Price includes one current stud, insulating tube, stud nuts and terminal shields, when required.

⑤For proper electrical clearance, studs must alternate between short and long stud lengths on circuit breaker poles (e.g. SLSLSL or LSLLSL).

Sentron Molded Case Circuit Breakers

Unusual Operating Conditions

Reference

Note: The information provided on this and the next page is intended for reference and recommendation only. Because several variables can act on a circuit breaker's performance at the same time, the data below is based less on controlled testing, than on experience and engineering judgment. Contact Siemens for further information on special conditions and treatment.

High Ambient Temperatures

Because thermal-magnetic trip breakers are temperature sensitive and calibrated for a specific ambient of 40° C (104° F) (average enclosure temperature), a higher ambient will cause the breaker to trip at lower current than its nameplate rating, in other words, causing the breaker to "derate" (see Table 1). Similarly, the current carrying capacity of a circuit conductor is based upon a certain ambient temperature, a higher ambient will reduce its current carrying capacity, causing it to "derate." Thus, with a fluctuating temperature, a thermal-magnetic breaker will derate nearly parallel with its connected circuit conductors and maintain close circuit protection. If the application temperature exceeds 40° C (104° F) and is known, either a breaker specially calibrated for the higher ambient or one oversized according to Table 1 may be selected. In a case such as this, the circuit conductors should be oversized as well. Siemens Sensitrip® III and Type SB Encased Systems Breakers are insensitive to temperature changes. However, they do include circuitry to protect the components from abnormally high temperatures.

Moisture — Corrosion

For atmospheres having high moisture content and / or where fungus growth is prevalent, a special preventive treatment may be required.

Where the air is heavily laden with corrosive elements, breakers made with special corrosion-resistant finishes may be required.

Altitude

Reduced air density at altitudes greater than 6600 ft. (2000 meters) affects the ability of a molded case circuit breaker to transfer heat and interrupt faults. Therefore, circuit breakers applied at these altitudes should have interrupting, insulation and continuous currents derated as indicated in Figure 1.

Table 1 — Temperature Derating Data for Thermal-Magnetic Breakers

Reference Ampere Rating at 40° C (104° F)	Ampere Rating at:			Siemens Breaker Frames	
	25° C (77° F)	50° C (122° F)	60° C (140° F)		
15	17	13	11	BQ, BL, BQD, CQD, NGG, NGB, ED	
20	22	18	16		
25	28	23	21		
30	33	28	26		
35	39	30	25		
40	44	37	34		
50	55	46	42		
60	66	56	52		
70	77	65	60		
90	99	84	78		
100	110	94	87		
125	137	114	100		QJ FD JD LD MD ND PD RD
150	165	136	120		
175	192	159	140		
200	220	182	160		
225	247	205	180		
250	275	235	220		
300	330	276	252		
350	385	325	301		
400	440	372	340		
500	550	468	435		
600	660	564	525		
700	770	658	613		
800	880	754	704		
900	990	828	749		
1000	1100	900	825		
1200	1320	1090	1000		
1400	1540	1304	1148		
1600	1760	1500	1320		
1800	1980	1690	1485		
2000	2200	1880	1650		

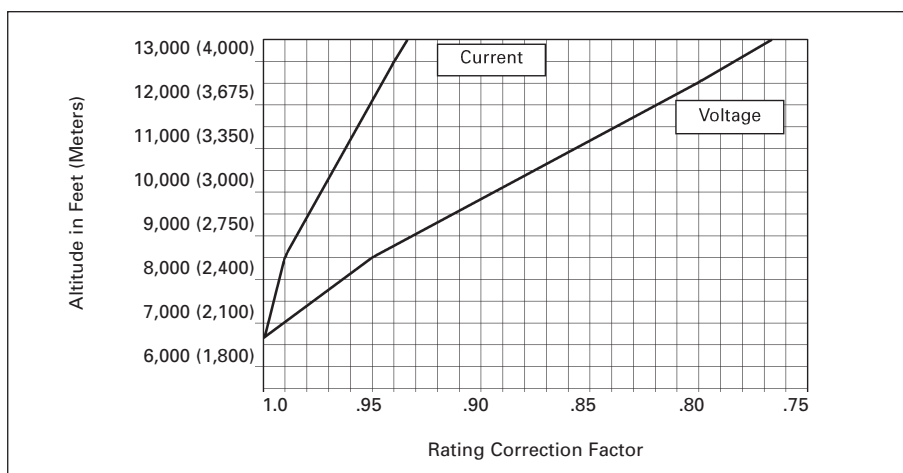


Figure 1 — Altitude Adjustment

Molded Case Circuit Breakers Modifications

General/Selection

A variety of internal and external accessories, as well as modifications, are available to adapt Siemens circuit breakers to special installation requirements. UL listed internal accessories for 100 through 2000A circuit breakers are field-addable.

Internal accessories fine tune an electrical distribution system, allowing control of the circuit breakers to meet special application requirements. For example, emergency situations may dictate tripping critically placed circuit breakers quickly. Shunt trips accomplish this conveniently and efficiently.

Or, when voltage drops are a concern, undervoltage trips automatically open the circuit breaker at a predetermined voltage level.

A wide range of external operating and mounting accessories is also available. For example, face, shallow, and back mounting plates are ideal for tailoring BQ circuit breakers to OEM applications. A complete line of operating handles and handle-blocking devices meet switchboard, enclosure and safety needs. Plug-in mounting assemblies, which simplify switchboard mounting of circuit breakers and permit breaker removal without disconnecting bus or cable connections, are available.

UL 489 Supplement SB Naval Use Breakers

Breakers tested to UL 489 Supplement SB are qualified for use on non combat and auxiliary naval vessels.

Siemens' molded case breakers from the ED frame through the 2000 Amp SB frame can be labeled "Naval" in compliance with Supplement SB.

Supplement SB testing comprises two sets of vibration tests. The first is to find mechanical resonances in the product and to subject the breaker to extreme testing at each resonant frequency. The second is a swept frequency test, in which the frequency of excitation is changed in intervals of 1Hz, and held at each frequency for five minutes. The excitation frequencies run from 4 to 33Hz, and the test is conducted in each of the three orthogonal axes of the breaker.

During these tests, the breaker must not trip from the closed position, nor may the contacts touch from the open position. Calibration and insulation resistance are also verified during the test.

For detailed information, refer to UL 489, Supplement SB.

50°C Ambient Calibration — Not UL listed and not available for solid state, 100% rated breakers or 400HZ calibrated breakers.

For BL Type Circuit Breakers	
— Add suffix 'M' to catalog number	
(Example: B120M)	No Charge
For BQ, QJ2, and ED Frame Circuit Breakers	
— Replace 'B' in catalog number with 'M'	No Charge
(Example: BQ3M060, QJ23M200, ED63M060)	
For FD, JD, LD, LMD, MD, ND, PD, and RD Frame Circuit Breakers	
Non-Interchangeable Trip (3-pole only)	No Charge
— Replace 'B' in catalog number with 'M'	No Charge
(Example: FXD63M225, JXD63M400)	
Interchangeable Trip (trip unit only, 3-pole only)	No Charge
— Replace 'T' in catalog number with 'W'	No Charge
(Example: FD63W200, JD63W400)	

400 HZ Calibration

UL Listed (5KA IR)	
For BQ & BL Type Circuit Breakers (200A max.)	Add 25% to list price
— Add suffix 'Y' to catalog number	
Not UL Listed	
For all other Circuit Breakers, see derating tables on pages 17/111 & 17/112 and order standard circuit breakers.	

Fungus Proofing

All BQD, CQD, NGG, ED, FD, JD, LD, LMD, MD, ND, PD, RD, DG, FG, JG, LG, MG, NG, and PG Frame Circuit Breakers are inherently fungus resistant and do not require special treatment.	
In accordance with MIL-T-152	
For BL, and BQ Type Circuit Breakers	Add \$10.00 net per pole
— Consult Sales Office for Availability	
For all other Circuit Breaker Types	Add \$160.00 net per device
— Consult Sales Office for Availability	

Certificate of Compliance with Test Report (catalog number CERT OF COMP) Add \$210.00 net

Certificate of compliance testing must be performed on the actual device being shipped. The certificate cannot be provided after initial shipment. Order for devices with COC requirement must be placed directly with the factory by the sales office and shipped directly to the end user.

Ordering Information

For "NAVAL" label, add **\$75.** net per catalog number per order. Order must be placed directly with the factory by Siemens Sales Office.

Types	UL File
BQD/CQD	E10848, Vol 10, Sec 1
NGG	E10848, Vol 10, Sec 2
NGB	E10848, Vol 10, Sec 3
ED2, ED4, ED6, IIED4, HED6	E10848, Vol 4, Sec 11
CED6	E10848, Vol 4, Sec 13
FD6, FXD6, HFD6, HFXD6	E10848, Vol 4, Sec 17
CFD6	E10848, Vol 4, Sec 18
JXD2, JD6, JXD6, LXD6, LD6, HJD6, HJXD6, HLD6, HLXD6	E10848, Vol 4, Sec 8
HHJD6, HHJXD6, HHLD6, HHLXD6	E10848, Vol 4, Sec 20
CJD6, CLD6	E10848, Vol 4, Sec 14
MD6, MXD6, HMD6, HMXD6, CMD6, ND6, NXD6, HND6, HNXD6, CND6	E10848, Vol 4, Sec 15
PD6, PXD6, HPD6, HPXD6, CPD6, RD6, RXD6, HRD6, HRXD6	E10848, Vol 4, Sec 19

400 Hz Systems^①

Siemens molded case circuit breakers can be applied for overcurrent protection on 400Hz systems, commonly used to power computer installations, aircraft, military and other specialty equipment. Below are basic guidelines.

Circuit Breaker Derating Required

This table lists the maximum continuous current carrying capacity for Siemens breakers at 400Hz. Due to the increased resistance of the copper sections resulting from the skin effect produced by eddy currents at these frequencies, circuit breakers in many cases require derating. The thermal derating on these devices is based upon 100%, three phase application in open air in a maximum of 40° C (104° F) with 48 in. (1219 mm) of the specified cable or bus at the line and load side. Additional derating of not less than 20% will be required if the circuit breaker is to be utilized in an enclosure. Further derating may be required if the enclosure

ambient temperature exceeds 40° C (104° F).

Cable and Bus Sizing

The cable and bus sizes to be utilized at 400Hz are not based on standard National Electric Codes tables for 60Hz application. Larger cross sections are necessary at 400Hz. All bus bars specified are based upon mounting the bars in the vertical plane to allow maximum air flow. All bus bars are spaced at a minimum of 0.25 in. (6 mm) apart. Mounting of bus bars in the horizontal plane will necessitate additional drafting. Edgewise orientation of the bus may change the maximum ratings indicated. If additional information is required for other connections of cable or bus, contact Siemens for information.

Application Recommendations

It is recommended that temperatures be measured on the line and load terminals or T-connectors of the center pole. These

are usually the hottest terminals with a balanced load. A maximum temperature of 75° C (35° C over a maximum ambient of 40° C) would verify the particular application. Temperature profiles taken on these breakers can be correlated to ensure that the hottest points within the breaker are within the required temperature limits.

Factory Configuration

When required, molded case circuit breakers may be factory calibrated for 400Hz application. These breakers are specially labeled for 400Hz usage and their nameplate current rating will include the necessary derating factory. The highest "Maximum Continuous Amperes" rating at 400Hz, found in the table below approximates the highest specially calibrated 400Hz nameplate ampere rating available for a given frame size. Contact Siemens for ordering information on other breakers applied in 400Hz systems.

400Hz Breakers

Siemens Breaker Type	Maximum Continuous Ampere Rating At 40° C (104° F) ^②			75° C (167° F) Copper Cable per Pole	
	60HZ		400HZ	No of Pieces	Wire Size
	Open Air	Open Air ^③	Enclosed After Derating		
NGG	15	15	12	1	#14
	20	20	16	1	#12
	15	15	12	1	#14
	20	20	16	1	#12
	25	25	20	1	#10
	30	30	24	1	#10
	35	35	28	1	#10
	40	40	32	1	#8
	45	43	34	1	#8
	50	48	38	1	#8
	60	57	46	1	#6
	70	67	54	1	#4
	80	76	61	1	#4
	90	86	69	1	#3
	100	95	76	1	#3
110	105	84	1	#2	
125	119	95	1	#1	
DG	50	48	38	1	#8
	60	57	46	1	#6
	70	63	50	1	#4
	80	72	58	1	#4
	90	80	64	1	#3
	100	90	72	1	#3
	110	95	75	1	#2
	125	105	84	1	#1
FG	100	90	72	1	#3
	110	95	75	1	#2
	125	105	84	1	#1
	150	125	100	1	#1/0
	175	140	112	1	#2/0
	200	160	128	1	#3/0
	225	180	144	1	#4/0
	250	200	160	1	250 kcmil

Siemens Breaker Type	Maximum Continuous Ampere Rating At 40° C (104° F) ^②			75° C (167° F) Copper Cable per Pole	
	60HZ		400HZ	No of Pieces	Wire Size
	Open Air	Open Air ^③	Enclosed After Derating		
JG	250	210	168	1	250 kcmil
	300	240	192	1	350 kcmil
	350	260	208	1	500 kcmil
	400	300	240	2	#2/0
JG 100% Rated	250	210	210	1	250 kcmil
	300	240	240	1	350 kcmil
	350	260	260	1	500 kcmil
	400	300	300	2	#3/0
LG	400	300	240	2	#3/0
	500	375	300	2	250 kcmil
MG	600	430	360	2	350 kcmil
	700	500	400	3	250 kcmil
	800	560	448	3	300 kcmil
MG 100% Rated	600	430	430	2	350 kcmil
	700	500	500	3	250 kcmil
	800	560	560	3	300 kcmil
NG	800	560	448	3	300 kcmil
	900	600	480	3	350 kcmil
	1000	650	520	3	400 kcmil
	1200	780	624	4	350 kcmil
	900	600	600	3	350 kcmil
NG 100% Rated	1000	650	650	3	400 kcmil
	1200	780	780	4	350 kcmil
PG	1200	780	624	4	400 kcmil
	1400	850	680	4	500 kcmil
	1600	960	768	5	500 kcmil
PG 100% Rated	1200	780	780	4	400 kcmil
	1400	850	850	4	500 kcmil
	1600	960	960	5	500 kcmil

^①The information provided on this page is intended for reference and recommendation only. Because several variables can act on a circuit breaker's performance at the same time, the data above is based less on controlled testing, than on experience and engineering

judgment. Contact Siemens for further information on special conditions and treatment.

^②Additional derating may be required if the ambient temperature is greater than 40° C (104° F).

^③Calculated after derating to compensate for the heating of the copper conductor, caused by the skin effect generated by eddy currents produced at 400/415Hz.

Molded Case Circuit Breakers

Unusual Operating Conditions

Reference

400 Hz Systems^①

Siemens molded case circuit breakers can be applied for overcurrent protection on 400Hz systems, commonly used to power computer installations, aircraft, military and other specialty equipment. Below are basic guidelines.

Circuit Breaker Derating Required

This table lists the maximum continuous current carrying capacity for Siemens breakers at 400Hz. Due to the increased resistance of the copper sections resulting from the skin effect produced by eddy currents at these frequencies, circuit breakers in many cases require derating. The thermal derating on these devices is based upon 100%, three phase application in open air in a maximum of 40° C (104° F) with 48 in. (1219 mm) of the specified cable or bus at the line and load side. Additional derating of not less than 20% will be required if the circuit breaker is to be utilized in an enclosure. Further derating may be required if the enclosure

ambient temperature exceeds 40° C (104° F).

Cable and Bus Sizing

The cable and bus sizes to be utilized at 400Hz are not based on standard National Electric Codes tables for 60Hz application. Larger cross sections are necessary at 400Hz. All bus bars specified are based upon mounting the bars in the vertical plane to allow maximum air flow. All bus bars are spaced at a minimum of 0.25 in. (6 mm) apart. Mounting of bus bars in the horizontal plane will necessitate additional drafting. Edgewise orientation of the bus may change the maximum ratings indicated. If additional information is required for other connections of cable or bus, contact Siemens for information.

Application Recommendations

It is recommended that temperatures be measured on the line and load terminals or T-connectors of the center pole. These

are usually the hottest terminals with a balanced load. A maximum temperature of 75° C (35° C over a maximum ambient of 40° C) would verify the particular application. Temperature profiles taken on these breakers can be correlated to ensure that the hottest points within the breaker are within the required temperature limits.

Factory Configuration

When required, molded case circuit breakers may be factory calibrated for 400Hz application. These breakers are specially labeled for 400Hz usage and their nameplate current rating will include the necessary derating factory. The highest "Maximum Continuous Amperes" rating at 400Hz, found in the table below approximates the highest specially calibrated 400Hz nameplate ampere rating available for a given frame size. Contact Siemens for ordering information on other breakers applied in 400Hz systems.

400Hz Breakers

Siemens Breaker Type	Maximum Continuous Ampere Rating At 40° C (104° F) ^②			75° C (167° F) Copper Cable per Pole	
	60HZ		400HZ	No of Pieces	Wire Size
	Open Air	Open Air ^③	Enclosed After Derating		
ED2, ED4, ED6, BOD, HED4, HED6, CED6	15	15	12	1	#14
	20	20	16	1	#12
	25	25	20	1	#10
	30	30	24	1	#10
	35	35	28	1	#10
	40	40	32	1	#8
	45	43	34	1	#8
	50	48	38	1	#8
	60	57	46	1	#6
	70	67	54	1	#4
	80	76	61	1	#4
	90	86	69	1	#3
	100	95	76	1	#3
QJ2, QJH2, QJ2H, HJ2H, FD6, FXD6, HFD6, HFXD6, CFD6	110	105	84	1	#2
	125	119	95	1	#1
	70	63	50	1	#4
	80	72	58	1	#4
	90	80	64	1	#3
	100	90	72	1	#3
	110	95	75	1	#2
	125	105	84	1	#1
	150	125	100	1	#1/0
	175	140	112	1	#2/0
JXD2, JD6, JXD6, HJD6, HJXD6, HHJD6, HHJXD6, CJD6	200	160	128	1	#3/0
	225	180	144	1	#4/0
	250	200	160	1	250 kcmil
	200	170	136	1	#3/0
	225	190	152	1	#4/0
	250	210	168	1	250 kcmil
	300	240	192	1	350 kcmil
	350	260	208	1	500 kcmil
	400	300	240	2	#3/0
	JD6, JXD6, HJD6, HJXD6 100% Rated	200	170	170	2
225		190	190	2	#4/0
250		210	210	1	250 kcmil
300		240	240	1	350 kcmil
350		260	260	1	500 kcmil
400	300	300	2	#3/0	

① The information provided on this page is intended for reference and recommendation only. Because several variables can act on a circuit breaker's performance at the same time, the data above is based less on

controlled testing, than on experience and engineering judgment. Contact Siemens for further information on special conditions and treatment.

② Additional derating may be required if the ambient

temperature is greater than 40° C (104° F).

③ Calculated after derating to compensate for the heating of the copper conductor, caused by the skin effect generated by eddy currents produced at 400/415HZ.

Siemens Breaker Type	Maximum Continuous Ampere Rating At 40° C (104° F) ^②			75° C (167° F) Copper Cable per Pole	
	60HZ		400/415HZ	No of Pieces	Wire Size
	Open Air	Open Air ^③	Enclosed After Derating		
LD6, LXD6, HLD6, HLXD6, HHL6, HHLXD6, CLD6	250	210	168	1	250 kcmil
	300	240	192	1	350 kcmil
	350	260	208	1	500 kcmil
	400	300	240	2	#3/0
	450	340	272	2	#4/0
	500	375	300	2	250 kcmil
	600	420	336	2	350 kcmil
	250	210	210	1	250 kcmil
	300	240	240	1	350 kcmil
	350	260	260	1	500 kcmil
LD6, LXD6, HLD6, HLXD6, 100% Rated	400	300	300	2	#3/0
	450	340	340	2	#4/0
	500	375	375	2	250 kcmil
	600	420	420	2	350 kcmil
	500	400	320	2	250 kcmil
	600	430	360	2	350 kcmil
MD6, MXD6, HMD6, HMXD6, CMD6	700	500	400	3	250 kcmil
	800	560	448	3	300 kcmil
	500	400	400	2	250 kcmil
	600	430	430	2	350 kcmil
MD6, MXD6, HMD6, HMXD6, CMD6 100% Rated	700	500	500	3	250 kcmil
	800	560	560	3	300 kcmil
	800	560	448	3	300 kcmil
	900	600	480	3	350 kcmil
ND6, NXD6, HND6, HNXD6, CND6	1000	650	520	3	400 kcmil
	1200	780	624	4	350 kcmil
	900	600	600	3	350 kcmil
	1000	650	650	3	400 kcmil
ND6, NXD6, HND6, HNXD6, CND6 100% Rated	1200	780	780	4	350 kcmil
	1200	780	624	4	400 kcmil
	1400	850	680	4	500 kcmil
PD6, PXD6, HPD6, HFXD6, CPD6	1600	960	768	5	500 kcmil
	1200	780	780	4	400 kcmil
	1400	850	850	4	500 kcmil
PD6, PXD6, HPD6, HFXD6, CPD6 100% Rated	1600	960	960	5	500 kcmil
	1600	960	768	5	500 kcmil
	1800	1080	864	5	500 kcmil
RD6, RXD6, HRD6, HRXD6 80% Rated	2000	1200	960	6	500 kcmil