Molded Case Circuit Breakers

Dual Function Circuit Breaker

NGB Circuit Breakers

QR Circuit Breakers

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contents

(continued on next page)

contents

What's **new** in molded case circuit breakers:

New Sentron Sensitrip

Sentron Sensitrip IV ETU Circuit Breakers with Integrated DAS / Maintenance Mode

Design enhancements include:

- Upgraded ETU for NEC 240.87 code compliance (Arc Energy Reduction)
- Frame ratings from 800A to 1200A
- Identical footprint, kAIC ratings and accessory offering as legacy Sensitrip III ETU breakers to ease integration / retrofit
- Maintenance mode versions require customer-supplied 24V external power supply, maintenance switch and light

The New Siemens QR Circuit Breaker

Implemented in load centers, panelboards, switchboards, meter centers, and modular metering, the new QR breaker is the same form-factor/ mounting as QJ breaker for easy retrofit.

Design enhancements include:

- Trip unit ratings from 100A to 250A.
- Field installable internal accessories – shunt trip, aux switch or shunt/aux combo.
- Two accessory pockets in 3-pole breakers. One accessory pocket in 2-pole breakers.
- High in-rush current capability (450%).
- Push-to-trip button.

The **Dual Function Circuit Breaker** combines GFCI and AFCI, protecting against both Arc Faults and Ground Faults. This, along with the new Self-Test & Lockout feature, makes it the first in class in electrical safety for homeowners.

- Faster Installation
- Cost savings
- Smaller Device
- Self Test & Lockout feature as required by UL 943 effective June 2015

The development of **VL Circuit Breaker enclosures** for the150A and 250A breakers demonstrates a significant enhancement of the Siemens product offering. The fundamental objective of this family of enclosures is to reduce installation cost of the breaker, as well as reducing the space required for low amperage breaker enclosures.

The Siemens GG circuit breaker is a compact, industrial design thermal magnetic breaker with valuable features for the global markets. These features include a design that meets multi-national standards, is suitable for DIN rail or base mounting without the need for adapters, and includes UL listed field installable accessories. The GG also has an over center toggle mechanism that is trip free and uses repulsion contact arm construction. Therefore, should a short circuit or tripping condition occur, the contacts are forced apart and the breaker cannot be held closed by means of the handle.

NGB **NGG** **HGG** **LGG**

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.

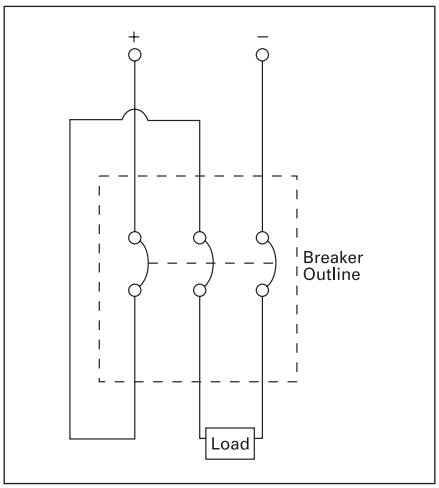
Frame, Trip Unit and Lugs Ordered Together

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.

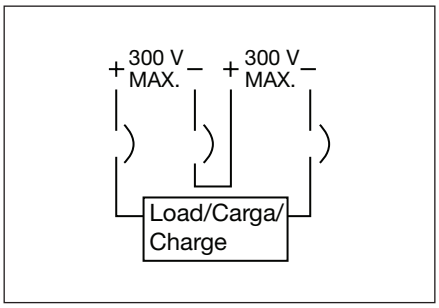


500V DC Wiring Configuration

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.

See below for an alternative connection diagram. For a list of Sentron breakers with the DC ratings, please refer to pages 7-11 to 7-16.



W-C-375C/GEN

Class	Interrupting Rating: Symmetrical Amperes①	Interrupting Rating: Volts AC 60HZ	Poles	Range of Current Trip③	Breaker Type (All Circuit Breakers Meet or Exceed the Indicated Class Level)
10a②	5,000	120/240	1 or 2	15–100	QP, BQ, QT, BL
10b	5,000	240	2 or 3	15–100	QP, BQ, BQD, CQD, BL
11a	7,500	120	1	15–100	QP, BQ, BQD, CQD, BL
11b	7,500	240	2 or 3	15–100	QP, BQ, BQD, CQD, BL
12a②	10,000	120/240	1 or 2	15–100	QP, BQ, QT, ED2, BL
12b	10,000	240	2 or 3	15–225	QP, BQ, QJ2, ED2, BQD, CQD, BL
12c	10,000	277	1	15–100	BQD, CQD, NGG, NGB, NEG, NEB
13a	14,000	277	1	15–100	ED4, BQD, CQD, NGG, NGB, NEG, NEB
13b	14,000	277/480	1, 2, or 3	15–100	ED4, BQD, CQD
14a	22,000	120/240	1 or 2	15–100	QPH, BQH, BLH
14b	22,000	240	2 or 3	70–400	QJH2, QJ2-H, BQH, BQD, CQD, BLH
15a	65,000	120/240	1 or 2	15–100	HQP, HBQ, ED4, HED4, NGG, NGB
15b	65,000	240	2 or 3	15–225	ED6, ED4, FXD6, FD6, HED4, BQD, CQD, HQJ2H, NGG, NGB, NEG, NEB
16a	100,000	480	2 or 3	15–225	CFD6, CED6
16b	100,000	600	2 or 3	15–600	CED6, CFD6, CJD6, SCJD6, CLD6, SCLD6
17a	200,000	600	2 or 3	70–2000	—
18a	18,000 14,000 14,000	240 480 600	2 or 3	15–125	ED6, HED6, HHED6
19a	22,000 18,000 14,000	240 480 600	2 or 3	70–225	FXD6, FD6, CFD6, HFD6
20a	25,000 22,000 22,000	240 480 600	2 or 3	70–225	FXD6-A, FD6-A, CFD6, HFD6
21a	42,000 30,000 22,000	240 480 600	2 or 3	70–800	HFD6, CFD6, JXD6(A), JD6(A), SJD6(A), HJD(A), HJXD6(A), HHJD6, SHJD6(A), CJD6, SCJD6, LXD6(A), LD6(A), SLD6(A), HLD6(A), HLXD6(A), HHLD6, SLD6(A), SHLD6(A), CLD6, SCLD6, LMD6, LMXD6, HLMD6, HLMXD6, MD6, MXD6, SMD6, HMD6, HMXD6, SHMD6, CMD6, SCMD6
22a	65,000 25,000 18,000	240 480 600	2 or 3	15–125	CED6, ED6, HED6, HHED6, FXD6-A, FD6-A
23a	65,000 35,000 25,000	240 480 600	2 or 3	70–1200	HHED6, FXD6-A, FD6-A, HFD6, HHFD6, CFD6, JD6(A), JXD6(A), SJD6(A), HJD6(A), HJXD6(A), SHJD6(A), HHJD6, HHJXD6, CJD6, SCJD6, LXD6(A), LD6(A), SLD6(A), HLD6(A), HLXD6(A), SHLD6(A), HHLD6, HHLXD6, CLD6, SCLD6, LMD6, LMXD6, HLMD6, HLMXD6, MD6, MXD6, SMD6, HMD6, HMXD6, SHMD6, CMD6, SCMD6, ND6, NXD6, SND6, HND6, HNXD6, SHND6, CND6, SCND6
24a	65,000 50,000 42,000	240 480 600	2 or 3	1200–2000	PD6, PXD6, HPD6, HPXD6, CPD6 RD6, RXD6, HRD6, HRXD6, SPD6, SHPD6
25a	125,000 80,000 60,000	240 480 600	2 or 3	600–4000	HHLD6, CLD6, CMD6, CND6 SCLD6, SCMD6, SCND6, CPD6

Applicable Standards

UL489 — Molded Case Circuit Breakers and Circuit Breaker Enclosures.

UL486A — Wire Connectors and Solderless Lugs for use with copper wire

UL486B — Wire Connectors and Solderless Lugs for use with aluminum wire

UL943 — Ground Fault Interrupters (for personnel protectors)

UL1087 — Molded Case Switches

UL50 — Cabinets and Boxes

UL869 — Service Equipment

NEMA AB-1 — Molded Case Circuit Breakers and Molded Case Switches

CSA–C22.2 No. 5, C22.2 No. 14

Note:

(A) Molded case circuit breakers are designed and tested in accordance to applicable portions of UL489 and meet application requirements of the National Electric Code. Unless marked otherwise, circuit breakers are 80% duty rated.

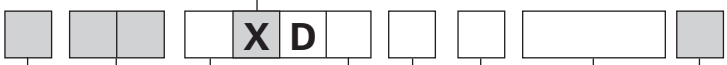
(B) Molded case circuit breakers are to be connected with 60 or 75°C wire for circuit breakers having a rated ampacity of 100 amperes or less. Circuit breakers having a rated ampacity greater than 100 amperes shall only be cabled with 75°C cable unless otherwise indicated on the circuit breaker label. Exceptions to this rule are outlined in the article 110-14 C(1)(2) of the 2005 National Electric Code.

①Interrupting ratings are not limited to the values or groups of values listed. However, the values listed are minimum values for the class specified.

②Single-unit or duplex construction must be specified.

③Use minimum frame size for ampere rating.

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
F — Type FD
J — Type JD
L — Type LD
LM — Type LMD
M — Type MD
N — Type ND
P — Type PD
R — Type RD

Maximum Voltage
2 — 240 Vac
4 — 480 Vac
6 — 600 Vac

Number of Poles
1
2
3
A — used to indicate advanced electronic trip unit with maintenance mode capability (always 3 poles)
B — used to indicate basic electronic trip unit (always 3 poles)

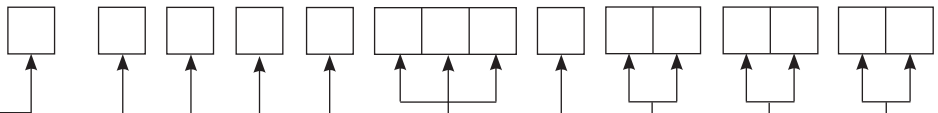
(Specific Application Type)
B — Standard 40°C Breaker
M — Calibrated for 50°C Application
F — Frame Only
T — 40°C Trip Unit Only
W — 50°C Trip Unit Only
S — Molded Case Switch
L — Low Instantaneous Range ETI Breaker
A — Standard Range ETI Breaker
H — High Instantaneous Range ETI Breaker

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)

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

NOTE:

□ — Position omitted if not used.



Interrupting Class
- N — Normal
- H — High
- L — Very High
- C — Trip Unit Only

Frame Family
- D — Type DG
- F — Type FG
- J — Type JG
- L — Type LG
- M — Type MG
- N — Type NG
- P — Type PG

Breaker Type
- E — Global DG, FG Frame Only 600 Y/347 V
- G — Global interchangeable (UL, IEC, CE, CSA, NOM①, CCC①)
- J — 240V rated JG frame, Non-interchangeable only
- K — Global, Non-interchangeable (DG, FG, LG-frame)
- M — Motor Circuit Protector
- P — Motor Circuit Protector (DG, FG Only)
- R — Molded Case Switch (DG, FG, LG-frame)
- S — Molded Case Switch
- T — Trip Unit Only
- V — Thermal Magnetic, standard 40°C ambient, 600VAC 25kA, UL/CSA (LG frame)
- W — 100% rated, Non-interchangeable (DG, LG-frame)
- X — Global Non-interchangeable
- Y — 100% rated, Non-interchangeable

Number of Poles
- 2, 3

Trip Unit
- F — Frame only, without trip unit
- B — Thermal Magnetic, standard 40° C ambient
- L — Magnetic Only, Motor Circuit Protector - Low instantaneous range
- J — Magnetic Only, Motor Circuit Protector - Low instantaneous range (LG-frame)
- M — Magnetic Only, Motor Circuit Protector - Standard instantaneous range
- Y — Magnetic Only, Motor Circuit Protector - Standard instantaneous range (LG-frame)
- H — Magnetic Only, Motor Circuit Protector - High instantaneous range
- S — Molded Case Switch
- A — Electronic w/ LCD, LSI or 3P (neutral protected)
- G — Electronic w/ LCD, LSIG, 3P/4W (selectable residual or return type ground fault protection)
- K — Electronic with LCD, LSI and GF alarm only, 3P/4W (selectable residual or return type ground fault alarm)
- R — Electronic LI or 3P (neutral protected)
- T — Electronic LSI or 3P (neutral protected)
- V — Electronic, LSIG or 3P/4W, residual ground fault protection
- W — Electronic, LIG or 3P/4W, residual ground fault protection

Continuous Current Rating
- For DG use 050, 060, 070, 080, 090, 100, 110, 125, 150
- For FG use 100, 110, 125, 150, 175, 200, 225, 250
- For JG use 250, 300, 350, 400
- For LG use 400, 500, 600
- For MG use 600, 700, 800
- For NG use 800, 900, 100 (1000A), 120 (1200A)
- For PG use 120 (1200A), 140 (1400A), 160 (1600A)

Terminations
- B — Load End Standard (cu/al) Lugs
- L — Line & Load Standard (cu/al) Lugs
- X — No Lugs (use only if accessory suffixes are to follow)

Accessories

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

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.

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

LCD = Liquid Crystal Display
LI = Long Delay & Instantaneous 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

① Select Frames

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. Contact Siemens for circuit breakers configured with accessories.

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 #

Non-Interchangeable Trip Breakers Example:

H F X 3 B 2 0 0 L

Standard 9-digit

Thermal-Magnetic Trip Breakers

						Plug-In Breakers						Panelboard Breakers						
						QT	QP, QPP②	QPH, QPPH②	HQP, HQPP②	HQPPH②	QPJ⑨	BL⑩	BLH	HBL	BQD, BQD6	NGB	HGB	LGB
Page						**7-21**	**7-22, 7-24**	**7-22, 7-24**	**7-20, 7-24**	**7-20, 7-24**	**7-24**	**7-29**	**7-29**	**7-29**	**7-32**	**7-33**	**7-33**	**7-33**
Ratings		Poles				1, 2	1, 2, 3	1, 2, 3	1, 2, 3⑦	2	2, 3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3
		Amperes				15-50	10-125③④	10-125③④	10-125③⑦	100-225	150-200	10-125	15-125	15-100	15-100	15-125	15-125	15-125
		Volts (50/60 Hz)			1 Pole	120/240	120/240	120/240	120/240	120/240	120/240	120/240	120/240	120/240	277	347	347	347
					2 Pole							120/240	120/240	120/240	480/277	600/347	600/347	600/347
					3 Pole	—	240	240	240	240	240	240	240	240	480/277	600/347	600/347	600/347
	AC	Interrupt Ratings	UL		120V	10,000	10,000	22,000	65,000	—	—	10000	22000	65000	65000	—	—	—
					240V	10,000	10,000	22,000	65,000	100,000	10,000	10000	22000	65000	65000	100000	100000	100000
					277V	—	—	—	—	—	—	—	—	—	14000	—	—	—
					347V	—	—	—	—	—	—	—	—	—	10000	—	—	—
					480/277V	—	—	—	—	—	—	—	—	—	14000	25000	35000	65000
					480V	—	—	—	—	—	—	—	—	—	—	—	—	—
					600/347V	—	—	—	—	—	—	—	—	—	10000	14000	14000	14000
					600V	—	—	—	—	—	—	—	—	—	—	—	—	—
			IEC 947-2 50/60 Hz	220/240V	I_{CU}	—	—	—	—	—	—	—	—	—	—	—	—	—
					I_{CS}	—	—	—	—	—	—	—	—	—	—	—	—	—
				380/415V	I_{CU}	—	—	—	—	—	—	—	—	—	—	—	—	—
					I_{CS}	—	—	—	—	—	—	—	—	—	—	—	—	—
				500V	I_{CU}	—	—	—	—	—	—	—	—	—	—	—	—	—
					I_{CS}	—	—	—	—	—	—	—	—	—	—	—	—	—
	DC	125/250 V DC Interrupting Rating			2-Pole	—	—	—	—	—	—	—	—	—	14000	14000	14000	14000
					3-Pole	—	—	—	—	—	—	—	—	—	—	—	—	—
Dimensions in Inches	Height				10-50A	—	2.87	2.87	—	—	—	3.56	3.56	3.75	4.50	5.00	5.00	5.00
					10-60A	3.12	—	—	—	—	—	—	—	—	—	—	—	—
					55-125A	—	3.12	3.12	3.12	3.12	3⑨	3.75	3.75	3.75	4.50	5.00	5.50	5.50
	Width				1-Pole	1.00	1.00	1.00	1.00	—	—	1.00	1.00	1.00	1.00	1.00	1.00	1.00
					2-Pole	2.00①	2.00②	2.00②	2.00	4.00②	⑨	2.00	2.00	2.00	2.00	2.00	2.00	2.00
					3-Pole	2.00①	3.00	3.00	3.00	—	3.00⑨	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	Depth					2.06	2.37	2.37	2.37	2.37	2.34	2.37	2.37	2.37	2.69	2.71	2.71	2.71
Overcurrent Devices	Thermal and Fixed magnetic Trip					√	√	√	√	√	√	√	√	√	√	√	√	√
	Thermal and Adjustable Magnetic trip					—	—	—	—	—	—	—	—	—	—	—	—	—
	Adjustable Magnetic trip only					—	—	—	—	—	—	—	—	—	—	—	—	—
	Motor Circuit Protector					—	—	—	—	—	—	—	—	—	—	—	—	—
	Molded Case Switch					—	√⑥	—	—	—	—	—	—	—	—	—	—	—
Accessories & Modifications	Undervoltage Trip					—	—	—	—	—	—	—	—	—	√	—	√	√
	Shunt Trip					—	√⑥	√⑥	√⑧	√⑧	—	√	√	√	√	√	√	√
	Auxilary Switch					—	—	—	—	√⑧	—	√	√	√	√	√	√	√
	Alarm Switch					—	—	—	—	—	—	—	—	—	√	√	√	√
	Mechanical Interlock					—	—	—	—	—	—	—	—	—	—	—	—	—
	Fungus Proofing (ref. page 7-91)					—	—	—	—	—	—	√	√	√	√	√	√	√
Individual Enclosures	Type 1 - Indoor Surface					√	√	√	√	√	—							
	Type 1 - Indoor, Flush					—	√	√	√	√	—							
	Type 3R - Outdoor-Rainproof					—	√	√	√	√	—							

Q3100

B120

B220H

B320HH

NGB1B030B

For inches / millimeters conversion, see Application Data section.
For Plug-in Breakers, see Load Centers & Circuit Breakers section.

①BQD6 CSA certified 10,000A @ 600Y/347V 15–70A only.
②Types QPP, QPPH, HQPP and HQPPH are special 2-pole configurations for metering equipment. Amperage range = 125–225A, width = 4 in.
③Single pole breakers available in ratings 10–70A only.
④125A, 2-pole 120/240V AC only.
⑥Not applicable to types QPP and QPPH.
⑦Single pole circuit breakers available in ratings 15-70A only, 125A available as a 2-pole only.
⑧Not applicable to type HQPP and HQPPH.
⑨Fits only Siemens EQIII load centers. Breaker is 2 or 3 poles wide.
⑩10A, 1-pole & 2-pole 120/240V AC only.

Thermal-Magnetic Trip Breakers

				General Purpose Breakers								
				BQ	BQH	HBQ	QR2	QRH2	HQR2	HQR2H	CQD	NGG
Page				**7-36**	**7-36**	**7-36**	**7-38**	**7-38**	**7-38**	**7-38**	**7-40**	**7-41**
Ratings	**AC**	Poles		1, 2, 3	1, 2, 3	1, 2, 3	2, 3	2, 3	2, 3	2, 3	1, 2, 3	1, 2, 3
		Amperes, Continuous	1-Pole	15–70	15–70	15–50	—	—	—	—	15–100	15–125
			2-Pole	15–125	15–100	15–70	100–250	100–250	100–250	100–250	15–100	15–125
			3-Pole	15–100	15–100	15–100					15–100	15-125
		Volts (50/60 Hertz)	1-Pole	120/240	120/240	120/240	—	—	—	—	277	347
			2-Pole				240	240	240	240	480/277	600/347
			3-Pole	240	240	240						
		UL Interrupting Rating — Symmetrical RMS Amperes	120V	10,000	22,000	65,000	—	—	—	—	65,000	65,000
			240V	10,000	22,000	65,000	10,000	25,000	65,000	100,000	65,000	65,000
			480V	—	—	—	—	—	—	—	14,000①	25,000
			600/347V	—	—	—	—	—	—	—	10,000②	14,000
	DC	Volts — 2-Pole		—	—	—	—	—	—	—	125/250	125/250
		Interrupting Rating — DC Amperes		—	—	—	—	—	—	—	14,000	14,000
Dimensions in inches		Height	15–50A	3.75	3.75	4.00	—	—	—	—	4.50	5.40
			55–125A	4.00	4.00	4.00	—	—	—	—	4.50	5.40
			60–225A	—	—	—	7.00	7.00	7.00	7.00	—	—
		Width	1-Pole	1.00	1.00	1.00	—	—	—	—	1.00	1.00
			2-Pole	2.00	2.00	2.00	3.00	3.00	3.00	3.00	2.00	2.00
			3-Pole	3.00	3.00	3.00	4.50	4.50	4.50	4.50	3.00	3.00
		Depth		2.37	2.37	2.37	2.53	2.53	2.53	2.53	2.87	2.90
Overcurrent Devices		Thermal and Fixed Magnetic Trip		√	√	√	√	√	√	√	√	√
		Molded Case Switch		√	—	—	√	—	—	√③	—	—
Accessories & Modifications		Undervoltage Trip		—	—	—	—	—	—	—	—	—
		Shunt Trip		√	√	√	√	√	√	√	√	√
		Auxiliary Switch		√	√	√	√	√	√	√	√	√
		Alarm Switch		—	—	—	—	—	—	—	√	√
		Mechanical Interlock		—	—	—	√	√	√	√	—	—
		Fungus Proofing (ref. page 7-91)		√	√	√	√	√	√	√	√	√
Individual Enclosures		Type 1 — Indoor Surface		√	√	√	√	√	√	√	—	√
		Type 1 — Indoor, Flush		√	√	√	√	√	√	√	—	√
		Type 3R — Outdoor-Rainproof		√	√	√	√	√	√	√	—	√

BQ1B020

BQ1B020H

HB1B020

CQD115

LGG2B020L

For inches / millimeters conversion, see Application Data section.

① CQD breakers are rated 14,000 KAIC at 480/277V.
② Type CQD6—CSA only.
③ 3-pole only.

Thermal-Magnetic Trip Breakers

						General Purpose Breakers							
						HGG	LGG	ED2	ED4	ED6	HED4	HHED6	CED6
Page						7-43	7-43	7-45	7-45	7-45	7-46	7-46	7-46
Ratings	AC	Poles				1, 2, 3	1, 2, 3	1, 2, 3	1, 2, 3	1④, 2, 3	1, 2, 3	2, 3	2, 3
		Amperes, Continuous				15–125	15–125	15–100	15–125	15–125⑦	15–125	15–50	15–125
		Volts 50/60HZ			1-Pole	347	347	120	277	347	277	—	—
					2-Pole 3-Pole	600/347	600/347	240	480	600	480	600	600
		Interrupt Rating Symmetrical RMS Amperes	UL		120V	—	—	10,000	—	—	100,000	—	—
					240V	85,000	100,000	10,000	65,000	65,000	100,000⑤	100,000	200,000
					277V	—	—	—	22,000①	—	65,000②	—	—
					347V	—	—	—	—	30,000	—	—	—
					480V	35,000	65,000	—	18,000	25,000	42,000	65,000	200,000
					600V	22,000⑥	25,000⑥	—	—	18,000	—	18,000	100,000
			IEC 947-2 50/60HZ	220/240V	Icu	—	—	—		65,000	—	—	—
					Ics	—	—	—	—	17,000	—	—	—
				380/415V	Icu	—	—	—		35,000	—	—	—
					Ics	—	—	—	—	9,000	—	—	—
				500V	Icu	—	—	—	—	18,000	—	—	—
					Ics	—	—	—	—	5,000	—	—	—
	DC	2-Pole, 250V DC Interrupting Ratings				35,000	42,000	5,000	30,000	30,000	30,000	—	30,000
		3-Pole, 500V DC Interrupting Ratings③				—	—	—	—	18,000	—	—	50,000
Dimensions in inches		Height				5.40	5.40	6.34	6.34	6.34	6.34	6.58	9.26
		Width			1-Pole	1.00	1.00	1.00	1.00	1.00	1.00	—	—
					2-Pole 3-Pole	2.00 3.00	2.00 3.00	2.00 3.00	2.00 3.00	2.00 3.00	2.00 3.00	2.00 3.00	2.00 3.00
					4-Pole	4.00	4.00	—	—	—	—	—	—
		Depth				2.90	2.90	4.00	4.00	4.00	4.00	4.00	4.00
Overcurrent Devices		Thermal and Fixed Magnetic Trip				√	√	√	√	√	√	√	√
		Thermal and Adjustable Magnetic Trip				—	—	—	—	—	—	—	—
		Adjustable Magnetic Trip only Motor Circuit Protector				—	—	—	—	√	—	—	√
		Molded Case Switch				—	—	√	√	√	—	—	√
Accessories & Modifications		Undervoltage Trip				—	—	√	√	√	√	√	√
		Shunt Trip				√	√	√	√	√	√	√	√
		Auxiliary Switch				√	√	√	√	√	√	√	√
		Alarm Switch				√	√	√	√	√	√	√	√
		Mechanical Interlock				—	—	—	—	—	—	—	—
		Rear Connection Studs				—	—	√	√	√	√	√	√
		Electric Motor Operator				—	—	√	√	√	√	√	√
		Plug-In Mounting Assembly (3 Pole Only)				—	—	√	√	√	√	√	√
		Fungus Proofing (ref. page 7-91)				√	√	√	√	√	√	√	√
Individual Enclosures		Type 1 — Indoor Surface				√	√	√	√	√	√	√	√
		Type 1 — Indoor, Flush				√	√	√	√	√	√	√	√
		Type 3R — Outdoor-Rainproof				√	√	√	√	√	√	√	√
		Type 7 — Flammable Gas Atmosphere				—	—	√	√	√	√	√	—
		Type 9 — Combustion Dusttight				—	—	√	√	√	√	√	—
		Type 5, 12 — Lint, Fine Dust, Oils, Coolants				√	√	√	√	√	√	√	√
		Type 12K — Semi-Dusttight				—	—	√	√	√	√	√	√

For inches / millimeters conversion, see Application Data section.

① 1-pole only.
② 35-100A: 25,000 AIR at 277V AC/15-30A: 65,000 AIR at 277V AC.
③ For DC UPS system application.
④ Single pole ED6 (15–30A) 30kA, (35–100A) 18 kA. CSA Only.
⑤ Single pole HED4, 15-30A: 65,000 AIR at 240V AC; single pole HED4, 35-100A: 25,000 AIR at 240V AC.
⑥ HGG and LGG breakers are rated at 600/347V.
⑦ ED6, 2-pole available 15-125 amps only.

ED62B020

HED41B040

HHED63B020

Thermal-Magnetic Trip Breakers

						General Purpose Breakers								
						FD6A, FXD6A	HFD6, HFXD6	HHFD6, HHFXD6	CFD6	JXD2-A	JD6-A, JXD6-A	HJD6-A, HJXD6-A	HHJD6-A, HHJXD6-A	CJD6-A
Page						7-48	7-49	7-49	7-49	7-51	7-51	7-52	7-52	7-52
Ratings	**AC**	Poles				2, 3	2, 3	2, 3	3	2, 3	2, 3	2, 3	2, 3	3
		Amperes, Continuous				70–250	70-250	70-250	70–250	200-400	200-400	200-400	200-400	200-400
		Volts 50/60HZ			2-Pole 3-Pole	600	600	600	600	240	600	600	600	600
		Interrupt Rating Symmetrical RMS Amperes	UL		240V	65,000	100,000	200,000	200,000	65,000	65,000	100,000	200,000	200,000
					480V	35,000	65,000	100,000	200,000	—	35,000	65,000	100,000	150,000
					600V	22,000	25,000	25,000	100,000	—	25,000	35,000	50,000	100,000
			IEC60947-2 50/60HZ	220/240V	Icu	65,000	100,000	—	—	—	65,000	100,000	—	—
					Ics	33,000	50,000	—	—	—	33,000	50,000	—	—
				380/415V	Icu	35,000	65,000	—	—	—	40,000	65,000	—	—
					Ics	18,000	33,000	—	—	—	20,000	33,000	—	—
				500V	Icu	—	—	—	—	—	—	—	—	—
					Ics	—	—	—	—	—	—	—	—	—
	DC	2-Pole 250V DC Interrupting Ratings				30,000	30,000	—	50,000	30,000	30,000	30,000	—	—
		3-Pole, 500V DC Interrupting Ratings①				18,000	25,000	—	50,000	—	25,000	35,000	—	50,000
Dimensions in inches		Height				9.50	9.50	14.12	14.12	11.00	11.00	11.00	11.00	17.86
		Width			2-Pole 3-Pole	4.50	4.50	4.50	4.50	7.50	7.50	7.50	7.50	7.50
		Depth				4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overcurrent Devices		Thermal and Fixed Magnetic Trip				—	—	—	—	—	—	—	—	—
		Thermal and Adjustable Magnetic Trip				√	√	√	√	√	√	√	√	√
		Adjustable Magnetic Trip Only Motor Circuit Protector				√	—	—	√	—	—	√	√	—
Accessories & Modifications		Molded Case Switch				√	—	—	√	√	√	—	—	√
		Undervoltage Trip				√	√	√	√	√	√	√	√	√
		Shunt Trip				√	√	√	√	√	√	√	√	√
		Auxiliary Switch				√	√	√	√	√	√	√	√	√
		Alarm Switch				√	√	√	√	√	√	√	√	√
		Mechanical Interlock				√	√	√	√	√	√	√	√	√
		Rear Connection Studs				√	√	√	√	√	√	√	√	√
		Electric Motor Operator				√	√	√	√	√	√	√	√	√
		Plug-In Mounting Assembly				√	√	√	√	√	√	√	√	√
		Fungus Proofing (ref. page 7-91)				√	√	√	√	—	√	√	√	√
Individual Enclosures		Type 1 — Indoor Surface				√	√	√	√	√	√	√	√	√
		Type 1 — Indoor, Flush				—	√	—	√	—	—	—	—	—
		Type 3R — Outdoor-Rainproof				√	√	√	√	√	√	√	√	—
		Type 7 — Flammable Gas Atmosphere				√	√	√	—	√	√	√	√	—
		Type 9 — Combustion Dusttight				√	√	√	—	√	√	√	√	—
		Type 5, 12 — Lint, Fine Dust, Oils, Coolants				√	√	√	√	√	√	√	√	√
		Type 12K — Semi-Dusttight				√	√	√	√	—	√	√	√	—

For inches / millimeters conversion, see Application Data section.

① For DC UPS application.

Thermal-Magnetic Trip Breakers

						General Purpose Breakers								
						LD6, LXD6	HLD6, HLXD6	HHLD6, HHLXD6	CLD6-A	LMD6, LMXD6	HLMD6, HLMXD6	MD6, MXD6	HMD6, HMXD6	CMD6
Page						7-55	7-56	7-56	7-56	7-59	7-60	7-62	7-63	7-63
Ratings	**AC**	Poles				2, 3	2, 3	2, 3	3	2, 3	2, 3	2, 3	2, 3	3
		Amperes, Continuous				250-600	250-600	250-600	450-600	500-800	500-800	500-800	500-800	400-800
		Volts 50/60 HZ			2-Pole	600	600	600	600	600	600	600	600	600
					3-Pole									
		Interrupt Rating Symmetrical RMS Amperes	UL		240V	65,000	100,000	200,000	200,000	65,000	100,000	65,000	100,000	200,000
					480V	35,000	65,000	100,000	150,000	50,000	65,000	50,000	65,000	100,000
					600V	25,000	35,000	50, 000	100,000	25,000	50,000	25,000	50,000	65,000
			IEC 947-2 50/60HZ	220/240V	Icu	65,000	100,000	—	—	65,000	100,000	65,000	100,000	—
					Ics	33,000	50,000	—	—	33,000	50,000	33,000	50,000	—
				380/415V	Icu	40,000	65,000	—	—	40,000	65,000	40,000	65,000	—
					Ics	20,000	33,000	—	—	20,000	33,000	20,000	33,000	—
				500V	Icu	—	—	—	—	—	—	—	—	—
					Ics	—	—	—	—	—	—	—	—	—
	DC	2-Pole 250V DC Interrupting Ratings				30,000	30,000	—	—	30,000	30,000	30,000	30,000	30,000
		3-Pole, 500V DC Interrupting Ratings①				35,000		—	50, 000	25,000	50,000	25,000	50,000	50,000
		Height				11.00	11.00	11.00	17.86	16.00	16.00	16.00	16.00	16.00
		Width				7.50	7.50	7.50	7.50	7.50	7.50	9.00	9.00	9.00
		Depth				4.00	4.00	4.00	4.00	4.59	4.59	6.19	6.19	6.19
Overcurrent Devices		Thermal and Adjustable Magnetic Trip				√	√	√	√	√	√	√	√	√
		Adjustable Magnetic Trip Only Motor Circuit Protector				√	—	—	√	√	√	√	—	√
		Molded Case Switch				√	—	—	√	√	—	√	—	√
Accessories & Modifications		Undervoltage Trip				√	√	√	√	√	√	√	√	√
		Shunt Trip				√	√	√	√	√	√	√	√	√
		Auxiliary Switch				√	√	√	√	√	√	√	√	√
		Alarm Switch				√	√	√	√	√	√	√	√	√
		Mechanical Interlock				√	√	√	√	√	√	√	√	√
		Rear Connection Studs				√	√	√	√	√	√	√	√	√
		Electric Motor Operator				√	√	√	√	√	√	√	√	√
		Plug-In Mounting Assembly				√	√	√	√	—	—	√	√	√
		Fungus Proofing (ref. page 7-91)				√	√	√	√	√	√	√	√	√
Individual Enclosures		Type 1 — Indoor Surface				√	√	√	√	√	√	√	√	√
		Type 1 — Indoor, Flush				√	—	—	—	—	—	—	—	—
		Type 3R — Outdoor-Rainproof				√	√	√	—	√	√	√	√	√
		Type 5, 12 — Lint, Fine Dust, Oils, Coolants				√	√	√	—	√	√	√	√	√
		Type 7 — Flammable Gas Atmosphere				√	√	√	—	—	—	—	—	—
		Type 9 — Combustion Dusttight				√	√	√	√	—	—	—	—	—
		Type 12K — Semi-Dusttight				√	√	√	—	√	√	√	√	√

For inches / millimeters conversion, see Application Data section.

① For DC UPS application.

Thermal-Magnetic Trip Breakers

							General Purpose Breakers					
							ND6, NXD6	HND6, HNXD6	CND6	PD6,④ PXD6④	HPD6,④ HPXD6④	CPD6④
Page							**7-66**	**7-67**	**7-67**	**7-70**	**7-70**	**7-70**
Ratings	**AC**	Poles					2, 3	2, 3	3	3	3	3
		Amperes, Continuous					800-1200	800-1200	800-1200	1200-1600	1200-1600	1200-1600
		Volts 50/60 HZ				3-Pole	600	600	600	600	600	600
		Interrupt Rating Symmetrical RMS Amperes	UL			240V	65,000	100,000	200,000	65,000	100,000	200,000
						480V	50,000	65,000	100,000	50,000	65,000	100,000
						600V	25,000	50,000	65,000	25,000	50,000	65,000
			IEC 947-2 50/60HZ	220/240V		Icu	65,000	100,000	—	—	—	—
						Ics	33,000	50,000	—	—	—	—
				380/415V		Icu	40,000	65,000	—	—	—	—
						Ics	20,000	33,000	—	—	—	—
				500V		Icu	—	—	—	—	—	—
						Ics	—	—	—	—	—	—
	DC	2-Pole 250V DC Interrupting Ratings					30,000	30,000	30,000	30,000	30,000	30,000
		3-Pole, 500V DC Interrupting Ratings①					25,000	50,000	50,000	25,000	50,000	50,000
Dimensions in inches		Circuit breakers require Connect-all mounting block. Dimensions shown are for circuit breaker only.				Height	16.00	16.00	16.00	16.0	16.00	16.00
						Width	9.00	9.00	9.00	9.00	9.00	9.00
						Depth	6.19	6.19	6.19	6.19	6.19	6.19
Overcurrent Devices		Thermal and Adjustable Magnetic Trip					√	√	√	√	√	√
		Adjustable Magnetic Trip Only Motor Circuit Protector					—	—	—	—	—	—
		Molded Case Switch					√	—	√	√	—	—
Accessories & Modifications		Undervoltage Trip					√	√	√	√	√	√
		Shunt Trip					√	√	√	√	√	√
		Auxiliary Switch					√	√	√	√	√	√
		Alarm Switch					√	√	√	√	√	√
		Mechanical Interlock					√	√	√	√	√	√
		Rear Connections Studs					√	√	√	—	—	—
		Electric Motor Operator					√	√	√	√	√	√
		Plug-in Mounting Assembly					√	√	√	—	—	—
		Fungus Proofing (ref. page 7-91)					√	√	√	√	√	√
		Mounting Block (required)					—	—	—	√	√	√
Individual Enclosures		Type 1 — Indoor Surface					√	√	√	√	√	√
		Type 1 — Indoor, Flush					—	—	—	—	—	—
		Type 3R — Outdoor-Rainproof					√	√	√	—	—	—
		Type 7 — Flammable Gas Atmosphere					√	√	√	—	—	—
		Type 9 — Combustion Dusttight					—	—	—	—	—	—
		Type 5, 12 — Lint, Fine Dust, Oils, Coolants					—	—	—	—	—	—
		Type 12K — Semi-Dusttight					√	√	√	—	—	—

For inches / millimeters conversion, see Application Data section.

① For DC UPS application.
② 2-pole design.
③ 3-pole design.
④ Requires Connect-all mounting assembly. Dimensions shown are for circuit breaker only.

Thermal-Magnetic Trip Breakers & Electronic Trip Breakers

							General Purpose Breakers		Solid State Trip Circuit Breakers					
							RD6,[1] RXD6[1]	HRD6,[1] HRXD6[1]	SJD6	SHJD6	SCJD6	SLD6	SHLD6	SCLD6
Page							7-73	7-73	7-53	7-53	7-53	7-57	7-57	7-57
Ratings	**AC**	Poles					3	3	3	3	3	3	3	3
		Amperes, Continuous					1600-2000	1600-2000	200-400	200-400	200-400	300-600	300-600	300-600
		Volts 50/60 HZ			3-Pole		600	600	600	600	600	600	600	600
		Interrupt Rating Symmetrical RMS Amperes	UL		240V		65,000	100,000	65,000	100,000	200,000	65,000	100,000	200,000
					480V		50,000	65,000	35,000	65,000	150,000	35,000	65,000	150,000
					600V		25,000	50,000	25,000	35,000	100,000	25,000	35,000	100,000
			IEC60947-2 50/60HZ	220/240V	Icu		—	—	—	—	—	—	—	—
					Ics		—	—	—	—	—	—	—	—
				380/415V	Icu		—	—	—	—	—	—	—	—
					Ics		—	—	—	—	—	—	—	—
				500V	Icu		—	—	—	—	—	—	—	—
					Ics		—	—	—	—	—	—	—	—
	DC	2-Pole 250V DC Interrupting Ratings					30,000	30,000	—	—	—	—	—	—
		3-Pole, 500V DC Interrupting Ratings[1]					25,000	50,000	—	—	—	—	—	—
Dimensions in inches		Height					16.00	16.00	11.00	11.00	17.86	11.0	11.00	17.86
		Width			3-Pole		9.00	9.00	7.50	7.50	7.50	7.50	7.50	7.50
		Depth					6.19	6.19	4.00	4.00	4.00	4.00	4.00	4.00
Overcurrent Devices		Solid State Trip					—	—	√	√	√	√	√	√
		Thermal and Adjustable Magnetic Trip					√	√	—	—	—	—	—	—
		Adjustable Magnetic Trip Only Motor Circuit Protector					—	—	—	—	—	—	—	—
		Molded Case Switch					√	—	—	—	—	—	—	—
Accessories & Modifications		Undervoltage Trip					√	√	√	√	√	√	√	√
		Shunt Trip					√	√	√	√	√	√	√	√
		Auxiliary Switch					√	√	√	√	√	√	√	√
		Alarm Switch					√	√	√	√	√	√	√	√
		Mechanical Interlock					√	√	√	√	√	√	√	√
		Rear Connections Studs					—	—	√	√	√	√	√	√
		Electric Motor Operator					√	√	√	√	√	√	√	√
		Plug-In Mounting Assembly					—	—	√	√	√	√	√	√
		Fungus Proofing (ref. page 7-91)					√	√	√	√	√	√	√	√
		Mounting Block (required)					√	√	—	—	—	—	—	—
Individual Enclosures		Type 1 — Indoor Surface					√	√	√	√	√	√	√	√
		Type 1 — Indoor, Flush					—	—	—	—	—	—	—	—
		Type 3R — Outdoor-Rainproof					—	—	√	√	—	√	√	—
		Type 7 — Flammable Gas Atmosphere					—	—	√	√	—	√	√	—
		Type 9 — Combustion Dusttight					—	—	√	√	—	√	√	—
		Type 5, 12 — Lint, Fine Dust, Oils, Coolants					—	—	√	√	√	√	√	√
		Type 12K — Semi-Dusttight					—	—	√	√	√	√	√	√

For inches / millimeters conversion, see Application Data section.

[1] Requires Connect-all mounting assembly. Dimensions shown are for circuit breaker only.

Electronic Trip Breakers

						Solid State Trip Circuit Breakers							
						SMD6	SHMD6	SCMD6	SND6	SHND6	SCND6	SPD6①	SHPD6①
Page						7-64	7-64	7-64	7-68	7-68	7-68	7-71	7-71
Ratings	**AC**	Poles				3	3	3	3	3	3	3	3
		Amperes, Continuous -				600-800	600-800	600-800	800-1200	800-1200	800-1200	1200-1600	1200-1600
		Volts 50/60HZ			3-Pole	600	600	600	600	600	600	600	600
		Interrupt Rating Symmetrical RMS Amperes	UL		240V	65,000	100,000	200,000	65,000	100,000	200,000	65,000	100,000
					480V	50,000	65,000	100,000	50,000	65,000	100,000	50,000	65,000
					600V	25,000	50,000	65,000	25,000	50,000	65,000	25,000	50,000
			IEC60947-2 50/60HZ	380/415V	Icu	—	—	—	—	—	—	—	—
					Ics	—	—	—	—	—	—	—	—
				690V	Icu	—	—	—	—	—	—	—	—
					Ics	—	—	—	—	—	—	—	—
Dimensions in inches		Height				10.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
		Width				9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
		Depth				6.19	6.19	6.19	6.19	6.19	6.19	6.19	6.19
Overcurrent Devices		Solid State Trip				√	√	√	√	√	√	√	√
		Optional DAS / Maintenance Mode				√	√	√	√	√	√	—	—
Accessories & Modifications		Undervoltage Trip				√	√	√	√	√	√	√	√
		Shunt Trip				√	√	√	√	√	√	√	√
		Auxiliary Switch				√	√	√	√	√	√	√	√
		Alarm Switch				√	√	√	√	√	√	√	√
		Mechanical Interlock				√	√	√	√	√	√	√	√
		Rear Connection Studs				√	√	√	√	√	√	—	—
		Electric Motor Operator				√	√	√	√	√	√	√	√
		Plug-In Mounting Assembly				√	√	√	√	√	√	—	—
		Fungus Proofing (ref. page 7-91)				√	√	√	√	√	√	√	√
Individual Enclosures		Type 1 — Indoor Surface				√	√	√	√	√	√	√	√
		Type 1 — Indoor, Flush				—	—	—	—	—	—	—	—
		Type 3R — Outdoor-Rainproof				√	√	√	√	√	√	—	—
		Type 7 — Flammable Gas Atmosphere				—	—	—	—	—	—	—	—
		Type 9 — Combustion Dusttight				—	—	—	—	—	—	—	—
		Type 5, 12 — Lint, Fine Dust, Oils, Coolants				√	√	√	√	√	√	—	—
		Type 12K — Semi-Dusttight				√	√	√	√	√	√	—	—

For inches / millimeters conversion, see Application Data section.

① Requires connect-all mounting block assembly. Dimensions shown are for circuit breaker.

② Breaker has rating plugs which can be changed within each frame rating.

Page				7-107			7-111			7-115		
Breaker Frame Family				**DG**			**FG**			**JG**		
	Continuous Amps			30–150A			40–250A			70–400A		
	Poles			2, 3			2, 3			2, 3		
	Max. Volts AC			600Y/347V			600Y/347V			600V		
Breaker Type				**NDGA**	**HDGA**	**LDGA**	**NFGA**	**HFGA**	**LFGA**	**NJGA**	**HJGA**	**LJGA**
Ratings	Interrupting Class			N	H	L	N	H	L	N	H	L
	Interrupting Rating RMS Symmetrical Amperes AC 50/60Hz		240Vac	65	100	200	65	100	200	65	100	200
		UL	480Vac	35	65	100	35	65	100	35	65	100
			600Vac	18	18	18	18	18	18	25	25	25
			220/240Vac	65/65	100/75	200/150	65/65	100/75	200/150	65/65	100/75	200/150
		I_{CU}/I_{CS}	380/415Vac	40/40	70/70	100/75	40/40	70/70	100/75	45/45	70/70	100/75
			690Vac	12/6	12/6	12/6	12/6	12/6	12/6	12/6	15/8	15/8
	DC Interrupting Ratings (UL)②		250Vdc (2-Pole)	30	30	30	30	30	30	30	30	30
			500Vdc (3-Pole)①	18	18	18	18	18	30	25	35	35
			600Vdc (3-Pole)⑥	—	42	—	—	42	—	—	65	—
Dimensions in Inches	1-Pole			—						—		
	2-Pole			6.9H x 4.1W x 3.4D						11H x 5.5W x 4.2D		
	3-Pole			6.9H x 4.1W x 3.4D						11H x 5.5W x 4.2D		
	4-Pole			—						—		
Trip Unit Information	Thermal-Magnetic			◆			◆			◆		
	Electronic			◆			◆			◆		
	Electronic with LCD			◆			◆			◆		
	Interchangeable Trip Unit			—			—			◆		
	Reverse Feed (w/Non-Interchangeable Trip)			◆			◆			◆		
	Communications Capability③			◆			◆			◆		
Specific Application Breakers	Molded Case Switch			◆			◆			◆		
	Motor Circuit Protector			◆			◆			◆		
	100% Rated			◆						◆		
	50°C Calibrated④											
Accessories & Modifications	Auxiliary Switch			◆			◆			◆		
	Alarm Switch			◆			◆			◆		
	Shunt Trip			◆			◆			◆		
	Undervoltage Release			◆			◆			◆		
	Mechanical Interlocks			◆			◆			◆		
	Electric Motor or Stored Energy Operator			◆			◆			◆		
	Rear Connecting Studs			◆			◆			◆		
	Plug-In Mounting Assy. w/Trip Interlock			◆			◆			◆		
	Draw-Out Assembly			◆			◆			◆		
	Handle Mechanism Options			◆			◆			◆		
Enclosures④	NEMA 1 – Indoor, Surface Mount			◆			◆					
	NEMA 1 – Indoor, Flush Mount			◆			◆					
	NEMA 3R – Outdoor, Rain Proof			◆			◆					
	NEMA 4, 4X – Stainless Steel			◆			◆					
	NEMA 7, 9 – Hazardous Locations											
	NEMA 12 – Dust			◆			◆					
	Terminal Shields			◆			◆			◆		
	Distribution Lugs			◆			◆			◆		
	Ground Sensor (Neutral Transformer)			◆			◆			◆		

① 500Vdc nominal, 600Vdc max. for ungrounded DC UPS systems.
② DC Interrupting Ratings are not applicable to electronic circuit breakers.
③ Communications available via a COMPRO or COMMOD modules using Profibus or Modbus protocols.
④ Consult Siemens for availability.
⑤ "Non-metallic" NEMA 4X enclosure for NGG breakers.
⑥ Special version, see page 7-136.
GG are not VL family breakers and do not share common VL accessories.
⑦ 304 and 316 Stainless Steel

Page				7-119			7-123			7-127			7-131		
Breaker Frame Family				**LG**			**MG**			**NG**			**PG**		
	Continuous Amps			150–600A			200–800A			300–1200A			400–1600A		
	Poles			2, 3			2, 3			2, 3			3		
	Max. Volts AC			600V			600V			600V			600V		
Breaker Type				**NLGB**	**HLGB**	**LLGB**	**NMG**	**HMG**	**LMG**	**NNG**	**HNG**	**LNG**	**NPG**	**HPG**	**LPG**
Ratings	Interrupting Class			N	H	L	N	H	L	N	H	L	N	H	L
	Interrupting Rating RMS Symmetrical Amperes AC 50/60Hz	UL	240Vac	65	100	200	65	100	200	65	100	200	65	100	200
			480Vac	35	65	100	35	65	100	35	65	100	35	65	100
			600Vac	18⑥	18	18	25	35	65	25	35	65	25	35	65
		I_{CU}/ I_{CS}	220/240Vac	65/65	100/75	200/150	65/35	100/50	200/150	65/65	100/75	200/100	65/35	100/50	200/100
			380/415Vac	45/45	70/70	100/75	50/50	70/70	100/75	50/25	70/35	100/50	50/25	70/35	100/50
			690Vac	12/6	15/8	15/8	20/10	30/15	35/17	20/10	30/15	35/17	20/10	30/15	35/15
	DC Interrupting Ratings (UL)③		250Vdc (2-Pole)	30	30	30	22	25	42	22	25	42	22	25	42
			500Vdc (3-Pole)②	25	35	35	35	50	65	35	50	65	35	50	65
			600Vdc (3-Pole)⑤	—	65	—	—	65	—	—	65	—	—	65	—
Dimensions in Inches	2-Pole			11H x 5.5W x 4.2D			16H x 7.5W x 4.7D			16H x 9W x 6.2D			—		
	3-Pole			11H x 5.5W x 4.2D			16H x 7.5W x 4.7D			16H x 9W x 6.2D					
Trip Unit Information	Thermal-Magnetic				◆			◆			◆			◆	
	Electronic				◆			◆			◆			◆	
	Electronic with LCD				◆			◆			◆			◆	
	Interchangeable Trip Unit				◆			◆			◆			◆	
	Reverse Feed (w/Non-Interchangeable Trip)				◆			◆			◆			◆	
	Communications Capability①				◆			◆			◆			◆	
Specific Application Breakers	Molded Case Switch				◆			◆			◆			◆	
	Motor Circuit Protector				◆			◆			◆				
	100% Rated④				◆			◆			◆			◆	
Accessories and Modifications	Auxiliary Switch				◆			◆			◆			◆	
	Alarm Switch				◆			◆			◆			◆	
	Shunt Trip				◆			◆			◆			◆	
	Undervoltage Release				◆			◆			◆			◆	
	Mechanical Interlocks				◆			◆			◆			◆	
	Electric Motor or Stored Energy Operator				◆			◆			◆			◆	
	Rear Connecting Studs				◆			◆			◆			◆	
	Plug-In Mounting Assy. w/Trip Interlock				◆										
	Draw-Out Assembly				◆			◆							
	Handle Mechanism Options				◆			◆			◆			◆	
	Terminal Shields				◆			◆			◆			◆	
	Distribution Lugs														
	Ground Sensor (Neutral Transformer)				◆			◆			◆			◆	

① Communications available via COMPRO or COMMOD modules using Profibus or Modbus protocol.
② 500Vdc nominal, 600Vdc max. for ungrounded DC UPS systems.
③ DC Interrupting Ratings are not applicable to electronic circuit breakers.
④ LG frame maximum 500A.
⑤ Special version, see page 7-136.
⑥ Special 600Vac 25kA version available, see page 7-120.

Arc-Fault Circuit Interrupters (AFCI)

AFCI's detect arcing faults (an unintentional arcing condition in a circuit) that standard circuit breakers are unable to detect. The device is intended to mitigate the effects of arcing faults by functioning to de-energize the circuit when an arc-fault is detected.

Combination Type AFCI

Detects all three possible types of arc faults: line-to-ground, line-to-neutral, and series.

Breaker Type	Ampere Rating	10,000 A IR Catalog No.	22,000 A IR Catalog No.	65,000 A IR Catalog No.
QAF2/QAFH2/HQAF2 **1-Pole 120V AC**	15 20	QA115AFC ①② QA120AFC ①②	QA115AFCH ① QA120AFCH ①	QA115AFCHH■ ① QA120AFCHH■ ①
QAF2/QAFH2 **2-Pole 120/240V AC**	15 20	Q215AFC ①② Q220AFC ①②	Q215AFCH■ ① Q220AFCH■ ①	— —

Branch-Feeder AFCI

Detects line-to-ground and line-to neutral arcs.

QAF2/QAFH2/HQAF2 **1-Pole 120V AC**	15 20	QA115AF ① QA120AF ①	QA115AFH■ ① QA120AFH■ ①	QA115AFHH■ ① QA120AFHH■ ①

NEW Dual Function AFCI/GFCI

The Dual Function Circuit Breaker combines Combination Type AFCI and GFCI, protecting against both Arc Faults and (5mA) Ground Faults. The device includes the Self Test feature, making it the first in class in electrical safety for homeowners.

QFGA2/QFGAH2/HQFGA2 **1-Pole 120V AC**	15 20	Q115DF ①② Q120DF ①②	Q115DFH■ ① Q120DFH ①	Q115DFHH■ ① Q120DFHH■ ①

Ground-Fault Circuit Interrupters (GFCI)

Provides Class A (5mA) ground fault protection. Intended for personnel protection. Includes Self Test as an added safety feature.

Breaker Type	Amp Rating	10,000 A IR Catalog No.	22,000 A IR Catalog No.	65,000 A IR Catalog No.
QPF2/QPHF2/HQPF2 **1-Pole 120V AC Plug-in**	15 20 30	QF115A①② QF120A①② QF130A①	QF115AH■① QF120AH■① QF130AH■①	QF115AHH■① QF120AHH■① QF130AHH■①
QPF/QPHF **2-Pole 120/240V AC Plug-in**	15 20 30 40 50 60	QF215A QF220A QF230A QF240A QF250A QF260A	QF215AH■ QF220AH■ QF230AH■ QF240AH■ QF250AH■ QF260AH■	— — — — — —

Ground Fault Equipment Protection (30mA)

Provides protection of equipment from damaging line-to-ground faults currents. De-energizes the circuit for all ungrounded conductors of the circuit.

QE/QEH **1-Pole 120V AC Plug-in**	15 20 30	QE115 QE120 QE130	QE115H■ QE120H■ QE130H■	— — —
QE/QEH **2-Pole 120/240V AC Plug-in**	15 20 30 40 50 60	QE215 QE220 QE230 QE240 QE250 QE260	QE215H■ QE220H■ QE230H■ QE240H■ QE250H■ QE260H■	— — — — — —

QAF2/QPF/QE/QPF2 Accessories

Description	Catalog Number①
Padlocking Device 1-Pole	ECPLD1
Padlocking Device 2-Pole	ECPLD2
Handle Block	ECBX231M

■ Built to order. Allow 8 -10 weeks for delivery.
① UL Listed as SWD (Switching Duty) Rated, suitable for 120V AC Fluorescent Lighting.
② Add WG to the part number for the WireGuide version, see page 1-4 for full selection.

• UL Listed • HACR Rated


1-Pole Combination Type AFCI


2-Pole Combination Type AFCI


1-Pole Branch Feeder AFCI


1-Pole Dual Function AFCI/GFC

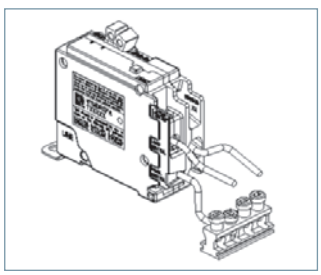

1-Pole GFCI

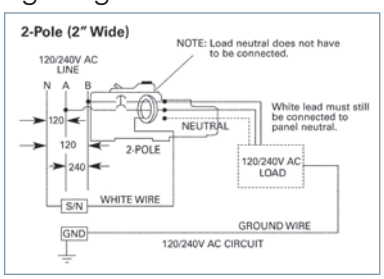

2-Pole GFCI


1-Pole Equipment Protection


2-Pole Equipment Protection

Wiring Diagrams





Continuous Current Rating @ 40° C	Type QP① 10,000A IR Catalog Number	Type QPH 22,000A IR Catalog Number	Type HQP 65,000A IR Catalog Number
1-Pole Plug-In (120V AC)⑤			
10	Q110⑨	—	—
15	Q115③	Q115H③	Q115HH■③
20	Q120③	Q120H③	Q120HH■③
25	Q125	Q125H■	Q125HH■
30	Q130	Q130H	Q130HH■
35	Q135■	Q135H■	Q135HH■
40	Q140	Q140H	Q140HH■
45	Q145■	Q145H■	Q145HH■
50	Q150	Q150H	Q150HH■
60	Q160	Q160H■	Q160HH■
70	Q170	Q170H■	Q170HH■
2-Pole Plug-In (Common-Trip 120/240V AC)⑥			
10	Q210⑨	—	—
15	Q215	Q215H	Q215HH
20	Q220	Q220H	Q220HH
25	Q225	Q225H■	Q225HH■
30	Q230	Q230H	Q230HH
35	Q235	Q235H■	Q235HH■
40	Q240	Q240H	Q240HH■
45	Q245	Q245H■	Q245HH■
50	Q250	Q250H	Q250HH
60	Q260	Q260H	Q260HH
70	Q270	Q270H	Q270HH
80	Q280	Q280H■	Q280HH■
90	Q290	Q290H	Q290HH■
100	Q2100	Q2100H	Q2100HH
110	Q2110	Q2110H	Q2110HH■
125	Q2125	Q2125H	Q2125HH
2-Pole Plug-In (Common-Trip 240V AC)④⑥			
15	Q215R	—	—
20	Q220R	—	—
30	Q230R	—	—
40	Q240R	—	—
50	Q250R	—	—
3-Pole Plug-In (Common-Trip 240V AC)⑦			
15	Q315	Q315H	Q315HH■
20	Q320	Q320H	Q320HH
25	Q325	Q325H■	Q325HH■
30	Q330	Q330H	Q330HH
35	Q335	Q335H■	Q335HH■
40	Q340	Q340H	Q340HH
45	Q345	Q345H■	Q345HH■
50	Q350	Q350H	Q350HH
60	Q360	Q360H	Q360HH
70	Q370	Q370H	Q370HH■
80	Q380	Q380H	Q380HH■
90	Q390	Q390H	Q390HH■
100	Q3100	Q3100H	Q3100HH

Q120

Q220

Q320

QP / QPH / HQP Internal Accessories

Control Voltage AC	Catalog Number	Field/Factory Installed
120V Shunt Trip	add suffix ...00S01■	Factory
24V Shunt Trip	add suffix ...00S07■	Factory
120V Auxiliary Switch	add suffix ...01■②	Factory

Modifications

Description	Catalog Number
400 Hz Calibration	add suffix ...Y⑧
Marine 50°C Ambient Calibration	add suffix ...M
Fungus Proofing	add suffix ...F

For external accessories, please refer to page 7-93

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

① UL Listed for use with 60/75° wire through 40 amps, UL listed for use with 75° wire only for 50 amps and above, HACR rated.
② 1A and 1B contacts.
③ UL Listed for frequent switching applications (SWD). 120V AC Fluorescent Lighting.
④ UL Listed for use on 3-phase grounded "B" systems — 10,000 for this application.
⑤ Shipped 12 per sleeve.
⑥ Shipped 6 per sleeve.
⑦ Shipped 4 per sleeve.
⑧ UL Listed 5 KA IR.
⑨ Type QP1, UL listed for 16 AWG conductors and multiple wires.

Duplex Circuit Breakers

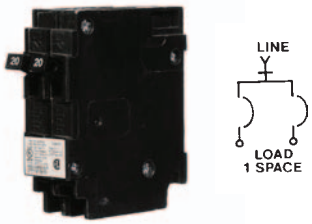
Breaker Type	Ampere Rating	Catalog Number	Catalog Number
QT **1-Pole** **10K AIC** **120V AC**	15–15	**Q1515**	**Q1515NC**①
	15–20	**Q1520**	**Q1520NC**①
	20–20	**Q2020**	**Q2020NC**①
	20–30	**Q2030**	—
	30–15■	**Q3015**	—
	30–20	**Q3020**	—
	30–30	**Q3030**	**Q3030NC**①
	SHIPPING: 12 per carton, (Wt. 4.8 lbs.)		

Triplex Circuit Breakers

Breaker Type	Ampere Rating		Catalog Number
	Single Pole	Common-Trip 2-Pole	
QT **2-Pole** **10K AIC** **120/240V AC** **Inner Poles** **Common Trip**	15	15	**Q21515CT**
	15	20	**Q21520CT**
	15	25	**Q21525CT**■
	15	30	**Q21530CT**
	15	35	**Q21535CT**■
	15	40	**Q21540CT**
	15	45	**Q21545CT**■
	15	50	**Q21550CT**
	20	20	**Q22020CT**
	20	25	**Q22025CT**■
	20	30	**Q22030CT**
	20	35	**Q22035CT**■
	20	40	**Q22040CT**
	20	45	**Q22045CT**■
	20	50	**Q22050CT**
	30	30	**Q23030CT**
	SHIPPING: 6 per carton, (Wt. 4.9 lbs.)		

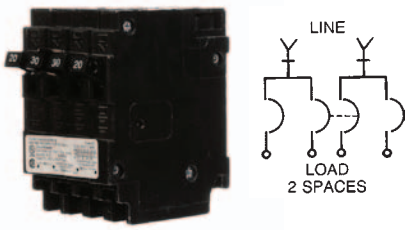
Quadplex Circuit Breakers

Breaker Type	Ampere Rating		Catalog Number
	Common-Trip 2-Pole Outside	Common-Trip 2-Pole Inside	
QT **2-Pole** **10K AIC** **120/240V AC** **Inner and** **Outter 2 Poles** **Common Trip**	15	15	**Q21515CT2**
	15	30	**Q21530CT2**
	20	20	**Q22020CT2**
	20	50	**Q22050CT2**
	30	20	**Q23020CT2**
	30	25	**Q23025CT2**
	30	30	**Q23030CT2**
	30	50	**Q23050CT2**
	40	20	**Q24020CT2**
	40	30	**Q24030CT2**
	40	40	**Q24040CT2**
	SHIPPING: 6 per carton, (Wt. 4.8 lbs.)		



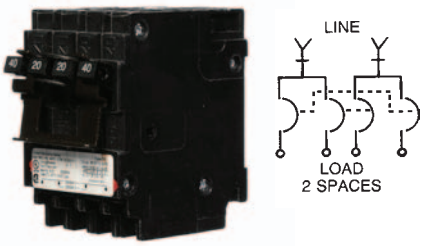
QT Duplex

These space saver duplex breakers combine two independent 1/2" breaker poles in a common unit. This unit plugs into one load center stab and requires one panel space. HACR rated.



QT Triplex

These space saver triplex breakers provide a 2-pole common trip breaker for 120/240V AC circuits and two single poles for 120V AC circuits. Triplex require two panel spaces. HACR rated.



QT Quadplex

These space saver quadplex breakers provide two sets of common trip, two-pole breakers for 120/240V AC circuits, and require two panel spaces. HACR rated.

For external accessories, please refer to page 7-93

For inches / millimeters conversion, see Application Data section.

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

① Non-CTL. For replacement use only in panels manufactured before 1968

HID Lighting

For high-intensity discharge lamp loads having in-rush currents above the instantaneous trip setting of a standard breaker.

Breaker Type	Wiring Diagram	Complete Breaker UL Unenclosed	
		Ampere Rating	Catalog Number
QP 1-Pole 120V AC	Figure 1	15	Q115HID①■
		20	Q120HID①
		30	Q130HID
QP 2-Pole 120/240V AC	Figure 2	15	Q215HID
		20	Q220HID■
		30	Q230HID■

Molded Case Switch

For applications that do not require overcurrent protection.

QP 1-Pole 120V AC	Figure 1	100	Q1100S
QP 2-Pole 120/240V AC	Figure 2	30	Q230S
		50	Q250S
		60	Q260S
		125	Q2125S

No-Noise

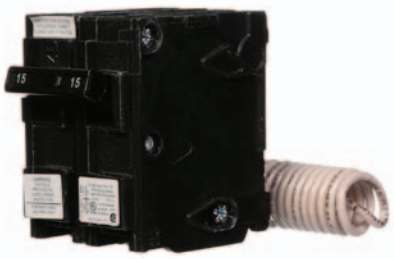
For applications that require a reduction in the 60-cycle hum of a standard breaker.

QP 2-Pole 120/240V AC	Figure 2	50	Q250NN■
		60	Q260NN

Switching Neutrals

Used where all conductors are required to be disconnected. Neutral pole of the circuit breaker does not connect to load center bus. One side is wired to neutral and the other side to the device.

QG 2-Wire Common Trip 120V AC	Figure 3	15	QG215
		20	QG220
QG 3-Wire Common Trip 120/240V AC	Figure 4	20	QG320



Switching Neutral

Figure 1

Figure 2

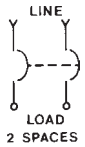


Figure 3

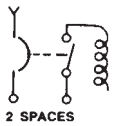
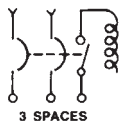


Figure 4



Wiring Diagrams

■ Built to order. Allow 2–3 weeks for delivery.
Note: All circuit breakers on this page are 10K AIC

① UL Listed as SWD (Switching Duty) Rated, suitable for 120V AC Fluorescent Lighting.

Features

- 3/4" format
- HACR Rated
- UL Classified for use in certain Square D load centers

Type QD Circuit Breakers

The Type QD circuit breaker line is available in 1-pole and 2-pole common trip versions listed on this page.

The circuit breakers are UL Classified and UL Listed.

All QD breakers are supplied with load side connectors suitable for 60/75°C wire and are calibrated for 40°C maximum ambient applications.

UL Classified

Siemens Type QD circuit breakers are UL Classified for use in specific Square D load centers in place of Square D Type QO® circuit breakers. A Panelboard Compatibility List packaged with each QD breaker shows which type QD circuit breakers are acceptable for use in Square D load centers.

The interrupting rating on these circuit breakers is 10,000A IR maximum and they are ***not*** series rated with Square D circuit breakers or equipment. This UL Classification allows a Siemens Type QD circuit breaker to be used in place of a Square D Type QO circuit breaker in those load centers that are specifically shown on the Panelboard Compatibility list. For additional information, contact your local Siemens sales engineer.

D120

D220

Continuous Current Rating @ 40°C	1-Pole	2-Pole
	120V	120/240V Common Trip
	Catalog Number	Catalog Number
15	D115①	D215
20	D120①	D220
30	D130	D230
40	D140	D240
50	D150	D250
60	D160	D260

Shipping Weights

Number of Poles	Number Per Carton	Shipping Weight (lbs.)
1	16	3.8
2	8	4.2

Panelboard Compatibility List

Listed Panelboards—Square D—Catalog Numbers

QO2L30F/S	QO12M100/RB	QO120-30M150/RB	QO130-40M200
QO2-4L70F/S	QO16-20M100/RB	QO124L150G	QO130M200/RB
QO2-4L70TS	QO16M100/RB	QO124M150	QO130-40L200G/RB
QO2-4L70RB	QO20M100/RB	QO130L150G/RB	QO140M200/RB
QO6-12L100F/S	QO112L125G/RB	QO130M150/RB	QO16L200/RB
QO6-12L100DF/S	QO112-24L125G/RB	QO16L150/RB	QO16M200/RB
QO6-12L100TF/S	QO112-24L125GWGC	QO16M150/RB	QO18-16M200FTRB
QO6-12L100DTF/S	QO116L125G	QO16-30L150/RB	QO20-40L200/RB
QO6-12L100RB	QO116-24L125G/RB	QO18-16M150FTRB	QO20-40M200TF/S
QO8-16L100F/S	QO12-24L125/RB	QO20-30M150/RB	QO20-40M200/RB
QO8-16L100DF/S	QO120-24L125G	QO20-30M150TF/S	QO24L200/RB
QO8-16L100TF/S	QO120-24L125GWGC	QO20-30L150	QO24M200/RB
QO8-16L100DTF/S	QO120L125G	QO24L150/RB	QO30L200/RB
QO8-16L100RB	QO124L125G/RB	QO24M150/RB	QO30M200/RB
QO112M100/RB	QO124M125/RB	QO30L150/RB	QO30-40L200/RB
QO116M100/RB	QO16L125/RB	QO30M150/RB	QO30-40M200/RB
QO120M100/RB	QO16-12M125FTRB	QO8-16M200FT/RB	QO40M200/RB
QO124M100	QO16-24L125/RB	QO112L200G/RB	QO140M225
QO12L100DF/S	QO20L125/RB	QO120-40M200/RB	QO142L225G/RB
QO12L100RB	QO20-24L125/RB	QO120-40M200TC	
QO12-20M100/RB	QO24L125/RB	QO124M200	
QO12-20M100TF/S	QO120-30L150G	QO130L200G/RB	

For inches / millimeters conversion, see Application Data section.

① UL Listed for frequent switching applications (SWD). 120V AC Fluorescent Lighting. One or two load conductors.

Breaker Type	Ampere Rating	Catalog Number	Catalog Number	UL Interrupting Ratings (kA)
QN 2-Pole 120/240V AC	150	**QN2150**	**QN2150R**②	10
	175	**QN2175**■	**QN2175R**②■	10
	200	**QN2200**	**QN2200R**②	10
QNH 2-Pole 120/240V AC	150	**QN2150H**	**QN2150RH**②	22
	175	**QN2175H**■	**QN2175RH**②■	22
	200	**QN2200H**	**QN2200RH**②	22
HQN 2-Pole 120/240V AC	150	**HQN2150**	**HQN2150R**②	65
	175	**HQN2175**■	—	65
	200	**HQN2200**	**HQN2200R**②	65

Requires 4 panel spaces, 2 adjacent and 2 opposite. **SHIPPING:** 1 per carton (Wt. 3 lbs.)

QNR⑤ **QN**⑤

Main Breaker Kits

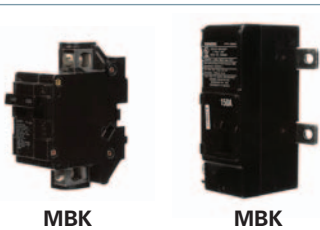
For use in Ultimate Load Centers④			For use in EQIII Load Centers			
UL Type	Ampere Rating	Catalog Number	UL Type	Ampere Rating	Catalog Number	UL Interrupting Ratings (kA)
EQ8681	100	**MBK100A**	EQ9675	100	**MBK100**	22
EQ8682	125	**MBK125A**	EQ9677	125	**MBK125**	22
EQ8693	150	**MBK150A**	EQ9683	150	**MBK150**	22
—	—	—	EQ9684	175	**MBK175**■	22
EQ8695	200	**MBK200A**	EQ9685	200	**MBK200**	22
EQ8696	225	**MBK225A**	EQ9686	225	**MBK225**	22

EQ9675

Breaker Type	Ampere Rating	Catalog Number	UL Interrupting Ratings (kA)
QPJ③ 3-Pole 240V AC	125	**QPJ3125**	10
	150	**QPJ3150**	10
	200	**QPJ3200**	10

Requires 6 spaces due to cross over design. Fits only EQIII 125-400A 3-phase load centers

SHIPPING: 5 per carton (Wt. 17 lbs.)



MBK (100,125)A **MBK** (150,200,225)A

Breaker Type	Ampere Rating	Catalog Number	UL Interrupting Breaker Ratings (kA) Volts AC 120/240
QPP 2-Pole 120/240V AC	125	**Q2125B**	10
	150	**Q2150B**	10
	175	**Q2175B**■	10
	200	**Q2200B**	10
	225	**Q2225B**	10
QPPH 2-Pole 120/240V AC	125	**Q2125BH**	22
	150	**Q2150BH**	22
	175	**Q2175BH**■	22
	200	**Q2200BH**	22
	225	**Q2225BH**■	22
HQPP 2-Pole 120/240V AC	125	**Q2125BHH**■	65
	150	**Q2150BHH**	65
	175	**Q2175BHH**■	65
	200	**Q2200BHH**	65
	225	**Q2225BHH**■	65
HQPPH 2-Pole 120/240V AC	100	**HQ2100BH**■	100
	125	**HQ2125BH**■	100
	150	**HQ2150BH**■	100
	175	**HQ2175BH**■	100
	200	**HQ2200BH**■	100
	225	**HQ2225BH**■	100

QPJ

2-Pole **QPP**

For inches / millimeters conversion, see Application Data section.
■ Built to order. Allow 2–3 weeks for delivery.

① All circuit breakers on this page are common trip.
② Reverse handle.
③ CSA Listed.
④ MBK100A for use in 100 and 125A load centers.
MBK125A for use in 125A load centers.
MBK150A for use in 150, 200 and 225A load centers.
MBK200A for use in 200 and 225A load centers.
MBK225A for use in 225A load centers.
MBK175A for use in 200 and 225A load centers.

⑤ QNR required for horizontal applications or vertical applications where the lugs are facing up. The QN breaker is required for vertical applications where the lugs are facing down as shown.

QS Breaker[1]

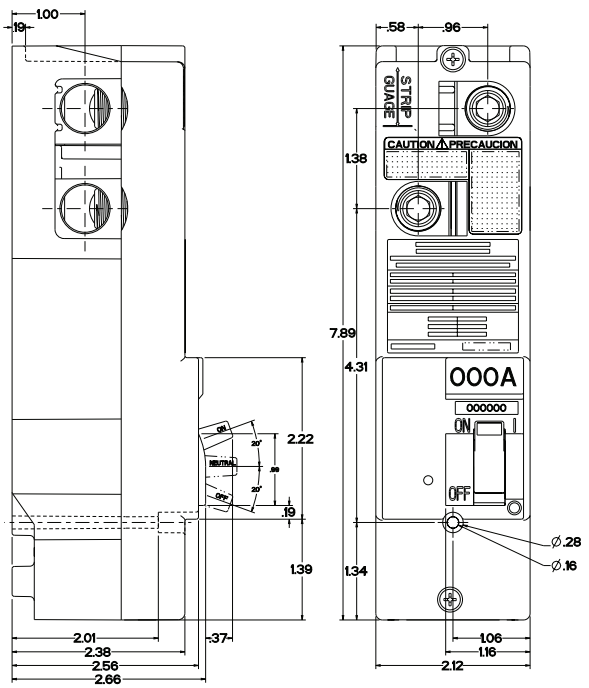
PowerMod's core offering of residential Meter Stacks, type WMM, offers the widest product offering & flexibility in the industry. Each meter stack houses the QuickSystem features to maximize productivity and minimize labor costs. To further simplify installation, our 225 Amp meter stacks feature the QS breaker. The QS breaker adds to the Siemens exclusive feature set in our Power Mod product line. Benefits and part numbers include:

- An exclusive side wired design saves wiring space and eliminates difficult "S bends"
- No need for costly filler plates — QS 225 Amp breaker takes the same space as standard 100 Amp QPs
- Single right hand bend wiring - saves time and wire
- Provides 100K AIC flexibility from 100 up to 225 Amps
- 10K to 100K AIC Series Rating

QS Breaker

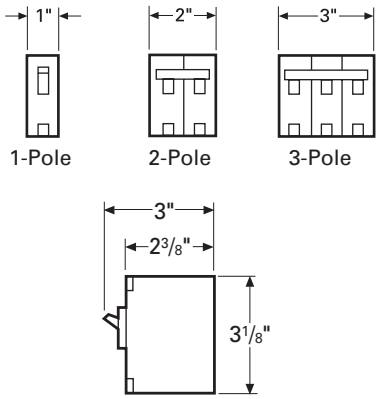
Breaker Type	QS	QSH	QSHH	HQS	HQSH
Amperage	10K AIC	22K AIC	42K AIC	65K AIC	100K AIC
100	QS2100	QS2100H	QSH2100	QS2100HH	HQS2100H
125	QS2125	QS2125H	QSH2125	QS2125HH	HQS2125H
150	QS2150	QS2150H	QSH2150	QS2150HH	HQS2150H
175	QS2175	QS2175H	QSH2175	QS2175HH	HQS2175H
200	QS2200	QS2200H	QSH2200	QS2200HH	HQS2200H
225	QS2225	QS2225H	QSH2225	QS2225HH	HQS2225H

QS Breaker Dimension Drawing

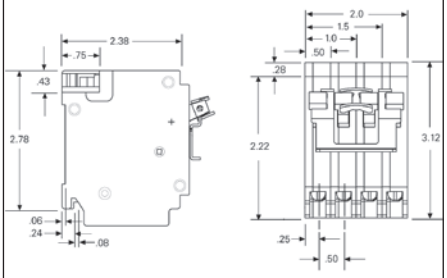


Front View

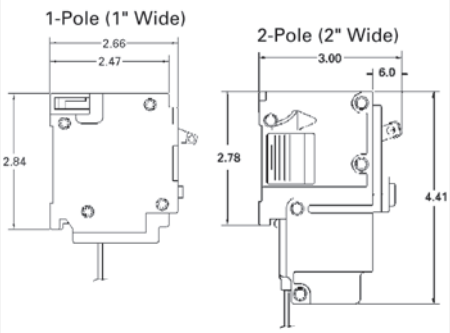
[1] For PowerMod information, please refer to Section 2, page 2-49



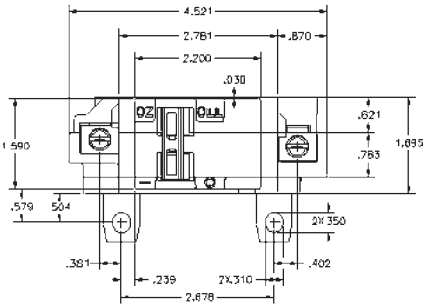
QP, QPH, HQP



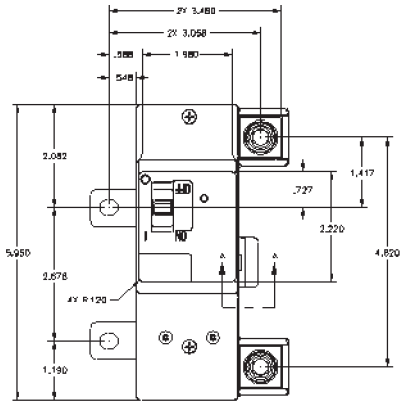
Type **QT**



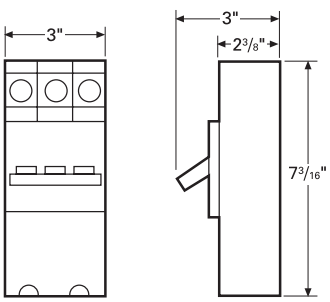
Type **QPF, QPHF, QE, QAF2, QAF2H**



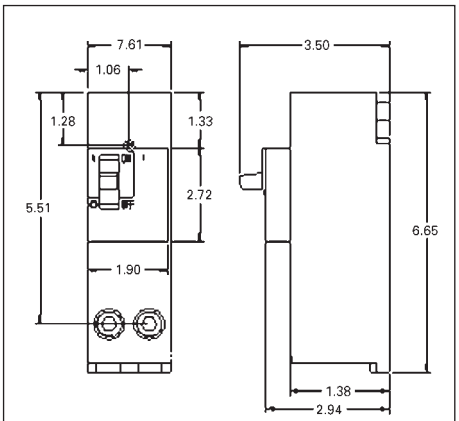
Type **EQ8681, EQ8682**



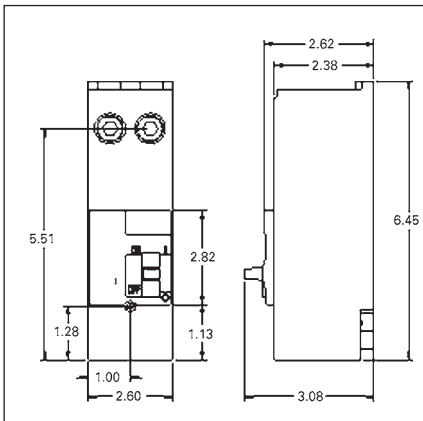
Type **EQ8693, EQ8695, EQ8696**



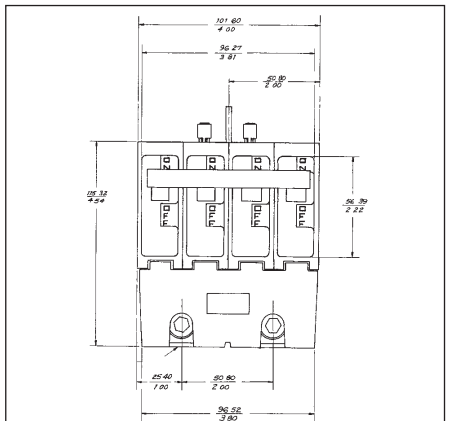
Type **QPJ**



Type **QN, QNH, HQN**



Type **QNR, QNRH, HQNR**



Type **QPP, QPPH, HQPP, HQPPH**

① All standard circuit breakers are calibrated to 40°C maximum ambient application.

Circuit Breaker Type	Circuit Breaker Ampere Rating	Cables Per Connector	Connector Wire Range
	LOAD SIDE		
QP, QPH, HQP, Plug-in	10	2	#14-#16 AWG Cu
	15–35	1 1	#14–#6 AWG Cu #14–#6 AWG Al
	40–50	1 1	#8–#6 AWG Cu #8–#4 AWG Al
	55-125	1 1	#8-#2/0 AWG Cu #8-#2/0 AWG Al
QP 1 & 2-Pole Only	55-60	1	#6-#4 AWG Cu-Al (#3 AWG compatible with QPH & HQP)
QT	15–35	1 1	#14–#6 AWG Cu #14–#6 AWG Al
	40	1	#8 AWG CU-Al
	40–50	1 1	#8–#6 AWG Cu #8–#4 AWG Al
QPF, QPHF	15–30	1 1	#14–#10 AWG Cu #12–#8 AWG Al
	40–60	1 1	#8–#6 AWG Cu #8–#4 AWG Al
QAF2, QAFH2, QFGA2, QFGAH2	15–20	1 1	#14–#12 AWG Cu #12–#10 AWG Al
QD	15–20	2	#14–#8 AWG Cu Only
	15–20	1 1	#14–#12 AWG Cu #12–#10 AWG Al
	25–35	1 1	#10–#8 AWG Cu #10–#6 AWG Al
	40–60	1 1	#8–#6 AWG Cu #8–#4 AWG Al
QN, QNH, HQN	150–200	1	#1–300kcmil Cu-Al
QS, QSH, QSHH, HQS, HQSH	100–225	1	#3–300kcmil Cu-Al
EQ8681-Ultimate	100	1	#4–3/0 AWG Cu-Al
EQ8682-Ultimate	125	1	#4–3/0 AWG Cu-Al
EQ8693-Ultimate	150	1	#1–300kcmil Cu-Al
EQ8695-Ultimate	200	1	#1–300kcmil Cu-Al
EQ8696-Ultimate	225	1	#1–300kcmil Cu-Al
QPP, QPPH, HQPP, HQPPH	125	1 1	#1 AWG Cu #2/0 AWG Al
	150	1 1	#1/0 AWG Cu #3/0 AWG Al
	175	1 1	#2/0 AWG Cu #4/0 AWG Al
	200	1 1	#3/0 AWG Cu 250kcmil AWG Al
	225	1 1	#4/0 AWG Cu 300kcmil AWG Al
EQ9675-EQIII	100	1 1	#8-#2/0 AWG Cu #8-#2/0 AWG Al
EQ9677-EQIII	125	1 1	#8-#2/0 AWG Cu #8-#2/0 AWG Al
EQ9683-EQIII	150	1 1	#1/0 AWG Cu #3/0 AWG Al
EQ9684	175	1 1	#3/0 AWG Cu 250kcmil AWG AL
EQ9685-EQIII	200	1 1	#3/0 AWG Cu 250kcmil AWG Al
EQ9686-EQIII	225	1 1	#4/0 AWG Cu 300kcmil AWG Al
QPJ	125–200	1	#2–300kcmil Cu-Al

Features

- 2 inch wide plug-on design
  - — Includes (2) 1 Pole circuits breakers
  - — No loss of load center spaces
- Easy to install and perfect for retrofit
- LEDs provide protection status

Benefits

By installing a Siemens Circuit Breaker and Surge Protective Device (SPD) in the load center of the residence, surge protection is provided for all branch circuits①.

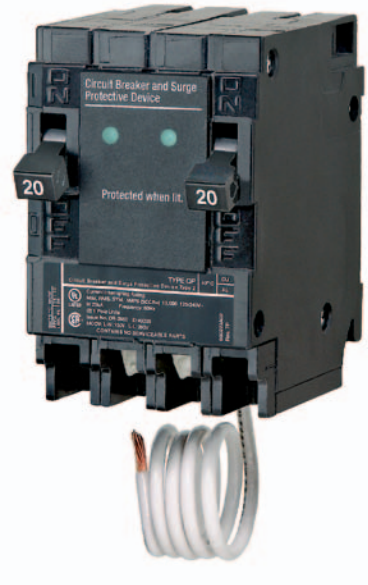
Two green LED indicator lights are provided to show that surge protection is provided for all circuits connected to the load center. These breakers should be used for circuit protection of frequently used household or facility circuits because the lights and devices connected to these circuits provide an effective indication that surge protection is being provided.

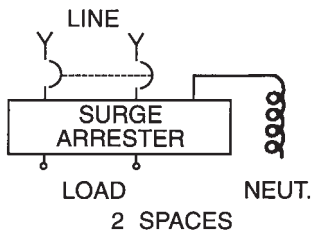
The circuit breaker and SPD utilize Siemens-built 150V AC, 40mm, metal oxide varistors (MOVs). The maximum impulse rating for the SPD module is 40kA. The standard interrupting rating for the circuit breakers is 10k AIC. All Type QP circuit breakers and SPD are plug-on style, with load terminals provided. The devices are rated for 120/240V AC and are calibrated for 40 degrees C maximum ambient applications.

Breaker Type	Ampere Rating	Catalog Number	Surge Type
QP 1- Pole 120/240V AC 10K AIC	(2) 15	**QSA1515SPD**	SPD
	(2) 20	**QSA2020SPD**	SPD

Catalog Number	**QSA1515SPD QSA2020SPD**
Amperage	15 or 20 Amp
Number of Poles	(2) 1-Pole Circuit Breakers
Initial Clamping Level	240 Volts
Transient Energy Rating	360 Joules line-to-neutral 720 Joules line-to-line
Transient Suppression	500 volts peak, line-to-neutral
Voltage Rating	1000 volts peak, line-to-line
Peak Current Rating (impulse)	40,000 amperes
Discharge Voltage Characteristic	@ 1,500A, 600 volts @ 5,000A, 800 volts (both line-to-neutral)
Discharge Current Withstand Rating	10,000 amperes line-to-neutral
Circuit Breaker Interrupting Rating	10,000A, 120/240V AC
Listings/Certifications	UL, CSA Meets UL 1449 4th Edition

Circuit Breaker and Surge Protective Device (SPD)





① For warranty information please refer to the surge website www.usa.siemens.com/surge

1-Pole Bolt-On (120V AC)⑤

Continuous Current Rating @ 40° C	Type BL①⑪ 10,000A IR Catalog Number	Type BLH①⑪ 22,000A IR Catalog Number	Type HBL①⑪ 65,000A IR Catalog Number
10⑨	B110	—	—
15	B115④	B115H④	B115HH④
20	B120④	B120H④	B120HH④
25	B125	B125H	B125HH■
30	B130	B130H	B130HH
35	B135	B135H■	B135HH■
40	B140	B140H	B140HH
45	B145■	B145H■	B145HH■
50	B150	B150H	B150HH■
60	B160	B160H■	B160HH■
70	B170	B170H■	B170HH■

2-Pole Bolt-On (Common-Trip 120/240V AC)⑥

10	B210	—	—
15	B215	B215H	B215HH
20	B220	B220H	B220HH
25	B225	B225H■	B225HH■
30	B230	B230H	B230HH
35	B235	B235H■	B235HH■
40	B240	B240H	B240HH
45	B245	B245H■	B245HH■
50	B250	B250H	B250HH
60	B260	B260H	B260HH
70	B270	B270H■	B270HH■
80	B280	B280H■	B280HH■
90	B290	B290H■	B290HH■
100	B2100	B2100H	B2100HH
110	B2110■	B2110H■	B2110HH■
125	B2125	B2125H	B2125HH■

2-Pole Bolt-On (Common-Trip 240V AC)③⑥⑩

15	B215R	—	—
20	B220R	—	—
30	B230R	—	—
40	B240R■	—	—
50	B250R	—	—

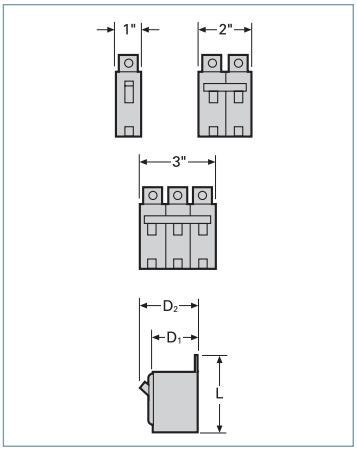
3-Pole Bolt-On (Common-Trip 240V AC)⑦

15	B315	B315H	B315HH
20	B320	B320H	B320HH
25	B325	B325H	B325HH■
30	B330	B330H	B330HH
35	B335	B335H■	B335HH■
40	B340	B340H	B340HH
45	B345	B345H■	B345HH■
50	B350	B350H	B350HH
60	B360	B360H	B360HH
70	B370	B370H	B370HH
80	B380	B380H■	B380HH
90	B390	B390H■	B390HH
100	B3100	B3100H	B3100HH

1-Pole

2-Pole

3-Pole



Breaker Type	Amperes	Dimensions L	D1	D2
BL, BLH	15–50	3 3/16	2 3/8	3
BL, BLH	55–125	3 3/4	2 3/8	3
HBL	15–125	3 3/4	2 3/8	3

BL/BLH/HBL Internal Accessories

Description	Catalog Number	Field/Factory Installed
120VAC Shunt Trip	add suffix...00S01■	Factory
24VAC Shunt Trip	add suffix...00S07■	Factory
120V Auxiliary Switch	add suffix...01■②	Factory

Modifications

Description	Catalog Number
400Hz Calibration	add suffix...Y⑧
Marine 50˚C Ambient Calibration	add suffix...M
Fungus Proofing	add suffix...F

For external accessories, please refer to page 7-93

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

① UL Listed for use with 60/75° wire through 40 amps, UL listed for use with 75° wire only for 50 amps and above, HACR rated. 120V AC Fluorescent Lighting.
②1A and 1B contacts.
③UL Listed for use on 3-phase grounded "B" systems — 10,000 for this application.
④UL Listed for frequent switching applications (SWD).
⑤Shipped 12 per sleeve.
⑥Shipped 6 per sleeve.
⑦Shipped 4 per sleeve.
⑧UL Listed 5KA IR.
⑨10 Amp breaker does not have INSTA-WIRE.
⑩For 3 Phase Applications.
⑪ UL Listed for reverse feed."

Arc-Fault Circuit Interrupters (AFCI)

AFCI's detect arcing faults (an unintentional arcing condition in a circuit) that standard circuit breakers are unable to detect. The device is intended to mitigate the effects of arcing faults by functioning to de-energize the circuit when an arc-fault is detected.

• UL Listed • HACR Rated

Combination Type AFCI

Detects all three possible types of arc fault: line-to-ground, line-to-neutral, and series.

Breaker Type	Ampere Rating	10,000 A IR Catalog Number	22,000 A IR Catalog Number	65,000 A IR Catalog Number
BAF2/BAFH2/HBAF2 1-Pole 120V AC	15	BA115AFC①	BA115AFCH■	BA115AFCHH■
	20	BA120AFC①	BA120AFCH■	BA120AFCHH■
BAF/BAFH 2-Pole 120/240V AC	15	B215AFC①	B215AFCH■	—
	20	B220AFC①	B220AFCH■	—

1-Pole Combination Type AFCI

2-Pole Combination Type AFCI

Branch-Feeder AFCI

Detects line-to-ground and line-to neutral arcs.

BAF2/BAFH2/HBAF2 1-Pole 120V AC	15	BA115AF①	BA115AFH■①	BA115AFHH■
	20	BA120AF①	BA120AFH■①	BA120AFHH■

1-Pole Branch Feeder AFCI

NEW Dual Function AFCI/GFCI

The Dual Function Circuit Breaker combines Combination Type AFCI and GFCI, protecting against both Arc Faults and (5mA) Ground Faults. The device includes the Self Test feature, making it the first in class in electrical safety for homeowners.

BFGA2/BFGAH2/HBFGA2 1-Pole 120V AC	15	B115DF	B115DFH■	B115DFHH■
	20	B120DF	B120DFH■	B120DFHH■

1-Pole Dual Function AFCI/GFC

Ground-Fault Circuit Interrupters (GFCI)

Provides Class A (5mA) ground fault protection. Intended for personnel protection. De-energizes the circuit for all ungrounded conductors of the circuit.

Breaker Type	Amp Rating	10k A IR Cat. No.	22k A IR Cat. No.	65k A IR Cat. No.
BLF/BLHF 1-Pole 120V AC Bolt-On	15	BF115A①	BF115AH①	BF115AHH■
	20	BF120A①	BF120AH①	BF120AHH■
	25	BF125A	BF125AH■	BF125AHH■
	30	BF130A	BF130AH	BF130AHH■
BLF/BLHF 2-Pole 120/240V AC Bolt-On	15	BF215A	BF215AH■	—
	20	BF220A	BF220AH	—
	30	BF230A	BF230AH	—
	40	BF240A	BF240AH■	—
	50	BF250A	BF250AH■	—
	60	BF260A	BF260AH■	—

Ground Fault Equipment Protection (30mA)

Provides protection of equipment from damaging line-to-ground faults currents. De-energizes the circuit for all ungrounded conductors of the circuit.

Breaker Type	Amp Rating	10k A IR Cat. No.	22k A IR Cat. No.
BLE/BLEH 1-Pole, 120V AC Bolt-On	15	BE115①	BE115H■①
	20	BE120①	BE120H■①
	30	BE130	BE130H■
BLE/BLEH 2-Pole 120/240V AC Bolt-On	15	BE215	BE215H■
	20	BE220	BE220H■
	30	BE230	BE230H■
	40	BE240	BE240H■
	50	BE250	BE250H■
	60	BE260	BE260H■

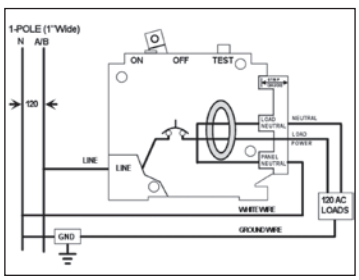
1-Pole Equipment Protection

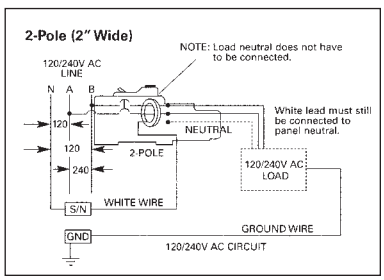
2-Pole Equipment Protection

QAF2/QPF/QE Accessories

Description	Catalog Number
Padlocking Device 1-Pole	ECPLD1
Padlocking Device 2-Pole	ECPLD2
Handle Block	ECBX231M

Wiring Diagrams





■ Built to order. Allow 8 -10 weeks for delivery.
① UL Listed as SWD (Switching Duty) Rated, suitable for 120V AC Fluorescent Lighting.

Special Application Breakers

Switching Neutrals①

Breaker Type	Ampere Rating	Catalog Number
BLG 2-Wire Common Trip	15 20	**BG215■** **BG220■**
BLG 3-Wire Common Trip	30	**BG330■**

HID Lighting①

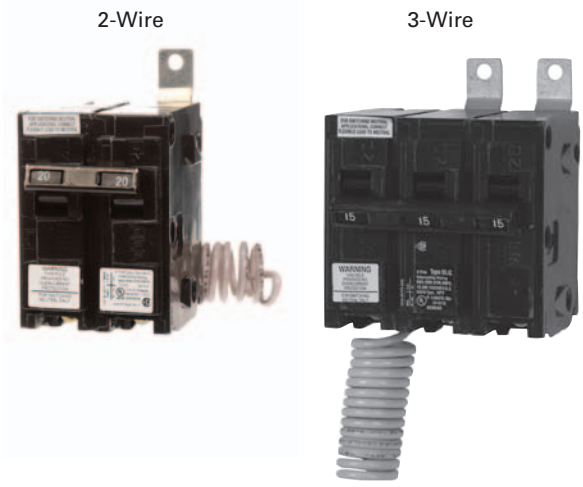
For high-intensity discharge lamp loads having in-rush currents above the instantaneous trip setting of a standard breaker.

BL 1-Pole	15 20 30	**B115HID②■** **B120HID②** **B130HID■**
BL 2-Pole	15 20 30	**B215HID②■** **B220HID②** **B230HID■**

Molded Case Switch

For applications that do not require overcurrent protection.

BL 2-Pole	30	**B230S**



Switching Neutrals

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

① HACR rated.
② UL Listed for frequent switching applications (SWD). 120V AC fluorescent lighting.

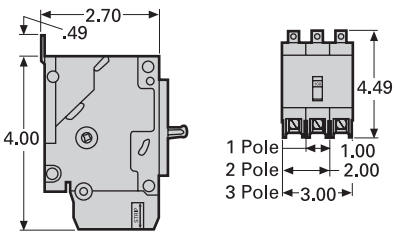
BQD④

Continuous Current Rating @ 40°C	1-Pole 277V AC–125V DC Catalog Number	2-Pole③ 480Y/277V AC–125/250V DC Catalog Number	3-Pole③ 480Y/277V AC Catalog Number
15	BQD115①②	BQD215⑤	BQD315⑤
20	BQD120①②	BQD220⑤	BQD320⑤
25	BQD125②	BQD225⑤	BQD325⑤
30	BQD130②	BQD230⑤	BQD330⑤
35	BQD135②	BQD235⑤	BQD335⑤
40	BQD140②	BQD240⑤	BQD340⑤
45	BQD145②■	BQD245⑤	BQD345⑤
50	BQD150②	BQD250⑤	BQD350⑤
60	BQD160	BQD260	BQD360
70	BQD170■	BQD270	BQD370
80	BQD180■	BQD280	BQD380
90	BQD190■	BQD290	BQD390
100	BQD1100■	BQD2100	BQD3100

BQD6 CSA Certified

Continuous Current Rating @ 40°C	1-Pole 347V AC Catalog Number	2-Pole③ 600/347V AC Catalog Number	3-Pole③ 600/347V AC Catalog Number
15	BQD6115①	BQD6215	BQD6315
20	BQD6120①	BQD6220	BQD6320
25	BQD6125■	BQD6225■	BQD6325■
30	BQD6130	BQD6230	BQD6330
35	BQD6135■	BQD6235■	BQD6335■
40	BQD6140■	BQD6240■	BQD6340
45	BQD6145■	BQD6245■	BQD6345■
50	BQD6150■	BQD6250■	BQD6350
60	BQD6160■	BQD6260■	BQD6360
70	BQD6170■	BQD6270■	BQD6370

BQD, BQD6



BQD, BQD6

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.) (ea.)
1	1/12/48	.6
2	1/6/24	1.2
3	1/4/16	2.0

Lugs For 60/75°C Wire

BQD – Load End Only	
15–40	#14–#6 AWG Cu #12–#6 AWG Al
45–100	#8–#1 AWG Cu #6–#1/0 AWG Al

Interrupting Ratings

Breaker Type	Number of Poles	RMS Symmetrical Amperes (KA)							
		Volts AC						Volts DC	
		120	240	277	480/277	347	600/347	125	125/250
BQD (UL)	1	65	—	14	—	—	—	14	—
	2	—	65	—	14	—	—	—	14
	3	—	65	—	14	—	—	—	—
BQD6 (CSA)	1	65	—	—	—	10	—	14	—
	2	—	65	—	—	—	10	—	14
	3	—	65	—	—	—	10	—	—

For inches / millimeters conversion, see Application Data section.

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

①SWD rated for switching fluorescent lighting.
②HID rated at 277V AC.
③Not suitable for 3-phase delta 480V applications.
④HACR rated.
⑤HID rated at 480Y/277V AC.

For external accessories, please refer to pages 7-95 to 7-100
For internal accessories, please refer to page 7-35

Type NGB Frame⑤ (Panelboard Mount)

Continuous Current Rating @ 40°C	1-Pole	2-Pole	3-Pole
	Catalog Number	Catalog Number	Catalog Number
15	NGB1B015B①②	NGB2B015B②	NGB3B015B②
20	NGB1B020B①②	NGB2B020B②	NGB3B020B②
25	NGB1B025B②	NGB2B025B②	NGB3B025B②
30	NGB1B030B②	NGB2B030B②	NGB3B030B②
35	NGB1B035B②	NGB2B035B②	NGB3B035B②
40	NGB1B040B②	NGB2B040B②	NGB3B040B②
45	NGB1B045B②	NGB2B045B②	NGB3B045B②
50	NGB1B050B②	NGB2B050B②	NGB3B050B②
60	NGB1B060B	NGB2B060B	NGB3B060B
70	NGB1B070B	NGB2B070B	NGB3B070B
80	NGB1B080B	NGB2B080B	NGB3B080B
90	NGB1B090B	NGB2B090B	NGB3B090B
100	NGB1B100B	NGB2B100B	NGB3B100B
110	NGB1B110B	NGB2B110B	NGB3B110B
125	NGB1B125B	NGB2B125B	NGB3B125B

Load lugs are included as standard. HACR rated.

NGB1B030B

Type HGB⑤ (Panelboard Mount)

Continuous Current Rating @ 40°C	1-Pole	2-Pole	3-Pole
	Catalog Number	Catalog Number	Catalog Number
15	HGB1B015B①②	HGB2B015B②	HGB3B015B②
20	HGB1B020B①②	HGB2B020B②	HGB3B020B②
25	HGB1B025B②	HGB2B025B②	HGB3B025B②
30	HGB1B030B②	HGB2B030B②	HGB3B030B②
35	HGB1B035B②	HGB2B035B②	HGB3B035B②
40	HGB1B040B②	HGB2B040B②	HGB3B040B②
45	HGB1B045B②	HGB2B045B②	HGB3B045B②
50	HGB1B050B②	HGB2B050B②	HGB3B050B②
60	HGB1B060B	HGB2B060B	HGB3B060B
70	HGB1B070B	HGB2B070B	HGB3B070B
80	HGB1B080B	HGB2B080B	HGB3B080B
90	HGB1B090B	HGB2B090B	HGB3B090B
100	HGB1B100B	HGB2B100B	HGB3B100B
110	HGB1B110B	HGB2B110B	HGB3B110B
125	HGB1B125B	HGB2B125B	HGB3B125B

Type LGB⑤ (Panelboard Mount)

Continuous Current Rating @ 40°C	1-Pole	2-Pole	3-Pole
	Catalog Number	Catalog Number	Catalog Number
15	LGB1B015B①②	LGB2B015B②	LGB3B015B②
20	LGB1B020B①②	LGB2B020B②	LGB3B020B②
25	LGB1B025B②	LGB2B025B②	LGB3B025B②
30	LGB1B030B②	LGB2B030B②	LGB3B030B②
35	LGB1B035B②	LGB2B035B②	LGB3B035B②
40	LGB1B040B②	LGB2B040B②	LGB3B040B②
45	LGB1B045B②	LGB2B045B②	LGB3B045B②
50	LGB1B050B②	LGB2B050B②	LGB3B050B②
60	LGB1B060B	LGB2B060B	LGB3B060B
70	LGB1B070B	LGB2B070B	LGB3B070B
80	LGB1B080B	LGB2B080B	LGB3B080B
90	LGB1B090B	LGB2B090B	LGB3B090B
100	LGB1B100B	LGB2B100B	LGB3B100B
110	LGB1B110B	LGB2B110B	LGB3B110B
125	LGB1B125B	LGB2B125B	LGB3B125B

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight lbs. (kg)
1	1	0.9 (0.4)
2	1	1.9 (0.9)
3	1	2.9 (1.2)

Lugs For 60/75°C Wire

NGB		
Ampere Rating	Wire Size	Catalog Number
15–30A	#14–#6 AWG Cu #12–#6 AWG Al	Integral with breaker
35–125A	#8-1/0 AWG Cu #8-2/0 AWG Al	Integral with breaker

Interrupting Ratings (max. RMS symmetrical amperes kA)

		UL489							
		Volts AC						Volts DC	
	Poles	120	240	277	347	480Y/277	600Y/347	125	125/250
NGB	1	100	—	25	14	—	—	14	—
	2,3	—	100	—	—	25	14	—	14④
HGB	1	100	—	35	14	—	—	14	—
	2,3	—	100	—	—	35	14	—	14④
LGB	1	100	—	65	14	—	—	14	—
	2,3	—	100	—	—	65	14	—	14④

① SWD rated.
② HID rated.
③ 2-pole only.
④ 2-pole only or two outer poles of 3-pole breaker
⑤ UL Listed for reverse feed.

For external accessories, please refer to pages 7-95 to 7-100
For internal accessories, please refer to page 7-35

Type NGB2⑤ (Panelboard Mount)

Continuous Current Rating @ 40°C	1-Pole	2-Pole	3-Pole
	Catalog Number	Catalog Number	Catalog Number
15	NGB1K015B①②	NGB2K015B②	NGB3K015B②
20	NGB1K020B①②	NGB2K020B②	NGB3K020B②
25	NGB1K025B②	NGB2K025B②	NGB3K025B②
30	NGB1K030B②	NGB2K030B②	NGB3K030B②
35	NGB1K035B②	NGB2K035B②	NGB3K035B②
40	NGB1K040B②	NGB2K040B②	NGB3K040B②
45	NGB1K045B②	NGB2K045B②	NGB3K045B②
50	NGB1K050B②	NGB2K050B②	NGB3K050B②
60	NGB1K060B	NGB2K060B	NGB3K060B
70	NGB1K070B	NGB2K070B	NGB3K070B
80	NGB1K080B	NGB2K080B	NGB3K080B
90	NGB1K090B	NGB2K090B	NGB3K090B
100	NGB1K100B	NGB2K100B	NGB3K100B
110	NGB1K110B	NGB2K110B	NGB3K110B
125	NGB1K125B	NGB2K125B	NGB3K125B

Load lugs are included as standard. HACR rated.

NGB2 series

Type HGB2⑤ (Panelboard Mount)

Continuous Current Rating @ 40°C	1-Pole	2-Pole	3-Pole
	Catalog Number	Catalog Number	Catalog Number
15	HGB1K015B①②	HGB2K015B②	HGB3K015B②
20	HGB1K020B①②	HGB2K020B②	HGB3K020B②
25	HGB1K025B②	HGB2K025B②	HGB3K025B②
30	HGB1K030B②	HGB2K030B②	HGB3K030B②
35	HGB1K035B②	HGB2K035B②	HGB3K035B②
40	HGB1K040B②	HGB2K040B②	HGB3K040B②
45	HGB1K045B②	HGB2K045B②	HGB3K045B②
50	HGB1K050B②	HGB2K050B②	HGB3K050B②
60	HGB1K060B	HGB2K060B	HGB3K060B
70	HGB1K070B	HGB2K070B	HGB3K070B
80	HGB1K080B	HGB2K080B	HGB3K080B
90	HGB1K090B	HGB2K090B	HGB3K090B
100	HGB1K100B	HGB2K100B	HGB3K100B
110	HGB1K110B	HGB2K110B	HGB3K110B
125	HGB1K125B	HGB2K125B	HGB3K125B

Type LGB2⑤ (Panelboard Mount)

Continuous Current Rating @ 40°C	1-Pole	2-Pole	3-Pole
	Catalog Number	Catalog Number	Catalog Number
15	LGB1K015B①②	LGB2K015B②	LGB3K015B②
20	LGB1K020B①②	LGB2K020B②	LGB3K020B②
25	LGB1K025B②	LGB2K025B②	LGB3K025B②
30	LGB1K030B②	LGB2K030B②	LGB3K030B②
35	LGB1K035B②	LGB2K035B②	LGB3K035B②
40	LGB1K040B②	LGB2K040B②	LGB3K040B②
45	LGB1K045B②	LGB2K045B②	LGB3K045B②
50	LGB1K050B②	LGB2K050B②	LGB3K050B②
60	LGB1K060B	LGB2K060B	LGB3K060B
70	LGB1K070B	LGB2K070B	LGB3K070B
80	LGB1K080B	LGB2K080B	LGB3K080B
90	LGB1K090B	LGB2K090B	LGB3K090B
100	LGB1K100B	LGB2K100B	LGB3K100B
110	LGB1K110B	LGB2K110B	LGB3K110B
125	LGB1K125B	LGB2K125B	LGB3K125B

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight lbs. (kg)
1	1	.75 (.34)
2	1	1.3 (.59)
3	1	2.0 (.98)

Lugs for 60/75°C Wire

Type	Ampere Rating	Wire Size	Catalog Number
NGB2 HGB2 LGB2	15-30A	#14-#6 AWG Cu	TC1Q1 (qty. 1) 3TC1Q1 (qty. 3)
		#12-#6 AWG Al	
	35-125A	#8-1/0 AWG Cu	3TC1GG20
		#8-2/0 AWG Al	

Interrupting Ratings (max. RMS symmetrical amperes kA)

Type	Poles	UL 489							
		Volts AC						Volts DC	
		120	240	277	480	347	600Y/347	125	125/250
NGB2	1	100	—	25	—	14	—	14	—
	2, 3	—	100	—	25	—	14	—	14④
HGB2	1	100	—	35	—	22	—	14	—
	2, 3	—	100	—	35	—	22	—	14④
LGB2	1	100	—	65	—	25	—	14	—
	2, 3	—	100	—	65	—	25	—	14④

① SWD rated.
② HID rated.
③ 2-pole only.
④ 2-pole only or two outer poles of 3-pole breaker
⑤ Suitable for reverse feed applications
⑥ 3 pole breakers suitable for single phase applications

For external accessories, please refer to pages 7-95 to 7-100
For internal accessories, please refer to page 7-35

Shunt Trip

Control Voltage		BQD, BQD6, CQD, CQD6, NGG, HGG, LGG, NGB, HGB, LGB, NGB2, HGB2 and LGB2 Catalog Number
V AC	V DC	
120	—	CQDST120
240	—	CQDST240▲
277	—	CQDST277▲
480	—	CQDST480▲
600	—	CQDST600
—	12	CQDST12
—	24	CQDST24
—	48	CQDST48
—	125	CQDST125

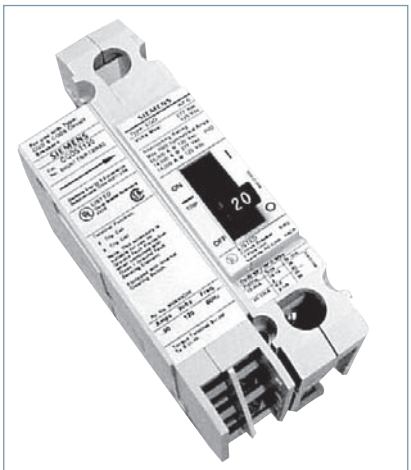
CQDST120AAS

Auxiliary Switch

Maximum Voltage		Number of Contacts	BQD, BQD6, CQD, CQD6, NGG, HGG, LGG, NGB, HGB, LGB, NGB2, HGB2 and LGB2 Catalog Number
AC	DC		
240	125	1A–1B	CQDA1
240	125	2A–2B	CQDA2

Alarm Switch

Maximum Voltage		BQD, BQD6, CQD, CQD6, NGG, HGG, LGG, NGB, HGB, LGB, NGB2, HGB2 and LGB2 Catalog Number
AC	DC	
240	125	CQDBA



CQD with Accessory Installed

Shunt Trip and Auxiliary Switch Combinations

Shunt Trip Voltage		BQD, BQD6, CQD, CQD6, NGG, HGG, LGG, NGB, HGB, LGB, NGB2, HGB2 and LGB2 Catalog Number
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

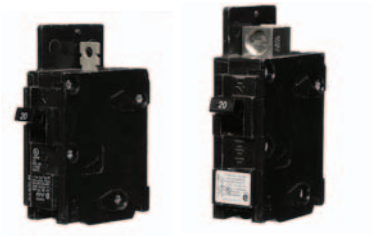
For Breaker	Catalog Number
BQD, BQD6, CQD, CQD6, NGG, HGG, LGG, NGB, HGB, LGB, NGB2, HGB2 and LGB2	CQDA1BA▲

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

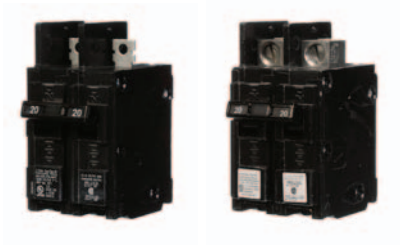
[1] Adds 1-pole space for accessory.

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.

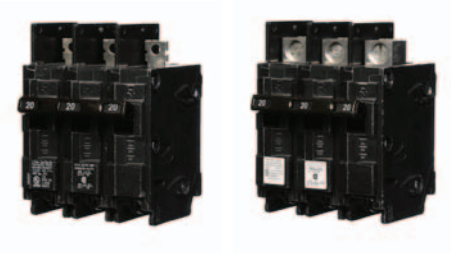
Continuous Current Rating @ 40° C	Type BQ① 10,000A IR Catalog Number	Type BQH 22,000A IR Catalog Number	Type HBQ 65,000A IR Catalog Number
1-Pole (120V AC)⑤			
15	BQ1B015④	BQ1B015H④	HB1B015■④
20	BQ1B020④	BQ1B020H④	HB1B020■④
25	BQ1B025	BQ1B025H■	HB1B025■
30	BQ1B030	BQ1B030H	HB1B030■
35	BQ1B035■	BQ1B035H■	HB1B035■
40	BQ1B040	BQ1B040H	HB1B040■
45	BQ1B045■	—	HB1B045■
50	BQ1B050	BQ1B050H	HB1B050■
60	BQ1B060■⑨	BQ1B060H■	HB1B060■
70	BQ1B070■	BQ1B070H■	HB1B070■
2-Pole (Common-Trip 120/240V AC)⑥			
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	—	HB2B045■
50	BQ2B050	BQ2B050H	HB2B050■
60	BQ2B060⑨	BQ2B060H	HB2B060■
70	BQ2B070	BQ2B070H■	HB2B070■
80	BQ2B080	BQ2B080H■	HB2B080
90	BQ2B090	BQ2B090H■	HB2B090■
100	BQ2B100	BQ2B100H	HB2B100
110	BQ2B110	—	HB2B110■
125	BQ2B125	BQ2B125H	HB2B125
2-Pole (Common-Trip 240V AC)③⑥			
15	BQ2H015	—	—
20	BQ2H020	—	—
30	BQ2H030	—	—
40	BQ2H040■	—	—
50	BQ2H050	—	—
60	BQ2H060	—	—
70	BQ2H070■	—	—
80	BQ2H080■	—	—
90	BQ2H090■	—	—
100	BQ2H100■	—	—
3-Pole (Common-Trip 240V AC)⑦			
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



1-Pole



2-Pole



3-Pole

Factory Modifications

Description	Catalog Number
Line Side Lugs	add suffix...L
Quick Connect Lug	add suffix...QX
400Hz Calibration	add suffix...Y ⑧
Marine 50° C Ambient Calibration	add suffix...M
Fungus Proofing	add suffix...F

BQ / BQH / HBQ Internal Accessories

Description	Catalog Number	Field/Factory Installed
120VAC Shunt Trip	add suffix...00S01■	Factory
24VAC Shunt Trip	add suffix...00S07■	Factory
120V Auxiliary Switch	add suffix...01■②	Factory

For external accessories, please refer to page 7-93

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

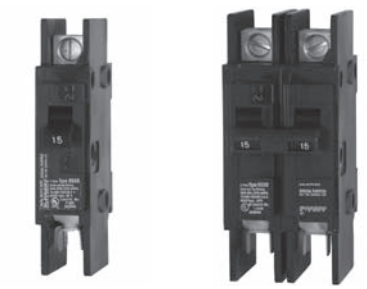
① UL Listed for use with 60/75° wire through 40 amps, UL listed for use with 75° wire only for 50 amps and above, HACR rated.

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 Refer to Table A on page 7-88

Breaker Type	Ampere Rating	Catalog Number	Line Side Connector	Load Side Connector	Interrupting Ratings (KA) (RMS Symmetrical Amperes) Volts AC 120	120/240
1-Pole DIN Rail (120V AC)						
BQLD 1-Pole 120V DIN Rail	10	**BQ1B010QLD**	TC1Q1	TC1Q1	10	
	15	**BQ1B015QLD**	TC1Q1	TC1Q1	10	
	20	**BQ1B020QLD**	TC1Q1	TC1Q1	10	
	25	**BQ1B025QLD**	TC1Q1	TC1Q1	10	
	30	**BQ1B030QLD**	TC1Q1	TC1Q1	10	
	35	**BQ1B035QLD**	TC1Q1	TC1Q1	10	
	40	**BQ1B040QLD**	TC1Q1	TC1Q1	10	
	45	**BQ1B045QLD**	TA1Q1	TA1Q1	10	
	50	**BQ1B050QLD**	TA1Q1	TA1Q1	10	
	60	**BQ1B060QLD**	TA1Q1	TA1Q1	10	
BQXD 1-Pole 120V DIN Rail	10	**BQ1B010QXD**	TC1Q1	Quick-Connect	10	
	15	**BQ1B015QXD**	TC1Q1	Quick-Connect	10	
	20	**BQ1B020QXD**	TC1Q1	Quick-Connect	10	
	25	**BQ1B025QXD**	TC1Q1	Quick-Connect	10	
	30	**BQ1B030QXD**	TC1Q1	Quick-Connect	10	
	35	**BQ1B035QXD**	TC1Q1	Quick-Connect	10	
	40	**BQ1B040QXD**	TC1Q1	Quick-Connect	10	
	45	**BQ1B045QXD**	TA1Q1	Quick-Connect	10	
	50	**BQ1B050QXD**	TA1Q1	Quick-Connect	10	
	60	**BQ1B060QXD**	TA1Q1	Quick-Connect	10	
2-Pole DIN Rail (120/240V AC)						
BQLD 2-Pole 120/240V DIN Rail	10	**BQ2B010QLD**	TC1Q1	TC1Q1		10
	15	**BQ2B015QLD**	TC1Q1	TC1Q1		10
	20	**BQ2B020QLD**	TC1Q1	TC1Q1		10
	25	**BQ2B025QLD**	TC1Q1	TC1Q1		10
	30	**BQ2B030QLD**	TC1Q1	TC1Q1		10
	35	**BQ2B035QLD**	TC1Q1	TC1Q1		10
	40	**BQ2B040QLD**	TC1Q1	TC1Q1		10
	45	**BQ2B045QLD**	TA1Q1	TA1Q1		10
	50	**BQ2B050QLD**	TA1Q1	TA1Q1		10
	60	**BQ2B060QLD**	TA1Q1	TA1Q1		10
BQXD 2-Pole 120/240V DIN Rail	10	**BQ2B010QXD**	TC1Q1	Quick-Connect		10
	15	**BQ2B015QXD**	TC1Q1	Quick-Connect		10
	20	**BQ2B020QXD**	TC1Q1	Quick-Connect		10
	25	**BQ2B025QXD**	TC1Q1	Quick-Connect		10
	30	**BQ2B030QXD**	TC1Q1	Quick-Connect		10
	35	**BQ2B035QXD**	TC1Q1	Quick-Connect		10
	40	**BQ2B040QXD**	TC1Q1	Quick-Connect		10
	45	**BQ2B045QXD**	TA1Q1	Quick-Connect		10
	50	**BQ2B050QXD**	TA1Q1	Quick-Connect		10
	60	**BQ2B060QXD**	TA1Q1	Quick-Connect		10

BQ1B015QLD **BQ2B015QLD**



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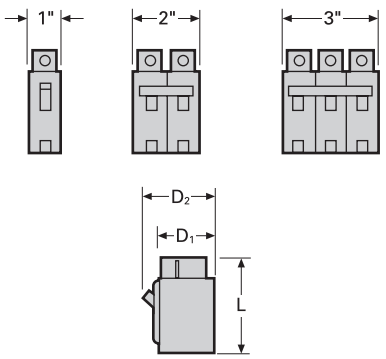


Lugs-For Use with BQXD⑥

Circuit Breaker Amp. Rtg.	Cab. Per Lug	Lug Wire Range AWG	Catalog Number
Line Side			
10–40	1 1	#16–#6 Cu #12–#6 Al	**TC1Q1**①②
45–125	1 1	#8–#1 Cu #6–#1/0 Al	**TA1Q1**

Finger Safe Terminal Shield

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

Catalog Number	Qty
BQFS2	2
BQFS1K	1000

Enclosures	
Type	**Catalog Number**④
1	**EB3100S**③⑤
3R	**WB3100**

Breaker Type	Amperes	Dimensions (inches) L	D1	D2
BQ, BQH	15–50	3¾	2⅜	3
BQ, BQH	55–125	4	2⅜	3
HBQ	15–125	4	2⅜	3
BQXD	15–60	4½	2⅜	3

For inches / millimeters conversion, see Application Data section.

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

① UL Listed for use with 60/75° wire through 40 amps, UL listed for use with 75° wire only for 50 amps and above, HACR rated.

②Connector has steel construction.

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

④Neutral included in enclosure.

⑤Enclosure will not accept circuit breakers with shunt trips or auxiliary switches installed.

⑥Type BQXD uses TA1Q1 or TC1Q1 lugs on line side of circuit breaker.

Enclosures, see Section 6
For external accessories, please refer to pages 7-93, 7-95 to 7-100

Continuous Current Rating @ 40°C	2-Pole 240V AC Catalog Number	3-Pole 240V AC Catalog Number
Type QR2②		
100	**QR22B100**	**QR23B100**
125	**QR22B125**	**QR23B125**
150	**QR22B150**	**QR23B150**
175	**QR22B175**	**QR23B175**
200	**QR22B200**	**QR23B200**
225	**QR22B225**	**QR23B225**
250	**QR22B250**	**QR23B250**
Type QRH2②		
100	**QRH22B100■**	**QRH23B100**
125	**QRH22B125**	**QRH23B125**
150	**QRH22B150**	**QRH23B150**
175	**QRH22B175■**	**QRH23B175**
200	**QRH22B200**	**QRH23B200**
225	**QRH22B225**	**QRH23B225**
250	**QRH22B250**	**QRH23B250**
Type HQR2②		
100	**HQR22B100■**	**HQR23B100**
125	**HQR22B125**	**HQR23B125**
150	**HQR22B150**	**HQR23B150**
175	**HQR22B175■**	**HQR23B175**
200	**HQR22B200**	**HQR23B200**
225	**HQR22B225**	**HQR23B225**
250	**HQR22B250**	**HQR23B250**
Type HQR2H②		
100	**HQR22B100H**	**HQR23B100H**
125	**HQR22B125H**	**HQR23B125H**
150	**HQR22B150H**	**HQR23B150H**
175	**HQR22B175H**	**HQR23B175H**
200	**HQR22B200H**	**HQR23B200H**
225	**HQR22B225H**	**HQR23B225H**
250	**HQR22B250H**	**HQR23B250H**

Ordering Information

Load side 3TA1QR300 lugs are mounted and included when circuit breaker is ordered. For line and load lugs (3TA1QR300) installed at no additional charge, add suffix "L" to catalog number.

50°C Calibration - See page 7-91.
400HZ. - See page 7-91.

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
2	1	3.2
3	1	4.5

Lugs For 75°C Wire①

Catalog Number	Lug Body	Lug Wire Range
3TA1QR300	Al	#3 - 300 Kcmil Al/Cu
3TC1QR250	Cu	#3 - 300 Kcmil Cu ONLY
CCQ250	CMP	#6 AWG - 350kcmil Al/Cu

Enclosures (Neutral Included)

Type	Catalog Number
1	**QR2N1(S) or (F)**
3R	**QR2N3R3**
12	**QR2N12**
4X	**QR2N4X**
4X316	**QR2N4X316**

UL 489 Interrupting Ratings

Breaker Type	RMS Symmetrical Amperes (kA) Volts AC (50/60 Hz)
	240
QR2	10
QRH2	25
HQR2	65
HQR2H	100

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

①See **Note: A** page 7-81.
Note: QR breakers are UL Listed for reverse feed applications.
②HACR rated.

Enclosures Section 6
For external accessories, please refer to pages 7-95 to 7-100

Shunt Trip

Control Voltage		In Rush	Shunt Trip	Shunt Trip and Auxiliary Switch Combination
AC	DC		Catalog Number	Catalog Number
—	24	1.1A	**S07QR2**	**S07QR2A**
120 - 240	48	2.0A AC / 1.8A DC	**S01QR2**	**S01QR2A**

Auxiliary Switch

Contains (1) or (2) sets of "A" contacts and "B" contacts

Maximum Control Supply Voltage (V)	Maximum Allowable Current (A)	Single Auxiliary 1A -1B Contact Catalog Number	Double Auxiliary 2A - 2B Contact Catalog Number
250 AC /125 DC	5 AC / 0.5 DC	**A01QR2**	**A02QR2**

External Accessories

Description	Catalog Number
Padlock Device	**HPLQR**
Mounting Screw Kit	**MSQR3**
Handle Blocking Device	**HBLQR**
Handle Sliding-bar Interlock	**SBMIQR**

Padlock Device HPLQR

Handle Block Device HBLQR

Mechanical Interlock SBMIQR

Type CQD (Cable In - Cable Out) DIN Rail Mount③

Continuous Current Rating @ 40°C	1-Pole 277V AC 125V DC Catalog Number	2-Pole 480Y/277V AC 125/250V DC Catalog Number	3-Pole 480Y/277V AC Catalog Number
15	CQD115①②	CQD215②	CQD315②
20	CQD120①②	CQD220②	CQD320②
25	CQD125②	CQD225②	CQD325②
30	CQD130②	CQD230②	CQD330②
35	CQD135②■	CQD235②■	CQD335②
40	CQD140②■	CQD240②	CQD340②
45	CQD145②■	CQD245②■	CQD345②■
50	CQD150②■	CQD250②	CQD350②
60	CQD160■	CQD260	CQD360
70	CQD170■	CQD270	CQD370
80	CQD180■	CQD280	CQD380
90	CQD190■	CQD290■	CQD390
100	CQD1100■	CQD2100	CQD3100

Interrupting Ratings

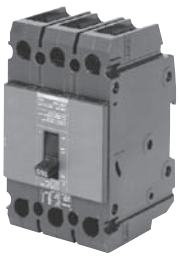
Breaker Type	Number of Poles	RMS Symmetrical Amperes (KA) Volts AC (50/60 Hz) 120	240	277	480/277	600/347	Volts DC 125	125/250
CQD (UL)	1	65	—	14	—	—	14	—
	2	—	65	—	14	—	—	14
	3	—	65	—	14	—	—	—

Shipping Weights

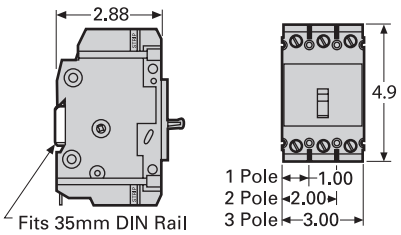
Number of Poles	Number per Carton	Shipping Weight lbs. (kg)
1	1	0.5 (0)
2	1	1.0 (0)
3	1	1.5 (1)

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



CQD



CQD

For inches / millimeters conversion, see Application Data section.

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

① SWD rated.

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

② HID rated.

③ HACR rated.

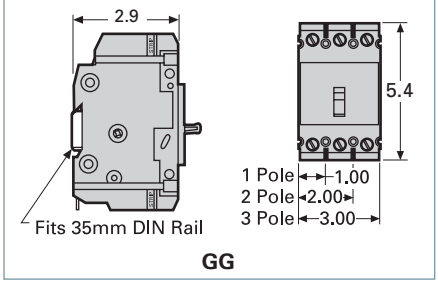
Enclosures Section 6
Accessories pages 7-42 and 7-95 to 7-100

GG 125A Frame (Cable In - Cable Out)

Continuous Current Rating @ 40°C	1-Pole	2-Pole	3-Pole
	Catalog Number	Catalog Number	Catalog Number
15	NGG1B015L①②	NGG2B015L②	NGG3B015L②
20	NGG1B020L①②	NGG2B020L②	NGG3B020L②
25	NGG1B025L②	NGG2B025L②	NGG3B025L②
30	NGG1B030L②	NGG2B030L②	NGG3B030L②
35	NGG1B035L②	NGG2B035L②	NGG3B035L②
40	NGG1B040L②	NGG2B040L②	NGG3B040L②
45	NGG1B045L②	NGG2B045L②	NGG3B045L②
50	NGG1B050L②	NGG2B050L②	NGG3B050L②
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.

GG



GG

Type HGG (Cable In - Cable Out)

Continuous Current Rating @ 40°C	1-Pole	2-Pole	3-Pole
	Catalog Number	Catalog Number	Catalog Number
15	HGG1B015L①②	HGG2B015L②	HGG3B015L②
20	HGG1B020L①②	HGG2B020L②	HGG3B020L②
25	HGG1B025L②	HGG2B025L②	HGG3B025L②
30	HGG1B030L②	HGG2B030L②	HGG3B030L②
35	HGG1B035L②	HGG2B035L②	HGG3B035L②
40	HGG1B040L②	HGG2B040L②	HGG3B040L②
45	HGG1B045L②	HGG2B045L②	HGG3B045L②
50	HGG1B050L②	HGG2B050L②	HGG3B050L②
60	HGG1B060L	HGG2B060L	HGG3B060L
70	HGG1B070L	HGG2B070L	HGG3B070L
80	HGG1B080L	HGG2B080L	HGG3B080L
90	HGG1B090L	HGG2B090L	HGG3B090L
100	HGG1B100L	HGG2B100L	HGG3B100L
110	HGG1B110L	HGG2B110L	HGG3B110L
125	HGG1B125L	HGG2B125L	HGG3B125L

Type LGG (Cable In - Cable Out)

Continuous Current Rating @ 40°C	1-Pole	2-Pole	3-Pole
	Catalog Number	Catalog Number	Catalog Number
15	LGG1B015L①②	LGG2B015L②	LGG3B015L②
20	LGG1B020L①②	LGG2B020L②	LGG3B020L②
25	LGG1B025L②	LGG2B025L②	LGG3B025L②
30	LGG1B030L②	LGG2B030L②	LGG3B030L②
35	LGG1B035L②	LGG2B035L②	LGG3B035L②
40	LGG1B040L②	LGG2B040L②	LGG3B040L②
45	LGG1B045L②	LGG2B045L②	LGG3B045L②
50	LGG1B050L②	LGG2B050L②	LGG3B050L②
60	LGG1B060L	LGG2B060L	LGG3B060L
70	LGG1B070L	LGG2B070L	LGG3B070L
80	LGG1B080L	LGG2B080L	LGG3B080L
90	LGG1B090L	LGG2B090L	LGG3B090L
100	LGG1B100L	LGG2B100L	LGG3B100L
110	LGG1B110L	LGG2B110L	LGG3B110L
125	LGG1B125L	LGG2B125L	LGG3B125L

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
15–30A	#14–#6 AWG Cu #12–#6 AWG Al	**TC1Q1** (qty. 1) **3TC1Q1** (qty. 3)
35–125A	#8–1/0 AWG Cu #8–2/0 AWG Al	**3TC1GG20** (qty. 3)
15–125A	Nut Keeper plate w/ screw (for crimp terminals)	**TNKG3** (qty. 3)

Interrupting Ratings (max. RMS symmetrical amperes kA)

Breaker Type	Poles	UL489								IEC 60947-2 (Ics = 50%Icu)		
		Volts AC						Volts DC		Volts AC		Volts DC
		120	240	277	347	480	600Y/347	125	125/250	240	415	125/250
NGG	1	65	—	25	14	—	—	14	—	25	—	—
	2,3	—	65	—	—	25	14	—	14①	65	—	14
HGG	1	65	—	35	22	—	—	14	—	—	—	—
	2,3	—	65	—	—	35	22	—	14①	—	—	—
LGG	1	65	—	65	25	—	—	14	—	—	—	—
	2,3	—	65	—	—	65	25	—	14①	—	—	—

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

Enclosures Section 6
Accessories pages 7-42 and 7-95 to 7-100

Shunt Trip

Control Voltage		BQD, BQD6, CQD, NGG, HGG, LGG, NGB, HGB and LGB Catalog Number
V AC	V DC	
120	—	CQDST120
240	—	CQDST240▲
277	—	CQDST277▲
480	—	CQDST480▲
600	—	CQDST600
—	12	CQDST12
—	24	CQDST24
—	48	CQDST48
—	125	CQDST125

CQDST120AAS

Auxiliary Switch

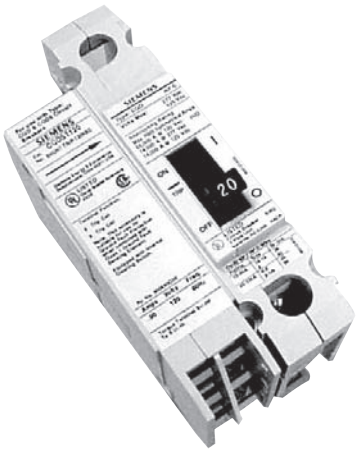
Maximum Voltage		Number of Contacts	BQD, BQD6, CQD, NGG, HGG, LGG, NGB, HGB and LGB Catalog Number
AC	DC		
240	125	1A–1B	CQDA1
240	125	2A–2B	CQDA2

Alarm Switch

Maximum Voltage		BQD, BQD6, CQD, NGG, HGG, LGG, NGB, HGB and LGB Catalog Number
AC	DC	
240	125	CQDBA

Shunt Trip and Auxiliary Switch Combinations

Shunt Trip Voltage		BQD, BQD6, CQD, NGG, HGG, LGG, NGB, HGB and LGB Catalog Number
AC	DC	
24	—	CQDST24AAS▲
120	—	CQDST120AAS▲
240	—	CQDST240AAS▲
277	—	CQDST277AAS▲
480	—	CQDST480AAS▲
600	—	CQDST600AAS▲
—	12	CQDST12DAS▲
—	24	CQDST24DAS▲
—	48	CQDST48DAS▲
—	125	CQDST125DAS▲



CQD with Accessory Installed

Alarm and Auxiliary Switch Combinations

For Breaker	Catalog Number
BQD, BQD6, CQD, NGG, HGG, LGG, NGB, HGB and LGB	CQDA1BA▲

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

①Adds 1-pole space for accessory.

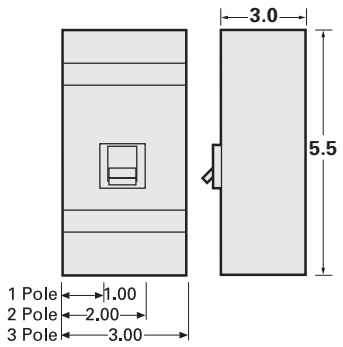
Type NEG (Cable In - Cable Out)

Continuous Ampere Rating @ 40°C	1-Pole	2-Pole	3-Pole	4-Pole
	Catalog Number	Catalog Number	Catalog Number	Catalog Number
15	NEG1B015L①②	NEG2B015L②	NEG3B015L	NEG4B015L
20	NEG1B020L①②	NEG2B020L②	NEG3B020L	NEG4B020L
25	NEG1B025L②	NEG2B025L②	NEG3B025L	NEG4B025L
30	NEG1B030L②	NEG2B030L②	NEG3B030L	NEG4B030L
35	NEG1B035L②	NEG2B035L②	NEG3B035L	NEG4B035L
40	NEG1B040L②	NEG2B040L②	NEG3B040L	NEG4B040L
45	NEG1B045L②	NEG2B045L②	NEG3B045L	NEG4B045L
50	NEG1B050L②	NEG2B050L②	NEG3B050L	NEG4B050L
60	NEG1B060L	NEG2B060L	NEG3B060L	NEG4B060L
70	NEG1B070L	NEG2B070L	NEG3B070L	NEG4B070L
80	NEG1B080L	NEG2B080L	NEG3B080L	NEG4B080L
90	NEG1B090L	NEG2B090L	NEG3B090L	NEG4B090L
100	NEG1B100L	NEG2B100L	NEG3B100L	NEG4B100L
110	NEG1B110L	NEG2B110L	NEG3B110L	NEG4B110L
125	NEG1B125L	NEG2B125L	NEG3B125L	NEG4B125L

HEG

Type HEG (Cable In - Cable Out)

Continuous Ampere Rating @ 40°C	1-Pole	2-Pole	3-Pole	4-Pole
	Catalog Number	Catalog Number	Catalog Number	Catalog Number
15	HEG1B015L①②	HEG2B015L②	HEG3B015L	HEG4B015L
20	HEG1B020L①②	HEG2B020L②	HEG3B020L	HEG4B020L
25	HEG1B025L②	HEG2B025L②	HEG3B025L	HEG4B025L
30	HEG1B030L②	HEG2B030L②	HEG3B030L	HEG4B030L
35	HEG1B035L②	HEG2B035L②	HEG3B035L	HEG4B035L
40	HEG1B040L②	HEG2B040L②	HEG3B040L	HEG4B040L
45	HEG1B045L②	HEG2B045L②	HEG3B045L	HEG4B045L
50	HEG1B050L②	HEG2B050L②	HEG3B050L	HEG4B050L
60	HEG1B060L	HEG2B060L	HEG3B060L	HEG4B060L
70	HEG1B070L	HEG2B070L	HEG3B070L	HEG4B070L
80	HEG1B080L	HEG2B080L	HEG3B080L	HEG4B080L
90	HEG1B090L	HEG2B090L	HEG3B090L	HEG4B090L
100	HEG1B100L	HEG2B100L	HEG3B100L	HEG4B100L
110	HEG1B110L	HEG2B110L	HEG3B110L	HEG4B110L
125	HEG1B125L	HEG2B125L	HEG3B125L	HEG4B125L



NEG, HEG

Line and load lugs are included as standard.
HACR rated.
Suitable for screw mounting.

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight lbs. (kg)
1	1	1.1 (0.5)
2	1	2.0 (0.9)
3	1	3.1 (1.4)
4	1	3.9 (1.8)

Lugs For 60/75°C Wire

NEG/HEG		
Ampere Rating	Wire Size	Catalog Number
15–125A	#14 – 3/0 AWG Cu (steel lugs)	3TW1EG30 (qty. 3)
15–125A④	#14 – 1/0 AWG Cu #14 – 1/0 AWG Al	3TA1EG10 (qty. 3)
15–125A④	#6 - 3/0 AWG Cu #6 - 3/0 AWG Al	3TA1EG30 (qty. 3)
15–125A	Nut Keeper plate w/ screw (for crimp terminals)	TNKE3 (3-Pole) TNKE4 (4-Pole)

Interrupting Ratings

Breaker Type	Number of Poles	UL 489 AIR							IEC 60947-2					
		RMS Symmetrical Amperes (KA)							Volts AC (50/60Hz)					
		Volts AC(50/60Hz)					Volts DC		220/240		380/415		Volts DC	
		240	277	347	480	600/347	125	125/250	Icu	Ics	Icu	Ics	125	125/250
NEG	1	85	35	22	—	—	35	—	85	43	—	—	35	—
	2, 3, 4	85	—	—	35	22③	—	35	85	43	40	20	—	35
HEG	1	100	65	25	—	—	42	—	100	50	—	—	42	—
	2, 3, 4	100	—	—	65	25③	—	42	100	50	70	35	—	42

For inches / millimeters conversion, see Application Data section.

① SWD rated.
② HID rated 277 VAC.
③ Applies to 3 & 4-pole breakers only.
④ Optional lugs for NEG and HEG breakers.

Accessories pages 7-44 and 7-95 to 7-100

Shunt Trip

Control Voltage		NEG, HEG, NEB, HEB Catalog Number
V AC	V DC	
110-240	—	**STRER240A**
—	125	**STRED125D**
380-600	—	**STREV600**
24-60	24-60	**STREM60D**

Auxiliary Switch

Maximum Voltage		Number of Contacts	NEG, HEG, NEB, HEB Catalog Number
AC	DC		
240	125	1A–1B	**ASKE2**
240	125	2A–2B	**ASKE3**

Alarm Switch

Maximum Voltage		Number of Contacts	NEG, HEG, NEB, HEB Catalog Number
AC	DC		
240	125	1A–1B	**ASKE1**
240	125	2A–2B	**ASKE5**

Undervoltage Trip

Control Voltage		NEG, HEG, NEB, HEB Catalog Number
AC	DC	
24		**UVREB24A**
60		**UVREM60▲**
120		**UVREN120**
240		**UVRER240**
480		**UVREU480▲**
600		**UVREV600▲**
	24	**UVREB24D**
	48	**UVREC48D▲**
	125	**UVRED125D▲**
	250	**UVREE250D▲**

Alarm and Auxiliary Switch Combinations

For Breaker	Catalog Number
NEG, HEG	**ASKE6**

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

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 addditional charge
- 50°C Calibration, 400HZ - see page 7-91. All ED frame circuit breakers may be reverse connected

Type ED2⑤

Blue Label

Continuous Current Rating @ 40°C	1-Pole 120V AC 125V DC Catalog Number	2-Pole 240V AC 125V DC 250V DC Catalog Number	3-Pole 240V AC Catalog Number
15	ED21B015④■	ED22B015	ED23B015
20	ED21B020④■	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

Type ED4⑤

Blue Label

Continuous Current Rating @ 40°C	1-Pole 120V AC 277V AC 125V DC Catalog Number	2-Pole 480V AC 250V DC Catalog Number	3-Pole 480V AC Catalog Number
15	ED41B015④	—	ED43B015
20	ED41B020④	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	ED41B110	ED42B110■	ED43B110
125	—	ED42B125	ED43B125

Type ED6⑤

Blue Label

Continuous Current Rating @ 40°C	1-Pole① 347V AC Catalog Number	2-Pole 600V AC 250V DC Catalog Number	3-Pole 600V AC 500V DC Catalog Number	3-Pole 600V DC Catalog Number
15	ED61B015	—	—	ED63D015L
20	ED61B020	ED62B020	ED63B020	ED63D020L
25	ED61B025	ED62B025■	ED63B025	ED63D025L
30	ED61B030	ED62B030	ED63B030	ED63D030L
35	ED61B035	ED62B035■	ED63B035	ED63D035L
40	ED61B040	ED62B040■	ED63B040	ED63D040L
45	ED61B045■	ED62B045■	ED63B045	ED63D045L
50	ED61B050	ED62B050■	ED63B050	ED63D050L
60	ED61B060	—	ED63B060	ED63D060L
70	ED61B070■	—	ED63B070	—
80	ED61B080	—	ED63B080	—
90	ED61B090	—	ED63B090	—
100	ED61B100■	—	ED63B100	—
110	—	—	ED63B110	—
125	—	—	ED63B125	—

Note: ED frame circuit breakers qualified to UL 489 Supplement SB "Naval"— See page 7-91 for additional information

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

①CSA Certified only (Not UL)

②For CED types and all 110–125 ampere ED frames.

③See **Note: A,** page 7-88.

④SWD rated.

⑤HACR rated.

⑥Not for use with HHED6 breakers.

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

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, HED4, HHED6 30–100A	2, 3	Load Side **LN1E100**	#10–1/0 Cu/Al
ED6 20-50A	2, 3	Line 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**③	#10–1/0 Cu only
Compression Lugs			
All ED, HHED, CED		**CCE125**	2/0

Enclosures (Neutral Included)⑥

Type	Catalog Number
1 (Surface)	**E2N1S** (15–100A)
1 (Flush)	**E2N1F** (15–100A)
3R	**E2N3R** (15–100A)
4–4X	**ED6SS4** (15–100A)
4–4X	**ED6S4** (15–100A)
4–4X (316SS)	**ED6S4316** (15–100A)
7–9	**EA** (15–60A)
7–9	**EB** (70–100A)
12	**E2N12** (15–100A)
1 (Surface)	**CED6N1S**②
1 (Flush)	**CED6N1F**②
3R	**CED6N3R**②
12	**CED6N12**②

Modifications page 7-91
Enclosures Section 6
Accessories pages 7-47 and 7-95 to 7-100

Type HED4⑤ — Black Label

Continuous Current Rating @ 40°C	1-Pole 277V AC 125V DC	2-Pole 480V AC 250V DC	3-Pole 480V AC
	Catalog Number	Catalog Number	Catalog Number
15	HED41B015①	HED42B015	HED43B015
20	HED41B020①	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

FIGURE1 - ED, HED, HHED

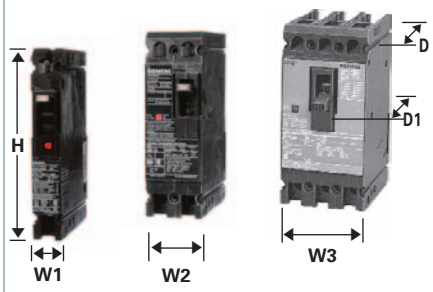
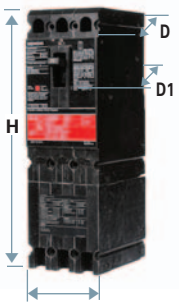


FIGURE 2 - CED (3-Pole shown)



Fuseless Current Limiting

Type HHED6⑤ — Black Label

Type CED6⑤ — Red Label

Continuous Current Rating @ 40°C	3-Pole 600V AC	2-Pole 600V AC, 250V DC	3-Pole 600V AC, 500V DC②
	Catalog Number⑥	Catalog Number	Catalog Number
15	HHED63B015A	CED62B015	CED63B015
20	HHED63B020	CED62B020■	CED63B020
25	HHED63B025	—	—
30	HHED63B030	CED62B030■	CED63B030
35	HHED63B035	—	—
40	HHED63B040	CED62B040■	CED63B040
45	HHED63B045	—	—
50	HHED63B050	CED62B050■	CED63B050
60	—	CED62B060■	CED63B060
70	—	CED62B070■	CED63B070
80	—	CED62B080■	CED63B080
90	—	CED62B090■	CED63B090
100	—	CED62B100■	CED63B100
110	—	—	CED63B110■
125	—	CED62B125■	CED63B125

Dimensions (in inches)

Breaker Type	W1	W2	W3	H	D	D1
Figure 1 ED2, ED4, ED6, HED4, ED6 ETI③	1	2	3	6.35	3.92	4.56
Figure 1 HHED6	—	2	3	6.53	3.92	4.56
Figure 2 CED6, CED6 ETI③	—	2	3	9.58	3.92	4.56

Interrupting Ratings

Breaker Type	UL 489 AIR (File #E10848) RMS Symmetrical Amperes (KA) Volts AC 120	240	277	347	480	600	Volts DC 125	250	500②	600	IEC 947-2 Volts AC (50/60Hz) 220/240 Icu	Ics	380/415 Icu	Ics	500 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)	—	—	—	30④	—	—	—	30	—	—	—	—	—	—	—	—
ED6 (2, 3-P)	—	65	—	—	25	18	—	—	18 (3-P)	—	65	17	35	9	18	5
ED6 (3-P)	—	—	—	—	—	—	—	—	—	10	—	—	—	—	—	—
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	18⑥	—	—	—	—	—	—	—	—	—	—
CED6 (2, 3-P)	—	200	—	—	200	100	—	50 (2-P)	30 (3-P)	—	—	—	—	—	—	—

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

①SWD rated.

②When wired as shown on page 7-4, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems.

③ED6-ETI, CED6-ETI, see page 7-74 for ordering information.

④Single Pole 15-30A 30KA @ 347V non-UL. 35-100A 18KA @ 347V non-UL.

⑤HACR rated.

⑥HHED63B015A 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.

GF01ED60

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▲

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▲

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	—	—

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

Alarm Switch Only

Maximum Voltage		1 Alarm Switch
AC	DC	Catalog Number
240	250	B00ED62
480		B00ED64

Ground Fault Sensing Relay Kit — Equipment Protection Only

For Use With Breaker Frame	Number of Poles	Description	Catalog Number	
			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.

Type FXD6-A①⑥

Blue Label

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

Continuous Current Rating @ 40°C	2-Pole Catalog Number	3-Pole Catalog Number
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-A⑥

Blue Label

Interchangeable Trip

Continuous Current Rating @ 40°C	Complete Breaker Unassembled w/Lugs Catalog Number	Frame Only Catalog Number	Trip Unit Only Catalog Number
2-Pole 600V AC, 250V DC②			
70	FD62B070■	FD62F250	FD62T070■
80	FD62B080■		FD62T080■
90	FD62B090■		FD62T090■
100	FD62B100■		FD62T100■
110	FD62B110■		FD62T110■
125	FD62B125■		FD62T125■
150	FD62B150		FD62T150
175	FD62B175■		FD62T175■
200	FD62B200		FD62T200
225	FD62B225■		FD62T225■
250	FD62B250■		FD62T250■
3-Pole 600V AC, 500V DC③			
70	FD63B070■	FD63F250	FD63T070■
80	FD63B080■		FD63T080■
90	FD63B090■		FD63T090■
100	FD63B100		FD63T100
110	FD63B110■		FD63T110■
125	FD63B125		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	500③	220/240		380/415		500	
						Icu	Ics	Icu	Ics	Icu	Ics
FXD6-A, FD6-A	65	35	22	30 (2-P)	18 (3-P)	65	33	35	9	—	—
HFXD6, HFD6	100	65	25	30 (2-P)	25 (3-P)	100	50	65	33	—	—
HHFD6, HHFXD6	200	100	25	—	—	—	—	—	—	—	—
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	900
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 7-91 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 without 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 7-91.

400 Hz Applications see page 7-91.

Lugs For 75°C Wire⑤

Catalog Number	Wire Range
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
1	F6N1S(F)
3R	F6N3R
4-4X	FD6SS4
7-9	EC2
12	F6N12
Neutral④	N250

Modifications page 7-91
Enclosures Section 6
Accessories pages 7-50 and 7-95 to 7-100

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

①Type FXD6-A circuit breakers are UL Listed for reverse fed applications.
②2-pole units are 3-pole width.
③When wired as shown on page 7-4, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.
④Order neutral as separate item.
⑤See **Note: A**, page 7-88.
⑥HACR rated.

Type HFD6, Type HFXD6②③④⑤

Black Label

Interchangeable Trip

Continuous Current Rating @ 40°C	Complete Breaker Unassembled w/Lugs Catalog Number	Frame Only Catalog Number	Trip Unit Only Catalog Number
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 DC①			
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, HHFXD6②③⑤

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-A③⑤

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
70	CFD63B070■
80	CFD63B080■
90	CFD63B090■
100	CFD63B100■
110	CFD63B110■
125	CFD63B125■
150	CFD63B150
175	CFD63B175
200	CFD63B200
225	CFD63B225
250	CFD63B250

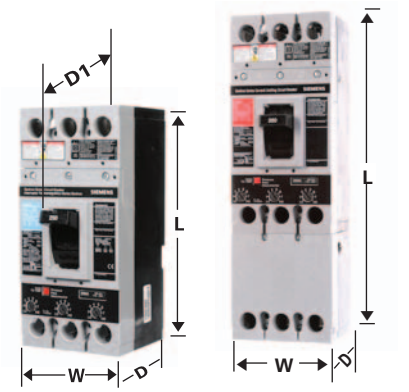


Figure 1 Figure 2

Dimensions (in inches)

Breaker Type	W	L	D	D1 (to handle)
Figure 1 FXD6-A, FD6-A, HFD6, HFXD6, HHFD6, FD6-ETI④	4.50	9.50	4	5.25
Figure 2 CFD6, CFD6-ETI④	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)		
3	1	16

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

① When wired as shown on page 7-4, 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 FXD6, ETI, CFD6, ETI — See page 7-74 for ordering information.

⑤ HACR rated.

Accessories:
for FD, FFC & FFF 250A Frames

S01FD60

Shunt Trip Combinations

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

Undervoltage Trip Combinations

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

Auxiliary Switch Combinations

Voltage		1 Auxiliary Switch	2 Auxiliary Switches
AC	DC	Catalog Number	Catalog Number
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	Catalog Number
480	250	B00FD64	C01FD64

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

①Auxiliary 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.

Type JXD2-A④

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) Catalog Number**	**3-Pole Catalog Number**
200	JXD22B200■	JXD23B200
225	JXD22B225■	JXD23B225
250	JXD22B250■	JXD23B250
300	JXD22B300	JXD23B300
350	JXD22B350■	JXD23B350
400	JXD22B400	JXD23B400

Type JXD6-A①④

600V AC, 2-Pole 250V DC, 3-Pole 500V DC② — Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker without Lugs)		
200	JXD62B200■	JXD63B200
225	JXD62B225■	JXD63B225
250	JXD62B250■	JXD63B250
300	JXD62B300	JXD63B300
350	JXD62B350■	JXD63B350
400	JXD62B400	JXD63B400

Type JD6-A④

Blue Label

Interchangeable Trip			
Continuous Current Rating @ 40°C	**Complete Breaker Unassembled w/Lugs Catalog Number**	**Frame Only Catalog Number**	**Trip Unit Only Catalog Number**
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 DC②			
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)					
						220/240		380/415		500	
	240	480	600	250	500②	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	—	—
HJD6-A, HJXD6-A	100	65	35	30 (2-P)	35 (3-P)	100	50	65	33	—	—
HHJD6, HHJXD6	200	100	50	—	—	—	—	—	—	—	—
CJD6-A	200	150	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
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.

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

②When wired as shown on page 7-4, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

③See **Note: A**, page 7-88.

④ HACR rated.

Note: JD frame qualified to UL489 supplement B "NAVAL." See page 7-91 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 without 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 (3-pole only)

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 7-91.

400Hz Applications see page 7-91.

Lugs For 75°C Wire③

Catalog Number	Cables per Lug	Wire Range
TA2J6500	1, 2 2	#3/0-500 kcmil Cu #4/0-500 kcmil Al
TA1L6750	1 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

Modifications page 7-91
Enclosures Section 6
Accessories pages 7-54 and 7-95 to 7-100

Type HJD6-A, HJXD6-A②④⑥

Black Label

Interchangeable Trip			
Continuous Current Rating @ 40°C	**Complete Breaker Unassembled w/Lugs**	**Frame Only**	**Trip Unit Only**
	Catalog Number	**Catalog Number**	**Catalog Number**
2-Pole 600V AC, 250V DC (3-Pole Width)			
200	**HJD62B200■**		**JD62T200■**
225	**HJD62B225■**		**JD62T225■**
250	**HJD62B250■**	**HJD62F400■**	**JD62T250■**
300	**HJD62B300■**		**JD62T300■**
350	**HJD62B350■**		**JD62T350■**
400	**HJD62B400■**		**JD62T400**
3-Pole 600V AC, 500V DC①②⑤			
200	**HJD63B200**		**JD63T200**
225	**HJD63B225**		**JD63T225**
250	**HJD63B250**	**HJD63F400**	**JD63T250**
300	**HJD63B300**		**JD63T300**
350	**HJD63B350**		**JD63T350**
400	**HJD63B400**		**JD63T400**

Type HHJD6, HHJXD6②④⑥

Black Label

2-Pole 600V AC (3-Pole Width)			
200	**HHJD62B200■**		**JD62T200■**
225	**HHJD62B225■**		**JD62T225■**
250	**HHJD62B250■**	**HHJD62F400■**	**JD62T250■**
300	**HHJD62B300■**		**JD62T300■**
350	**HHJD62B350■**		**JD62T350■**
400	**HHJD62B400■**		**JD62T400**
3-Pole 600VAC			
200	**HHJD63B200**		**JD63T200**
225	**HHJD63B225**		**JD63T225**
250	**HHJD63B250**	**HHJD63F400**	**JD63T250**
300	**HHJD63B300**		**JD63T300**
350	**HHJD63B350**		**JD63T350**
400	**HHJD63B400**		**JD63T400**

Type CJD6-A ⑤⑥

Fuseless Current Limiting

Red 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	**Catalog Number**
200	For 2-pole application use outside poles of 3-pole circuit breaker	**CJD63B200■**
225		**CJD63B225■**
250		**CJD63B250■**
300		**CJD63B300■**
350		**CJD63B350■**
400		**CJD63B400**

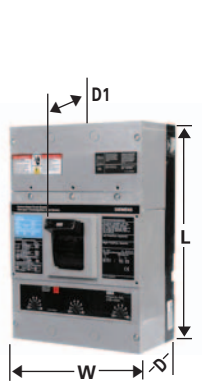


Figure 1

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,③ SJD6, SHJD6	7.5	11	4	5.44
Figure 2 CJD6, CJD6-ETI,③ SCJD6	7.5	17.86	4	5.44

Enclosures (Except SCJD6)

Type	Catalog Number
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)		
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 7-4, 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 7-74 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.

Type SJD6-A

Blue Label

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

SJD 400A Frame – 100% Rated②

Type SJD6-A

Blue Label

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

Trip Unit Adjustable Functions

Suffix Letter Code	Trip Type	Cont Current Setting	Long Time Delay	Instan-taneous Setting	Short Time Pick Up	Short Time Delay	Short Time I²t 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

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.

①For additional information, see **Note: A,** page 7-88.
②Refer to the NEC for proper application of 100% rated devices.

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

Lugs for 75° C Wire①

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

Neutral Transformers

Ampere Rating	Catalog Number
200	N02SJD
300	N03SJD
400	N04SJD

Enclosures Section 6
Accessories pages 7-54 and 7-95 to 7-100

Accessories for:

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

S01JLD6

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	Catalog Number
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	Catalog Number	Catalog Number
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	Catalog Number
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	Catalog Number	CatalogNumber
480	250	B01JLD64	A01JLD64B	A02JLD64B

Plug-in Ammeter Display Units

Breaker Type	Description	Catalog Number
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.

Type LXD6-A①④

Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker without Lugs)

Continuous Current Rating @ 40°C	2-Pole (3-Pole Width) 600V AC 250V DC Catalog Number	3-Pole 600V AC 500V DC Catalog Number
450	LXD62B450■	LXD63B450
500	LXD62B500■	LXD63B500
600	LXD62B600	LXD63B600

Type LD6-A④

Blue Label

Interchangeable Trip

Continuous Current Rating @ 40°C	Complete Breaker Unassembled w/Lugs Catalog Number	Frame Only Catalog Number	Trip Unit Only Catalog Number
2-Pole 600V AC, 250V DC (3-Pole Width)			
250	LD62B250■	LD62F600	JD62T250■
300	LD62B300■		JD62T300■
350	LD62B350■		JD62T350■
400	LD62B400		JD62T400
450	LD62B450■		LD62T450■
500	LD62B500■		LD62T500■
600	LD62B600		LD62T600
3-Pole 600V AC, 500V DC②			
250	LD63B250	LD63F600	JD63T250
300	LD63B300		JD63T300
350	LD63B350		JD63T350
400	LD63B400		JD63T400
450	LD63B450		LD63T450
500	LD63B500		LD63T500
600	LD63B600		LD63T600

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	500③	220/240		380/415		500	
						(Icu)	(Ics)	(Icu)	(Ics)	(Icu)	(Ics)
LD6-A, LXD6-A	65	35	25	30 (2-P)	25 (3-P)	65	33	40	20	—	—
HLD6-A, HLXD6-A	100	65	35	30 (2-P)	35 (3-P)	100	50	65	33	—	—
HHLD6, HHLXD6	200	100	50	—	—	—	—	—	—	—	—
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.

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

②When wired as shown on page 7-4, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

③See **Note: A**, page 7-88.

④HACR rated.

Note: LD frame qualified to UL489 supplement SB "NAVAL". See page 7-91 for additional information.

Modifications page 7-91
Enclosures Section 6
Accessories pages 7-58 and 7-95 to 7-100

Ordering Information

Complete Breaker Unassembled with Lugs
Prices of LD6, HLD6, and HHLD6 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 (3-pole only)
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 7-91.

400Hz Applications see page 7-91.

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
LXD6, LD6, HLD6, HHLD6 Assembled Breaker (less terminals)		
2	1	17.5
3	1	19.5
LD6, HLD6, HHLD6 Frame Only		
2	1	14
3	1	15.5
LD6, HHLD6 Trip Unit Only		
2	1	3.5
3	1	4
CLD6 Complete Assembled Breaker (less terminals)		
3	1	31.5

Lugs For 75°C Wire③

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

Type HLD6-A, HLXD6-A②③⑥

Black Label

Interchangeable Trip			
Continuous Current Rating @ 40°C	Complete Breaker Unassembled w/Lugs Catalog Number	Frame Only Catalog Number	Trip Unit Only Catalog Number
2-Pole 600V AC, 250V DC (3-Pole Width)			
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 DC①⑤			
250	HLD63B250	HLD63F600	JD63T250
300	HLD63B300		JD63T300
350	HLD63B350		JD63T350
400	HLD63B400		JD63T400
450	HLD63B450		LD63T450
500	HLD63B500		LD63T500
600	HLD63B600		LD63T600

Type HHLD6, HHLXD6②③⑥

Black Label

2-Pole 600V AC (3-Pole Width)			
250	HHLD62B250■	HHLD62F600■	JD62T250■
300	HHLD62B300■		JD62T300■
350	HHLD62B350■		JD62T350■
400	HHLD62B400■		JD62T400
450	HHLD62B450■		HHLD62T450■
500	HHLD62B500■		HHLD62T500■
600	HHLD62B600■		HHLD62T600■
3-Pole 600V AC			
250	HHLD63B250	HHLD63F600	JD63T250
300	HHLD63B300		JD63T300
350	HHLD63B350		JD63T350
400	HHLD63B400		JD63T400
450	HHLD63B450■		HHLD63T450■
500	HHLD63B500■		HHLD63T500■
600	HHLD63B600■		HHLD63T600■

Type CLD6-A③⑥

Fuseless Current Limiting

Red Label

Non-Interchangeable Trip (Assembled Circuit Breaker Without Lugs)		
Continuous Current Rating @ 40°C	2-Pole 600V AC/250V DC Catalog Number	3-Pole 600V AC/500V DC Catalog Number
450	For 2-pole application use outside poles of 3-pole circuit breaker	CLD63B450■
500		CLD63B500
600		CLD63B600

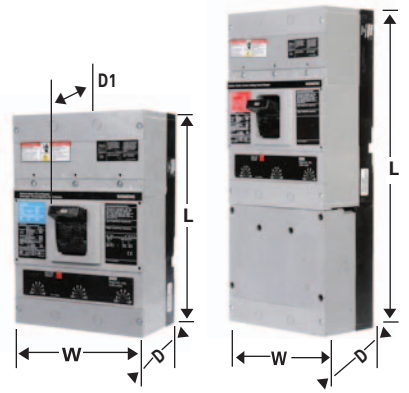


Figure 1 Figure 2

Dimensions (in inches)

Breaker Type	W	L	D	To Handle D1
Figure 1 LXD6-A, LD6-A HLD6-A HHLD6, HHLXD6, LXD6–ETI,④ SLD6, SHLD6	7.5	11	4	5.44
Figure 2 CLD6, CLD6-ETI,④ SCLD6	7.5	17.86	4	5.44

Enclosures: (except SCLD6)

Type	Catalog Number
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 7-4, 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 HHLD6 type circuit breaker change the prefix identifier HLD6 or HHLD6 to HLXD6 or HHLXD6. Price is sum of frame and trip units prices, e.g. price of HLXD63B400 is the price of HLD63F600 plus the price of LD63T600. Order the terminal connectors separately.

③ Type HLXD6, HHLXD6, & CLD6 Circuit Breakers are UL Listed for reverse feed applications.

④ LXD6-ETI, CLD6-ETI see page 7-74 for ordering information.

⑤ CE Applies to non-interchangeable type HLXD only.

⑥ HACR rated.

Type SLD6-A

Blue Label

3-Pole, 600V AC	
Catalog Number	**Max Current Rating**
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**
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**
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 <u>not</u> 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

Neutral Transformers

Ampere Rating	Catalog Number
300	**N03SJD**
400	**N04SJD**
500	**N05SLD**
600	**N06SLD**

Trip Unit Adjustable Functions

Suffix Letter Code	Trip Type	Cont Current Setting	Long Time Delay	Instan-taneous Setting	Short Time Pick Up	Short Time Delay	Short Time I^2t 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
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 7-55; for enclosures, see page 7-56.

100% Rated – Not available in SLD6 Frame.

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

Accessories for:

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

S01JLD6

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	Catalog Number
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	Catalog Number	Catalog Number
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	Catalog Number
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	Catalog Number	CatalogNumber
480	250	B01JLD64	A01JLD64B	A02JLD64B

Plug-in Ammeter Display Units

Breaker Type	Description	Catalog Number
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.

Type LMXD6①④

Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker without Lugs)

Continuous Current Rating @ 40°C	2-Pole (3-Pole Width) Catalog Number	3-Pole Catalog Number
500	—	LMXD63B500■
600	LMXD62B600■	LMXD63B600
700	LMXD62B700■	LMXD63B700
800	LMXD62B800	LMXD63B800

Type LMD6④

Blue Label

Interchangeable Trip

Continuous Current Rating @ 40°C	Complete Breaker Unassembled w/Lugs Catalog Number	Frame Only Catalog Number	Trip Unit Only Catalog Number
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 DC②			
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 7-91.

400Hz Applications see page 7-91.

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

Lugs③ for 75°C Wire

Catalog Number	Cables per Lug	Wire Range
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 7-4, this circuit breaker is UL listed and rated for use on 500VDC ungrounded UPS systems only.

③ See **Note: A**, page 7-88.

④ HACR rated.

Modifications page 7-91
Enclosures Section 6
Accessories pages 7-61 and 7-95 to 7-100

Type HLMXD6①④

Black 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	**Catalog Number**
500	For 2-pole application use outside poles of 3-pole circuit breaker	**HLMXD63B500■**
600		**HLMXD63B600■**
700		**HLMXD63B700■**
800		**HLMXD63B800**

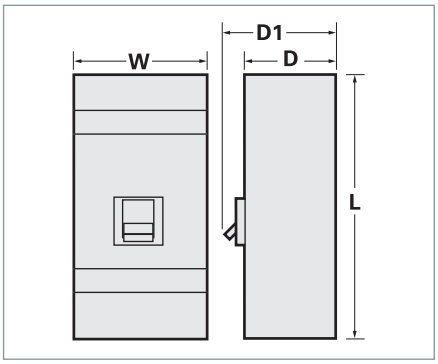
Type HLMD6④

Black Label

Interchangeable Trip			
Continuous Current Rating @ 40°C	**Complete Breaker Unassembled**	**Frame Only**	**Trip Unit Only**
	Catalog Number	**Catalog Number**	**Catalog Number**
2-Pole 600V AC, 250V DC (3-Pole Width)			
500	**HLMD62B500■**	**HLMD62F800■**	**LMD62T500■**
600	**HLMD62B600■**		**LMD62T600■**
700	**HLMD62B700■**		**LMD62T700■**
800	**HLMD62B800■**		**LMD62T800■**
3-Pole 600V AC, 500V DC③			
500	**HLMD63B500**	**HLMD63F800**	**LMD63T500■**
600	**HLMD63B600**		**LMD63T600■**
700	**HLMD63B700**		**LMD63T700■**
800	**HLMD63B800**		**LMD63T800**

Interrupting Ratings

Breaker Type	UL 489A IR RMS Symmetrical Amperes (KA)				
	Volts AC			Volts DC	
	240	480	600	250	500
LMD6, LMXD6	65	50	25	30 (2-P)	25 (3-P)
HLMD6, HLMXD6	100	65	50	30 (2-P)	50 (3-P)



Dimensions (in inches)

Breaker Type	W	L	D	D1
LMD6, LMXD6, HLMD6, HLMXD6 LMXD6-ETI②	7.5	16	4.5	5.93

Enclosures

Type	Catalog Number
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.

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

②LMXD6-ETI, see page 7-74 for catalog information.

③ When wired as shown on page 7-4, this circuit breaker is UL listed and rated for use on 500VDC ungrounded UPS systems only.

④ HACR rated.

Accessories for:

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

S01JLD6

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	Catalog Number
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	Catalog Number	Catalog Number
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	Catalog Number
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	Catalog Number	CatalogNumber
480	250	B01JLD64	A01JLD64B	A02JLD64B

Plug-in Ammeter Display Units

Breaker Type	Description	Catalog Number
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.

Type MXD6①⑥ — Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker Without Lugs)

Continuous Current Rating @ 40°C	2-Pole② Catalog Number	3-Pole Catalog Number
600	MXD62B600■	MXD63B600
700	MXD62B700■	MXD63B700
800	MXD62B800■	MXD63B800

Type MD6⑥ — Blue Label

Interchangeable Trip

Continuous Current Rating @ 40°C	Complete Breaker Unassembled with Lugs Catalog Number	Frame Only Catalog Number	Trip Unit Only Catalog Number
2-Pole 600V AC, 250V DC②			
500	MD62B500■	MD62F800■	MD62T500■
600	MD62B600■		MD62T600■
700	MD62B700■		MD62T700■
800	MD62B800■		MD62T800■
3-Pole 600V AC, 500V DC③			
500	MD63B500	MD63F800	MD63T500
600	MD63B600		MD63T600
700	MD63B700		MD63T700
800	MD63B800		MD63T800

Lugs④

Catalog Number	Cables Per Lug	Lugs Per Kit	Wire Range
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 3TA2N8750	1-2	2 3	500-750 kcmil Cu/Al
2TA3N8750 3TA3N8750	1-3	2 3	500-750 kcmil Cu/Al
2TA4N8500 3TA4N8500	1-4	2 3	250-500 kcmil Cu/Al
2TA4P8500 3TA4P8500	1-4	2 3	250-500 kcmil Cu/Al

Instantaneous Adjustment Trip Range

Ampere Rating	Nominal Instantaneous Values							
	Low +/- 20% Tolerance	2	3	4	5	6	7	High +/- 20% Tolerance
500	3000	3430	3860	4280	4710	5140	5570	6000
600–800	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 7-4, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems.
④ See **Note: A**, page 7-88.
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 7-91 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 without 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% Rated⑤ 3-Pole Only
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 3TA4P8500 or 3TA2N8750.

50°C Applications see page 7-91.

400Hz Applications see page 7-91.

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
SMD6 Breaker		
3	1	61.5

Enclosures

Type	Catalog Number
1 3R 12	MND61 MND63 MND612■
Neutral	W63623

Modifications page 7-91
Enclosures Section 6
Accessories pages 7-65 and 7-95 to 7-100

Type HMXD6①⑤

Black 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	**Catalog Number**
600	For 2-pole application use outside poles of 3-pole circuit breaker	**HMXD63B600■**
700		**HMXD63B700■**
800		**HMXD63B800**

Type HMD6⑤

Black Label

Interchangeable Trip			
Continuous Current Rating @ 40°C	**Complete Breaker Unassembled w/Lugs**	**Frame Only**	**Trip Unit Only**
	Catalog Number	**Catalog Number**	**Catalog Number**
2-Pole 600V AC, 250V DC②			
500	**HMD62B500■**	**HMD62F800■**	**MD62T500■**
600	**HMD62B600■**		**MD62T600■**
700	**HMD62B700■**		**MD62T700■**
800	**HMD62B800■**		**MD62T800■**
3-Pole 600V AC, 500V DC④			
500	**HMD63B500**	**HMD63F800**	**MD63T500**
600	**HMD63B600**		**MD63T600**
700	**HMD63B700**		**MD63T700**
800	**HMD63B800**		**MD63T800**

Type CMD6①⑤

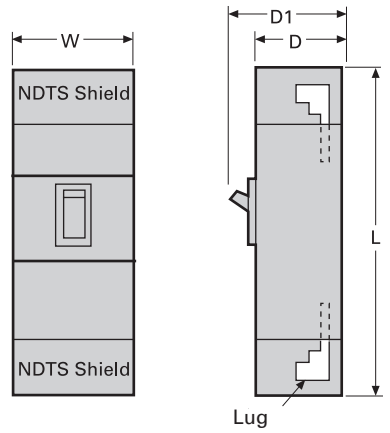
Fuseless Current Limiting

Red 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	**Catalog Number**
600	For 2-pole application use outside poles of 3-pole circuit breaker	**CMD63B600■**
700		**CMD63B700■**
800		**CMD63B800**

Interrupting Ratings

Breaker Type	UL 489 AIR—File E10848 RMS Symmetrical Amperes (KA) Volts AC 240	480	600	Volts DC 250	500④	IEC 947-2 AIR Volts AC (50/60HZ) 220/240 (Icu)	(Ics)	380/415 (Icu)	(Ics)	500 (Icu)	(Ics
MD6, MXD6	65	50	25	30 (2-P)	25 (3-P)	65	33	40	20	—	—
HMD6, HMXD6	100	65	50	30 (2-P)	50 (3-P)	100	50	65	33	—	—
CMD6	200	100	65	—	50 (3-P)	—	—	—	—	—	—



When wire lug shield NDTS is used.

Note: NDTS lug shields are required when oversized lugs are used. The kits include the NDTS shield.

Dimensions (in inches)

Breaker Type	W	L	D	(To Handle) D1
MD6, MXD6, HMD6, HMXD6, CMD6, MXD6-ETI, CMD6-ETI, SMD6-B, SHMD6-B, and SCMD6-B	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.

①HMXD6 and CMD circuit breakers are UL listed for reverse connection applications.
②2-pole units available in 3-pole width only.
③MXD6-ETI, CMD6-ETI see page 7-74 for catalog information.
④When wired as shown on page 7-4, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.
⑤HACR rated.

SMD 800A Frame – 100% Rated①

	Type SMD6 Blue Label		Type SHMD6-B Black Label		Current Limiting Type SCMD6-B Red Label	
Max Current Rating	3-Pole, 600V AC		3-Pole, 600V AC		3-Pole, 600V AC	
	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)
600	SMD6A600LI	SMD6B600LI	SHMD6A600LI	SHMD6B600LI	SCMD6A600LI	SCMD6B600LI
700	SMD6A700LI	SMD6B700LI	SHMD6A700LI	SHMD6B700LI	SCMD6A700LI	SCMD6B700LI
800	SMD6A800LI	SMD6B800LI	SHMD6A800LI	SHMD6B800LI	SCMD6A800LI	SCMD6B800LI
600	SMD6A600LIG	SMD6B600LIG	SHMD6A600LIG	SHMD6B600LIG	SCMD6A600LIG	SCMD6B600LIG
700	SMD6A700LIG	SMD6B700LIG	SHMD6A700LIG	SHMD6B700LIG	SCMD6A700LIG	SCMD6B700LIG
800	SMD6A800LIG	SMD6B800LIG	SHMD6A800LIG	SHMD6B800LIG	SCMD6A800LIG	SCMD6B800LIG
600	SMD6A600LSI	SMD6B600LSI	SHMD6A600LSI	SHMD6B600LSI	SCMD6A600LSI	SCMD6B600LSI
700	SMD6A700LSI	SMD6B700LSI	SHMD6A700LSI	SHMD6B700LSI	SCMD6A700LSI	SCMD6B700LSI
800	SMD6A800LSI	SMD6B800LSI	SHMD6A800LSI	SHMD6B800LSI	SCMD6A800LSI	SCMD6B800LSI
600	SMD6A600LSIG	SMD6B600LSIG	SHMD6A600LSIG	SHMD6B600LSIG	SCMD6A600LSIG	SCMD6B600LSIG
700	SMD6A700LSIG	SMD6B700LSIG	SHMD6A700LSIG	SHMD6B700LSIG	SCMD6A700LSIG	SCMD6B700LSIG
800	SMD6A800LSIG	SMD6B800LSIG	SHMD6A800LSIG	SHMD6B800LSIG	SCMD6A800LSIG	SCMD6B800LSIG

SMD 800A Frame – 100% Rated①

	Blue Label		Black Label		Current Limiting Red Label	
Max Current Rating	3-Pole, 600V AC		3-Pole, 600V AC		3-Pole, 600V AC	
	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)
600	SMD6A600LIH	SMD6B600LIH	SHMD6A600LIH	SHMD6B600LIH	SCMD6A600LIH	SCMD6B600LIH
700	SMD6A700LIH	SMD6B700LIH	SHMD6A700LIH	SHMD6B700LIH	SCMD6A700LIH	SCMD6B700LIH
800	SMD6A800LIH	SMD6B800LIH	SHMD6A800LIH	SHMD6B800LIH	SCMD6A800LIH	SCMD6B800LIH
600	SMD6A600LIGH	SMD6B600LIGH	SHMD6A600LIGH	SHMD6B600LIGH	SCMD6A600LIGH	SCMD6B600LIGH
700	SMD6A700LIGH	SMD6B700LIGH	SHMD6A700LIGH	SHMD6B700LIGH	SCMD6A700LIGH	SCMD6B700LIGH
800	SMD6A800LIGH	SMD6B800LIGH	SHMD6A800LIGH	SHMD6B800LIGH	SCMD6A800LIGH	SCMD6B800LIGH
600	SMD6A600LSIH	SMD6B600LSIH	SHMD6A600LSIH	SHMD6B600LSIH	SCMD6A600LSIH	SCMD6B600LSIH
700	SMD6A700LSIH	SMD6B700LSIH	SHMD6A700LSIH	SHMD6B700LSIH	SCMD6A700LSIH	SCMD6B700LSIH
800	SMD6A800LSIH	SMD6B800LSIH	SHMD6A800LSIH	SHMD6B800LSIH	SCMD6A800LSIH	SCMD6B800LSIH
600	SMD6A600LSIGH	SMD6B600LSIGH	SHMD6A600LSIGH	SHMD6B600LSIGH	SCMD6A600LSIGH	SCMD6B600LSIGH
700	SMD6A700LSIGH	SMD6B700LSIGH	SHMD6A700LSIGH	SHMD6B700LSIGH	SCMD6A700LSIGH	SCMD6B700LSIGH
800	SMD6A800LSIGH	SMD6B800LSIGH	SHMD6A800LSIGH	SHMD6B800LSIGH	SCMD6A800LSIGH	SCMD6B800LSIGH

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-B, SHMD6-B and SCMD6-B are acceptable for reverse connection applications

Lugs for 75° C Wire②

Catalog Number	Cables per Lug	Wire Range
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	Instan-taneous Setting	Short Time Pick Up	Short Time Delay	Ground Fault Pick Up	Ground Fault Delay
LI	LI	√	√	√				
LIG	LIG	√	√	√			√	√
LSI	LSI	√	√	√	√	√		
LSIG	LSIG	√	√	√	√	√	√	√

Interrupting Ratings

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

Neutral Transformers

Ampere Rating	Catalog Number
600	**N06SMDA**
700	**N07SMDA**
800	**N08SMDA**

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.

All breakers 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 7-88.

③ Advanced trip unit equipped DAS / Maintenance Mode. Requires customer-supplied 24V external power supply, maintenance switch and light.

Enclosures Section 6
Accessories pages 7-65 and 7-95 to 7-100

Accessories for:

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

S01MN6

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	Catalog Number
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	Catalog Number	Catalog Number
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	Catalog Number
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	Catalog Number	Catalog Number
480	250	B00MN64	A01MN64B	A02MN64B

Plug-in Ammeter Display Units

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

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

Type NXD6①⑧ — 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	Catalog Number
900	NXD62B900■	NXD63B900
1000	NXD62B100■	NXD63B100
1200	NXD62B120■	NXD63B120

Type ND6⑧ — Blue Label

Interchangeable Trip

Continuous Current Rating @ 40°C	Complete Breaker Unassembled with Lugs	Frame Only	Trip Unit Only
	Catalog Number	Catalog Number	Catalog Number
2-Pole 600V AC, 250V DC②			
800	ND62B800■	ND62F120	MD62T800■
900	ND62B900■		ND62T900■
1000	ND62B100■		ND62T100■
1200	ND62B120		ND62T120
3-Pole 600V AC, 500V DC③			
800	ND63B800	ND63F120	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	500③	220/240		380/415		500	
						(Icu)	(Ics)	(Icu)	(Ics)	(Icu)	(Ics)
ND6, NXD6	65	50	25	30 (2-P)	25 (3-P)	65	33	40	20	—	—
HND6, HNXD6	100	65	50	30 (2-P)	50 (3-P)	100	50	65	33	—	—
CND6	200	100	65	—	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
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 7-91.

400Hz Applications see page 7-91.

Lugs⑥

Catalog Number	Cables per Lug	Wire Range
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)		
2TA4P8500④ 3TA4P8500④	4	250-500 kcmil Cu/Al
2TA4N8500⑤ 3TA4N8500⑤	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
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 7-4, 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. Rated for 90° C cable. 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 7-88.
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 7-91 for additional information.

Modifications page 7-91
Enclosures Section 6
Accessories pages 7-69 and 7-95 to 7-100

Type HNXD6①④

Black 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	**Catalog Number**
900 1000 1200	For 2-pole application use outside poles of 3-pole circuit breaker	**HNXD63B900** **HNXD63B100** **HNXD63B120**

Type HND6④

Black Label

Interchangeable Trip			
Continuous Current Rating @ 40°C	**Complete Breaker Unassembled with Lugs**	**Frame Only**	**Trip Unit Only**
	Catalog Number	**Catalog Number**	**Catalog Number**
2-Pole 600V AC, 250V DC②			
800 900 1000 1200	For 2-pole application use outside poles of 3-pole circuit breaker		
3-Pole 600V AC, 500V DC③			
800	**HND63B800**	**HND63F120**	**MD63T800**
900	**HND63B900**		**ND63T900**
1000	**HND63B100**		**ND63T100**
1200	**HND63B120**		**ND63T120**

Type CND6①④

Fuseless Current Limiting

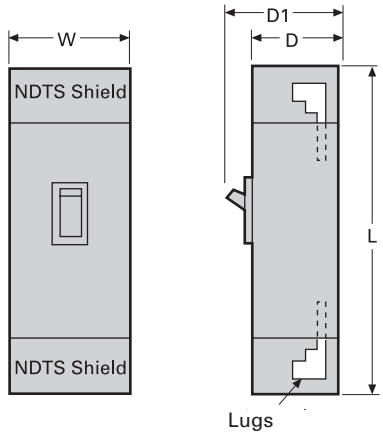
Red Label

Non-Interchangeable Trip (Assembled Circuit Breaker)		
Continuous Current Rating @ 40°C	**2-Pole**	**3-Pole**
	Catalog Number	**Catalog Number**
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

NXD63B120



When lugs shield NDTS is used.

Note: NDTS lug shields are required when oversized lugs TA4P8500 or TA4N8500 are used. The kits include the NDTS shield.

Dimensions (in inches)

Breaker Type	W	L	D	D1
ND6, NXD6, HND6, HNXD6, CND6, SND6-B, SHND6-B, and SCND6-B	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.

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

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

③When wired as shown on page 7-4, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

④HACR rated.

Type SND6-B — Blue Label | Type SHND6-B — Black Label | Current Limiting Type SCND6-B — Red Label

Max Current Rating	3-Pole, 600V AC		3-Pole, 600V AC		3-Pole, 600V AC	
	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)
800	SND6A800LI	SND6B800LI	SHND6A800LI	SHND6B800LI	SCND6A800LI	SCND6B800LI
1000	SND6A100LI	SND6B100LI	SHND6A100LI	SHND6B100LI	SCND6A100LI	SCND6B100LI
1200	SND6A120LI	SND6B120LI	SHND6A120LI	SHND6B120LI	SCND6A120LI	SCND6B120LI
800	SND6A800LIG	SND6B800LIG	SHND6A800LIG	SHND6B800LIG	SCND6A800LIG	SCND6B800LIG
1000	SND6A100LIG	SND6B100LIG	SHND6A100LIG	SHND6B100LIG	SCND6A100LIG	SCND6B100LIG
1200	SND6A120LIG	SND6B120LIG	SHND6A120LIG	SHND6B120LIG	SCND6A120LIG	SCND6B120LIG
800	SND6A800LSI	SND6B800LSI	SHND6A800LSI	SHND6B800LSI	SCND6A800LSI	SCND6B800LSI
1000	SND6A100LSI	SND6B100LSI	SHND6A100LSI	SHND6B100LSI	SCND6A100LSI	SCND6B100LSI
1200	SND6A120LSI	SND6B120LSI	SHND6A120LSI	SHND6B120LSI	SCND6A120LSI	SCND6B120LSI
800	SND6A800LSIG	SND6B800LSIG	SHND6A800LSIG	SHND6B800LSIG	SCND6A800LSIG	SCND6B800LSIG
1000	SND6A100LSIG	SND6B100LSIG	SHND6A100LSIG	SHND6B100LSIG	SCND6A100LSIG	SCND6B100LSIG
1200	SND6A120LSIG	SND6B120LSIG	SHND6A120LSIG	SHND6B120LSIG	SCND6A120LSIG	SCND6B120LSIG

SND 1200A Frame – 100% Rated①

Type SND6-B — Blue Label | Type SHND6-B — Black Label | Current Limiting Type SCND6-B — Red Label

Max Current Rating	3-Pole, 600V AC		3-Pole, 600V AC		3-Pole, 600V AC	
	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)	Catalog Number (Advanced trip unit)③	Catalog Number (Basic trip unit)
800	SND6A800LIH	SND6B800LIH	SHND6A800LIH	SHND6B800LIH	SCND6A800LIH	SCND6B800LIH
1000	SND6A100LIH	SND6B100LIH	SHND6A100LIH	SHND6B100LIH	SCND6A100LIH	SCND6B100LIH
1200	SND6A120LIH	SND6B120LIH	SHND6A120LIH	SHND6B120LIH	SCND6A120LIH	SCND6B120LIH
800	SND6A800LIGH	SND6B800LIGH	SHND6A800LIGH	SHND6B800LIGH	SCND6A800LIGH	SCND6B800LIGH
1000	SND6A100LIGH	SND6B100LIGH	SHND6A100LIGH	SHND6B100LIGH	SCND6A100LIGH	SCND6B100LIGH
1200	SND6A120LIGH	SND6B120LIGH	SHND6A120LIGH	SHND6B120LIGH	SCND6A120LIGH	SCND6B120LIGH
800	SND6A800LSIH	SND6B800LSIH	SHND6A800LSIH	SHND6B800LSIH	SCND6A800LSIH	SCND6B800LSIH
1000	SND6A100LSIH	SND6B100LSIH	SHND6A100LSIH	SHND6B100LSIH	SCND6A100LSIH	SCND6B100LSIH
1200	SND6A120LSIH	SND6B120LSIH	SHND6A120LSIH	SHND6B120LSIH	SCND6A120LSIH	SCND6B120LSIH
800	SND6A800LSIGH	SND6B800LSIGH	SHND6A800LSIGH	SHND6B800LSIGH	SCND6A800LSIGH	SCND6B800LSIGH
1000	SND6A100LSIGH	SND6B100LSIGH	SHND6A100LSIGH	SHND6B100LSIGH	SCND6A100LSIGH	SCND6B100LSIGH
1200	SND6A120LSIGH	SND6B120LSIGH	SHND6A120LSIGH	SHND6B120LSIGH	SCND6A120LSIGH	SCND6B120LSIGH

Trip Unit Adjustable Functions

Suffix Letter Code	Trip Type	Cont Current Setting	Long Time Delay	Instan-taneous Setting	Short Time Pick Up	Short Time Delay	Short Time I^2t Pick Up	Ground Fault Pick Up	Ground Fault Delay
LI	LI	✓	✓	✓					
LIG	LIG	✓	✓	✓				✓	✓
LSI	LSI	✓	✓	✓	✓	✓	✓		
LSIG	LSIG	✓	✓	✓	✓	✓	✓	✓	✓

Interrupting Ratings

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

Neutral Transformers

Ampere Rating	Catalog Number
600	N06SMDA
700	N07SMDA
800	N08SMDA

For inches / millimeters conversion, see Application Data section.

For ordering information and terminal connectors, and enclosures, see page 7-66.

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.

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

③ Advanced trip unit equipped DAS / Maintenance Mode. Requires customer-supplied 24V external power supply, maintenance switch and light.

Accessories for:

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

S01MN6

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.

Shunt Trip Combinations

Control Voltage		1 Shunt Trip	1 Shunt Trip and 1 Auxiliary Switch
AC	DC	Catalog Number	Catalog Number
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	Catalog Number	Catalog Number
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	Catalog Number
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	Catalog Number	Catalog Number
480	250	B00MN64	A01MN64B	A02MN64B

Plug-in Ammeter Display Units

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

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

Type PXD6② Non-Interchangeable Trip⑤

3-Pole 600V AC, 250-500V DC① — Blue Label

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

Type PD6 Interchangeable Trip⑤

3-Pole 600V AC, 250-500V DC① — Blue Label

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

Type HPXD6② Non-Interchangeable Trip⑤

3-Pole 600V AC, 250-500V DC① — Blue Label

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

Type HPD6 Interchangeable Trip⑤

3-Pole 600V AC, 250-500V DC① — Black Label

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

Type CPD6 Non-Interchangeable Trip⑤

Fuseless Current Limiting
3-Pole 600V AC, 250-500V DC① — Red Label

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

Interrupting Ratings

Breaker Type	UL 489 A IR RMS Symmetrical KA Volts AC 240	480	600	Volts DC⑥ 250	500
PD6, PXD6	65	50	25	30 (2P)	25 (3P)
HPD6, HPXD6	100	65	50	30 (2P)	50 (3P)
CPD6	200	100	65	30 (2P)	50 (3P)

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

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

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

②When wired as shown on page 7-4, this circuit breaker is UL listed and rated for use on 500V DC ungrounded UPS systems only.

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

④For additional information See **Note: A**, page 7-88.

⑤HACR rated.

Note: PD frame qualified to UL489 supplement B "NAVAL". See page 7-91 for additional information.

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 7-91.

400HZ Applications see page 7-91.

Lugs (6 required per breaker)④

Catalog Number	No of Cables per Connector	Wire Range
TA5P600	1-5	300-600 kcmil Cu/Al
TC5R600	1-5	300-600 kcmil Cu only
TA4P750▲	1-4	600-750 kcmil Cu/Al
TA6R600	1-6	300-600 kcmil Cu/Al

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**
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**
SHPD69140■	1400
SHPD69160■	1600
SHPD69140G■	1400
SHPD69160G■	1600
SHPD69140NT■	1400
SHPD69160NT■	1600
SHPD69140NGT■	1400
SHPD69160NGT■	1600

Suffix Letter Code	Trip Type	Cont Current Setting	Long Time Delay	Instan-taneous Setting	Short Time Pick Up	Short Time Delay	Short Time I^2t 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		
	240V AC	480V AC	600V AC
SPD6	65	50	25
SHPD6	100	65	50

Lugs①

Catalog Number	No. of Cables per Connector	Wire Range
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

Neutral Transformers

Ampere Rating	Catalog Number
1400	**N14SPD**
1600	**N16SPD**

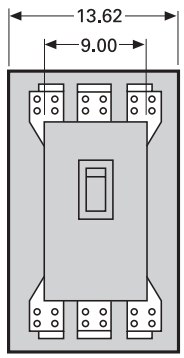
Enclosure

Type	Catalog Number
1	**PRD6N1**

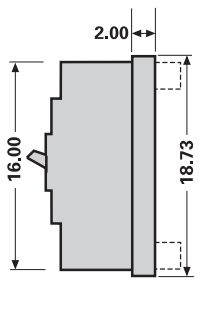
Mounting Block (Required)②

Catalog Number
MB9301
MBR9302

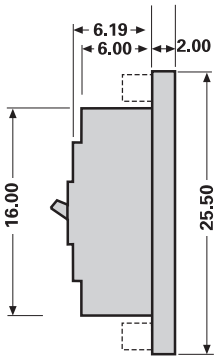
All PD, RD Frames:



MB9301 (shown)
MBR9302



MBR9302



MB9301

MBR9302

MB9301

For inches / millimeters conversion, see Application Data section.

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

①For additional information, see **Note: A,** page 7-88.

②The 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.

Accessories for:

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

S01MN6

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.

Shunt Trip Combinations

Control Voltage		1 Shunt Trip	1 Shunt Trip and 1 Auxiliary Switch
AC	DC	Catalog Number	Catalog Number
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	Catalog Number	Catalog Number
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	Catalog Number
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	Catalog Number	Catalog Number
480	250	B00MN64	A01MN64B	A02MN64B

Plug-in Ammeter Display Units

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

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

Type RXD6④

3-Pole 600V AC, 250-500V DC① — Blue Label

Non-Interchangeable Trip (Assembled Circuit Breaker Only Without Lugs)			
Continuous Current Rating @ 40°C	Complete Breaker Assembled (Frame/Trip Unit Only) Catalog Number	Mounting Assembly Catalog Number	Lugs (6 required) Catalog Number
1600	RXD63B160	MB9301	
1800	RXD63B180	-or-	TC5R600
2000	RXD63B200	MBR9302	

Type RD6④

3-Pole 600V AC, 250-500V DC① — Blue Label

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

Type HRXD6④ — Black Label

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

Type HRD6④ — Black Label

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

Interrupting Ratings

Breaker Type	UL 489 A IR RMS Symmetrical KA Volts AC 240	480	600	Volts DC① 250	500
RD6, RXD6	65	50	25	30 (2P)	25 (3P)
HRD6, HRXD6	100	65	50	30 (2P)	50 (3P)

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	10,000

RXD63B200

Mounting Block⑥

Catalog Number	Connection Points
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 (6 required per breaker)⑤

Catalog Number	No of Cables per Connector	Wire Range
TC5R600	1-5	300-600 kcmil Cu only
TA6R600	1-6	300-600 kcmil Cu/Al

■ 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 7-4, 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.

④ HACR rated.

⑤ For additional information See **Note: A**, page 7-88.
Note: RD frame qualified to UL489 supplement B "NAVAL". See page 7-91 for additional information.

⑥ For required mounting base (MB9301 or MBR9302) see page 7-71.

Breaker Type	Ampere Rating	Instantaneous Trip Range② Minimum③	Instantaneous Trip Range② Maximum③	Complete Circuit Breaker Without Lugs⑤ Catalog Number 2-Pole	Complete Circuit Breaker Without Lugs⑤ Catalog Number 3-Pole
HEM	3	9	33	—	**HEM3M003L**
	7	21	77	—	**HEM3M007L**
	15	45	165	—	**HEM3M015L**
	30	90	330	—	**HEM3M030L**
	50	150	550	—	**HEM3M050L**
	70	210	770	—	**HEM3M070L**
	100	300	1100	—	**HEM3M100L**
	SHIPPING:				3.7 lbs. each
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	—	**CED63A002■**
	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
FXD6④ 600V AC 250V DC	150	400	800	—	**FXD63L150■**
	150	800	1500	—	**FXD63A150**
	150	1100	2500	—	**FXD63H150**
	250	1100	2500	—	**FXD63A250**
	SHIPPING:				9 lbs. each
CFD6④ 600V AC 250V DC	150	400	800	—	**CFD63L150■**
	150	800	1500	—	**CFD63A150■**
	150	1100	2500	—	**CFD63H150■**
	250	1100	2500	—	**CFD63A250■**
	SHIPPING:			12 lbs. each	12 lbs. each
JXD6(A)① 600V AC 250V DC	400	1250	2500	—	**JXD63L400**
	400	2000	4000	**JXD62H400■**	**JXD63H400**
	SHIPPING:			16 lbs. each	20 lbs. each
CJD6① 600V AC 250V DC	400	1250	2500	—	**CJD63L400■**
	400	2000	4000	—	**CJD63H400■**
	SHIPPING:			29.5 lbs. each	31.5 lbs. each
LXD6(A)① 600V AC 250V DC	600	2000	4000	**LXD62L600■**	**LXD63L600■**
	600	3000	6000	—	**LXD63H600**
	SHIPPING:			16 lbs. each	20 lbs. each
CLD6① 600V AC 250V DC	600	2000	4000	—	**CLD63L600■**
	600	3000	6000	—	**CLD63H600■**
	SHIPPING:				31.5 lbs. each
LMXD6④ 600V AC 250V DC	800	2800	6000	—	**LMXD63L800■**
	800	3200	8000	—	**LMXD63A800**
	SHIPPING:				35 lbs. each
MXD6④ 600V AC 250V DC	800	3000	6000	—	**MXD63L800■**
	800	4000	8000	—	**MXD63A800■**
	800	5000	10000	—	**MXD63H800**
	SHIPPING:				33 lbs. each
CMD6④ 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 HEM, ED and CED6 ETIs. 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 7-88 to 7-90
Enclosures Section 6
Accessories pages 7-95 to 7-100
Application data pages 7-75 to 7-76

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

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

② When applied on DC Circuits — Trip levels will increase approximately +15 to 20%.

③ Tolerance -20%/+30% for lowest setting. All other settings are -20%/+20%

④ 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	ETI Trip Setting Amperes
0.69 – 0.91	HEM3M003L	A (min)	9
1.1 – 1.3		B	15
1.6 – 1.7		C	21
2.0 – 2.2		D	27
2.3 – 2.5		E	30
2.6 – 2.8		F (max)	33
1.5 – 2.0	HEM3M007L	A (min)	21
2.6 – 3.1		B	35
3.7 – 3.9		C	49
4.8 – 5.2		D	63
5.3 – 5.7		E	70
5.8 – 6.1		F (max)	77
3.4 – 4.5	HEM3M015L	A (min)	45
5.7 – 6.8		B	75
8.0 – 9.1		C	100
10.4 – 11.4		D	135
11.5 – 12.6		E	150
12.7 – 13.0		F (max)	165
3.9 – 9.1	HEM3M030L	A (min)	90
11.5 – 13.7		B	150
16.1 – 18.3		C	210
20.7 – 22.9		D	270
23.0 – 25.2		E	300
25.3 – 26.1		F (max)	330
11.5 – 15.2	HEM3M050L	A (min)	150
19.2 – 22.9		B	250
26.9 – 30.6		C	350
34.6 – 38.3		D	450
38.4 – 42.1		E	500
42.2 – 43.5		F (max)	550
16.1 – 30.6	HEM3M070L	A (min)	210
26.9 – 32.2		B	350
37.6 – 42.9		C	490
48.4 – 53.7		D	630
53.8 – 59.1		E	700
59.2 – 60.9		F (max)	770
23.0 – 30.9	HEM3M100L	A (min)	300
38.4 – 46.0		B	500
53.8 – 61.4		C	700
69.2 – 76.8		D	900
76.9 – 84.5		E	1000
84.6 – 87.0		F (max)	1100
.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

Motor Full Load Amperes	Catalog Number	ETI Trip Setting Adjustment	ETI Trip Setting Amperes
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
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

Motor Full Load Amperes	Catalog Number	ETI Trip Setting Adjustment	ETI Trip Setting Amperes
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
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	2800
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	4000
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	5000
495.00 – 550.00		3	6430
605.00 – 660.00		5	7860
660.00 – 695.00		6	8575

Note: Lowest instantaneous settings have a -20%/+30% tolerance and all other settings have a -20%/+20% tolerance.

Breaker Mounted at a Distance From Motor Starter

ET thermal-magnetic circuit breakers conform to the National Electrical Code table 430-52 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 Horse-power Rating	200 and 208V Motors			230V Motors			460V Motors			575V Motors		
	240V Circuit Breaker Data①			240V Circuit Breaker Data①			480V Circuit Breaker Data①			600V Circuit Breaker Data①		
	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	BQ②	**BQ3B015**	15	BQ②	**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	BQ②	**BQ3B040**	40	BQ②	**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		**FDX63B100**	100
		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	FD6③ JD6③	**FD63B250** **JD63B250**	250 250	FXD6, FD6	**FD63B175**	175
125	LD6③ or LMD6	**LD63B600** **LMD63B600**	600	LD6③ or LMD6	**LD63B500** or **LMD63B500**	500	JD6③	**JD63B300**	300	FXD6, FD6 OR JD6③	**FXD63B200** **JD63B200**	200 200
150	LD6③ or LMD6	**LD63B600** or **LMD63B600**	600	LMD6	**LD63B600** or **LMD63B600**	600	JD6③	**JD63B300**	300	FXD6 or JD6③	**FXD63B225** **JD63B225**	225 225
200	LMD6	**LMD63B800**	800	LMD6	**LMD63B800**	800	JD6③	**JD63B350**	350	JD6③	**JD63B300**	300
250	—	**—**	—	—	**—**	—	JD6③	**JD63B400**	400	JD6③	**JD63B400**	400
300	—	**—**	—	—	**—**	—	LD6③ or LMD6	**LD63B600** or **LMD63B600**	600	JD6③	**JD63B400**	400
350	—	**—**	—	—	**—**	—	LMD6	**LMD63B700**	700	LD6③ or LMD6	**LD63B500** or **LMD63B500**	500
400	—	**—**	—	—	**—**	—	LMD6	**LMD63B800**	800	LD6③ or LMD6	**LD63B600** or **LMD63B600**	600
500	—	**—**	—	—	**—**	—	—	**—**	—	LMD6	**LMD63B800**	800

①The 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.

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

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

Breaker Type	Maximum Continuous Amperes	Nominal AC Adjustable Trip Range								ETI Motor Circuit Protector Catalog Number	Thermal Magnetic Catalog Number	
		Low	2	3	4	5	6	7	High	3-Pole	2-Pole	3-Pole
HEM	3	9	15	21	27	30	—	—	33	HEM3M003L	—	—
	7	21	35	49	63	70	—	—	77	HEM3M007L	—	—
	15	45	75	100	135	150	—	—	165	HEM3M015L	—	—
	30	90	150	210	270	300	—	—	330	HEM3M030L	—	—
	50	150	250	350	450	500	—	—	550	HEM3M050L	—	—
	70	210	350	490	630	700	—	—	770	HEM3M070L	—	—
	100	300	500	700	900	1000	—	—	1100	HEM3M100L	—	—
ED6	1	2.6	4.5	6	7.5	—	—	—	9	ED63A001	—	—
	2	7	11	15	19	—	—	—	22	ED63A002	—	—
	3	10	17	23	30	—	—	—	35	ED63A003	—	—
	5	16	26	36	46	—	—	—	54	ED63A005	—	—
	10	30	50	70	85	—	—	—	100	ED63A010	—	—
	25	55	90	125	155	—	—	—	180	ED63A025	—	—
	30	80	135	185	235	—	—	—	270	ED63A030	—	—
	40	115	185	255	325	—	—	—	375	ED63A040	—	—
	50	180	300	410	520	—	—	—	600	ED63A050	—	—
	100	315	540	740	890	—	—	—	1000	ED63A100	—	—
	125	500	720	920	1100	—	—	—	1250	ED63A125	—	—
CED6	1	2.6	4.5	6	7.5	—	—	—	9	CED63A001■	—	—
	2	7	11	15	19	—	—	—	22	CED63A002■	—	—
	3	10	17	23	30	—	—	—	35	CED63A003■	—	—
	5	16	26	36	46	—	—	—	54	CED63A005■	—	—
	10	30	50	70	85	—	—	—	100	CED63A010■	—	—
	25	55	90	125	155	—	—	—	180	CED63A025■	—	—
	30	80	135	185	235	—	—	—	270	CED63A030■	—	—
	40	115	185	255	325	—	—	—	375	CED63A040■	—	—
	50	180	300	410	520	—	—	—	600	CED63A050	—	—
	100	315	540	740	890	—	—	—	1000	CED63A100	—	—
	125	500	720	920	1100	—	—	—	1250	CED63A125	—	—
FXD6-A	70	600	640	690	730	770	810	850	900	—	FXD62B070	FXD63B070
	80	600	640	690	730	770	810	850	900	—	FXD62B080	FXD63B080
	90	600	640	690	730	770	810	850	900	—	FXD62B090	FXD63B090
	100	700	770	840	920	990	1060	1140	1200	—	FXD62B100	FXD63B100
	110	700	770	840	920	990	1060	1140	1200	—	FXD62B110	FXD63B110
	125	800	900	1000	1100	1200	1300	1400	1500	—	FXD62B125	FXD63B125
	150	400	460	520	580	640	700	760	820	FXD63L150	—	—
	150	800	900	1000	1100	1200	1300	1400	1500	FXD63A150	FXD62B150	FXD63B150
	150	1100	1300	1500	1700	1900	2100	2300	2500	FXD63H150	—	—
	175	900	1060	1210	1370	1520	1780	1930	2000	—	FXD62B175	FXD63B175
	200	900	1060	1210	1370	1520	1780	1930	2000	—	FXD62B200	FXD63B200
	225	1100	1300	1500	1700	1900	2100	2300	2500	—	FXD62B225	FXD63B225
	250	1100	1300	1500	1700	1900	2100	2300	2500	FXD63A250	FXD62B250	FXD63B250
FD6-A	70	600	640	690	730	770	810	850	900	—	FD62B070	FD63B070
	80	600	640	690	730	770	810	850	900	—	FD62B080	FD63B080
	90	600	640	690	730	770	810	850	900	—	FD62B090	FD63B090
	100	700	770	840	920	990	1060	1140	1200	—	FD62B100	FD63B100
	110	700	770	840	920	990	1060	1140	1200	—	FD62B110	FD63B110
	125	800	900	1000	1100	1200	1300	1400	1500	—	FD62B125	FD63B125
	150	800	900	1000	1100	1200	1300	1400	1500	—	FD62B150	FD63B150
	175	900	1060	1210	1370	1520	1780	1930	2000	—	FD62B175	FD63B175
	200	900	1060	1210	1370	1520	1780	1930	2000	—	FD62B200	FD63B200
	225	1100	1300	1500	1700	1900	2100	2300	2500	—	FD62B225	FD63B225
	250	1100	1300	1500	1700	1900	2100	2300	2500	—	FD62B250	FD63B250
HFD6	70	600	640	690	730	770	810	850	900	—	HFD62B070	HFD63B070
	80	600	640	690	730	770	810	850	900	—	HFD62B080	HFD63B080
	90	600	640	690	730	770	810	850	900	—	HFD62B090	HFD63B090
	100	700	770	840	920	990	1060	1140	1200	—	HFD62B100	HFD63B100
	110	700	770	840	920	990	1060	1140	1200	—	HFD62B110	HFD63B110
	125	800	900	1000	1100	1200	1300	1400	1500	—	HFD62B125	HFD63B125
	150	800	900	1000	1100	1200	1300	1400	1500	—	HFD62B150	HFD63B150
	175	900	1060	1210	1370	1520	1780	1930	2000	—	HFD62B175	HFD63B175
	200	900	1060	1210	1370	1520	1780	1930	2000	—	HFD62B200	HFD63B200
	225	1100	1300	1500	1700	1900	2100	2300	2500	—	HFD62B225	HFD63B225
	250	1100	1300	1500	1700	1900	2100	2300	2500	—	HFD62B250	HFD63B250
HHFD6	70	600	640	690	730	770	810	850	900	—	—	HHFD63B070
	80	600	640	690	730	770	810	850	900	—	—	HHFD63B080
	90	600	640	690	730	770	810	850	900	—	—	HHFD63B090
	100	700	770	840	920	990	1060	1140	1200	—	—	HHFD63B100
	110	700	770	840	920	990	1060	1140	1200	—	—	HHFD63B110
	125	800	900	1000	1100	1200	1300	1400	1500	—	—	HHFD63B125
	150	800	900	1000	1100	1200	1300	1400	1500	—	—	HHFD63B150
	175	900	1060	1210	1370	1520	1780	1930	2000	—	—	HHFD63B175
	200	900	1060	1210	1370	1520	1780	1930	2000	—	—	HHFD63B200
	225	1100	1300	1500	1700	1900	2100	2300	2500	—	—	HHFD63B225
	250	1100	1300	1500	1700	1900	2100	2300	2500	—	—	HHFD63B250
CFD6	70	600	640	690	730	770	810	850	900	—	CFD62B070	CFD63B070
	80	600	640	690	730	770	810	850	900	—	CFD62B080	CFD63B080
	90	600	640	690	730	770	810	850	900	—	CFD62B090	CFD63B090
	100	700	770	840	920	990	1060	1140	1200	—	CFD62B100	CFD63B100
	110	700	770	840	920	990	1060	1140	1200	—	CFD62B110	CFD63B110
	125	800	900	1000	1100	1200	1300	1400	1500	—	CFD62B125	CFD63B125
	150	400	460	520	580	640	700	760	820	CFD63L150	—	—
	150	800	900	1000	1100	1200	1300	1400	1500	CFD63A150	CFD62B150	CFD63B150
	150	1100	1300	1500	1700	1900	2100	2300	2500	CFD63H150	—	—
	175	900	1060	1210	1370	1520	1780	1930	2000	—	CFD62B175	CFD63B175
	200	900	1060	1210	1370	1520	1780	1930	2000	—	CFD62B200	CFD63B200
	225	1100	1300	1500	1700	1900	2100	2300	2500	—	CFD62B225	CFD63B225
	250	1100	1300	1500	1700	1900	2100	2300	2500	CFD63A250	CFD62B250	CFD63B250

Note: Tolerances for instantaneous trip points meet UL 489 (7.3). Nominal AC instantaneous trip points are given in the tables. For DC instantaneous trip points, add 15% to nominal values.

Instantaneous trip adjustment is made through the breaker cover on all frame breakers. To change instantaneous trip point on circuit breaker, depress indicating knob, then rotate to desired position.

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

Adjustable Instantaneous Magnetic Trip Settings

Application

Breaker Type	Maximum Continuous Amperes	Nominal AC Adjustable Trip Range								ETI Motor Circuit Protector Catalog Number	Thermal Magnetic Catalog Number	
		Low	2	3	4	5	6	7	High	3-Pole	2-Pole	3-Pole
JXD2(A)	200	1250	1430	1610	1790	1960	2140	2320	2500	—	JXD22B200	JXD23B200
	225	1250	1430	1610	1790	1960	2140	2320	2500	—	JXD22B225	JXD23B225
	250	1250	1430	1610	1790	1960	2140	2320	2500	—	JXD22B250	JXD23B250
	300	1250	1430	1610	1790	1960	2140	2320	2500	—	JXD22B300	JXD23B300
	350	2000	2290	2570	2860	3140	3430	3710	4000	—	JXD22B350	JXD23B350
	400	2000	2290	2570	2860	3140	3430	3710	4000	—	JXD22B400	JXD23B400
JXD6(A)	200	1250	1430	1610	1790	1960	2140	2320	2500	—	JXD62B200	JXD63B200
	225	1250	1430	1610	1790	1960	2140	2320	2500	—	JXD62B225	JXD63B225
	250	1250	1430	1610	1790	1960	2140	2320	2500	—	JXD62B250	JXD63B250
	300	1250	1430	1610	1790	1960	2140	2320	2500	—	JXD62B300	JXD62B300
	350	2000	2290	2570	2860	3140	3430	3710	4000	—	JXD62B350	JXD23B350
	400	2000	2290	2570	2860	3140	3430	3710	4000	—	JXD62B400	JXD23B400
JD6(A)	200	1250	1430	1610	1790	1960	2140	2320	2500	—	JD62B200	JD63B200
	225	1250	1430	1610	1790	1960	2140	2320	2500	—	JD62B225	JD63B225
	250	1250	1430	1610	1790	1960	2140	2320	2500	—	JD62B250	JD63B250
	300	1250	1430	1610	1790	1960	2140	2320	2500	—	JD62B300	JD63B300
	350	2000	2290	2570	2860	3140	3430	3710	4000	—	JD62B350	JD63B350
	400	1250	1430	1610	1790	1960	2140	2320	2500	JXD63L400	—	—
	400	2000	2290	2570	2860	3140	3430	3710	4000	JXD63H400	JD62B400	JD63B400
HJD6(A)	200	1250	1430	1610	1790	1960	2140	2320	2500	—	HJD62B200	HJD63B200
	225	1250	1430	1610	1790	1960	2140	2320	2500	—	HJD62B225	HJD63B225
	250	1250	1430	1610	1790	1960	2140	2320	2500	—	HJD62B250	HJD63H250
	300	1250	1430	1610	1790	1960	2140	2320	2500	—	HJD62B300	HJD63B300
	350	2000	2290	2570	2860	3140	3430	3710	4000	—	HJD62B350	HJD63B350
	400	2000	2290	2570	2860	3140	3430	3710	4000	—	HJD62H400	HJD63B400
HHJD6	200	1250	1430	1610	1790	1960	2140	2320	2500	—	HHJD62B200	HHJD63B200
	225	1250	1430	1610	1790	1960	2140	2320	2500	—	HHJD62B225	HHJD63B225
	250	1250	1430	1610	1790	1960	2140	2320	2500	—	HHJD62B250	HHJD63B250
	300	1250	1430	1610	1790	1960	2140	2320	2500	—	HHJD62B300	HHJD63B300
	350	2000	2290	2570	2860	3140	3430	3710	4000	—	HHJD62B350	HHJD63B350
	400	2000	2290	2570	2860	3140	3430	3710	4000	—	HHJD62B400	HHJD63B400
CJD6	200	1250	1430	1610	1790	1960	2140	2320	2500	—	—	CJD63B200
	225	1250	1430	1610	1790	1960	2140	2320	2500	—	—	CJD63B225
	250	1250	1430	1610	1790	1960	2140	2320	2500	—	—	CJD63B250
	300	1250	1430	1610	1790	1960	2140	2320	2500	—	—	CJD63B300
	350	2000	2290	2570	2860	3140	3430	3710	4000	—	—	CJD63B350
	400	2000	2290	2570	2860	3140	3430	3710	4000	CJD63H400	—	CJD63B400
	400	1250	1450	1610	1790	1960	2140	2320	2500	CJD63L400	—	—
LXD6(A)	450	2000	2290	2570	2860	3140	3430	3710	4000	—	LXD62B450	LXD63B450
	500	3000	3430	3860	4290	4710	5140	5570	6000	—	LXD62B500	LXD63B500
	600	3000	3430	3860	4290	4710	5140	5570	6000	—	LXD62B600	LXD63B600
LD6(A)	250	1250	1430	1610	1790	1960	2140	2320	2500	—	LD62B250	LD63B250
	300	1250	1430	1610	1790	1960	2140	2320	2500	—	LD62B300	LD63B300
	350	2000	2290	2570	2860	3140	3430	3710	4000	—	LD62B350	LD63B350
	400	2000	2290	2570	2860	3140	3430	3710	4000	—	LD62B400	LD63B400
	450	2000	2290	2570	2860	3140	3430	3710	4000	—	LD62B450	LD63B450
	500	3000	3430	3800	4290	4710	5140	5570	6000	—	LD62B500	LD63B500
	600	2000	2290	2570	2860	3140	3430	3710	4000	LXD63L600	—	—
	600	3000	3430	3800	4290	4710	5140	5570	6000	LXD63H600	LD62B600	LD63B600
HLD6(A)	250	1250	1430	1610	1790	1960	2140	2320	2500	—	HLD62B250	HLD63B250
	300	1250	1430	1610	1790	1960	2140	2320	2500	—	HLD62B300	HLD63B300
	350	2000	2290	2570	2860	3140	3430	3710	4000	—	HLD62B350	HLD63B350
	400	2000	2290	2570	2860	3140	3430	3710	4000	—	HLD62B400	HLD63B400
	450	2000	2290	2570	2860	3140	3430	3710	4000	—	HLD62B450	HLD63B450
	500	3000	3430	3860	4290	4710	5140	5570	6000	—	HLD62B500	HLD63B500
	600	3000	3430	3860	4290	4710	5140	5570	6000	—	HLD62B600	HLD63B600
HHLD6	250	1250	1430	1610	1790	1960	2140	2320	2500	—	HHLD62B250	HHLD63B250
	300	1250	1430	1610	1790	1960	2140	2320	2500	—	HHLD62B300	HHLD63B300
	350	2000	2290	2570	2860	3140	3430	3710	4000	—	HHLD62B350	HHLD63B350
	400	2000	2290	2570	2860	3140	3430	3710	4000	—	HHLD62B400	HHLD63B400
	450	2000	2290	2570	2860	3140	3430	3710	4000	—	HHLD62B450	HHLD63B450
	500	3000	3430	3860	4290	4710	5140	5570	6000	—	HHLD62B500	HHLD63B500
	600	3000	3430	3860	4290	4710	5140	5570	6000	—	HHLD62B600	HHLD63B600
CLD6	250	1250	1430	1610	1790	1960	2140	2320	2500	—	—	CJD63B250
	300	1250	1430	1610	1790	1960	2140	2320	2500	—	—	CJD63B300
	350	2000	2290	2570	2860	3140	3430	3710	4000	—	—	CJD63B350
	400	2000	2290	2570	2860	3140	3430	3710	4000	—	—	CLD63B400
	450	2000	2290	2570	2860	3140	3430	3710	4000	—	—	CLD63B450
	500	3000	3430	3860	4290	4710	5140	5570	6000	—	—	CLD63B500
	600	2000	2290	2570	2860	3140	3430	3710	4000	CLD63L600	—	—
	600	3000	3430	3860	4290	4710	5140	5570	6000	CLD63H600	—	CLD63B600
LMXD6	500	3000	3430	3860	4290	4710	5140	5570	6000	—	—	LMXD63B500
	600	3000	3430	3860	4290	4710	5140	5570	6000	—	LMXD62B600	LMXD63B600
	700	3200	3500	3700	4200	4700	6400	7300	8000	—	LMXD62B700	LMXD63B700
	800	2800	3100	3400	3700	4000	4800	5500	6000	LMXD63L800	—	—
	800	3200	3500	3700	4200	4700	6400	7300	8000	LMXD63A800	LMXD62B800	LMXD63B800
LMD6	500	3000	3430	3860	4290	4710	5140	5570	6000	—	LMD62B500	LMD63B500
	600	3000	3430	3860	4290	4710	5140	5570	6000	—	LMD62B600	LMD63B600
	700	3200	3500	3700	4200	4700	6400	7300	8000	—	LMD62B700	LMD63B700
	800	3200	3500	3700	4200	4700	6400	7300	8000	—	LMD62B800	LMD63B800

Breaker Type	Maximum Continuous Amperes	Nominal AC Adjustable Trip Range								ETI Motor Circuit Protector Catalog Number	Thermal Magnetic Catalog Number	
		Low	2	3	4	5	6	7	High	3-Pole	2-Pole	3-Pole
HLMXD6	500	3000	3430	3860	4290	4710	5140	5570	6000	—	—	**HLMXD63B500**
	600	3000	3430	3860	4290	4710	5140	5570	6000	—	—	**HLMXD63B600**
	700	3200	3500	3700	4200	4700	6400	7300	8000	—	—	**HLMXD63B700**
	800	3200	3500	3700	4200	4700	6400	7300	8000	—	—	**HLMXD63B800**
HLMD6	500	3000	3430	3860	4290	4710	5140	5570	6000	—	**HLMD62B500**	**HLMD63B500**
	600	3000	3430	3860	4290	4710	5140	5570	6000	—	**HLMD62B600**	**HLMD63B600**
	700	3200	3500	3700	4200	4700	6400	7300	8000	—	**HLMD62B700**	**HLMD63B700**
	800	3200	3500	3700	4200	4700	6400	7300	8000	—	**HLMD62B800**	**HLMD63B800**
MD6	500	3000	3430	3860	4290	4710	5140	5570	6000	—	**MD62B500**	**MD63B500**
	600	3000	3430	3860	4290	4710	5140	5570	6000	—	**MD62B600**	**MD63B600**
	700	4000	4570	5140	5710	6280	6850	7420	8000	—	**MD62B700**	**MD63B700**
	800	3000	3430	3860	4280	4710	5140	5570	6000	**MXD63L800**	—	—
	800	4000	4570	5140	5710	6280	6850	7420	8000	**MXD63A800**	**MD62B800**	**MD63B800**
	800	5000	5715	6430	7145	7860	8575	9290	10000	**MXD63H800**	—	—
MXD6	500	3000	3430	3860	4280	4710	5140	5570	6000	—	**MXD62B500**	**MXD63B500**
	600	3000	3430	3860	4280	4710	5140	5570	6000	—	**MXD62B600**	**MXD63B600**
	700	4000	4570	5140	5710	6280	6850	7420	8000	—	**MXD62B700**	**MXD63B700**
	800	3000	3430	3860	4280	4710	5140	5570	6000	**MXD63L800**	—	—
	800	4000	4570	5140	5710	6280	6850	7420	8000	**MXD63A800**	**MXD62B800**	**MXD63B800**
	800	5000	5715	6430	7145	7860	8575	9290	10000	**MXD63H800**	—	—
HMD6	500	3000	3430	3860	4280	4710	5140	5570	6000	—	**HMD62B500**	**HMD63B500**
	600	3000	3430	3860	4280	4710	5140	5570	6000	—	**HMD62B500**	**HMD63B600**
	700	4000	4570	5140	5710	6280	6850	7420	8000	—	**HMD62B700**	**HMD63B700**
	800	4000	4570	5140	5710	6280	6850	7420	8000	—	**HMD62B800**	**HMD63B800**
HMXD6	500	3000	3430	3860	4280	4710	5140	5570	6000	—	—	**HMXD63B500**
	600	3000	3430	3860	4280	4710	5140	5570	6000	—	—	**HMXD63B600**
	700	4000	4570	5140	5710	6280	6850	7420	8000	—	—	**HMXD63B700**
	800	4000	4570	5140	5710	6280	6850	7420	8000	—	—	**HMXD63B800**
CMD6	400	3000	3430	3860	4280	4710	5140	5570	6000	—	—	
	500	3000	3430	3860	4280	4710	5140	5570	6000	—	—	
	600	3000	3430	3860	4280	4710	5140	5570	6000	—	—	**CMD63B600**
	700	4000	4570	5140	5710	6280	6850	7420	8000	—	—	**CMD63B700**
	800	3000	3430	3860	4280	4710	5140	5570	6000	**CMD63L800**	—	—
	800	4000	4570	5140	5710	6280	6850	7420	8000	**CMD63A800**	—	**CMD63B800**
	800	5000	5715	6430	7145	7860	8575	9290	10000	**CMD63H800**	—	—
ND6	800	4000	4570	5140	5710	6280	6850	7420	8000	—	**ND62B800**	**ND63B800**
	900	5000	5715	6430	7145	7860	8575	9290	10000	—	**ND62B900**	**ND63B900**
	1000	5000	5715	6430	7145	7860	8575	9290	10000	—	**ND62B100**	**ND63B100**
	1200	5000	5715	6430	7145	7860	8575	9290	10000	—	**ND62B120**	**ND63B120**
NXD6	900	5000	5715	6430	7145	7860	8575	9290	10000	—	**NXD62B900**	**NXD63B900**
	1000	5000	5715	6430	7145	7860	8575	9290	10000	—	**NXD62B100**	**NXD63B100**
	1200	5000	5715	6430	7145	7860	8575	9290	10000	—	**NXD62B120**	**NXD63B120**
HND6	800	4000	4570	5140	5710	6280	6850	7420	8000	—	**HND62B800**	**HND63B800**
	900	5000	5715	6430	7145	7860	8575	9290	10000	—	**HND62B900**	**HND63B900**
	1000	5000	5715	6430	7145	7860	8575	9290	10000	—	**HND62B100**	**HND63B100**
	1200	5000	5715	6430	7145	7860	8575	9290	10000	—	**HND62B120**	**HND63B120**
HNXD6	900	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HNXD63B900**
	1000	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HNXD63B100**
	1200	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HNXD63B120**
CND6	800	4000	4570	5140	5710	6280	6850	7420	8000	—	—	**CND63B800**
	900	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**CND63B900**
	1000	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**CND63B100**
	1200	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**CND63B120**
PD6	1200	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**PD63B120**
	1400	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**PD63B140**
	1600	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**PD63B160**
PXD6	1200	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**PXD63B120**
	1400	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**PXD63B140**
	1600	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**PXD63B160**
HPD6	1200	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HPD63B120**
	1400	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HPD63B140**
	1600	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HPD63B160**
HPXD6	1200	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HPXD63B120**
	1400	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HPXD63B140**
	1600	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HPXD63B160**
CPD6	1200	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**CPD63B120**
	1400	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**CPD63B140**
	1600	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**CPD63B160**
RD6	1800	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**RD63B180**
	2000	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**RD63B200**
RXD6	1800	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**RXD63B180**
	2000	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**RXD63B200**
HRD6	1800	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HRD63B180**
	2000	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HRD63B200**
HRXD6	1800	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HRXD63B180**
	2000	5000	5715	6430	7145	7860	8575	9290	10000	—	—	**HRXD63B200**

Maximum Frame Amp Rating	2-Pole Catalog Number	3-Pole Catalog Number	Self-Protective Instantaneous Override ±20%③
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	—	**HQR23S250HA**	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**⑤	10000
2000	①	**RXD63S200A■**⑤	10000

Ordering Information

Order by catalog number. Switches include frame and self protective trip unit only. Order lugs separately from pages 7-88 to 7-90.

■ 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 7-88 to 7-90.

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 7-88 to 7-90
Enclosures Section 6
Accessories pages 7-95 to 7-100

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.

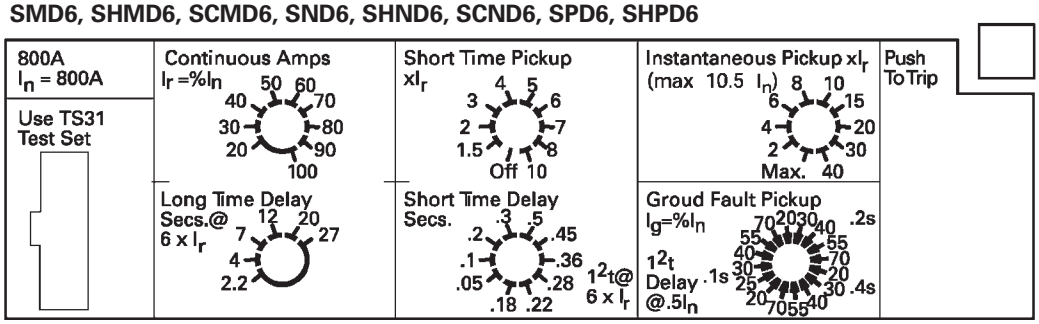
Functions available in Sentron Sensitrip circuit breakers

Catalog Number (Description + Suffix)	Trip Type	Cont Current Setting	Long Time Delay	Instan-taneous Setting	Short Time Pick Up	Short Time Delay	Short Time I^2t 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	√	√	√	√	√	√	√	√

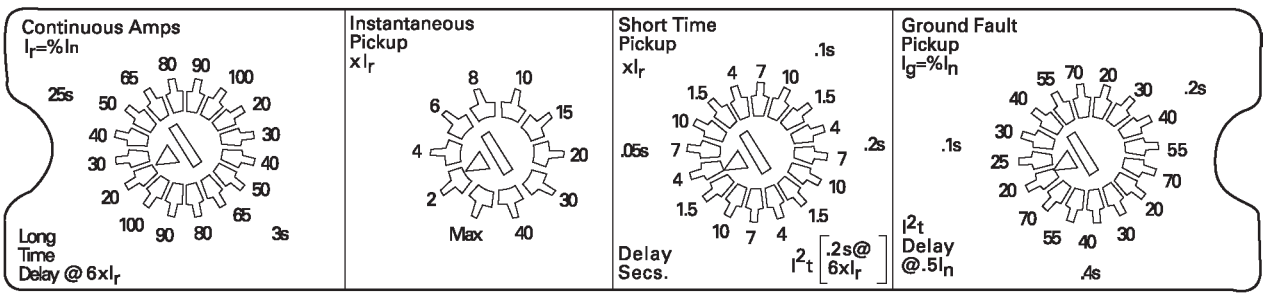
Letter "A" is used for MD and ND Solid State frame types only.

Typical Trip Unit Labeling and Adjustment Positions for the Sentron Sensitrip Circuit Breaker.

SMD6, SHMD6, SCMD6, SND6, SHND6, SCND6, SPD6, SHPD6



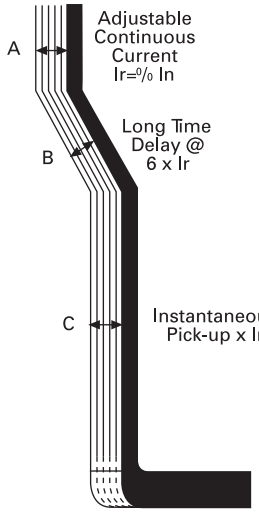
SJD6, SHJD6, SCJD6, SCD6, SHLD6, SCLD6



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 .



A. Adjustable "Continuous Amps" Rating Switch

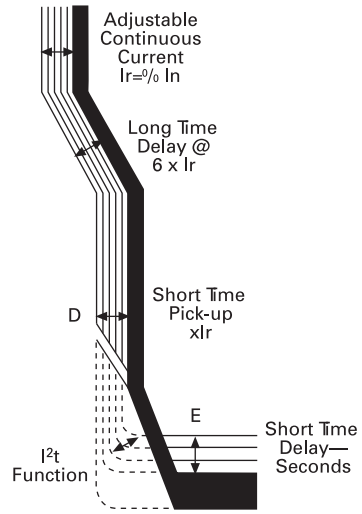
All Sensitrip III solid state molded case circuit breakers have an adjustable ampere rating switch. Adjustments made to this switch change the continuous current rating of the breaker from 20% to 100% of its maximum trip unit rating depending on the circuit breaker frame.

B. Adjustable "Long Time Delay" Switch

All Sensitrip III circuit breakers have an adjustable long time delay switch to allow for selection of long time delays of fixed time intervals at six times the setting of the adjustable "continuous amps" rating switch.

C. Adjustable "Instantaneous Pick-Up" Switch

Sensitrip III circuit breakers with an adjustable instantaneous trip switch allow selection of a tripping point from related to the adjusted circuit breaker Rating (I_r).

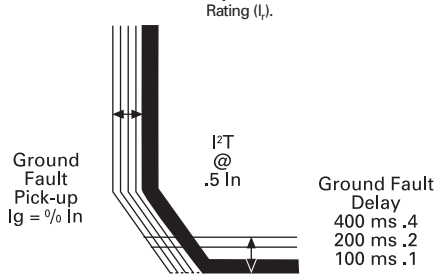


D. Adjustable "Short Time Pick-Up" Switch (Optional)

Sensitrip III circuit breakers with an adjustable short time pick-up switch allow for selection of short time pick-up in a range from 1.5 to 10 times the setting of the maximum current rating.

E. Adjustable "Short Time Delay" Switch (Optional)

Sensitrip III circuit breakers with an adjustable short time pick-up switch also contain a switch for adjustment in time delay. The adjustable short time delay switch allows for either of two modes of short time delays. One range of settings enables the breaker to be set for fixed time delays and the other range of settings enables the breaker to be set for short time delays based on I²t curves.



Adjustable "Ground Fault Pick-Up" Switch

Sensitrip III circuit breakers containing the optional equipment ground fault protection cover the ground fault pick-up range of 20% to 70% of the circuit breaker frame rating. The ground fault pick-up settings also allow for one of three time delays based on 12t curves.

For 3-phase, 4-wire systems, an external neutral transformer is required with an ampere rating equal to the trip unit ampere rating.

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 x 240 amps = 1440.	8 1920 amperes 8 x I_r = 8 x 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	I²T 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 x I_r). Breaker will trip in 20 seconds with 3360 amperes.

Ⓓ Short Time Pick-Up Off — Instantaneous can be used.

Ⓔ Instantaneous set at 10 x I_r = 10 x 560 = 5600 amperes.

Ⓕ Short Time Pick-Up On — Set at 8 = 8 x 560 = 4480 amperes.

Ⓖ Short Time Delay = .5 seconds. (Definite Time)
Note: Ⓖ & Ⓗ are mutually exclusive.

Ⓗ I²t switch on .28 seconds @ 6 x 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.

Breaker Description

The ever-increasing use of plant and energy management systems has intensified the demand for circuit breakers supporting multiple open protocols to monitor and control the flow of energy in the power system. The extensive and modular WL family of circuit breakers and accessories provides this for applications from 200A to 6000A.

Applications

WL breakers can be applied as main, tie, feeder or distribution breakers in low-voltage electrical power systems.

Versions

- Frame ratings: 800A to 6000A
- 3 physical frame sizes
- Rated nominal operating voltage up to 635VAC
- Seven interrupting classes from 50kA to 200kA at 480V
- Circuit breaker or non-automatic switch
- WL Circuit Breakers are delivered as complete assembled breakers or individual frames, guide frames, and accessories

Installation Types

Fixed-mounted or Draw-out version.

Standards

- WL ANSI / UL 1066 Circuit Breakers will satisfy: C37.13, C37.16, C37.17, C37.50, NEMA SG3
- WL UL 489 Circuit Breakers will satisfy: UL 489
- WL Circuit Breakers are suitable for use in UL 1558 LV Switchgear and UL 891 LV Switchboards

Conditions of Application

WL Circuit Breakers are designed to meet standard Industrial and Commercial application requirements.

Uniform Dimensions

WL Circuit Breaker dimensions differ only in the device width, which varies by frame size. With the exception of the 200kA ANSI Frame Size II which has an additional 5" in depth to accommodate integral fuses and the UL489 Frame Size I which measures only 15" in height to allow six-high stacking in switchboards.

Minimal Space Requirements

The WL design is extremely compact without sacrificing performance and does not use energy-wasting heat sinks.

Trip Units

The electronic, micro processor-based trip unit is auxiliary voltage-independent for all protective functions and enables adaptation to the different protection requirements of distribution systems, motors, transformers and generators.

Non-Automatic Switch

A special version of the circuit breaker is used as a non-automatic switch.
The non-automatic switch is constructed without a trip unit and has no protective function. A possible application is for use as a tie in systems with parallel feeds.

Main Bus Connectors

Breakers are equipped with standard vertical main bus connections. Horizontal bus connections are available as an option in Frame Size 1 and 2 up to 2000A.

Communication Capability

MODBUS or PROFIBUS communications transmit the acquired and metered data, such as current values, breaker status, trip log, etc. to a central monitoring computer. With a factory installed metering function option, the WL acquires data useful for power management and can contribute to a significant savings in energy costs. A new, internal circuit breaker bus enables the expansion of breaker functionality through the integration of many secondary functions which were previously separate, including:

- Control of analog displays
- Options for testing the communication setup
- Display of breaker status and reason for trip
- Input modules for reading other external signals and transmitting these signalsvia PROFIBUS or MODBUS communication
- A selection of output modules to provide contact closures based on events or measured-value setpoints. It is not only possible to monitor the breaker remotely, it is also possible to open and close the breaker as well as setting parameters remotely

Operating Mechanisms

Circuit breakers can be optionally delivered with different operating mechanisms, including:

- Manual operating mechanism with mechanical closing (standard)
- Manual operating mechanism with mechanical and electrically interlocked closing
- Motorized operating mechanism with mechanical and electrically interlocked closing. Operating mechanisms with electrically interlocked closing are suitable for synchronizing tasks

Auxiliary Contacts

Auxiliary switches can be added according to the type of installation. They are easily mounted via front, top mounted terminal blocks.

Modularity

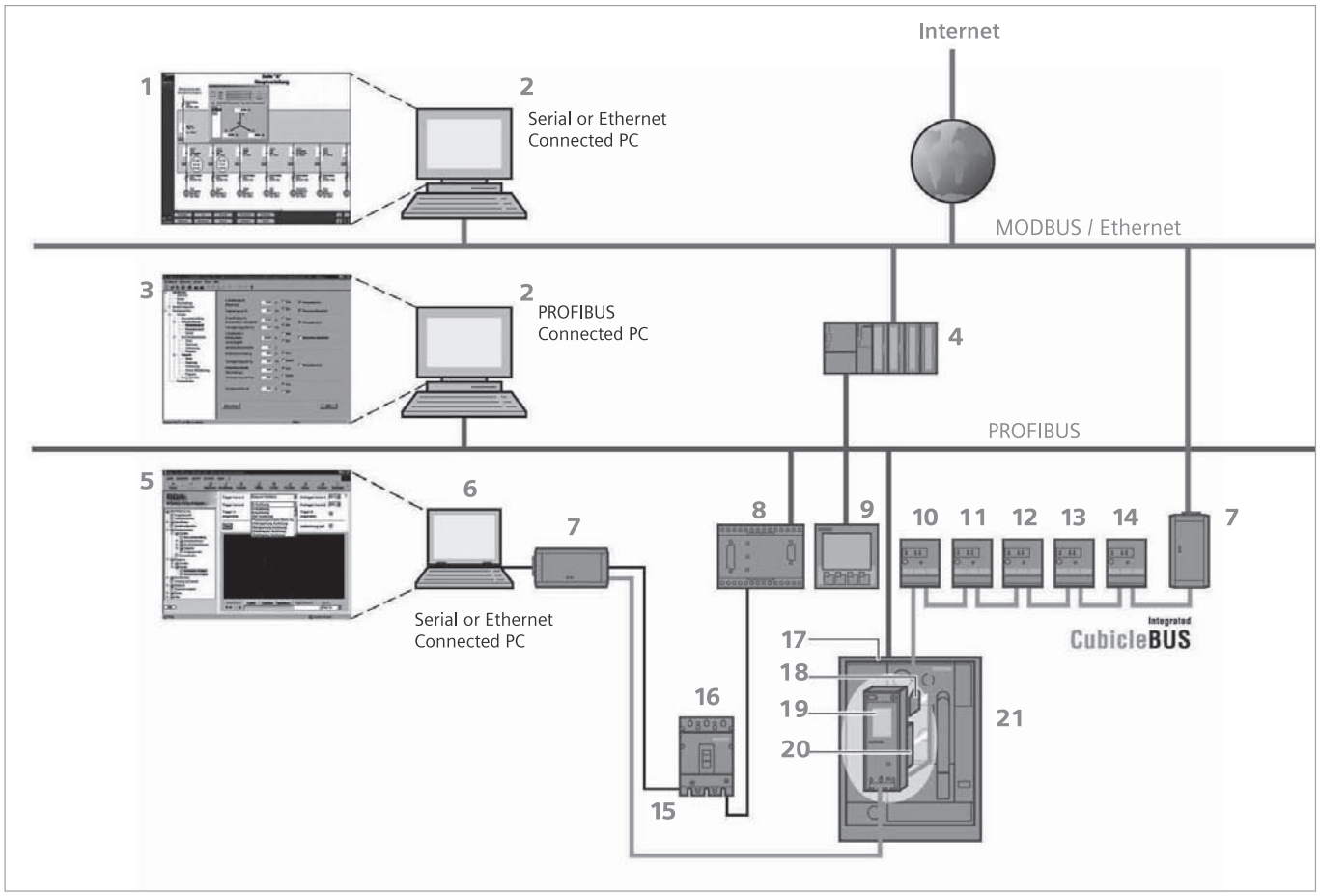
Common guide frames for the draw-out version make them completely interchangeable between the UL 489 and ANSI / UL 1066 rated circuit breakers. Components, such as auxiliary releases, motorized operating mechanisms, trip units, current sensors, auxiliary signal switches, automatic reset devices or interlocks can be used to modify or retrofit any circuit breaker to meet changing requirements. The main contacts can be replaced to extend the life of the circuit breaker and feature integrated contact wear indicators.

Electronic Trip Unit Modularity

Modularity is the outstanding feature of the new WL Circuit Breakers. The trip units themselves can be retrofitted with special LCDs, ground fault modules, rating plugs and communication modules.100% Rated Circuit Breaker WL circuit breakers are designed for continuous operation at 100% of their current rating without the need for external heat sinks.

Conditions of Application

WL Circuit Breakers are designed to meet standard Industrial and Commercial application requirements.



A spectrum of power distribution communication

1 WinPM.Net software
2 Server or desktop PC
3 Switch ES power software
4 PLC
5 BDA web server
6 Portable PC
7 Breaker data adapter (BDA)
8 COM10 PROFIBUS module or COM11 MODBUS module
9 Power metering device
10 Zone selective interlock
11 Digital input module
12 Analog output module
13 Digital output module
14 Relay output module
15 VL CubicleBus network
16 VL feeder breaker
17 Input power and communication terminals
18 Breaker status sensor (BSS)
19 Trip unit display
20 Metering function
21 WL power breaker

Trip Unit Functions

Basic Protective Functions		ETU745	ETU748	ETU776
Long-time overcurrent protection	L	●	●	●
Short-time delayed overcurrent protection	S	●	●	●
Instantaneous overcurrent protection	I	●	●	●
Neutral conductor protection	N	●	●	●
Ground fault protection	G	○	○	○
Additional Functions				
Selectable neutral protection		●	●	●
Defeatable short-time protection		●	—	●
Defeatable instantaneous protection		●	—	●
Selectable thermal memory		●	●	●
Zone selective interlocking		●	●	●
Selectable I2t or fixed short-time delay		●	●	●
Adjustable instantaneous pick-up		●	—	●
Selectable I2t or I4t long-time delay		●	●	●
Adjustable short-time delay and pick-up		●	●	●
Selectable and adjustable neutral protection		●	●	●
Dual protective setting capability		—	—	●
Dynamic arc-flash sentry		—	—	●
Extended instantaneous protection		●	●	●
Parameterization and Displays				
Parameterization by rotary switches (10 steps)		●	●	—
Parameterization by communication (absolute values)		—	●	●
Parameterization by menu/keypad (absolute values)		—	—	●
Remote parameterization of the basic functions		—	—	●
Remote parameterization of the additional functions		—	—	●
Alphanumeric LCD		○	○	—
Graphical LCD		—	—	●
Metering Function				
Metering function		○	○	○
Metering function Plus		○	○	○
Communication				
CubicleBUS		●	●	●
Communication via PROFIBUS-DP		○	○	○
Communication via the MODBUS		○	○	○
Communication via the Ethernet (BDA)		○	○	○

● Standard — Not available ○ Optional

Rating Plug

It is no longer necessary to replace the current transformer to change the rated current of the breaker. Instead, you simply replace the rating plug which is easily accessible on the front of the trip unit. The circuit breaker is set to the new rated current quickly and is already correctly labeled.

Long Time Overcurrent Protection with Switchable I2t/I4t Characteristics

The long time overcurrent protection in the ETU745, ETU755 and ETU776 trip units can be switched between an I2t and I4t characteristic to improve coordination between upstream circuit breakers and fuses.

Front Panel

The front panel is designed so that it can be accessed through a cutout in the door, which means that all controls and displays are accessible even when the cubicle door is closed. The front panels of all Frame Size II and Frame Size III circuit breakers are identical, and allow for two different through-door access designs: Trip unit and front panel controls or front panel controls only. The degree of protection of the front panel is IP 20.

Environmental Protection

The plastics used are halogen-free and recyclable.

Safety and Reliability

In order to help protect the electrical distribution system and circuit breaker against unauthorized breaker operations, a wide range of locking devices can be installed or retrofit, including:

- Lockable drawout version to protect against unauthorized removal (standard)
- High degree of protection through Plexiglas cover
- Mechanical reclosing lockout after long-time, short-time or instantaneous trip (optional)
- Devices with trip unit ETU745 or higher are equipped with temperature sensors on the BSS and COM15/COM16 (standard)
- Lock provision for locking the breaker in the OPEN position
- Lockable covers for the CLOSE button
- Lockable racking handle prevents moving the breaker
- Lockable charging handle prevents charging the springs

Standard Version Features

WL Circuit Breakers have the following standard equipment:

- Mechanical CLOSE and mechanical OPEN push buttons
- Manual operating mechanism with mechanical closing
- Contact position indicator
- Front panel ready-to-close indicator
- Spring charge indicator
- Rear vertical main contacts
- Main contact replacement flag
- Auxiliary plug system with bare wire pressure screw terminals. Delivery includes all auxiliary plugs necessary for both factory installed and future field installed accessories
- Mechanical trip indicator of the overcurrent release system
- Automatic reset after trip
- The front panel cannot be removed if the circuit breaker closed
- Laminated main contact fingers as part of the breaker contact strip on the drawout circuit breaker
- Breaker position display in the operator's panel
- Captive crank handle for racking out the breaker
- Guide frame with guide rails for easy handling of draw-out version
- Breaker cannot be moved in the CLOSED state
- Rated current coding between the guide frame and the breaker
- Suitable for reverse feed applications
- The breaker is always equipped with the required number of secondary disconnect blocks

Exclusive Features

Generator/Utility Protection Sets

24/7/365 power availability is critical for some systems. On-site generation capability is growing more and more common in many systems. All of the WL digital electronic trip units allow the system designer to precisely tailor trip settings for the most demanding requirements. However, the 776 trip unit allows one set of trip settings for a fully loaded utility feed and with a simple contact closure, the trip unit toggles to a second trip set tailored to provide optimal generator protection. The wide range of settings allows the WL to provide protection for a minimal generator capacity for only essential loads, through full backup for an entire facility. This dual utility/generator protection capability in a single circuit breaker allows the system designer unparalleled, cost effective, flexibility.

Dynamic Arc-Flash Sentry

A unique feature of the WL trip unit allows the system designer to achieve lower levels of arc flash energy and delayed tripping for selective trip coordination purposes. Dynamic Arc-Flash Sentry (DAS) employs the unique dual protective setting capability of the 776 trip unit, coupled with the ability to easily toggle to a lower arc flash parameter set. A normal operation parameter set can be optimized for selective trip coordination, while the second set is optimized for lower arc flash energy levels. The dynamic action comes from the ability to switch from the normal operation set to the arc flash limiting set based on the presence of personnel as they approach the flash protection boundary. A wide variety of switching methods may be used based on the needs of a particular facility. The capabilities range from fully automatic switching using appropriate occupancy sensors to manual switching via a key operation.

Extended Instantaneous Protection

Extended Instantaneous protection (EIP), another unique feature of the WL trip unit, allows the system designer to achieve full selective trip coordination up to the short-time rating of the frame while also allowing application of the breaker up to the interrupting rating of the frame. The typical power circuit breaker with an 'LS' trip unit, or when the instantaneous function is switched off on an 'LSI' trip unit, can only be applied up to it's short-time rating, commonly 85kA or less. For application on systems with levels of available fault current above the short-time rating, the typical 'LS' power circuit breaker cannot be applied or must employ an instantaneous override. This instantaneous override is set at as much as 20% below the short-time rating and can seriously compromise selective trip coordination with downstream breakers.

The WL, equipped with EIP, overcomes these limitations by providing full withstand capability, and full coordination, with a minus 0% short-time band tolerance up to 85kA on frame Size II and 100kA on Size III. Above fault currents of 20% higher than the full short-time rating, the WL breaker is self-protecting, and the EIP function will trip the breaker instantly to protect the frame and the system from these extremely high currents, as high as 150kA on frame Size III. One added benefit is that arc flash energy is greatly reduced in this high current region due to the instantaneous trip response that EIP provides.

Multiplexor Translator

Breaker Type	Features	Catalog Number
SJD, SLD SMD, SND SPD	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 Number
SJD, SLD SMD, SND SPD	6″	**EPC06**
	8″	**EPC08**
	12″	**EPC12■**
	18″	**EPC18**
	24″	**EPC24■**

Telephone Cables

Breaker Type	Length	Catalog Number
SJD, SLD SMD, SND, SPD	8′	**MTC08**
	15′	**MTC15**
	25′	**MTC25**
	50′	**MTC50**

Expansion Plug

Breaker Type	Frame Size	Mounting Type	Catalog Number
Sensitrip	ALL	ALL	**EP**

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) MTCSB08 e.g.

Component Selection Guide①

Trip Units and Application		
Component Type	**ZSI (only) with Sensitrip MCCB'S**	**Access and/or ZSI with Sensitrip MCCB's**
EP	✓	✓
MTZ②	✓	
MTA②		✓
EPC Cable	✓	✓
MTC Cable③	✓	✓

Electronic & Display Devices

Trip Unit Test Set

Type	Catalog Number
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
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 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

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

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

① When ordered with circuit breaker from the factory.
② One MTA or MTZ per eight trip units when required.

③ Always required when multiple MT's are used. One additional cable per each additional MT.

For Use With Type(s)	Circuit Breaker Ampere Rating	Cables Per Lug	Lug Wire Range	Catalog Number
BQ, BQH, BQHF BQE, BQF, BL, BLH, HBL, HBQ Switching Neutrals BG, BLG	**Line Side**			
	15–40	1 1	#14–#6 AWG Cu #12–#6 AWG Al	**TC1Q1**①②
	45–125	1 1	#8–#1 AWG Cu #6–#1/0 AWG Al	**TA1Q1**②
	Load Side			
	15–20	1 1	#14–#10 AWG Cu #12–#10 AWG Al	Lugs are integral to Circuit Breaker
	25–35	1 1	#14–#6 AWG Cu #12–#6 AWG Al	Lugs are integral to Circuit Breaker
	40–50	1 1	#8–#6 AWG Cu #8–#4 AWG Al	Lugs are integral to Circuit Breaker
	55–70 *exceptions in Table A	1 1	#8–#4 AWG Cu #8–#2 AWG Al	Lugs are integral to Circuit Breaker
	80–100	1 1	#4–#1/0 AWG Cu #2–#1/0 AWG Al	Lugs are integral to Circuit Breaker
	110–125	1 1	#2–#1/0 AWG Cu #1/0–#2/0 AWG Al	Lugs are integral to Circuit Breaker
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, HGG, LGG	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)
NEG, HEG	15-125	1	#14-3/0 AWG Cu	**3TW1EG30** (pkg. of 3)
	15-125	1	#14-1/0 AWG Cu/Al	**3TA1EG10** (pkg. of 3)
	15-125	1	#6-3/0 AWG Cu/Al	**3TA1EG30** (pkg. of 3)
	15-125	—	Nut Keeper Kit (3-pole)	**TNKE3** (pkg. of 3)
	15-125	—	Nut Keeper Kit (4-pole)	**TNKE4** (pkg. of 4)

Connector wire ranges and cavities are established in conjunction with Table 6.1.4.2.1 of UL 489 standards.

Table A

For Use With Type(s)	Circuit Breaker Ampere Rating	Cables Per Lug	Lug Wire Range	Number of Poles
BQ, BL, QP	**Load Side**			
	55-60	1	#8–#4 AWG Cu-Al #3 AWG requires 22 or 65 kAIC	This exception is applicable to 1- and 2-pole only

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.

For Use With Type(s)	Circuit Breaker Ampere Rating	Cables Per Lug	Lug Wire Range	Catalog Number
QR2, QR2H, HQR2, HQR2H	100-250	1	#3–300 Kcmil Al/C	**3TA1QR300** (3 lugs per kit)
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, HHLD6, SHLD6(A), CLD6, SCLD6	250–600	1–2	3/0–500 kcmil (Cu) 4/0–500 kcmil (Al)	**TA2J6500**
LMD6①, LMXD6①, HLMD6①, HLMXD6①, MD6, MXD6, SMD6, HMD6, HMXD6, SHMD6, CMD6, SCMD6	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**②③ **3TA4P8500**②④
			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**

①Use TA2K500 or TA3K500 only.
②Used for 100% rated MD/ND frame breakers. Rated for 90° C cable.
③Contains 2 connectors plus 1 NDTS end barrier.
④Contains 3 connectors plus 1 NDTS end barrier.

For Use With Type	Circuit Breaker Ampere Rating	Cables Per Lug	Lug Material	Lug Wire Range	Qty Per Catalog No	Catalog Number
QR2, QR2H, HQR2, HQR2H	100-250	1	Cu	#3 - 300 Kcmil Cu ONLY)	3	**3TC1QR2520** (3 lugs per kit)
ED, HED 1, 2 & 3-pole	1, 2 & 3-pole 30-125	1	Cu	#10–#1/0 (Cu)	1	**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), HHLD6, 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**① **TC2J6500**①
	250–600	1 1	Al	500–750 kcmil (Al) 500–600 kcmil (Cu)	1	**TA1L6750**
SMD6, M(X)D6,	500–600	1–2	Cu	#1 AWG–500 kcmil (Cu)	1	**TC2K500**
HM(X)D6, HMD6,		1–3	Cu	#1 AWG–350 kcmil (Cu)	1	**TC3K350**
CMD6, SCMD6, SND6,	700–800	1–2	Al	500–750 kcmil (Cu) 500–750 kcmil (Al)	2 3	**2TA2N8750** **3TA2N8750**
N(X)D6, HN(X)D6,						
SHND6, CND6, SCND6	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
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**
QR2, QR2H, HQR2, HQR2H	100-250	2-3	1	#6 - 350kcmil Al/Cu	**CCQ250**
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 Lugs②

For Circuit Breaker Types	Ampere Rating	Poles	Lugs Per kit	Wires Per Lug	Lug Wire Size	Catalog Number
NGG, HGG, LGG	15-125	1,2,3	1	6	#6-#4 AL #14-#4 Cu	**TA6GG04**
NEG, HEG	15-125	1,2,3	3	3	#14-#2 AWG Cu	**3TA3EG02**
NEG, HEG	15-125	1,2,3	3	6	#14-#6 AWG Cu	**3TA6EG06**
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**

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

①Used for 100% rated JD/LD frame circuit breakers.

② Special purpose wire connectors, not for general use.

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.

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 and ED Frame Circuit Breakers
— Replace 'B' in catalog number with 'M' ..... No Charge
(Example: BQ3M060, 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'
(Example: FXD63M225, JXD63M400)

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 page 7-102 and order standard circuit breakers.

Fungus Proofing

All BQD, CQD, GB, GG, 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.

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.

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, including BL, NGB and Sentron ED through RD frames can be labeled "NAVAL" in compliance with UL 489 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.

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
GG	E10848, Vol 10, Sec 2
GB	E10848, Vol 10, Sec 3
ED2, ED4, 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

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/ AUX/ ALSW	AUX	AUX/ ALSW	ALSW	Elect. Bell Alarm	Ground fault	Grd fault w/Bell
QP, BQ, BL①	1	1, 2, 3	1	—	—	—	—	—			1,2	—	—	—	—	—
BQD, CQD, GB, GG	1	2, 3	1	1/1	—	—	—	—			1,2	1/1	1	—	—	—
QR	1, 2	2, 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, LMD②	2	2, 3	1	1	—	—	1	1/1, 1/2	—	—	1, 2	1/1, 1/2	1, 2	—	—	—
SJD6, SHJD6, SCJD6, SLD6, SHLD6, SCLD6③	1	3	1	1	—	—	1	1/1, 1/2	—	—	1, 2	1/1, 1/2	1, 2	—	—	—
All MD, ND, PD, RD Including Electronic trip④	2	2, 3	1	1/1	—	—	1	1/1, 1/2	—	—	1, 2	1/1, 2/1	1, 2	—	—	—
STD⑤	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.

For ED Frames

S01FD60

For FD Frames

S01FD60

For JD and LD Frames

①Factory assembled only
②If mechanical interlock is installed, no accessory module can be installed in the right pocket.
③If mechanical interlock is installed, no accessory module can be installed.
④If mechanical interlock is installed, no accessory module can be installed in the left pocket.
⑤One module per column.

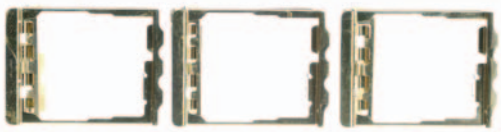
Circuit Breaker Accessories ④⑤⑥⑦⑧⑨

Catalog Number	For Use With Breaker Type	Number of Poles	Standard Package
Padlocking Device For locking breaker in "OFF" position. Note "ON" position does not affect breaker fuctionally			
ECPLD1	Type QP, BL, QAF2, QPF2, QE, QT-Duplex, BQ, BQXD	1P	3 Pieces
ECPLD1R	Type QP, BL, QAF2, QPF, QE, QT-Duplex, BQ, BQXD (Red Color)	1P	3 Pieces
ECPLD2	Type QP, BL, QAF2, QPF, QE, QT-Triplex & Quadplex, BQ, BQXD	2P	3 Pieces
ECPLD2R	Type QP, BL, QAF2, QPF, QE, QT-Triplex & Quadplex, BQ, BQXD (Red Color)	2P	3 Pieces
ECPLD3	Type QP, BL, QAF2, QPF, QE, BQ	3P	1 Piece
US2:ECPLD3R	Type QP, BL, QAF2, QPF, QE, BQ (Red Color)	3P	1 Piece
ECQLD3	Type QP, BL, BQ, BQXD	1P	10 Pieces
ECQLD4	Type QT-Duplex	QT-Duplex Breakers	10 Pieces
ECQLN3②	150-225 MBKA, QN, QNR	n/a	1 Piece
ECQTH4	Type QP, BL, BQH	Designed for (3) 1P Breakers	1 Piece
Handle Tie Provide simultaneous swiching of 2 adjacent handles.			
ECQTH2	Type QT Duplex	Designed for (2) QT Duplex Breakers	25 Pieces
ECQTH3	Type QP, BL	2P	50 Pieces
Mechanical Interlock①			
ECQML12	Type QP, BL, BQ Interlock Bracket	Designed for 1" Breaker	10 Pieces
Handle Blocking Device For holding breaker in "ON" or "OFF" position. Not a lockout/tagout device			
ECQL1	Type QP, BL, BQ, BQXD	1P	10 Pieces
ECBX231M	Type QT-Duplex	1/2" Breakers	10 Pieces
Main Breaker Retainer			
ECMBR1③	EQ Load Centers		1 Piece
ECMBR2	Ultimate Load Centers		1 Piece
Mounting Accessories			
MB120	Type BQ, BQH Mounting Clips	1P	20 Pieces
FP9508	Type BQ, BQH FACE MOUNT PLATE	1P	10 Pieces
FP9555	Type BQ, BQH FACE MOUNT PLATE	2P	10 Pieces
FP9556	Type BQ, BQH FACE MOUNT PLATE	3P	10 Pieces
SMB6R	Type BQ MOUNTING BRACKET	1P, 2P, 3P	6 Pieces
TCH65K	Type BQ MOUNTING ADAPTER		500 Pieces
BR2	Type BQ, BQH, BQXD Back Mounting Plates	2P	10 Pieces
BR3	Type BQ, BQH, BQXD Back Mounting Plates	3P	10 Pieces
BR4	Type BQ, BQH, BQXD Back Mounting Plates	4P	10 Pieces
I0204ML1125CU	Type QP Back Mounting Plates	1P, 2P	10 Pieces
I0303ML3100CU	Type QP Back Mounting Plates	3P	10 Pieces
Replacement Lugs			
TA1Q1	Type BQ, NGG 100A Al Cu LGS	n/a	6 Pieces
TC1Q1	Type BQ, NGG 40A Al Cu LUGS	n/a	6 Pieces
Finger Shield			
BQFS1K	Type BQXD Finger Shield (Bulk Pack)	n/a	1000 Pieces
BQFS2	Type BQXD Finger Shield	n/a	2 Pieces
Filler Plate			
ECQF3	1" Filler Plate	n/a	5 Pieces

① For a complete list of standby power mechanical interlock kits, see page 1-25
② For use with Ultimate Load Center Main Breakers
③ Not suitable for use on 15-50A, 10 AIC Type QP Circuit Breakers
④ QP Type includes QPH, HQP
⑤ BL Type includes BLH, HBL
⑥ BQ Type includes BQH, HBQ
⑦ QAF2 Type includes QAFH2, BAF2, BAFH2, QFGA2, QFGAH2, BFGA2, BFGAH2
⑧ QPF Type includes QPHF, BLF, BLHF
⑨ QE Type includes QEH, BLE, BLEH

Padlocking Device

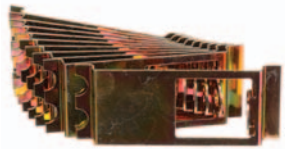
ECPLD1



ECPLD2

ECPLD1R/2R/3R (Single pole pictured. 2-/3-pole available)

ECQLD3

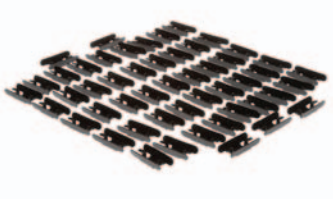


ECQLD4

ECQTH4

Handle Tie

ECQTH2



ECQTH3

Handle Blocking Device

ECQL1

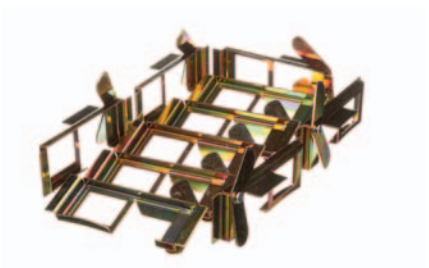
ECBX231M

Main Breaker Retainer

ECMBR1

ECMBR2

Mechanical Interlock



ECQML12

Mounting Accessories

MB120

SMB6R

I0204ML1125

FP9508

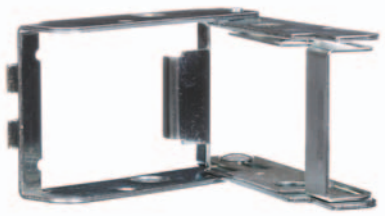
FP9555

FP9556

Handle Ties with Padlock Device

Provide simultaneous switching of 2 or 3 adjacent handles.
Do not provide common trip.

For Use With Breaker Frame(s)	Catalog Number	Standard Package	Wt Lb/ Std Pkg
BQD, NGB, HGB, LGB	**BQDHT2**	10	½
	BQDHT3	10	½

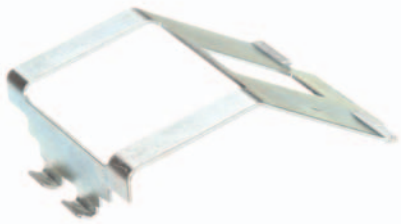


FD Padlocking Device
FD6PLI

Padlocking Devices

For locking breaker in "OFF" position.

All QR	**HPLQR**	1	¼
All BQD, CQD, NGB, HGB, LGB	**BQDPLD**	1	⅛
NGG, HGG, LGG	**HPLG**	1	¼
EB, 1- thru 3-pole	**HPLEB**	1	⅛
EG, 3- and 4-pole only	**HPLE**	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



FD Handle Blocking Device
FD6HB1

Handle Blocking Devices

For holding breaker in "ON" or "OFF" position.
Not a lockout/tagout device.

All QR	**HBLQR**	1	1
All BQD, CQD, GG, GB	**BQDHBD**	1	¼
EG	**HBDE**	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 Extension
EX11

Handle Extensions

For replacement. One extension shipped with breaker.

All MD, ND, PD, RD	**EX11**	1	2

Terminal Shields

Breaker Type	Poles	Catalog Number	Standard Package
NGG	3	**TSSG3A**	1
HGG, LGG	1	**TSSG61**	1
	2	**TSSG62**	1
	3	**TSSG63**	1

■ Built to order. Allow 2–3 weeks for delivery.
① Sold only in standard package quantities.

Face Mounting Plates

For Use With Breaker Frame(s)	Number of Poles	Catalog Number	Standard Package	Wt Lb/ Std Pkg
CQD, CQD6	1 2 3	**CQDFMB1** **CQDFMB2■** **CQDFMB3■**	1 1 1	¼ ¼ ¼
NGG, HGG, LGG	1 2 3	**FMPG1** **FMPG2** **FMPG3**	**1** **1** **1**	¼ ¼ ¼

Back Mounting Plates

ED2, ED4, ED6, HED4, HED6	1	**E2BMB**	1	¼

Mounting Screw Kits

CQD, CQD6	**CQDSMK**①	1	1¼
NGG, HGG, LGG	**MSKG4**①	1	¼
All QR	**MSQR3**	1	⅛
All ED (CED6 requires 2 kits)	**MSE6**① **MSE6100**②	1 100⑥	¼ 1
All FD (CFD6 requires 2 kits)	**MSF6**① **MSF650**③	1 50⑥	¼ 1
All EG 1-pole	**MSKE1**	—	—
All EG 2-pole	**MSKE2**	—	—
All EG 3 or 4-pole	**MSKE4**	—	—
All JD, LD	**MSJ6**①	1	¼
All LMD	**MSLMD**	1	¼
All MD, ND,	**MSMN**	1	¼
All PD, RD	**MSPR6**	1	2

Mounting Screw Kit
MSE6

Mechanical Interlock
MI5444

"MI" Mechanical Interlocks

For Use With Breaker Type(s)	Panel⑦ Mounted	Plug-in Mounted	Standard Package	Wt Lb Std Pkg
All EG (Sliding Bar)	**HSBE**	—	1	—
All QR (Sliding Bar)	**SBMIQR**	—	1	1½
All FD	**MI5444**	**MI5444**	1	—
All JD, LD	**MI5413**④	—	1	1
All LMD	**MI5406**④■	—	1	1
All MD	**MI5404**⑤■	—	1	3
All ND	**MI5404**⑤■	—	1	3
All PD, RD	**MI5405**⑤▲	—	—	—

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

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

①Kit consists of 4 screws and washers.
②Consists of 1 screw and washers (order 100).
③Consists of 1 screw and washers (order 50).

④With mechanical interlock in place, no accessory can be installed into circuit breaker right pole.
⑤Addition of the mechanical interlock will prevent accessory installation in the left pole.
⑥Sold only in standard package quantities. Multiply List Price Each times package quantity for full price.

⑦Mechanical interlock is not designed for use within Siemens panelboards.

Rotary Door Mounted Operating Handles

Types 1, 3, 3R , 12, 4 4X

For Use With Breaker Frames	Complete Mechanism Catalog Number		Handle Only	Breaker Operator	Shaft Only	
	Standard Depth	Variable Depth	Catalog Number	Catalog Number	Length (inches)	Catalog Number
EG	RHVE64X	RHVE124X	—	—	—	—
ED①	CRHOESD	CRHOEVD	CRHOH③	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	RHOH③	RHONBO④	3 12 24	RHONSSD▲ RHONSVD RHONSXD

RHOH

Rotary Door Mounted Operating Handles

Types 1 & 12

For Use With Breaker Frames	Standard Depth Catalog Number	Variable Depth Catalog Number	Handle and Shaft Catalog Number	Breaker Operator Catalog Number
CQD, NGG, HGG, LGG	—	RHOCQVD	RHOH62⑤	CQDOP
ED	D11CEU1	D11CEU2	—	—
FD	D11CFU1▲	D11CFU2	—	—
JD, LD	—	D11CJU2	—	—

For CQD, NGG, HGG and LGG red emergency handle, order assembly **RHOCQVDE** (includes handle and operator).▲
For CQD, NGG, HGG and LGG in a NEMA 3R enclosure, order **CQDOP34** operator, **RHOH** handle and **RHOSVD** shaft.
For CQD, NGG, HGG and LGG in a NEMA 4 or 4X enclosure, order **CQDOP34** operator, **RHOH4** handle and **RHOSVD** shaft.

CRHOH

Through Door Mounted Operating Handles②

Types 1 & 12

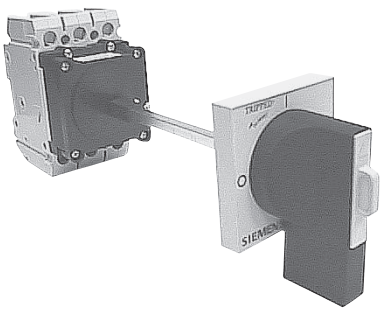
For Use With Breaker Frames	Standard Depth Catalog Number	Variable Depth Catalog Number
CQD, NGG, HGG, LGG	FMHOS	—
EG (3 & 4-Pole only)	RHFESD	—
EG (red handle)	RHFESDEM	—
ED	E2RH1	E2RHV9
FD	F6RH1	F6RHV9

D11CEU2

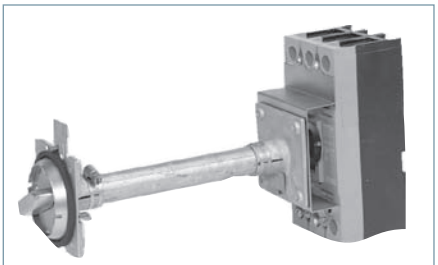
Door Latch Kits

Type	Catalog Number Right Hand	Catalog Number Left Hand
2 point latch	DKR2	DKL2■
3 point latch	DKR3	DKL3■

Standard Depth F6RH1



Rotary Handle **RHOCQVD**



Variable Depth **F6RHV9**

■ 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**. Consult sales office for additional EG operator shaft lengths.

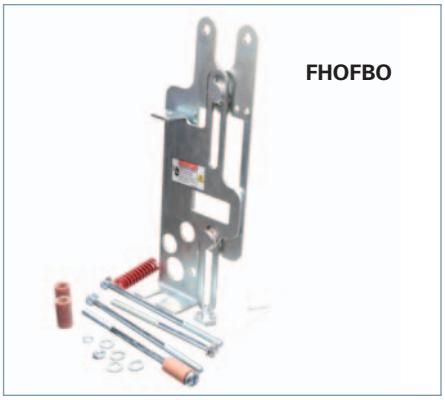
④ For extended shaft support order catalog number **RHONSB2**.

⑤ Length of shaft is 300mm (11.8 inches).

Max-Flex™, Flange Mounted Variable Depth Operators③

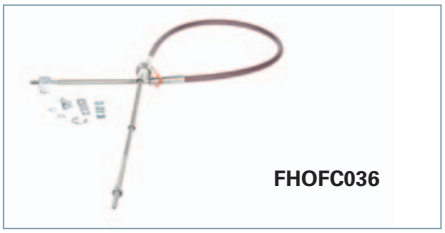
Frames	NEMA Type	Complete Kit Catalog Number	Handle Only Catalog Number	Breaker Operator Catalog Number	36" Cable Catalog Number
GG	1, 3 (R), 12	MFKG3R3	MFHG3R	MFMG	MFCF036
	4 (x)	MFKG4X3	MFHG4X		
EG	1, 3 (R), 12	MFKE3④	—	—	—
	4 (x)	MFKE4X3	—		
ED	1, 3 (R), 12	FHOE036①	FHOH	FHOEBO①	FHOEC036
	4 (x)	—	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	FHONC048②
	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 IECmarkets, 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 Catalog Number	FD Catalog Number	JD/LD/LMD Catalog Number	MD/ND/PD/RD Catalog Number
48	FHOEC048	FHOFC048	FHOJC048	FHONC048
60	FHOEC060	FHOFC060	FHOJC060	FHONC060
72	FHOEC072	FHOFC072	FHOJC072	FHONC072
96	FHOEC096	FHOFC096	FHOJC096	FHONC096
120	FHOEC120▲	FHOFC120	FHOJC120▲	FHONC120▲
144	FHOEC144▲	FHOFC144▲	FHOJC144▲	FHONC144▲



Handle Auxiliary Switch

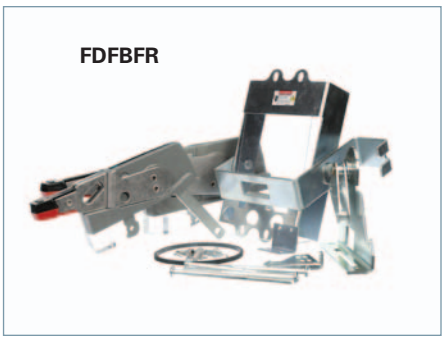
For use with Max-Flex and Rotary Door operators (FHOH and RHOH). 1 NO and 1 NC contact (Form C).

For Use With	Catalog Number
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 Catalog Number	Right Hand Mount Catalog Number
ED⑤	6.44	1, 3R, 12	FDFBEL▲	FDFBER▲
		4, 4X	FDFBEL4▲	FDFBER4▲
FD	6.44	1, 3R, 12	FDFBFL▲	FDFBFR▲
		4, 4X	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 IECmarkets, 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.

①For 1- or 2-pole breaker order FHOED036 complete kit or FHOEDBO breaker operator only. Use MFHM3R handle.

②48 inch cable is standard length for M through R frame Max-Flex operators.

③Meets requirements of NFPA 79, section 5.3.3.1 for locking external operator disconnecting devices

④Consult sales office for additional cable lengths for EG Flex Shaft Operators. For 3-Pole only.

⑤3-Pole ED only.

Telemand® Motor Operator

Breaker Frame	AC Voltage	Hinged to Open Down Catalog Number
ED except CED	120	**MOE6120**
	240	**MOE6240▲**

ED motor operator opens downward.

Breaker Frame	DC Voltage	Hinged to Open Right Catalog Number	AC Voltage	Hinged to Open Right Catalog Number
FD	24 48 125	**MOF6024DC▲** **MOF6048DC▲** **MOF6125DC▲**	120 240	**MOF6120** **MOF6240**
JD, LD	24 48 125	**MOJ6024DC▲** **MOJ6048DC▲** **MOJ6125DC▲**	120 240	**MOJ6120** **MOJ6240**
LMD	24 48 125	**MOLMD6024DC▲** **MOLMD6048DC▲** **MOLMD6125DC▲**	120 240	**MOLMD6120** **MOLMD6240**
MD, ND, PD, RD	— —	— —	120 240	**EMOPL120MN** **EMOPL240MN**

To order FD through RD motor operators with Left side hinges, add "L" to catalog number (e.g. MOF6120L). List prices are the same.▲

Dimensions

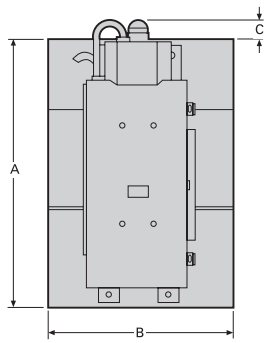
Frame	A	B	C	D	E	F
ED	7.04	4.31	—	4.31	13.84	8.84
FD	9.50	4.55	1.60	6.84	9.70	7.58
JD, LD, LMD	11.00	7.50	0.79	8.34	9.85	7.74
MD, ND, PD, RD	16.00	9.00	—	9.83	13.13	10.13

Operating Currents

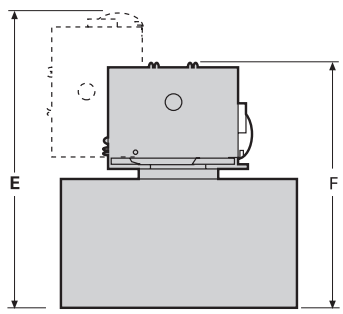
Catalog Number	On			Off			Reset (Amps)
	In-Rush (Amps)	Running (Amps)	Time (msec)	In-Rush (Amps)	Running (Amps)	Time (msec)	
MOE6120 **MOE6240**	10.25 5.2	2.3 1.1	550 500	10 5	2.3 1	400 330	2.3 1.1
MOF6120/L **MOF6240/L**	13.6 7.6	5.5 3.5	200 200	13.6 7.6	5.5 3.5	175 185	5.5 3.5
MOLMD6120/L	13.6	6	210	13.6	6	185	6
MOJ6120/L **MOJ6240/L**	13.6 7.6	6 3.5	210 217	13.6 7.6	6 3.5	185 185	6 3.5
EMOPL120MN	15	5.5	500	15	5.5	500	5.5
EMOPL240MN	7.6	3.25	500	7.6	3.25	500	3.25

Telemand Motor Operator

FD, JD, LD, LMD, MD, ND, PD, RD
Frames



Front View



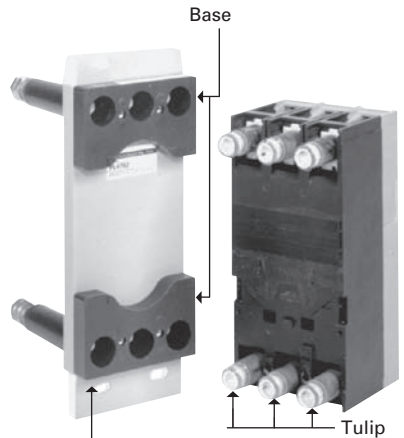
Bottom View

For inches / millimeters conversion, see Application Data section.

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

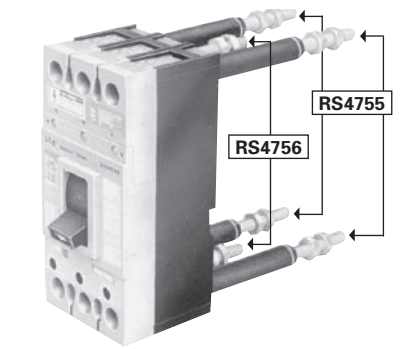
Plug-In Mounting Assemblies, Including Base and Tulip Assemblies

For Use With Breaker Frames	Poles	Line Side Catalog Number[2]	Load Side Catalog Number[2]	Steel Switchboard Mounting Plate[1] Catalog Number
EG	3	PCBERC3[6]	—	—
	4	PCBERC4[6]	—	
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 Catalog Number	3-Pole Catalog Number
ED	TCE2▲	TCE3▲
FD	TCF2▲	TCF3▲
JD	TCJ2▲	TCJ3▲
LD	TCL2▲	TCL3▲
MD	TCM2▲	TCM3▲
ND	TCN2▲	TCN3▲



Circuit Breaker With Rear-Connecting Studs

Rear-Connecting Studs

For Use With Breaker Frames	Ampere Rating	Description	Extension Behind Breaker (inches)	Line Side Catalog Number[4]	Load Side Catalog Number[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▲
	1200	Long	8.00	RS5785▲	RS5785▲

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

[1] Furnished at no extra charge when ordered with plug-in mounting assembly.

[2] Each piece catalog number consists of (1) mounting block assembly and required tulip assemblies (2) for 2-pole, (3) for 3-pole

[3] For vertical bus mounting — for horizontal, substitute PC5665 for PC5664 and PC5667 for PC5666.

[4] Price includes one current stud, insulating tube, stud nuts and terminal shields, when required.

[5] For proper electrical clearance, studs must alternate between short and long stud lengths on circuit breaker poles (e.g. SLSLSL or LSLSLS).

[6] Plug-in assembly for EG breakers include line and load side in one assembly.

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: 50°C (122°F)	60°C (140°F)	Siemens Breaker Frames
15	13	11	BQ, BL, BQD, CQD, GG, GB, ED
20	18	16	
25	23	21	
30	28	26	
35	30	28	
40	37	34	
50	46	42	
60	56	52	
70	65	60	
90	84	78	
100	94	87	
125	114	100	
150	136	120	QR
175	159	140	
200	182	160	FD
225	205	180	
250	235	220	
300	276	252	JD
350	325	301	
400	372	340	LD
500	468	435	
600	564	525	MD
700	658	613	
800	754	704	ND
900	828	749	
1000	900	825	PD
1200	1090	1000	
1400	1304	1148	RD
1600	1500	1320	
1800	1690	1485	
2000	1880	1650	

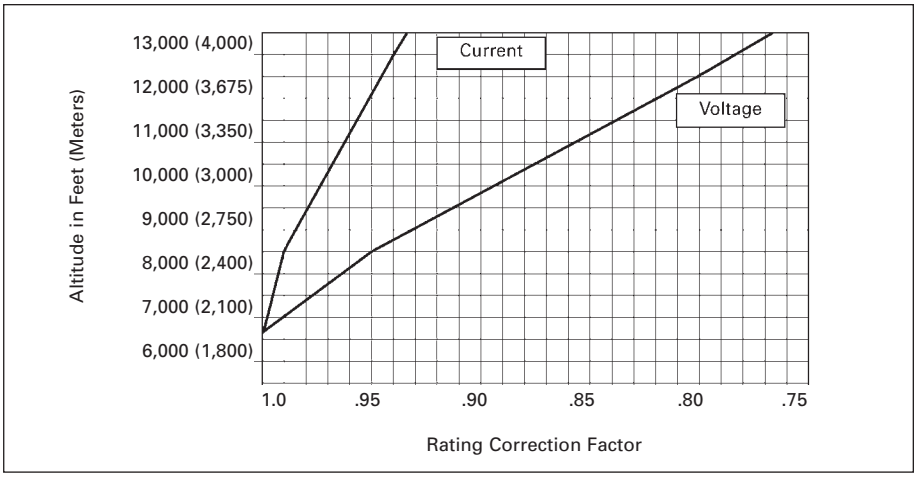


Figure 1 — Altitude Adjustment

400 Hz Systems①

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			
	Open Air	Open Air③	Enclosed After Derating	No of Pieces	Wire Size
ED2, ED4, ED6, BQD, HED4, HED6, CED6, GG, GB	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
QR2, QR2H, HQR2, HQR2H, FD6, FXF6, HFD6, HFXD6, CFD6	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
	200	160	128	1	#3/0
	225	180	144	1	#4/0
	250	200	160	1	250 kcmil
JXD2, JD6, JXD6, HJD6, HJXD6, HHJD6, HHJXD6, CJD6	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	#3/0
	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

Siemens Breaker Type	Maximum Continuous Ampere Rating At 40°C (104°F)②			75°C (167°F) Copper Cable per Pole	
	60HZ	400/415HZ			
	Open Air	Open Air③	Enclosed After Derating	No of Pieces	Wire Size
LD6, LXD6, HLD6, HLXD6, HHLD6, 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
LD6, LXD6, HLD6, HLXD6, 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
	450	340	340	2	#4/0
	500	375	375	2	250 kcmil
	600	420	420	2	350 kcmil
MD6, MXD6, HMD6, HMXD6, CMD6	500	400	320	2	250 kcmil
	600	430	360	2	350 kcmil
	700	500	400	3	250 kcmil
	800	560	448	3	300 kcmil
MD6, MXD6, HMD6, HMXD6, CMD6 100% Rated	500	400	400	2	250 kcmil
	600	430	430	2	350 kcmil
	700	500	500	3	250 kcmil
	800	560	560	3	300 kcmil
ND6, NXD6 HND6, HNXD6, CND6	800	560	448	3	300 kcmil
	900	600	480	3	350 kcmil
	1000	650	520	3	400 kcmil
	1200	780	624	4	350 kcmil
ND6, NXD6 HND6, HNXD6, CND6 100% Rated	900	600	600	3	350 kcmil
	1000	650	650	3	400 kcmil
	1200	780	780	4	350 kcmil
PD6, PXD6, HPD6, HPXD6, CPD6,	1200	780	624	4	400 kcmil
	1400	850	680	4	500 kcmil
	1600	960	768	5	500 kcmil
PD6, PXD6, HPD6, HPXD6, CPD6 100% Rated	1200	780	780	4	400 kcmil
	1400	850	850	4	500 kcmil
	1600	960	960	5	500 kcmil
RD6, RXD6, HRD6, HRXD6 80% Rated	1600	960	768	5	500 kcmil
	1800	1080	864	5	500 kcmil
	2000	1200	960	6	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.

Frame Summary and Ratings Table

Frame Family		DG	FG	JG
				
Continuous Ampere Range		30 to 150A	40 to 250A	70 to 400A
Number of Poles		2, 3	2, 3	2, 3
Maximum Voltage Rating		600Y/347	600Y/347	600V
Type of Protection				
Thermal-Magnetic		◆	◆	◆
Electronic		◆	◆	◆
Electronic with LCD		◆	◆	◆
Motor Circuit Protector		◆	◆	◆
Molded Case Switch		◆	◆	◆
100% Rated Breaker		ETU only	—	◆
Interchangeable Trip Unit		—	—	◆
	W In.(mm)	4.1 (105)		5.5 (139)
	H	7.3 (175)		11 (279)
	D	3.4 (81)		4.2 (102)
	D1	4.2 (107)		5.4 (138)
Type N – Normal Interrupting Rating①, RMS Symmetrical Amperes (kA)				
UL	240Vac	65	65	65
	480Vac	35	35	35
	600Vac⑤	18	18	25
IEC (I_{cu}/I_{cs})	240Vac	65/65	65/65	65/65
	415Vac	40/40	40/40	45/45
	690Vac	12/6	12/6	12/6
DC Voltages – Interrupting Rating (kA)④				
	250Vdc - 2p	30	30	30
	500Vdc - 3p③	18	18	25
Type H – High Interrupting Rating①, RMS Symmetrical Amperes (kA)				
UL	240Vac	100	100	100
	480Vac	65	65	65
	600Vac⑤	18	18	25
IEC (I_{cu}/I_{cs})	240Vac	100/75	100/75	100/75
	415Vac	70/70	70/70	70/70
	690Vac	12/6	12/6	15/8
DC Voltages – Interrupting Rating (kA)④				
	250Vdc - 2p	30	30	30
	500Vdc - 3p③	18	25	35
	600Vdc - 3p②	42	42	65
Type L – Very High Interrupting Rating①, RMS Symmetrical Amperes (kA)				
UL	240Vac	200	200	200
	480Vac	100	100	100
	600Vac⑤	18	18	25
IEC (I_{cu}/I_{cs})	240Vac	200/150	200/150	200/150
	415Vac	100/75	100/75	100/75
	690Vac	12/6	12/6	15/8
DC Voltages – Interrupting Rating (kA)④				
	250Vdc - 2p	30	30	30
	500Vdc - 3p③	18	30	35

① UL does not recognize AIC ratings for Molded Case Switches or Motor Circuit Protectors.
② For 600 VDC breakers see page 7-136.
③ 500Vdc nominal, 600Vdc max. for ungrounded DC UPS systems.
④ DC Interruption Ratings do not apply to electronic trip circuit breakers.
⑤ DG & FG breakers are 600Y/347V.

Frame Summary and Ratings Table — Continued

Frame Family		LG	MG	NG	PG
					
Continuous Ampere Range		150 to 600A	200 to 800A	300 to 1200A	400 to 1600A
Number of Poles		2, 3	2, 3	2, 3	3
Maximum Voltage Rating		600V	600V	600V	600V
Type of Protection					
Thermal-Magnetic		◆	◆	◆	◆
Electronic		◆	◆	◆	◆
Electronic with LCD		◆	◆	◆	◆
Motor Circuit Protector		◆	◆	◆	—
Molded Case Switch		◆	◆	◆	◆
100% Rated		400/500 Amp	◆	◆	◆
Interchangeable Trip Unit		—	◆	◆	◆⑥
	W In.(mm)	5.5 (139)	7.5 (190)	9 (229)	
	H	11 (279)⑦	16 (406)	16 (406)	
	D	4.2 (102)	4.7 (114)	6.2 (157)	
	D1	5.4 (138)	5.9 (151)	8.1 (207)	
Type N – Normal Interrupting Rating①, RMS Symmetrical Amperes (kA)					
UL	240Vac	65	65	65	65
	480Vac	35	35	35	35
	600Vac	18	25	25	25
IEC (I_{cu}/I_{cs})	240Vac	65/65	65/65	65/65	65/65
	415Vac	45/45	50/50	50/25	50/25
	690Vac	12/6	20/10	20/10	20/10
DC Voltages – Interrupting Rating (kA)④					
	250Vdc - 2p	30	22	22	22
	500Vdc - 3p③	25	35	35	35
Type H – High Interrupting Rating①, RMS Symmetrical Amperes (kA)					
UL	240Vac	100	100	100	100
	480Vac	65	65	65	65
	600Vac	18②	35	35	35
IEC (I_{cu}/I_{cs})	240Vac	100/75	100/75	100/75	100/50
	415Vac	70/70	70/70	70/35	70/35
	690Vac	15/8	30/15	30/15	30/15
DC Voltages – Interrupting Rating (kA)④					
	250Vdc - 2p	30	25	25	25
	500Vdc - 3p③	35	50	50	50
	600Vdc - 3p⑤	65	65	65	65
Type L – Very High Interrupting Rating①, RMS Symmetrical Amperes (kA)					
UL	240Vac	200	200	200	200
	480Vac	100	100	100	100
	600Vac	18	50	65	65
IEC (I_{cu}/I_{cs})	240Vac	200/150	200/150	200/150	200/150
	415Vac	100/75	100/75	100/75	100/75
	690Vac	15/8	35/17	35/17	35/17
DC Voltages – Interrupting Rating (kA)④					
	250Vdc - 2p	30	42	42	42
	500Vdc - 3p③	35	65	65	65

① UL does not recognize AIC ratings for Molded Case Switches or Motor Circuit Protectors.
② 25kA available in a special version. Standard breakers rated 18kA. See page 7-120.
③ 500Vdc nominal, 600Vdc max. for ungrounded DC UPS systems.
④ DC Interruption Ratings do not apply to electronic trip circuit breakers.
⑤ For 600 VDC breakers see page 7-136.
⑥ Thermal-magnetic available non-interchangeable only.
⑦ 13.6" with extended shields.

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. 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 information menus. With precise control over the circuit beaker 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 555 trip units. The pick-up and time delay settings are set at the factory 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 adjustable settings on both the 555 and 586 trip units.

Trip Unit Functions	VL Trip Units							
	Model 525	Model 555				Model 586		
	Thermal-magnetic	Electronic LI	Electronic LIG	Electronic LSI	Electronic LSIG	Electronic with LCD LSI	Electronic with LCD LSIG	Electronic with LCD LSI + G alarm only
Continuous Current Setting (I_r)	Fixed	◆	◆	◆	◆	◆	◆	◆
Long Time Delay (t_r)	□	◆	◆	◆	◆	◆	◆	◆
Instantaneous Function	●	●	●	●	●	(ON/OFF)	(ON/OFF)	(ON/OFF)
Instantaneous Pickup (I_i)	◆	◆	◆	◆	◆	◆	◆	◆
Short Time Function	□	□	□	●	●	(ON/OFF)	(ON/OFF)	(ON/OFF)
Short Time Pick-up (I_{sd})	□	□	□	◆	◆	◆	◆	◆
Short Time Delay (t_{sd})	□	□	□	◆	◆	◆	◆	◆
Ground Fault Pick-up (I_g)	□	□	◆	□	◆	□	◆	□
Ground Fault Delay (t_g)	□	□	◆	□	◆	□	◆	□
Ground Fault Alarm Pick-up	□	□	□	□	□	□	◆	◆
Ground Fault Alarm Delay	□	□	□	□	□	□	◆	◆
Alarm & Status Indicator	□	●	●	●	●	●	●	●
Built-in Display (LCD)	□	□	□	□	□	●	●	●
Pre-Trip Alarm①	□	●	●	●	●	●	●	●
Last Trip Information	□	●①	●①	●①	●①	●	●	●
Zone Selective①	□	●	●	●	●	●	●	●
Communications①	□	●	●	●	●	●	●	●

◆ Adjustable setting
● This feature is included
□ Feature is not included.
① Requires a COMPRO20 or COMMOD21 module in a communication system.

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 x I_r.

Instantaneous Pick-up (I_i)

This function sets the breaker to trip instantaneously during high fault conditions. This function may be turned off on Model 586 trip units. Turning this function off will enable an instantaneous trip override function to ensure self protection of circuit breaker.

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 586 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.

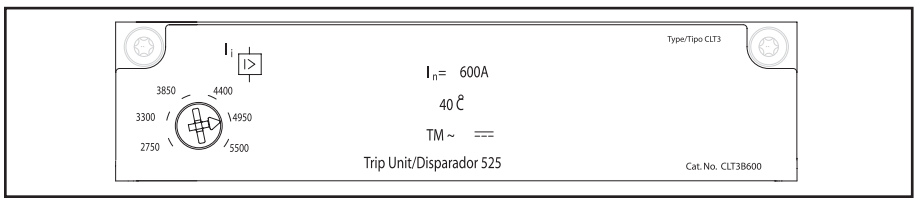
Ground Fault Pick-Up (I_g)

This setting controls the level of ground fault current that will cause the breaker to trip. Model 555 Electronic Trip Units act on the residual current to sense ground current. The Model 586 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.

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 50 to 1600A.



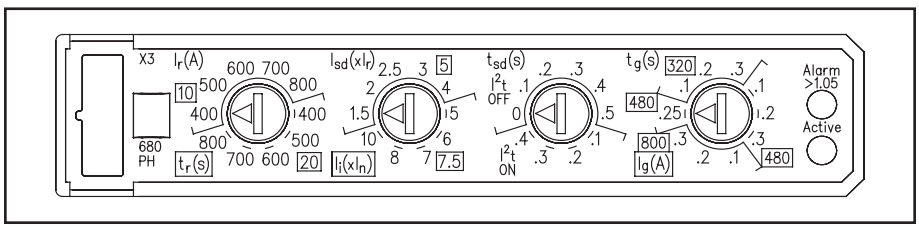
Electronic Trip Units

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.

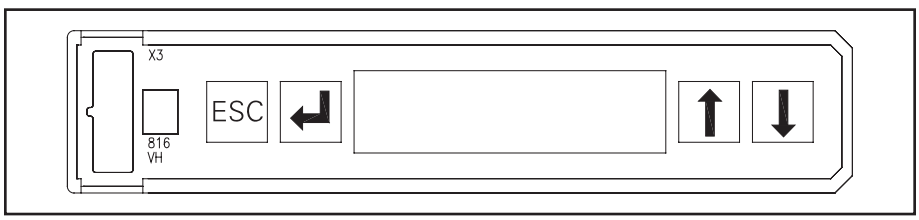
On the Model 555 Electronic Trip Unit a flashing LED confirms that the microprocessor is in operating and another indicates an overload condition. For ease-of-use and to insure proper coordination, the set points for the continuous current are shown on the face of these trip units in amps.

On the Model 586, the LCD version, the current in each phase is continuously shown on the display. Unlike many 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. Without being connected via a communication module, the last trip status can be viewed on Model 586 trip units (no time stamp).

Typical Trip Unit Labeling and Adjustment Positions



Model 555 Electronic Trip Unit with LSIG trip functions



Model 586 Electronic Trip Unit has an LCD display

Ordering Information

Complete Assembled Breaker

A complete factory assembled DG breaker includes 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 DC applications, use thermal magnetic trip unit only.

Breakers are suitable for reverse feed applications.

For special applications, refer to page 7-156.

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 "W". Available in electronic and electronic with LCD only.

HACR rated.

Interrupting Ratings

Interrupting Class	Breaker Type	RMS Symmetrical Amperes (KA)											
		UL 489					IEC 60947-2						
		Volts AC (50/60 Hz)			Volts DC		Volts AC (50/60 Hz)						
							220/240		380/415		690		
		240	480	600Y /347	250	500	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
N	NDGB	65	35	18	30	18	65	65	40	40	12	6
H	HDGB	100	65	18	30	18	100	75	70	70	12	6
L	LDGB	200	100	18	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
Steel	30-150	#8–1/0 Cu	1	**3TW1DG20**②
Aluminum	30-150	#6–3/0 Al/Cu	1	**3TA1DG30**①②
Copper	30-150	#6–3/0 Cu	1	**3TC1DG30**②④
Distribution Lugs				
	30-150	#14–#2 Al/Cu (3pcs. Max)	3	**3TA3DG02**②
	30-150	#14–#4 Cu, #14–#6 Al	6	**3TA6DG04**②
Compression Lugs				
	30-150	#14–2/0 kcmil Al/Cu	–	**2CLD20**③
	30-150	#14–2/0 kcmil Al/Cu	–	**3CLD20**②

① Standard connector supplied with complete breakers.
② Kit consists of 3 terminal connectors.
③ 2 Lugs for 2-pole breakers.
④ Required for 100% rated DG breakers. Requires 90°C Cu cable sized at 75°C ampacity

DG Thermal-Magnetic, Instantaneous Trip Adjustment Range

Trip Unit Continuous Amp Rating (I_n)	Instantaneous Overcurrent Setting (I_i)	
	Min.	Max.
50	450	600
60	450	600
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.

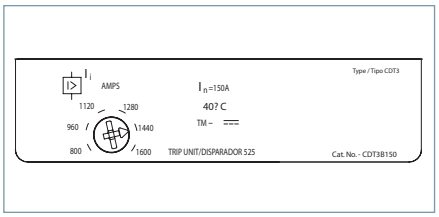
Dimensions, inches (mm)

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 7-137 through 7-151



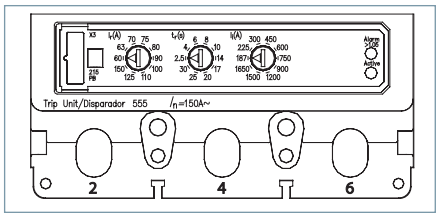
Model 525 Trip Unit

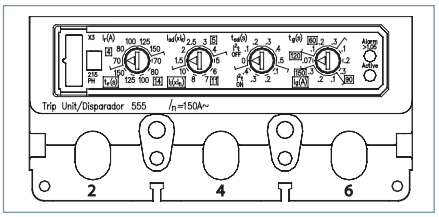
DG 150A Frame 2-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
50	NDK2B050L	HDK2B050L	LDK2B050L
60	NDK2B060L	HDK2B060L	LDK2B060L
70	NDK2B070L	HDK2B070L	LDK2B070L
80	NDK2B080L	HDK2B080L	LDK2B080L
90	NDK2B090L	HDK2B090L	LDK2B090L
100	NDK2B100L	HDK2B100L	LDK2B100L
110	NDK2B110L	HDK2B110L	LDK2B110L
125	NDK2B125L	HDK2B125L	LDK2B125L
150	NDK2B150L	HDK2B150L	LDK2B150L

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

Continuous Ampere Rating	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
50	NDK3B050L	HDK3B050L	LDK3B050L
60	NDK3B060L	HDK3B060L	LDK3B060L
70	NDK3B070L	HDK3B070L	LDK3B070L
80	NDK3B080L	HDK3B080L	LDK3B080L
90	NDK3B090L	HDK3B090L	LDK3B090L
100	NDK3B100L	HDK3B100L	LDK3B100L
110	NDK3B110L	HDK3B110L	LDK3B110L
125	NDK3B125L	HDK3B125L	LDK3B125L
150	NDK3B150L	HDK3B150L	LDK3B150L

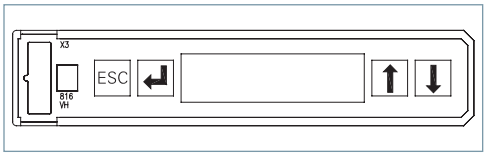




Model 555 Trip Units

DG 150A Frame 3-Pole Electronic Trip Unit①

Continuous Ampere Rating	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
ELECTRONIC LI TRIP			
60	**NDK3R060L**	**HDK3R060L**	**LDK3R060L**
100	**NDK3R100L**	**HDK3R100L**	**LDK3R100L**
150	**NDK3R150L**	**HDK3R150L**	**LDK3R150L**
ELECTRONIC LSI TRIP			
60	**NDK3T060L**	**HDK3T060L**	**LDK3T060L**
100	**NDK3T100L**	**HDK3T100L**	**LDK3T100L**
150	**NDK3T150L**	**HDK3T150L**	**LDK3T150L**
ELECTRONIC LSIG TRIP			
60	**NDK3V060L**	**HDK3V060L**	**LDK3V060L**
100	**NDK3V100L**	**HDK3V100L**	**LDK3V100L**
150	**NDK3V150L**	**HDK3V150L**	**LDK3V150L**
ELECTRONIC LIG TRIP			
60	**NDK3W060L**	**HDK3W060L**	**LDK3W060L**
100	**NDK3W100L**	**HDK3W100L**	**LDK3W100L**
150	**NDK3W150L**	**HDK3W150L**	**LDK3W150L**



Model 586 Trip Unit

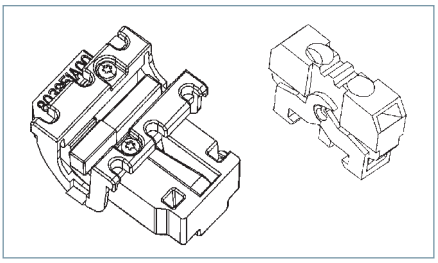
DG 150A Frame 3-Pole Electronic LCD Trip Unit①

Continuous Ampere Rating	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
LCD ELECTRONIC LSI TRIP			
60	**NDK3A060L**	**HDK3A060L**	**LDK3A060L**
100	**NDK3A100L**	**HDK3A100L**	**LDK3A100L**
150	**NDK3A150L**	**HDK3A150L**	**LDK3A150L**
LCD ELECTRONIC LSIG TRIP			
60	**NDK3G060L**	**HDK3G060L**	**LDK3G060L**
100	**NDK3G100L**	**HDK3G100L**	**LDK3G100L**
150	**NDK3G150L**	**HDK3G150L**	**LDK3G150L**
LCD ELECTRONIC LSI TRIP + GF ALARM ONLY			
60	**NDK3K060L**	**HDK3K060L**	**LDK3K060L**
100	**NDK3K100L**	**HDK3K100L**	**LDK3K100L**
150	**NDK3K150L**	**HDK3K150L**	**LDK3K150L**

① Due to the location of the magnetic tripping solenoid, the left accessory pocket is not available for accessories.

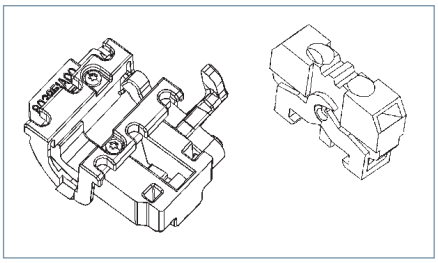
Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket①	Catalog Number
1 Alarm Switch 1A/B③ Bases AMBL2 & AMBL3	Left, Right②	**ASKL1**
2 Aux. Switches 1A + 1B Bases AMBL1	Left, Right	**ASKL2**
2 Aux. + 1 Alarm Switch 1A + 1B, 1A/B③ Bases AMBL2 & AMBL3	Left, Right②	**ASKL3**



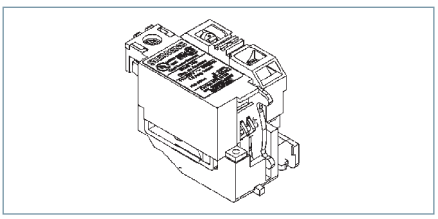
Auxiliary/Alarm Switch Mounting Base Only

Description	Mounting Pocket	Catalog Number
Up to 3 Auxiliary Switches	Left, Right	**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
1 Normally Open Contact (1A)	**ASWPA**
1 Normally Closed Contact (1B)	**ASWPB**



Shunt Trips

Description	Mounting Pocket	Catalog Number
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
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		**UVRLL24**
110-127 VAC		**UVRLN120**
220-240 VAC		**UVRLR240**
208 VAC		**UVRLP208**
277 VAC		**UVRLS277**
380-415 VAC		**UVRLT415**
440-480 VAC		**UVRLU480**

UVRLN120

① Refer to the "Accessory Locations" chart on page 7-152 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.
'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).

External Accessories pages 7-137 through 7-151

Ordering Information

Complete Assembled Breaker

A complete factory assembled FG breaker includes 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 DC applications, use thermal magnetic trip unit only.

Breakers are suitable for reverse feed applications.

For special applications, refer to page 7-156.

Mounting hardware is included with each frame or complete breaker.

HACR rated.

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)						
						220/240		380/415		690	
	240	480	600Y/347	250	500	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	18	30	18	100	75	70	70	12	6
LFG	200	100	18	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
Steel	50-250	#4–350 kcmil Cu	1	**3TW1FG350**②
Aluminum①	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/Al	3	**3TA3FG20**②
	50-250	#14–#4 Cu/Al	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_i)	
	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.

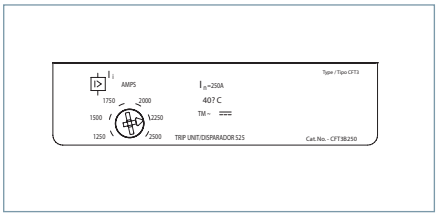
Dimensions, inches (mm)

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

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)

External Accessories pages 7-137 through 7-151



Model 525 Trip Unit

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

Continuous Ampere Rating	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
100	NFK2B100L	HFK2B100L	LFK2B100L
110	NFK2B110L	HFK2B110L	LFK2B110L
125	NFK2B125L	HFK2B125L	LFK2B125L
150	NFK2B150L	HFK2B150L	LFK2B150L
175	NFK2B175L	HFK2B175L	LFK2B175L
200	NFK2B200L	HFK2B200L	LFK2B200L
225	NFK2B225L	HFK2B225L	LFK2B225L
250	NFK2B250L	HFK2B250L	LFK2B250L

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

Continuous Ampere Rating	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
100	NFK3B100L	HFK3B100L	LFK3B100L
110	NFK3B110L	HFK3B110L	LFK3B110L
125	NFK3B125L	HFK3B125L	LFK3B125L
150	NFK3B150L	HFK3B150L	LFK3B150L
175	NFK3B175L	HFK3B175L	LFK3B175L
200	NFK3B200L	HFK3B200L	LFK3B200L
225	NFK3B225L	HFK3B225L	LFK3B225L
250	NFK3B250L	HFK3B250L	LFK3B250L

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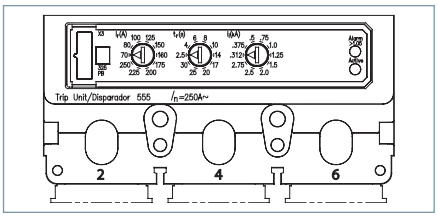
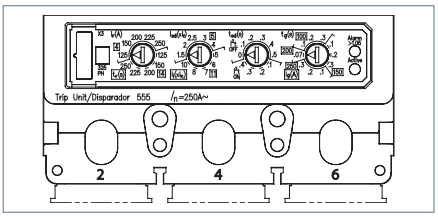
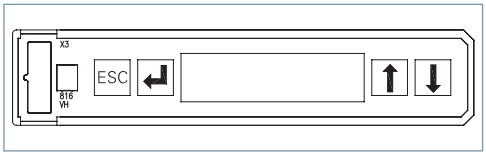




Model 555 Trip Units

FG 250A Frame 3-Pole Electronic Trip Unit①

Continuous Ampere Rating	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
ELECTRONIC LI TRIP			
100	**NFK3R100L**	**HFK3R100L**	**LFK3R100L**
150	**NFK3R150L**	**HFK3R150L**	**LFK3R150L**
250	**NFK3R250L**	**HFK3R250L**	**LFK3R250L**
ELECTRONIC LSI TRIP			
100	**NFK3T100L**	**HFK3T100L**	**LFK3T100L**
150	**NFK3T150L**	**HFK3T150L**	**LFK3T150L**
250	**NFK3T250L**	**HFK3T250L**	**LFK3T250L**
ELECTRONIC LSIG TRIP			
100	**NFK3V100L**	**HFK3V100L**	**LFK3V100L**
150	**NFK3V150L**	**HFK3V150L**	**LFK3V150L**
250	**NFK3V250L**	**HFK3V250L**	**LFK3V250L**
ELECTRONIC LIG TRIP			
100	**NFK3W100L**	**HFK3W100L**	**LFK3W100L**
150	**NFK3W150L**	**HFK3W150L**	**LFK3W150L**
250	**NFK3W250L**	**HFK3W250L**	**LFK3W250L**



Model 586 Trip Unit

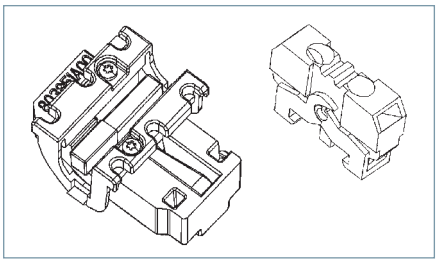
FG 250A Frame 3-Pole Electronic LCD Trip Unit①

Continuous Ampere Rating	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
LCD ELECTRONIC LSI TRIP			
100	**NFK3A100L**	**HFK3A100L**	**LFK3A100L**
150	**NFK3A150L**	**HFK3A150L**	**LFK3A150L**
250	**NFK3A250L**	**HFK3A250L**	**LFK3A250L**
LCD ELECTRONIC LSIG TRIP			
100	**NFK3G100L**	**HFK3G100L**	**LFK3G100L**
150	**NFK3G150L**	**HFK3G150L**	**LFK3G150L**
250	**NFK3G250L**	**HFK3G250L**	**LFK3G250L**
LCD ELECTRONIC LSI TRIP + GF ALARM ONLY			
100	**NFK3K100L**	**HFK3K100L**	**LFK3K100L**
150	**NFK3K150L**	**HFK3K150L**	**LFK3K150L**
250	**NFK3K250L**	**HFK3K250L**	**LFK3K250L**

① Due to the location of the magnetic tripping solenoid, the left accessory pocket is not available for accessories.

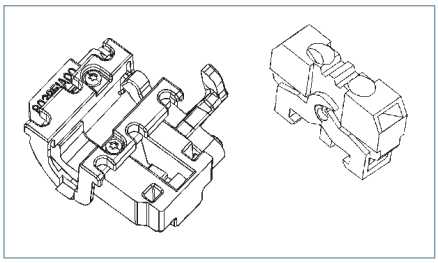
Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket①	Catalog Number
1 Alarm Switch 1A/B③ Bases AMBL2 & AMBL3	Left, Right②	**ASKL1**
2 Aux. Switches 1A + 1B Bases AMBL1	Left, Right	**ASKL2**
2 Aux. + 1 Alarm Switches 1A + 1B, 1A/B③ Bases AMBL2 & AMBL3	Left, Right②	**ASKL3**



Auxiliary/Alarm Switch Mounting Base Only

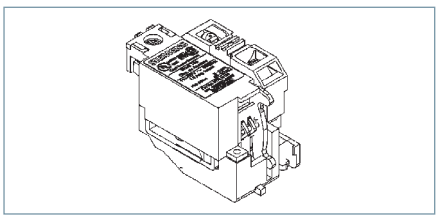
Description	Mounting Pocket	Catalog Number
Up to 3 Auxiliary Switches	Left, Right	**AMBL1**
2 Aux. + 1 Alarm Switch	Left Pocket Only	**AMBL2**
2 Aux. + 1 Alarm Switch	Right Pocket Only	**AMBL3**



Auxiliary/Alarm Switch Only

Common to DG - PG Frames

Description	Catalog Number
1 Normally Open Contact (1A)	**ASWPA**
1 Normally Closed Contact (1B)	**ASWPB**



Shunt Trips

Description	Mounting Pocket	Catalog Number
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
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		**UVRLL24**
110-127 VAC		**UVRLN120**
220-240 VAC		**UVRLR240**
208 VAC		**UVRLP208**
277 VAC		**UVRLS277**
380-415 VAC		**UVRLT415**
440-480 VAC		**UVRLU480**

UVRLN120

① Refer to the "Accessory Locations" chart on page 7-152 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.
'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).

External Accessories pages 7-137 through 7-151

Ordering Information

Complete Assembled Breaker

A complete factory assembled JG breaker includes 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" (3-pole only).

For special applications, refer to page 7-156.

Mounting hardware is included with each frame or complete breaker.

HACR rated.

Interrupting Ratings

Interrupting Class	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)						
							220/240		380/415		690	
		240	480	600	250	500	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
N	NJGA	65	35	25	30	25	65	65	45	45	12	6
H	HJGA	100	65	25	30	35	100	75	70	70	15	8
L	LJGA	200	100	25	30	35	200	150	100	75	15	8

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)

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
Steel	70-400	1/0–600 kcmil Cu	1	**3TW1JG600**②
Aluminum	70-400	3/0–250 kcmil Al/Cu	2	**3TA2JG250**①②
Aluminum	70-400	250–750 kcmil Al	1	**3TA1JG750**②
Aluminum	70-400	3/0–600 kcmil Cu	1	**3TA1JG750**②
Copper	70-400	3/0–600 kcmil Cu	1	**TC1JG750**③
Copper	70-400	3/0–250 kcmil Cu	2	**TC2JG250**③
Distribution Lugs				
	70-400	#14–4 Cu	12	**3TA12JG04**②
	70-400	#14–2/0 Al/Cu	6	**3TA6JG20**②
Compression Lugs				
	70-400	#6–350 kcmil	—	**3CLJ350**②
	70-400	250-600 kcmil	—	**3CLJ600**②

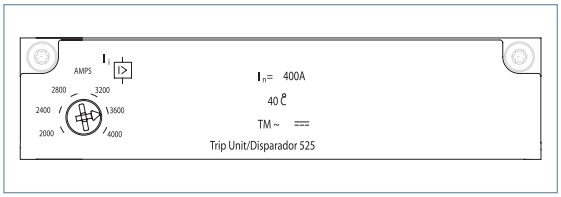
① Standard construction supplied for each breaker.
② Kit consists of 3 terminal connectors.
③ Required for 100% rated JG breakers. Requires 90°C Cu cable sized at 75°C ampacity.

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 7-137 through 7-151



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	Catalog Number	Catalog Number	Catalog Number
	FRAME ONLY			
	NJG2F400	HJG2F400	LJG2F400	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
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	Catalog Number	Catalog Number	Catalog Number
	FRAME ONLY			
	NJG3F400	HJG3F400	LJG3F400	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
250	NJG3B250L	HJG3B250L	LJG3B250L	CJT3B250
300	NJG3B300L	HJG3B300L	LJG3B300L	CJT3B300
350	NJG3B350L	HJG3B350L	LJG3B350L	CJT3B350
400	NJG3B400L	HJG3B400L	LJG3B400L	CJT3B400

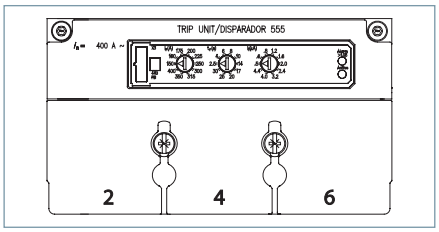
JJ 400A Frame 240V max., 2-pole with Thermal-Magnetic Non-Interchangeable Trip Unit①

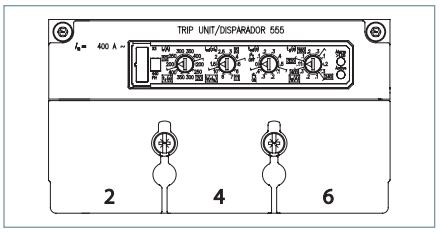
Continuous Ampere Rating	N-Interrupting Class
	Catalog Number
	COMPLETE BREAKER
250	NJJ2B250
300	NJJ2B300
350	NJJ2B350
400	NJJ2B400

JJ 400A Frame 240V max., 3-pole with Thermal-Magnetic Non-Interchangeable Trip Unit①

Continuous Ampere Rating	N-Interrupting Class
	Catalog Number
	COMPLETE BREAKER
250	NJJ3B250
300	NJJ3B300
350	NJJ3B350
400	NJJ3B400

① Terminal connectors must be ordered separately. Breaker Type NJJA.

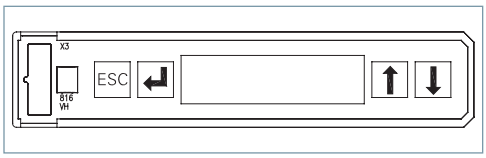




Model 555 Trip Units

JG 400A Frame 3-Pole Electronic Trip Unit

Continuous Ampere Rating	N-Interrupting Class Catalog Number	H-Interrupting Class Catalog Number	L-Interrupting Class Catalog Number	Catalog Number
	FRAME ONLY			
	NJG3F400	HJG3F400	LJG3F400	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
ELECTRONIC LI TRIP				
250 400	NJG3R250L NJG3R400L	HJG3R250L HJG3R400L	LJG3R250L LJG3R400L	CJT3R250 CJT3R400
ELECTRONIC LSI TRIP				
250 400	NJG3T250L NJG3T400L	HJG3T250L HJG3T400L	LJG3T250L LJG3T400L	CJT3T250 CJT3T400
ELECTRONIC LSIG TRIP				
250 400	NJG3V250L NJG3V400L	HJG3V250L HJG3V400L	LJG3V250L LJG3V400L	CJT3V250 CJT3V400
ELECTRONIC LIG TRIP				
250 400	NJG3W250L NJG3W400L	HJG3W250L HJG3W400L	LJG3W250L LJG3W400L	CJT3W250 CJT3W400



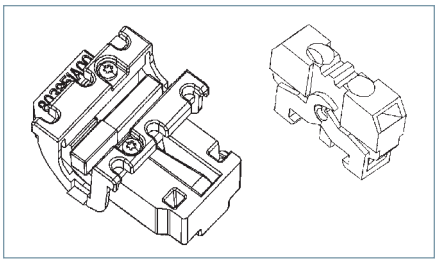
Model 586 Trip Unit

JG 400A Frame 3-Pole Electronic LCD Trip Unit

Continuous Ampere Rating	N-Interrupting Class Catalog Number	H-Interrupting Class Catalog Number	L-Interrupting Class Catalog Number	Catalog Number
	FRAME ONLY			
	NJG3F400	HJG3F400	LJG3F400	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
LCD ELECTRONIC LSI TRIP				
250 400	NJG3A250L NJG3A400L	HJG3A250L HJG3A400L	LJG3A250L LJG3A400L	CJT3A250 CJT3A400
LCD ELECTRONIC LSIG TRIP				
250 400	NJG3G250L NJG3G400L	HJG3G250L HJG3G400L	LJG3G250L LJG3G400L	CJT3G250 CJT3G400
LCD ELECTRONIC LSI TRIP + GF ALARM ONLY				
250 400	NJG3K250L NJG3K400L	HJG3K250L HJG3K400L	LJG3K250L LJG3K400L	CJT3K250 CJT3K400

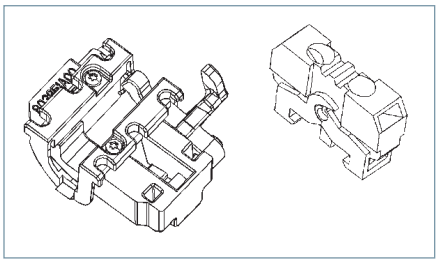
Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket①	Catalog Number
1 Alarm Switch 1A/B③ Bases AMBL2 & AMBL3	Left, Right②	**ASKL1**
2 Aux. Switches 1A + 1B Bases AMBL1	Left, Right	**ASKL2**
2 Aux. + 1 Alarm Switches 1A + 1B, 1A/B Bases AMBL2 & AMBL3	Left, Right②	**ASKL3**



Auxiliary/Alarm Switch Mounting Base Only

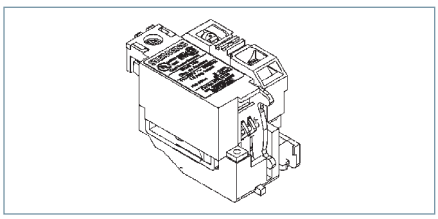
Description	Mounting Pocket	Catalog Number
Up to 3 Auxiliary Switches	Left, Right	**AMBL1**
2 Aux. + 1 Alarm Switch	Left Pocket Only	**AMBL2**
2 Aux. + 1 Alarm Switch	Right Pocket Only	**AMBL3**



Auxiliary/Alarm Switch Only

Common to DG - PG Frames

Description	Catalog Number
1 Normally Open Contact (1A)	**ASWPA**
1 Normally Closed Contact (1B)	**ASWPB**



Shunt Trips

Description	Mounting Pocket	Catalog Number
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
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		**UVRLL24**
110-127 VAC		**UVRLN120**
220-240 VAC		**UVRLR240**
208 VAC		**UVRLP208**
277 VAC		**UVRLS277**
380-415 VAC		**UVRLT415**
440-480 VAC		**UVRLU480**

UVRLN120

① Refer to the "Accessory Locations" chart on page 7-152 for guidelines and limitations about which pockets may be used for accessory combinations.
② Includes 1A and 1B contact for alarm purposes, only one of which may be installed at any time.
'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).

External Accessories pages 7-137 through 7-151

Ordering Information

Complete Assembled Breaker

A complete factory assembled LG breaker includes 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 DC applications, use thermal magnetic trip unit only.

Breakers are suitable for reverse feed applications.

For special applications, refer to page 7-156.

Mounting hardware is included with each breaker.

For 100% rated breakers, change the 3rd character of the catalog number to "W". Available on 400/500 Amp only (3-pole only).

HACR rated.

Interrupting Ratings

Interrupting Class	Breaker Type	RMS Symmetrical Amperes (KA)											
		UL 489					IEC 60947-2						
		Volts AC (50/60 Hz)			Volts DC		Volts AC (50/60 Hz)						
							220/240		380/415		690		
		240	480	600	250	500	I_{CU}	I_{CS}	I_{CU}	I_{CS}	I_{CU}	I_{CS}
N	NLGB	65	35	18	30	25	65	65	45	45	12	6
H	HLGB	100	65	18①	30	35	100	75	70	70	15	8
L	LLGB	200	100	18	30	35	200	150	100	75	15	8

① Special 600Vac 25kA thermal-magnetic version (Type HLGC) available, see page 7-120.

Connectors for 75°C Wire

Construction	Ampere Rating	Wire Range	No. of cables per connector	Catalog Number③
Aluminum	150-600	#2–600 kcmil Al/Cu	2 (load side)	**3TA2LG600LD**②
Aluminum	150-600	#2–600 kcmil Al/Cu	2 (line side)	**3TA2LG600LN**②
Copper	150-600	#2–600 kcmil Cu	2 (load side)	**3TC2LG600LD**⑤
Copper	150-600	#2–600 kcmil Cu	2 (line side)	**3TC2LG600LN**⑤
Compression Lugs				
	150-600	#6–350 kcmil Al/Cu	—	**6CLL350**④
	150-600	250-750 kcmil Al/Cu	—	**3CLL750**③
	150-600	250-600 kcmil Al/Cu	—	**6CLL600**⑤

② Standard construction supplied for each breaker.
③ Kit consists of 3 terminal connectors.
④ Kit consists of 6 lugs for Line or Load end.
⑤ Required for 100% rated LG breakers. Requires 90°C Cu cable sized at 75°C ampacity.

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.

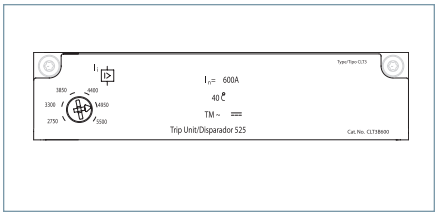
Dimensions, inches (mm)

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 7-137 through 7-151



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	Catalog Number	Catalog Number
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
400	**NLK2B400L**	**HLK2B400L**	**LLK2B400L**
500	**NLK2B500L**	**HLK2B500L**	**LLK2B500L**
600	**NLK2B600L**	**HLK2B600L**	**LLK2B600L**

LG 600A Frame 3-Pole with Thermal-Magnetic Trip Unit①

Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
400	**NLK3B400L**	**HLK3B400L**	**LLK3B400L**
500	**NLK3B500L**	**HLK3B500L**	**LLK3B500L**
600	**NLK3B600L**	**HLK3B600L**	**LLK3B600L**

Type HLGC 600A Frame 2-Pole with Thermal-Magnetic Trip Unit , 600Vac 25kA only②

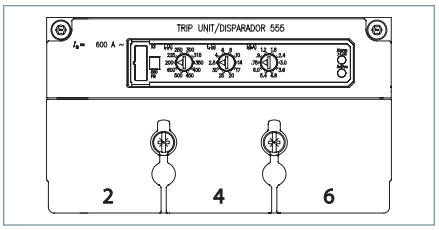
Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
400	—	**HLV2B400L**	—
500	—	**HLV2B500L**	—
600	—	**HLV2B600L**	—

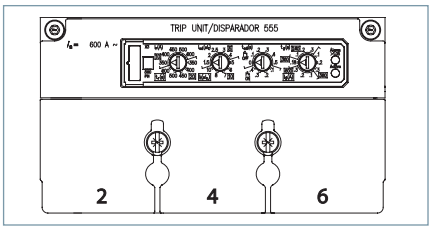
Type HLGC 600A Frame 3-Pole with Thermal-Magnetic Trip Unit , 600Vac 25kA only①②

Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
400	—	**HLV3B400L**	—
500	—	**HLV3B500L**	—
600	—	**HLV3B600L**	—

① For 100% rated 400A or 500A versions, change the third character of the catalog number to "Z".

② Consult sales office for availability.

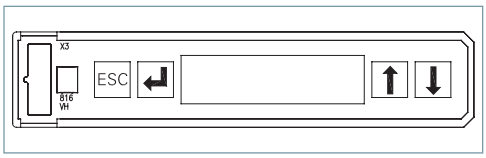




Model 555 Trip Unit

LG 600A Frame 3-Pole Electronic Trip Unit

Continuous Ampere Rating	N-Interrupting Class Catalog Number	H-Interrupting Class Catalog Number	L-Interrupting Class Catalog Number
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
ELECTRONIC LI TRIP			
400 600	NLK3R400L NLK3R600L	HLK3R400L HLK3R600L	LLK3R400L LLK3R600L
ELECTRONIC LSI TRIP			
400 600	NLK3T400L NLK3T600L	HLK3T400L HLK3T600L	LLK3T400L LLK3T600L
ELECTRONIC LSIG TRIP			
400 600	NLK3V400L NLK3V600L	HLK3V400L HLK3V600L	LLK3V400L LLK3V600L
ELECTRONIC LIG TRIP			
400 600	NLK3W400L NLK3W600L	HLK3W400L HLK3W600L	LLK3W400L LLK3W600L



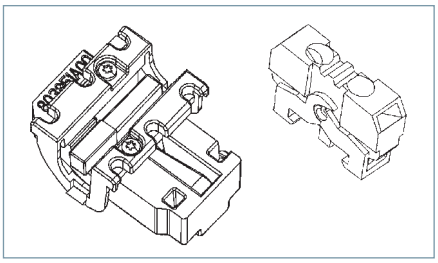
Model 586 Trip Unit

LG 600A Frame 3-Pole Electronic LCD Trip Unit

Continuous Ampere Rating	N-Interrupting Class Catalog Number	H-Interrupting Class Catalog Number	L-Interrupting Class Catalog Number
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
ELECTRONIC LSI TRIP			
400 600	NLK3A400L NLK3A600L	HLK3A400L HLK3A600L	LLK3A400L LLK3A600L
ELECTRONIC LSIG TRIP			
400 600	NLK3G400L NLK3G600L	HLK3G400L HLK3G600L	LLK3G400L LLK3G600L
ELECTRONIC LSI TRIP + GF ALARM ONLY			
400 600	NLK3K400L NLK3K600L	HLK3K400L HLK3K600L	LLK3K400L LLK3K600L

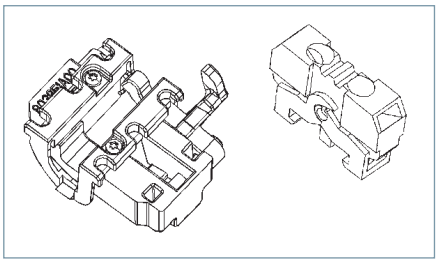
Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket①	Catalog Number
1 Alarm Switch 1A/B③ Bases AMBL2 & AMBL3	Left, Right②	**ASKL1**
2 Aux. Switches 1A + 1B Bases AMBL1	Left, Right	**ASKL2**
2 Aux. + 1 Alarm Switches 1A + 1B, 1A/B Bases AMBL2 & AMBL3	Left, Right②	**ASKL3**



Auxiliary/Alarm Switch Mounting Base Only

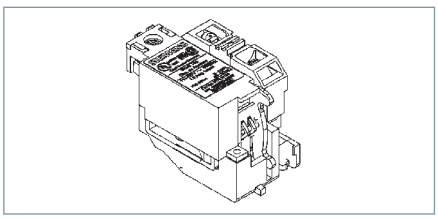
Description	Mounting Pocket	Catalog Number
Up to 3 Auxiliary Switches	Left, Right	**AMBL1**
2 Aux. + 1 Alarm Switch	Left Pocket Only	**AMBL2**
2 Aux. + 1 Alarm Switch	Right Pocket Only	**AMBL3**



Auxiliary/Alarm Switch Only

Common to DG - PG Frames

Description	Catalog Number
1 Normally Open Contact (1A)	**ASWPA**
1 Normally Closed Contact (1B)	**ASWPB**



Shunt Trips

Description	Mounting Pocket	Catalog Number
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
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		**UVRLL24**
110-127 VAC		**UVRLN120**
220-240 VAC		**UVRLR240**
208 VAC		**UVRLP208**
277 VAC		**UVRLS277**
380-415 VAC		**UVRLT415**
440-480 VAC		**UVRLU480**

UVRLN120

① Refer to the "Accessory Locations" chart on page 7-152 for guidelines and limitations about which pockets may be used for accessory combinations.
② Includes 1A and 1B contact for alarm purposes, only one of which may be installed at any time.
'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).

External Accessories pages 7-137 through 7-151

Ordering Information

Complete Assembled Breaker

A complete factory assembled MG breaker includes 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 7-156.

Mounting hardware is included with each frame or complete breaker.

HACR rated.

Interrupting Ratings

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

Connectors for 75°C Wire

Construction	Ampere Rating	Wire Range	No. of cables per connector	Catalog Number
Aluminum	200-800A	1/0–500 kcmil Al/Cu	3	**3TA3MG500**①②
Aluminum	200-800A	500-750 kcmil Al/Cu	2	**3TA2MG750**②
Copper	200-800A	1/0–500 kcmil Cu	3	**TC3MG500**③⑤
Aluminum	200-800A	#2–600 kcmil Al/Cu	3	**3TA3MG600**②④

① Standard connector supplied with complete breakers.
② Kit consists of 3 terminal connectors.
③ Consists of one terminal.
④ Includes extended terminal cover.
⑤ Required for 100% rated MG breakers. Requires 90°C Cu cable sized at 75°C ampacity.

MG Thermal-Magnetic, Instantaneous Trip Adjustment Range

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

Note: Each breaker has 6 trip settings.

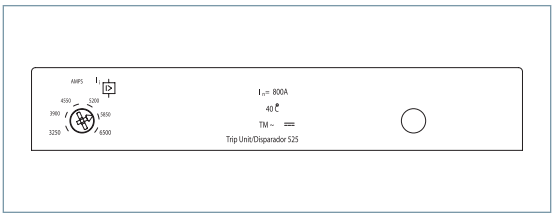
Dimensions, inches (mm)

Number of Poles	Width	Length	Depth	To Handle D1
2, 3	7.5 (190)	16 (406)	4.7 (119)	5.9 (151)

Shipping Weight, lbs. (kg)

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

External Accessories pages 7-137 through 7-151



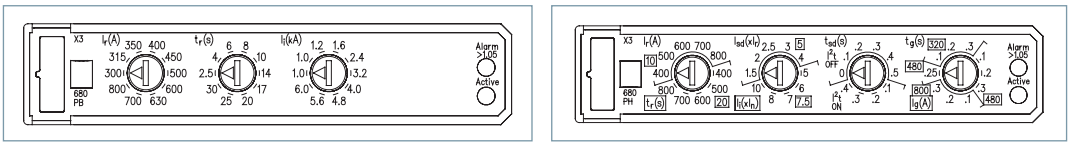
Model 525 Trip Unit

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

Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class	
	Catalog Number	Catalog Number	Catalog Number	Catalog Number
	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

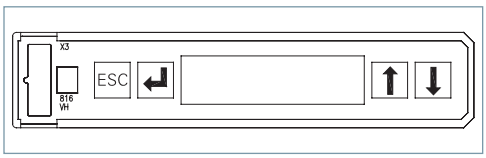
Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class	
	Catalog Number	Catalog Number	Catalog Number	Catalog Number
	FRAME ONLY			
	NMG3F800	HMG3F800	LMG3F800	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
600	NMG3B600L	HMG3B600L	LMG3B600L	CMT3B600
700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



Model 555 Trip Units

MG 800A Frame 3-Pole Electronic Trip Unit

Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class	
	Catalog Number	Catalog Number	Catalog Number	Catalog Number
	FRAME ONLY			
	NMG3F800	HMG3F800	LMG3F800	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
ELECTRONIC LI TRIP				
600 800	NMG3R600L NMG3R800L	HMG3R600L HMG3R800L	LMG3R600L LMG3R800L	CMT3R600 CMT3R800
ELECTRONIC LSI TRIP				
600 800	NMG3T600L NMG3T800L	HMG3T600L HMG3T800L	LMG3T600L LMG3T800L	CMT3T600 CMT3T800
ELECTRONIC LSIG TRIP				
600 800	NMG3V600L NMG3V800L	HMG3V600L HMG3V800L	LMG3V600L LMG3V800L	CMT3V600 CMT3V800
ELECTRONIC LIG TRIP				
600 800	NMG3W600L NMG3W800L	HMG3W600L HMG3W800L	LMG3W600L LMG3W800L	CMT3W600 CMT3W800



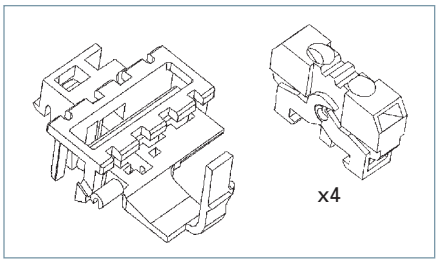
Model 586 Trip Unit

MG 800A Frame 3-Pole Electronic LCD Trip Unit

Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class	
	Catalog Number	Catalog Number	Catalog Number	Catalog Number
	FRAME ONLY			
	NMG3F800	HMG3F800	LMG3F800	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
LCD ELECTRONIC LSI TRIP				
600 800	NMG3A600L NMG3A800L	HMG3A600L HMG3A800L	LMG3A600L LMG3A800L	CMT3A600 CMT3A800
LCD ELECTRONIC LSIG TRIP				
600 800	NMG3G600L NMG3G800L	HMG3G600L HMG3G800L	LMG3G600L LMG3G800L	CMT3G600 CMT3G800
LCD ELECTRONIC LSI TRIP + GF ALARM ONLY				
600 800	NMG3K600L NMG3K800L	HMG3K600L HMG3K800L	LMG3K600L LMG3K800L	CMT3K600 CMT3K800

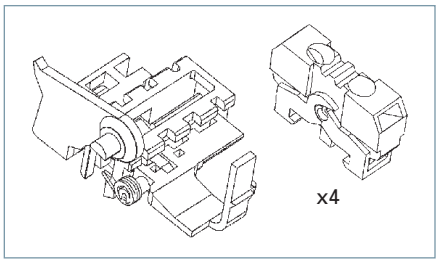
Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket①	Catalog Number
2 Aux. + 2 Alarm Switches 2A + 2B Bases AMBP2	Left Pocket Only	**ASKP3**
4 Aux. Switches 2A + 2B Bases AMBP1	Left, Right	**ASKP4**



Auxiliary/Alarm Switch Mounting Base Only

Description	Mounting Pocket	Catalog Number
Up to 4 Auxiliary Switches	Left, Right	**AMBP1**
2 Aux. + 2 Alarm Switches	Left Pocket Only	**AMBP2**



Auxiliary/Alarm Switch Only

Common to DG - PG Frames

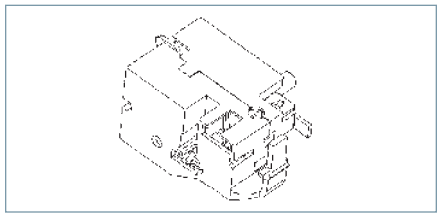
Description	Catalog Number
1 Normally Open Contact (1A)	**ASWPA**
1 Normally Closed Contact (1B)	**ASWPB**

Shunt Trips

Description	Mounting Pocket	Catalog Number
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
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**



① Refer to the "Accessory Locations" chart on page 7-152 for guidelines and limitations about which pockets may be used for accessory combinations.
'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).

External Accessories pages 7-137 through 7-151

Ordering Information

Complete Assembled Breaker with Lugs

A complete factory assembled NG breaker includes 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 7-156.

Mounting hardware is included with each frame or complete breaker.

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

HACR rated.

Interrupting Ratings

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

Connectors for 75°C Wire

Construction	Ampere Rating	Wire Range	No. of cables per connector	Catalog Number
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	4	**3TC4NG500**②④
Aluminum	300-1200A	1/0–500 kcmil Al/Cu	4	**3TA4NG500H**②④
Compression Lugs				
	300-1200A	1/0-500 kcmil Al/Cu	—	**12CLN500**①

① Total of 12 connectors (4 per phase Line or Load).
② For 100% rated NG breakers. Requires 90°C Cu cable sized at 75°C ampacity.
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_i)	
	Min.	Max.
800	4000	8000
900	5000	10000
1000	5000	10000
1200	7000	12000

Note: Each breaker has 6 trip settings.

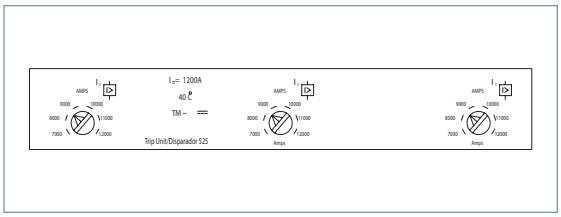
Dimensions, inches (mm)

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

Shipping Weight, lbs. (kg)

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

External Accessories pages 7-137 through 7-151



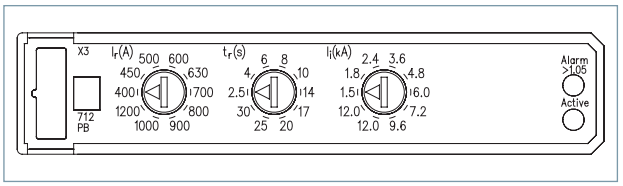
Model 525 Trip Unit

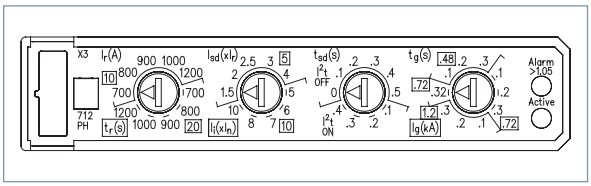
NG 1200A Frame 2-Pole with Thermal-Magnetic Trip Unit

Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class	
	Catalog Number	Catalog Number	Catalog Number	Catalog Number
	FRAME ONLY			
	NNG2F120	HNG2F120	LNG2F120	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
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	Catalog Number	Catalog Number	Catalog Number
	FRAME ONLY			
	NNG3F120	HNG3F120	LNG3F120	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
800	NNG3B800L	HNG3B800L	LNG3B800L	CNT3B800
900	NNG3B900L	HNG3B900L	LNG3B900L	CNT3B900
1000	NNG3B100L	HNG3B100L	LNG3B100L	CNT3B100
1200	NNG3B120L	HNG3B120L	LNG3B120L	CNT3B120

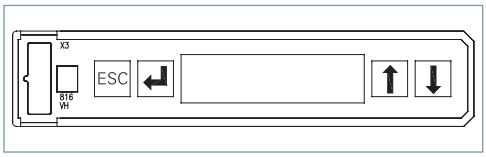




Model 555 Trip Units

NG 1200A Frame 3-Pole Electronic Trip Unit

Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class	
	Catalog Number	Catalog Number	Catalog Number	Catalog Number
	FRAME ONLY			
	NNG3F120	HNG3F120	LNG3F120	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
ELECTRONIC LI TRIP				
800	NNG3R800L	HNG3R800L	LNG3R800L	CNT3R800
1000	NNG3R100L	HNG3R100L	LNG3R100L	CNT3R100
1200	NNG3R120L	HNG3R120L	LNG3R120L	CNT3R120
ELECTRONIC LSI TRIP				
800	NNG3T800L	HNG3T800L	LNG3T800L	CNT3T800
1000	NNG3T100L	HNG3T100L	LNG3T100L	CNT3T100
1200	NNG3T120L	HNG3T120L	LNG3T120L	CNT3T120
ELECTRONIC LSIG TRIP				
800	NNG3V800L	HNG3V800L	LNG3V800L	CNT3V800
1000	NNG3V100L	HNG3V100L	LNG3V100L	CNT3V100
1200	NNG3V120L	HNG3V120L	LNG3V120L	CNT3V120
ELECTRONIC LIG TRIP				
800	NNG3W800L	HNG3W800L	LNG3W800L	CNT3W800
1000	NNG3W100L	HNG3W100L	LNG3W100L	CNT3W100
1200	NNG3W120L	HNG3W120L	LNG3W120L	CNT3W120



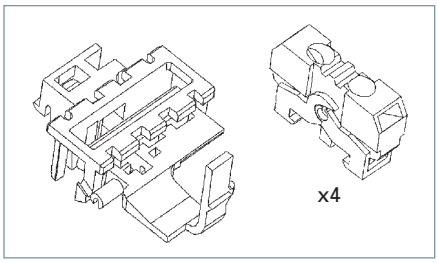
Model 586 Trip Unit

NG 1200A Frame 3-Pole Electronic LCD Trip Unit

Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class	
	Catalog Number	Catalog Number	Catalog Number	Catalog Number
	FRAME ONLY			
	NNG3F120	HNG3F120	LNG3F120	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
LCD ELECTRONIC LSI TRIP				
800	NNG3A800L	HNG3A800L	LNG3A800L	CNT3A800
1000	NNG3A100L	HNG3A100L	LNG3A100L	CNT3A100
1200	NNG3A120L	HNG3A120L	LNG3A120L	CNT3A120
LCD ELECTRONIC LSIG TRIP				
800	NNG3G800L	HNG3G800L	LNG3G800L	CNT3G800
1000	NNG3G100L	HNG3G100L	LNG3G100L	CNT3G100
1200	NNG3G120L	HNG3G120L	LNG3G120L	CNT3G120
LCD ELECTRONIC LSI TRIP + GF ALARM ONLY				
800	NNG3K800L	HNG3K800L	LNG3K800L	CNT3K800
1000	NNG3K100L	HNG3K100L	LNG3K100L	CNT3K100
1200	NNG3K120L	HNG3K120L	LNG3K120L	CNT3K120

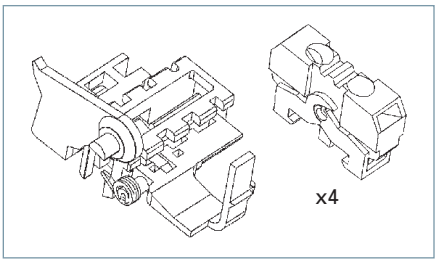
Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket①	Catalog Number
2 Aux. + 2 Alarm Switches 2A + 2B Base AMBP2	Left Pocket Only	**ASKP3**
4 Aux. Switches 2A + 2B Base AMBP1	Left, Right	**ASKP4**



Auxiliary/Alarm Switch Mounting Base Only

Description	Mounting Pocket①	Catalog Number
Up to 4 Auxiliary Switches 2 Aux. + 2 Alarm Switches	Left, Right Left Pocket Only	**AMBP1** **AMBP2**



Auxiliary/Alarm Switch Only

Common to DG-PG Frames

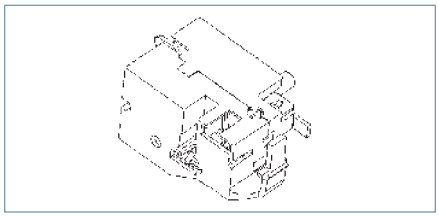
Description	Catalog Number
1 Normally Open Contact (1A)	**ASWPA**
1 Normally Closed Contact (1B)	**ASWPB**

Shunt Trips

Description	Mounting Pocket	Catalog Number
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
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**



① Refer to the "Accessory Locations" chart on page 7-152 for guidelines and limitations about which pockets may be used for accessory combinations.
'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).

External Accessories pages 7-137 through 7-151

Ordering Information

A complete factory assembled PG breaker includes the frame and trip unit only. The connectors must be ordered as separate items.

PG thermal-magnetic breakers sold as non-interchangeable only.

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 seperate 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 7-156.

Mounting hardware is included with each frame or complete breaker.

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

Interrupting Ratings

Interrupting Class	Breaker Type	RMS Symmetrical Amperes (KA)											
		UL 489					IEC 60947-2⑥ (ETU only)						
		Volts AC (50/60 Hz)			Volts DC		Volts AC (50/60 Hz)						
							220/240		380/415		690	
		240	480	600	250	500	I_{CU}	I_{CS}	I_{CU}	I_{CS}	I_{CU}	I_{CS}
N	NPG	65	35	25	22	35	65	35	50	25	20	10
H	HPG	100	65	35	25	50	100	50	70	35	30	15
L	LPG	200	100	65	42	65	200	100	100	50	35	17

Dimensions, inches (mm)

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

Shipping Weight, lbs. (kg)

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

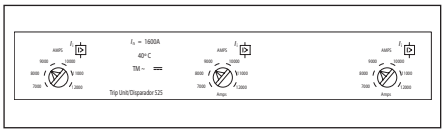
Connectors for 75°C Wire

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

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.



Model 525 Trip Unit

Mounting Arrangement

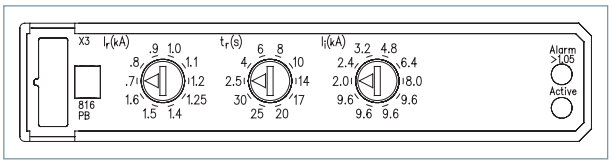
Description	Catalog Number
Lug Mounting Assembly	**LMAP1600**
Breaker Mounting Base (Front Connect)	**MBPG1600**
Breaker Mounting Base (Rear Connect)	**MBPG1601**

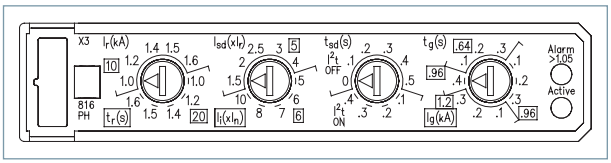
PG 1600A Frame 3-Pole with Thermal-Magnetic Trip Unit⑥

Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class
	Catalog Number	Catalog Number	Catalog Number
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER		
1200	**NPX3B120**	**HPX3B120**	**LPX3B120**
1400	**NPX3B140**	**HPX3B140**	**LPX3B140**
1600	**NPX3B160**	**HPX3B160**	**LPX3B160**

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 Required for 100% rated PG breakers. Requires 90°C cable sized at 75°C ampacity.
⑥ IEC 60947-2: ONLY applies to Electronic Trip Units (ETUs).

External Accessories pages 7-137 through 7-151

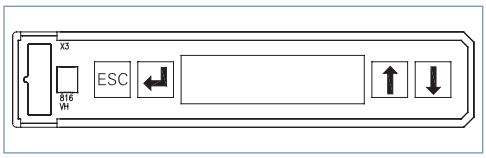




Model 555 Trip Unit

PG 1600A Frame 3-Pole Electronic Trip Unit

Continuous Ampere Rating	N-Interrupting Class Catalog Number	H-Interrupting Class Catalog Number	L-Interrupting Class Catalog Number	Catalog Number
	FRAME ONLY			
	NPG3F160	HPG3F160	LPG3F160	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
ELECTRONIC LI TRIP				
1200 1600	NPG3R120 NPG3R160	HPG3R120 HPG3R160	LPG3R120 LPG3R160	CPT3R120 CPT3R160
ELECTRONIC LSI TRIP				
1200 1600	NPG3T120 NPG3T160	HPG3T120 HPG3T160	LPG3T120 LPG3T160	CPT3T120 CPT3T160
ELECTRONIC LSIG TRIP				
1200 1600	NPG3V120 NPG3V160	HPG3V120 HPG3V160	LPG3V120 LPG3V160	CPT3V120 CPT3V160
ELECTRONIC LIG TRIP				
1200 1600	NPG3W120 NPG3W160	HPG3W120 HPG3W160	LPG3W120 LPG3W160	CPT3W120 CPT3W160



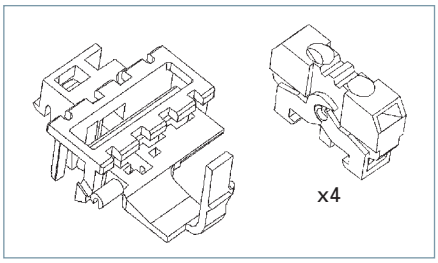
Model 586 Trip Unit

PG 1600A Frame 3-Pole Electronic LCD Trip Unit

Continuous Ampere Rating	N-Interrupting Class Catalog Number	H-Interrupting Class Catalog Number	L-Interrupting Class Catalog Number	Catalog Number
	FRAME ONLY			
	NPG3F160	HPG3F160	LPG3F160	
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER			TRIP UNIT ONLY
LCD ELECTRONIC LSI TRIP				
1200 1600	NPG3A120 NPG3A160	HPG3A120 HPG3A160	LPG3A120 LPG3A160	CPT3A120 CPT3A160
LCD ELECTRONIC LSIG TRIP				
1200 1600	NPG3G120 NPG3G160	HPG3G120 HPG3G160	LPG3G120 LPG3G160	CPT3G120 CPT3G160
LCD ELECTRONIC LSI TRIP + GF ALARM ONLY				
1200 1600	NPG3K120 NPG3K160	HPG3K120 HPG3K160	LPG3K120 LPG3K160	CPT3K120 CPT3K160

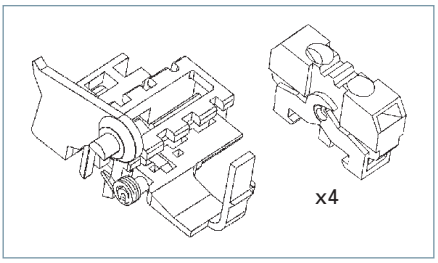
Auxiliary Switch and Alarm Switch Combination Kits

Description	Mounting Pocket①	Catalog Number
2 Aux. + 2 Alarm Switches 2A + 2B Base AMBP2	Left Pocket Only	**ASKP3**
4 Aux. Switches 2A + 2B Base AMBP1	Left, Right	**ASKP4**



Auxiliary/Alarm Switch Mounting Base Only

Description	Mounting Pocket①	Catalog Number
Up to 4 Auxiliary Switches 2 Aux. + 2 Alarm Switches	Left, Right Left Pocket Only	**AMBP1** **AMBP2**



Auxiliary/Alarm Switch Only

Common to DG-PG Frames

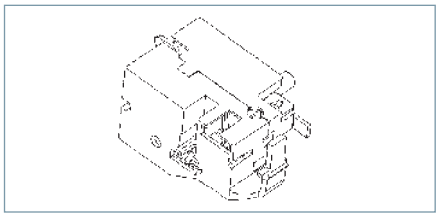
Description	Catalog Number
1 Normally Open Contact (1A)	**ASWPA**
1 Normally Closed Contact (1B)	**ASWPB**

Shunt Trips

Description	Mounting Pocket	Catalog Number
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
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**



① Refer to the "Accessory Locations" chart on page 7-152 for guidelines and limitations about which pockets may be used for accessory combinations.
'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).

External Accessories pages 7-137 through 7-151

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	2-Pole	3-Pole	Short-Circuit Current Rating①			Self Protective Instantaneous Override
	Catalog Number	Catalog Number	240V	480V	600V	
150A / DG	**HDR2S150**	**HDR3S150**	100k	65k	20k	2,500A
250A / FG	**HFR2S250**	**HFR3S250**	100k	65k	20k	3,500A
400A / JG	**HJS2S400**	**HJS3S400**	100k	65k	25k	4,400A
600A / LG	**HLR2S600**	**HLR3S600**	100k	65k	18k	5,500A
800A / MG	**HMS2S800**	**HMS3S800**	100k	65k	35k	6,500A
1200A / NG	**HNS2S120**	**HNS3S120**	100k	65k	35k	12,000A
1600A / PG	—	**HPS3S160**	100k	65k	35k	14,000A

Maximum Ampere Rating / Frame	3-Pole	Short-Circuit Current Rating①			Self Protective Instantaneous Override
	Catalog Number	240V	480V	600V	
250A / FG	**LFR3S250**	200k	100k	25k	3,500A
400A / JG	**LJS3S400**	200k	100k	25k	4,400A
600A / LG	**LLR3S600**	200k	100k	18k	5,500A
800A / MG	**LMS3S800**	200k	100k	65k	6,500A
1200A / NG	**LNS3S120**	200k	100k	65k	12,000A
1600A / PG	**LPS3S160**	200k	100k	65k	14,000A

①The 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.

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 Number①
35-50	450	HDP3L150L
42-60	540	
48-70	630	
55-80	720	
62-90	810	
69-100	900	
58-83	750	HDP3M150L
69-100	900	
81-117	1050	
92-133	1200	
104-150	1350	
115-150②	1500	
96-139	1250	HDP3H150L
115-150②	1500	
135-150②	1750	
135-150②	2000	
135-150②	2250	
135-150②	2500	
46-67	600	HFP3L250L
55-80	720	
65-93	840	
74-107	960	
83-120	1080	
92-133	1200	
77-111	1000	HFP3M250L
92-133	1200	
108-156	1400	
123-178	1600	
138-200	1800	
154-222	2000	
135-194	1750	HFP3H250L
162-210	2100	
188-220	2450	
215-241	2800	
242-250②	3150	
242-250②	3500	

Motor Full Load Amperes	Trip Setting (A)	Catalog Number①
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	
308-400②	4000	
154-222	2000	HLM3J600
185-267	2400	
215-311	2800	
246-356	3200	
277-400	3600	
308-444	4000	
212-306	2750	HLM3Y600
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.

General

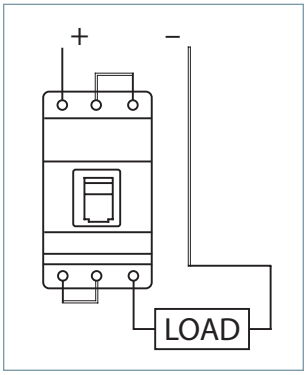
Siemens UL Listed non-interchangeable trip DC Thermal/magnetic Molded Case Circuit Breakers shown below are for use in grounded & ungrounded general DC circuits and ungrounded battery supply circuits of UPS systems. These breakers are rated at 600Vdc closed circuit and feature rated interruption levels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

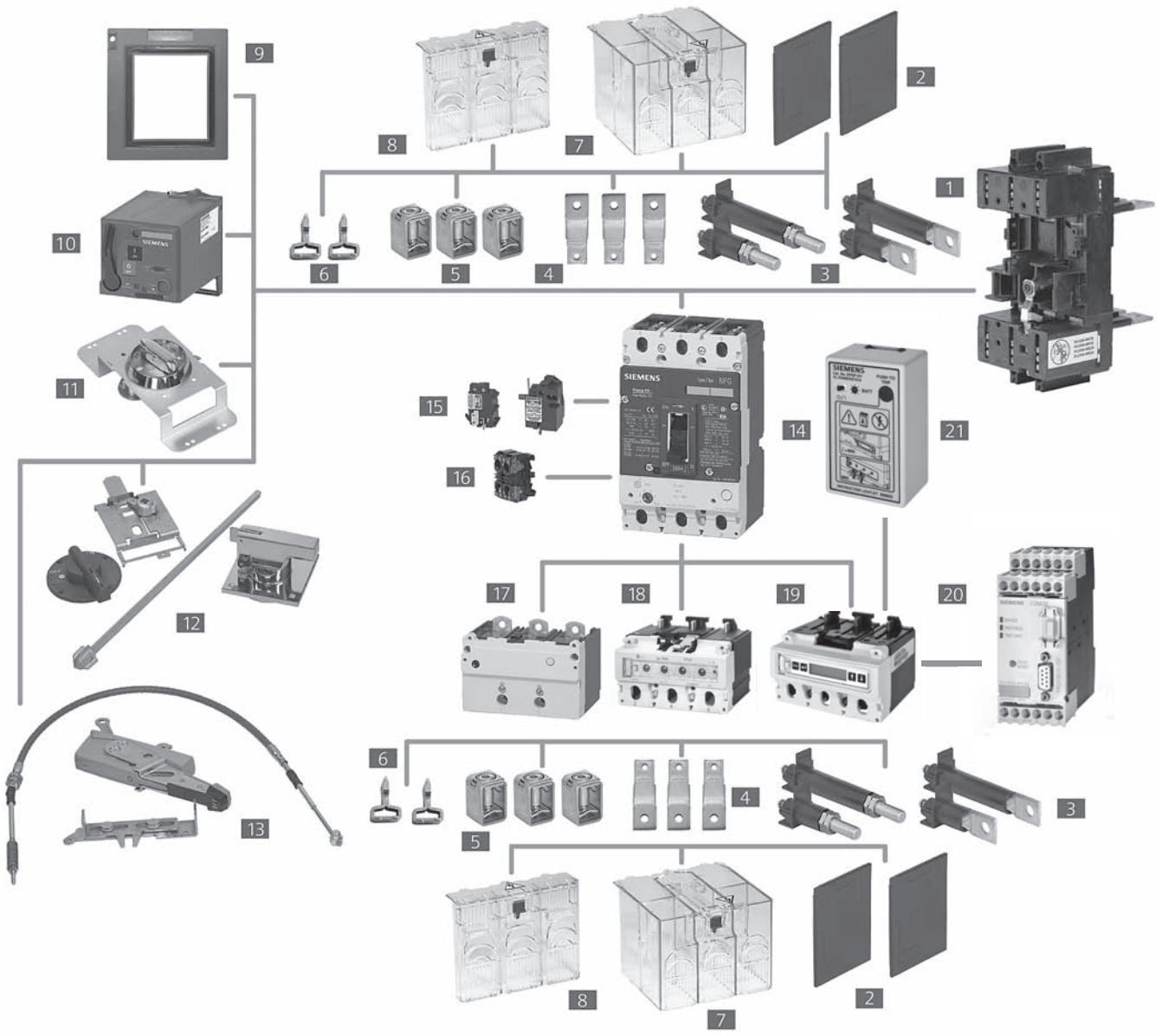
Frame	Type	Continuous Ampere Rating	Catalog Number (3-pole)①	Short-Circuit Current Rating 600VDC②
DG	HDGD	50	**HDC3B050**	42K
		60	**HDC3B060**	42K
		70	**HDC3B070**	42K
		80	**HDC3B080**	42K
		90	**HDC3B090**	42K
		100	**HDC3B100**	42K
		110	**HDC3B110**	42K
		125	**HDC3B125**	42K
		150	**HDC3B150**	42K
FG	HFGD	100	**HFC3B100**	42K
		150	**HFC3B150**	42K
		175	**HFC3B175**	42K
		200	**HFC3B200**	42K
		250	**HFC3B250**	42K
JG	HJGD	250	**HJC3B250**	65K
		300	**HJC3B300**	65K
		350	**HJC3B350**	65K
		400	**HJC3B400**	65K
LG	HLGD	400	**HLC3B400**	65K
		500	**HLC3B500**	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	HPGD	1200	**HPC3B120**	65K
		1400	**HPC3B140**	65K
		1600	**HPC3B160**	65K



① Terminal connectors must be ordered separately; see page 7-146.
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

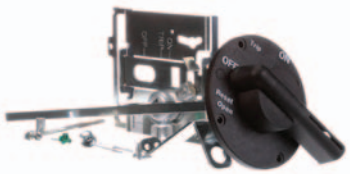


1 Base for Plug-In or Draw-Out
2 Interphase Barriers
3 Rear Terminals – Flat and Round
4 Bus Extensions
5 Terminal Connectors
6 Plug-In Terminal Blades
7 Extended Terminal Shield
8 Standard Terminal Shield
9 Cover Frame for Door Cutout
10 Stored Energy Operator
11 Rotary Handle Operator
12 Variable Depth 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 (555)
19 Elec. Trip Unit with LCD (586)
20 Communication Module with ZSI
21 Electronic Trip Unit Tester and LCD Power Supply

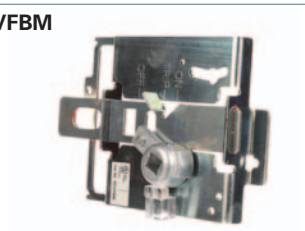
Operating Mechanisms

RHFF

RHVF12



RHVFBM



RHVM3RH

RHVMS12

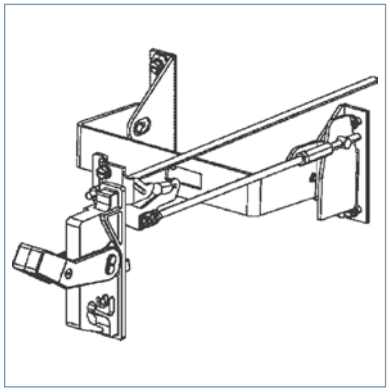
RHVM12H

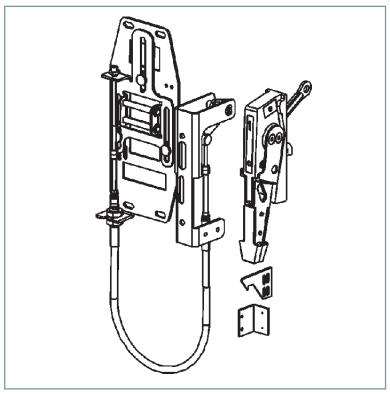
Description	For DG to FG Frame 150 to 250 A Catalog Number	For JG to LG Frame 400 A to 600 A Catalog Number
Through-Door Rotary Handle Operator Kit Fixed depth and the handle is mounted directly on the circuit breaker.		
Lockable knob (for up to 3 padlocks). NEMA 1, 12	**RHFF**	**RHFL**
Red Handle Version with red knob, yellow indicator plate NEMA 1, 12	**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 Kit①		
Includes 1 switch with 5′ wire For Door-Mounted Operator	—	**RHSLA1**
For Through-Door Operator	**RHSFA1F**	**RHSLA1F**
Includes 2 switches with 5′ wire For Door-Mounted Operator	—	**RHSLA2**
For Through-Door Operator	**RHSFA2F**	**RHSLA2F**
Door-Mounted Rotary Operator Mechanism Breaker mechanism only	**RHVFBM**	**RHVLBM**
Door-Mounted Rotary Handle Only		
Standard version NEMA 1, 12	**RHVM12H**	**RHVM12H**
NEMA 3R	**RHVM3RH**	**RHVM3RH**
NEMA 4X	**RHVM4XH**	**RHVM4XH**
Red Handle version	**RHVMEMH**	**RHVMEMH**
NFPA-79 Handle Kit Intermediate handle for NFPA-79 compliance with door-mounted rotary operator	**RHVF79H**	**RHVM79H**
Extension Shaft Only, for Door Mounted Operator		
2 inches (50.8mm)	**RHVMS02**	**RHVMS02**
3 inches (76.2mm)	—	—
12 inches (304.8 mm)	**RHVMS12**	**RHVMS12**
16 inches (406.4 mm)	**RHVMS16**	**RHVMS16**
24 inches (609.6mm) w/ support bracket	**RHVMS24**	**RHVMS24**

① During manual operation, Early Break auxiliary switch contacts open before the breaker opens.

Description	For MG Frame 800 A Catalog Number		For NG to PG Frame 1200 to 1600 A Catalog Number	
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	**RHSMA1**		**RHSPA1**	
For Through-Door Operator	—	—	—	—
Includes 2 switches with 5′ wire				
For Door-Mounted Operator	**RHSMA2**		**RHSPA2**	
For Through-Door Operator	—	—	—	—
Door-Mounted Rotary Operator Mechanism				
Breaker mechanism only	**RHVMBM**		**RHVPBM**	
Door-Mounted Rotary Handle Only				
Standard version NEMA 1, 12	**RHVM12H**		**RHVP3RH**	
NEMA 3R	**RHVM3RH**		**RHVP3RH**	
NEMA 4X	**RHVM4XH**		**RHVP4XH**	
Red Handle version	**RHVMEMH**		**RHVPEMH**	
NFPA-79 Handle Kit				
Intermediate handle for NFPA-79 compliance with door-mounted rotary operator	**RHVM79H**		**RHVP79H**	
Extension Shaft Only, for Door Mounted Operator				
2 inches (50.8mm)	**RHVMS02**		—	—
3 inches (76.2mm)	—	—	**RHVPS03**	
12 inches (304.8 mm)	**RHVMS12**		**RHVPS12**	
16 inches (406.4 mm)	**RHVMS16**		—	—
24 inches (609.6mm) w/ support bracket	**RHVMS24**		**RHVPS24**	

Operating Mechanisms





Description		For DG and FG Frame 150 to 250 A Catalog Number	For JG and LG Frame 400 to 600 A Catalog Number
Variable Depth Flange Mounted Operator Kit			
Adjustable from 8″ to 16″			
Complete kit, includes handle and variable depth operator.			
	NEMA 1, 3R, 12	**FHVF3R**	**FHVL3R**
	NEMA 4X	**FHVF4X**	**FHVL4X**
IEC Black Handle	NEMA 1, 3R, 12	**FHVF3RB**	**FHVL3RB**
	NEMA 4X	**FHVF4XB**	**FHVL4XB**
Max-Flex™, Variable Depth Flange Mounted Operator Kit			
Complete kit, includes plastic handle, breaker operator, and cable.	NEMA 1, 3R, 12	**MFKF3R**	**MFKL3R**
For DG and FG operators, the cable is 36″, all others are 48″			
May be right- or left-hand mounted			
Handle Only, for Max-Flex™ Variable Depth			
NEMA 1, 3R, 12	Plastic	**MFHM3R**	**MFHM3R**
NEMA 1, 3R, 12	Steel - epoxy coated	**MFHM3RS**	**MFHM3RS**
NEMA 4, 4X	Steel - chrome plated	**MFHM4X**	**MFHM4X**
Solid color (all gray) Plastic①			
NEMA 1, 3R, 12		**MFHM3RB**	**MFHM3RB**
Solid color (black handle) Steel epoxy coated①			
NEMA 1, 3R, 12		**MFHM3RSB**	**MFHM3RSB**
Breaker Operator Mechanism Only, for Max-Flex™		**MFMF**	**MFML**
Cable Only, for Max-Flex™ Variable Depth			
36″		**MFCF036**	**MFCM036**
48″		**MFCF048**	**MFCM048**
60″		**MFCF060**	**MFCM060**
72″		**MFCF072**	**MFCM072**
84″		**MFCF084**	**MFCM084**
96″		**MFCF096**	**MFCM096**
120″		**MFCF120**	**MFCM120**
144″		**MFCF144**	**MFCM144**
Handle Auxiliary Switch			
Form C (1NO - 1NC), early break②			
1 Aux. switch		**MFSFA1**	**MFSLA1**
2 Aux. switch		**MFSFA2**	**MFSLA2**

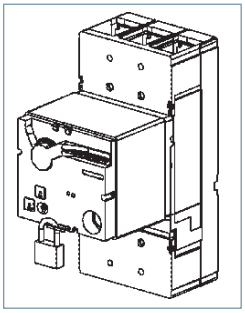
① Max-Flex™ handles are available with solid gray or black handles instead of the customary "Red for On" flange handle. The black handle is preferred for IEC markets, where red handles have a specific meaning.
② During manual operation, Early Break aux. contacts open before the breaker opens.

Description			For MG Frame 800 A Catalog Number	For NG Frame 1200 A Catalog Number	For PG Frame 1600 A Catalog Number
Variable Depth Flange Mounted Operator Kit					
Adjustable from 8″ to 16″					
Complete kit, includes handle and variable depth operator.					
	NEMA 1, 3R, 12		—	—	
	NEMA 4X		—	—	
IEC Black Handle	NEMA 1, 3R, 12		—	—	
	NEMA 4X		—	—	
Max-Flex™, Variable Depth Flange Mounted Operator Kit					
Complete kit, includes plastic handle, breaker operator, and cable.	NEMA 1, 3R, 12		**MFKM3R**	**MFKP3RS**	**MFKP3RS**
For DG and FG operators, the cable is 36″, all others are 48″					
May be right- or left-hand mounted					
Handle Only, for Max-Flex™ Variable Depth					
NEMA 1, 3R, 12	Plastic		**MFHM3R**	—	—
NEMA 1, 3R, 12	Steel - epoxy coated		**MFHM3RS**	**MFHP3RS**	**MFHP3RS**
NEMA 4, 4X	Steel - chrome plated		**MFHM4X**	**MFHP4X**	**MFHP4X**
Solid color (all gray) Plastic①					
NEMA 1, 3R, 12			**MFHM3RB**	—	—
Solid color (black handle) Steel epoxy coated①					
NEMA 1, 3R, 12			**MFHM3RSB**	**MFHP3RSB**	**MFHP3RSB**
Breaker Operator Mechanism Only, for Max-Flex™			**MFMM**	**MFMP**	**MFMP**
Cable Only, for Max-Flex™ Variable Depth					
36″			**MFCM036**	—	—
48″			**MFCM048**	**MFCP048**	**MFCP048**
60″			**MFCM060**	**MFCP060**	**MFCP060**
72″			**MFCM072**	**MFCP072**	**MFCP072**
84″			**MFCM084**	—	—
96″			**MFCM096**	**MFCP096**	**MFCP096**
120″			**MFCM120**	**MFCP120**	**MFCP120**
144″			**MFCM144**	**MFCP144**	**MFCP144**
Handle Auxiliary Switch					
Form C (1NO - 1NC), early break②					
1 Aux. switch			**MFSPA1**	**MFSPA1**	**MFSPA1**
2 Aux. switch			**MFSPA2**	**MFSPA2**	**MFSPA2**

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.

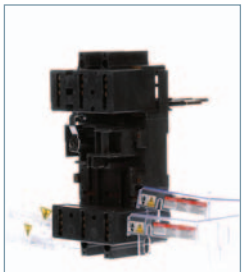
External Accessories

Operating Mechanisms

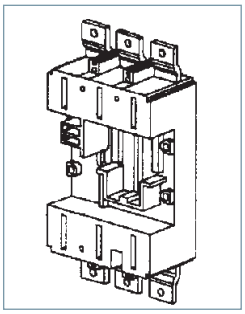


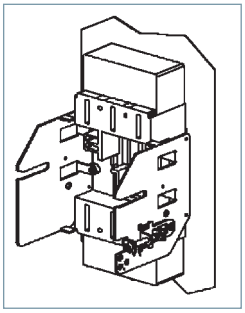
Description	For DG to FG Frame 150 to 250 A Catalog Number
Stored Energy and Motor Operators	
Lockable with up to 3 padlocks.	
AC Voltage / DC Voltage	Stored Energy Type
— / 24	**SEAFB**
42-48 / 42-48	**SEAFM**
60 / 60	**SEAFY**
110–127 / 110–127	**SEAFN**
220–250 / 220–250	**SEAFR**
Cylinder Locks for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

Plug-In and Draw-Out Bases



PCBDRC3





Description	For DG Frame 150 A Catalog Number	For FG Frame 250 A 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	**DCADFC3**	**DCAFFC3**
(Draw-out assembly includes side plates and all hardware)		
Hex Wrench for racking draw-out assembly and position indicator	**DCHP**	**DCHP**
Position Indicator Switch	**DCIP**	**DCIP**
Form "C" switch to indicate breaker engaged/de-engaged position.①		
Secondary Terminal Block Assy.	**PCTF83**	**PCTF83**
Accessory connections for plug-in or draw-out breakers. Pre-wired plug and block with 8 terminal points.②		
Plug-In Spare Breaker Kit	**PCXD3**	**PCXF3**
Set of 6 terminal blades, 2 terminal shield, & 1 trip interlock		
Draw-out Spare Breaker Kit	**DCXD3**	**DCXF3**
Set of 6 terminal blades, & 1 trip interlock		
Spare Breaker Trip Interlock	**PCXFT**	**PCXFT**

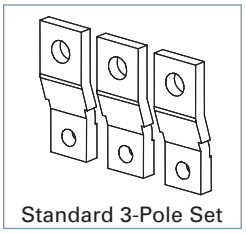
① Up to 2 position indicator switches may be mounted per plug-in or draw-out base.
② Up to 2 plugs per breaker (16 terminal points) may be mounted on DG, and FG breakers. Up to 3 plugs per breaker (24 terminal points) may be mounted on JG, LG, MG, NG, and PG breakers.

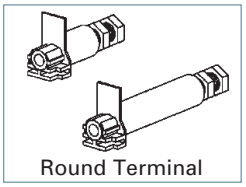
For JG to LG Frame 400 to 600 A	For MG Frame 800 A	For NG to PG Frame 1200 to 1600 A
Catalog Number	Catalog Number	Catalog Number
Stored Energy Type	Stored Energy Type	Motor Operator Type
SEALB	**SEAMB**	**MTRPB**
SEALM	**SEAMM**	**MTRPM**
SEALY	**SEAMY**	**MTRPY**
SEALN	**SEAMN**	**MTRPN**
SEALR	**SEAMR**	**MTRPR**
CLKP	**CLKP**	**CLKP**

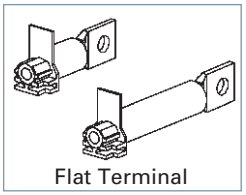
For JG Frame 400 A	For LG Frame 600 A	For MG Frame 800 A	For NG Frame 1200 A	For PG Frame 1600 A
Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number
PCBJRC3	**PCBLRC3**	**PCBMRC3**	**PCBNRC3**	—
PCBJFC3	**PCBLFC3**	—	—	—
DCAJRC3	**DCALRC3**	—	—	—
DCAJFC3	**DCALFC3**	—	—	—
DCHP	**DCHP**	—	—	—
DCIP	**DCIP**	—	—	—
PCTL83	**PCTL83**	—	—	—
PCXJ3	**PCXL3**	—	—	—
DCXJ3	**DCXL3**	—	—	—
PCXLT	**PCXLT**	—	—	—

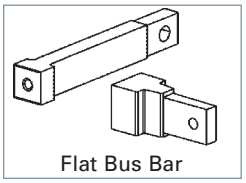
External Accessories

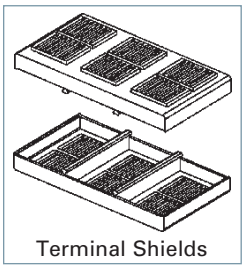
Connections


Standard 3-Pole Set


Round Terminal


Flat Terminal


Flat Bus Bar


Terminal Shields


IPBF

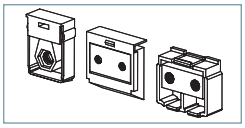
Description	For DG Frame 150 A Catalog Number	For FG Frame 250 A Catalog Number
Front Bus Bar Connections		
Includes nut keeper plates and shield.		
Standard (straight)		
3-Pole Set	**FBCD3**	**FBCF3**
Bus Bar Connection Strap Kit	—	—
Includes 6 - Bus Bars, 6 Nut Keepers & Shields 100% rated applications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

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	Catalog Number	Catalog Number	Catalog Number	Catalog Number
FBCJ3 —	FBCL3 —	FBCM3 —	SSBP SSBPH	SSBP SSBPH
RTLJSR RTLJLR SRTJR3 RTLJSF RTLJLF SRTJF3 — —	— — — — — — RTLLSF SRTLF3	— — — — — — RTLMSF SRTMF3	— — — — — — RTLNSF SRTNF3	— — — — — — — —
TSSL3 TSLL3	— —	TSSM3 TSLM3	TSSP3 TSLP3	TSSP3 TSLP3
IPBM	IPBM	IPBM	IPBP	IPBP
—	—	—	—	LMAP1600②
— —	— —	— —	— —	MBPG1600 MBPG1601

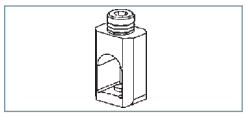
① Not for use with standard Al terminals. Use Standard Shield for rear connection and Extended Shield for bus-bar connection.

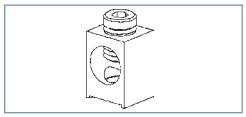
② Kit includes connection for one side of breaker only. Order quantity 2 if connecting line and load side.

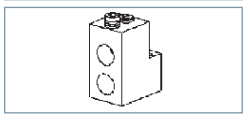
Connections



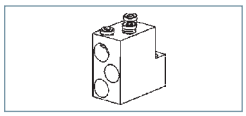

TNKD3

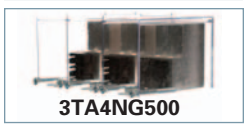


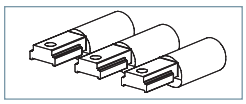


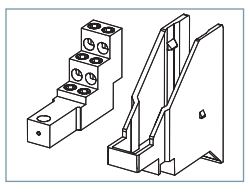



3TA2LG600LD




3TA4NG500





Note: pictures provide graphical representaions only.

Description	For DG Frame 150 A Catalog Number	For FG Frame 250 A Catalog Number
Nut Keeper Plates		
For ring/tongue terminal or bus bar connections. (For metric threads on other than the JG frame, change "TNK" to "TMK")		
1 Nut Keeper Plate	**TNKD**	**TNKF**
Kit of 3	**TNKD3**	**TNKF3**
Mechanical Lugs		
Steel Wrap Around Body (Cu Wire Only)		
Cable Size; (cables per phase)	#8-1/0; 1-hole	#4-350 kcmil; 1-hole
Single Lug	**TW1DG20**	**TW1FG350**
Kit of 3	**3TW1DG20**	**3TW1FG350**
Aluminum Body (Al or Cu Wire)		
Cable Size; (cables per phase)	#6-3/0; 1-hole	#4-350 kcmil; 1-hole
Single Lug	**TA1DG30**	**TAW1FG350**
Kit of 2	—	—
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	—	—
	—	—
Copper Body (Cu Wire Only)		
Cable Size; (cables per phase)	#6-3/0; 1-hole	#4-350 kcmil; 1-hole
Single Lug	**TC1DG30**①	**TCW1FG350**①
Kit of 2	—	—
Kit of 3	**3TC1DG30**①	**3TCW1FG350**①
Cable Size; (cables per phase)	—	—
Single Lug	—	—
Compression Lugs		
Cable Size; (cables per phase)	#14-2/0; 1-cable	#4-350 kcmil; 1-cable
Kit of 2	**2CLD20**	—
Kit of 3	**3CLD20**	**3CLF350**
Cable Size; (cables per phase)		—
Kit of 2		—
Kit of 3	—	—
Cable Size; (cables per phase)	—	—
Kit of 3	—	—
Distribution Lugs *(Cu Wire Only)*		#14-#1; 2-hole and
Cable Size; (cables per phase)	#14-#2; 3-hole	#14-2/0; 1-hole
Single Lug	**TA3DG02**	**TA3FG20**
Kit of 3	**3TA3DG02**	**3TA3FG20**
Cable Size; (cables per phase)	#14-#4; 6-hole	#14-#4; 6-hole
Single Lug	**TA6DG04**	**TA6FG04**
Kit of 3	**3TA6DG04**	**3TA6FG04**
Control Wire Terminals		
Control Wire Terminal (Single)	—	—
Control Wire Terminal (Kit of 3)	—	—

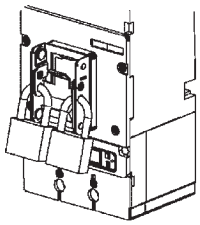
① Required for 100% rated breakers. Requires 90°C cable sized at 75°C ampacity.

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	**Catalog Number**	**Catalog Number**	**Catalog Number**	**Catalog Number**
TMKJ **TMKJ3** *metric only*	**TNKL** **TNKL3**	**TNKM** **TNKM3**	**TNKP** **TNKP3**	**TNKP** **TNKP3**
1/0-600 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**⑤
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**④ (Kit of 3)	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**③ — — 3/0-750 kcmil; 1-hole **TC1JG750**③	#2-600 kcmil; 2-hole — — — **3TC2LG600LD**①③ **3TC2LG600LN**②③ — —	1/0-500 kcmil; 3-hole **TC3MG500**③ — — — —	1/0-500 kcmil; 4-hole — — **3TC4NG500**③ — —	— — — — 300-600 kcmil; 5-hole **TC5R600**③⑥
#6-350 kcmil; 1-cable — **3CLJ350** 250-600 kcmil; 1-cable **3CLJ600** — —	#6-350 kcmil; 2-cable — **6CLL350** (kit of 6) 250-750 kcmil; 1-cable **3CLL750** — 250-600 kcmil; 2-cable **6CLL600** (kit of 6) —	— — — — — — — —	1/0-500 kcmil; 4-cable — **12CLN500** (kit of 12) — — — — —	— — — — — — — —
#14-#4; 12-hole **TA12JG04** **3TA12JG04** #14-2/0; 6-hole **TA6JG20** **3TA6JG20**	— — — — — —	— — — — — —	— — — — — —	— — — — — —
TA2JG250PT —	— **3TA2LG600LNPT**	**TA3MG500PT** —	— **3TA4NG500PT**	— —

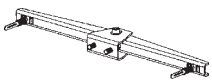
All lug kits include the nut keepers.
① Mounted on Load Side Only.
② Mounted on Line Side Only.
③ Required for 100% rated breakers. Requires 90°C cable sized at 75°C ampacity.
④ Requires extended modified shield.
⑤ Used only with LMAP1600 mounting base.
⑥ Used only with MBPG1600 or MBPG1601 mounting base.

External Accessories

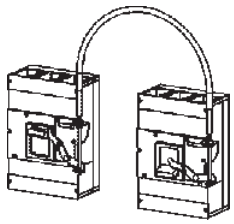
General



Handle Padlocking Device



Walking-Beam Interlock Mechanism



Cable Interlock System

Description	For DG Frame 150 A Catalog Number	For FG Frame 250 A Catalog Number
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 Note: Both breakers must be of the same frame size.	**WBMFFM**	**WBMFFM**
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)	**CBCF18**	**CBCF18**
Cable length 36 in. .91m (recommended from 400–800A)	**CBCM36**	**CBCM36**
Cable length 54 in. 1.37m (recommended from 1200–1600A)	**CBCP54**	**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)	**MSKF2**	**MSKF2**
Kit with 4 screws (SAE thread)	**MSKF4**	**MSKF4**
Trip Adjustment Sealing Cover Includes a trip unit cover to prevent tampering or adjustment of trip settings. Seal not included.	**3VL97008BL00**	**3VL97008BL00**
Thermal-Magnetic Trip Units	**TSCFTM**	**TSCFTM**

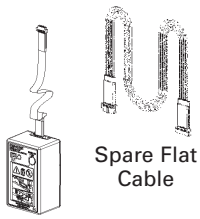
For JG Frame 400 A	For LG Frame 600 A	For MG Frame 800 A	For NG Frame 1200 A	For PG Frame 1600 A
Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number
HPLL	HPLL	HPLM	HPLP	HPLP
HBDL	HBDL	HBDM	HBDP	HBDP
WBMLFM	WBMLFM	WBMMFM	WBMPFM	WBMPFM
CBTL	CBTL	CBTM	CBTP	CBTP
—	—	—	—	—
CBCM36	CBCM36	CBCM36	—	—
CBCP54	CBCP54	CBCP54	CBCP54	CBCP54
—	—	—	—	—
MSKL4	MSKL4	MSKM4	MSKP4	MSKP4
3VL97008BL00	3VL97008BL00	3VL97008BL00	3VL97008BL00	3VL97008BL00
TSCLTM	TSCLTM	TSCMTM	—	—

External Accessories

Ground Sensors & Electronic Accessories

NGSF150

NGSM600



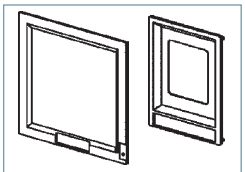
Spare Flat Cable

Power Stick

Com20 Profibus & Com21 Modbus Communications Module

Description	For DG Frame 150 A Catalog Number	For FG Frame 250 A Catalog Number
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		
Portable Test Set.	**ELTPHB**	**ELTPHB**
Power Stick - Hand held, battery operated power supply for LCD trip units. (Requires two 9V batteries.) Trip testing for both 555 & 586 trip units.	**EPSP18V**	**EPSP18V**
Spare flat cable for Power Stick.	**COMPCA**	**COMPCA**
COM20 Profibus Communications Module with ZSI for electronic trip units (order cable separately)	**COMPRO20**	**COMPRO20**
COM21 Modbus Communications Module with ZSI for electronic trip units (order cable separately)	**COMMOD21**	**COMMOD21**
Cable for COM20/21, 1.5 m (4.9 ft)	**COMKIT3**	**COMKIT3**
Cable for COM20/21, 3.0 m (9.8 ft)	**COMKIT6**	**COMKIT6**
Addressing Plug - assigns a field bus address without a PC by plugging into COM20/21	**3UF79100AA000**	**3UF79100AA000**

Door Cutouts & Extensions



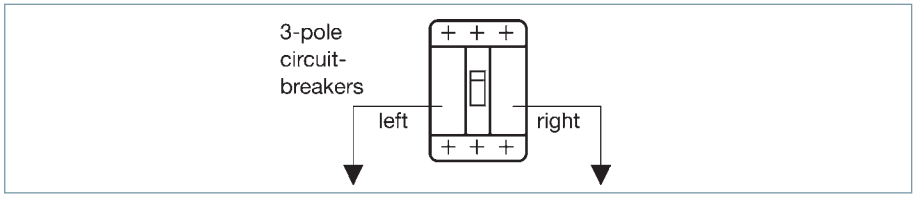
Cover Frame for Door Cutout

THEL

THEP

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.)	**—**	**—**

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	Catalog Number	Catalog Number	Catalog Number	Catalog Number
—	—	—	—	—
—	—	—	—	—
—	—	—	—	—
NGSJ250	—	—	—	—
NGSL400	NGSL400	—	—	—
—	NGSM600	NGSM600	—	—
—	—	NGSN800	NGSN800	—
—	—	—	NGSP120	NGSP120
—	—	—	—	NGSP160
ELTPHB	ELTPHB	ELTPHB	ELTPHB	ELTPHB
EPSP18V	EPSP18V	EPSP18V	EPSP18V	EPSP18V
COMPCA	COMPCA	COMPCA	COMPCA	COMPCA
COMPRO20	COMPRO20	COMPRO20	COMPRO20	COMPRO20
COMMOD21	COMMOD21	COMMOD21	COMMOD21	COMMOD21
COMKIT4	COMKIT4	COMKIT5	COMKIT5	COMKIT5
COMKIT7	COMKIT7	COMKIT8	COMKIT8	COMKIT8
3UF79100AA000	3UF79100AA000	3UF79100AA000	3UF79100AA000	3UF79100AA000
BZLL3	BZLL3	BZLM3	BZLP3	BZLP3
BZLLRHSE	BZLLRHSE	BZLMRHSE	BZLPRHSE	BZLPRHSE
BZLLBDC	BZLLBDC	BZLMBDC	BZLPBDC	BZLPBDC
THEL	THEL	THEM	THEP	THEP



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 Swich	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 Swiches	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

For applications using COMMOD20 and COMMOD21 for communication using Modbus or Profibus

DG, FG

COMKIT3 & COMKIT6 provide auxiliary contact kit. May add only one or two contact blocks for Alarm or Auxiliary function.

JG, LG

COMKIT4 & COMKIT7 provide auxiliary contact kit mounted in left pole pocket. One contact block can be added for Auxiliary function. Right pole pocket available for other release or an additional Auxiliary contact kit.

MG, NG, PG

COMKIT5 & COMKIT8 provide auxiliary contact kit mounted in Left pole pocket. Two contact blocks can be added for Auxiliary function and one for Alarm function. Right pole pocket available for other release or an additional Auxiliary Contact kit.

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 1NC Alarm 2NO Aux. and 1NC 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	RB	**STRLB24DC**
	48-60V DC	RC	**STRLC60DC**
	110-127V DC	RD	**STRLD125DC**
	220-250V DC	RE	**STRLE250DC**
	48-60V AC	RM	**STRLM60**
	110-127V AC	RN	**STRLN120**
	208-277V AC	RS	**STRLS277**
	380-600V AC	RV	**STRLV600**
MG, NG or PG	24V DC	RB	**STRPB24DC**
	48-60V DC	RC	**STRPC60DC**
	110-127V DC	RD	**STRPD125DC**
	220-250V DC	RE	**STRPE250DC**
	48-60V AC	RM	**STRPM60**
	110-127V AC	RN	**STRPN120**
	208-277V AC	RS	**STRPS277**
	380-600V AC	RV	**STRPV600**

Suffix for factory mounted Undervoltage Releases

If the frame is:	And you need these functions:	Then add this suffix:	Device Catalog Number
DG, FG, JG or LG	12V DC	UA	**UVRLA12DC**
	24V DC	UB	**UVRLB24DC**
	48V DC	UC	**UVRLC48DC**
	60V DC	UG	**UVRLG60DC**
	110-127V DC	UD	**UVRLD125DC**
	220-250V DC	UE	**UVRLE250DC**
	24V AC	UK	**UVRLL24**
	110-127V AC	UN	**UVRLN120**
	220-240V AC	UR	**UVRLR240**
	208V AC	UP	**UVRLP208**
	277V AC	US	**UVRLS277**
	380-415V AC	UT	**UVRLT415**
	440-480V AC	UU	**UVRLU480**
MG, NG or PG	12V DC	UA	**UVRPA12DC**
	24V DC	UB	**UVRPB24DC**
	48V DC	UC	**UVRPC48DC**
	60V DC	UG	**UVRPG60DC**
	110-127V DC	UD	**UVRPD125DC**
	220-250V DC	UE	**UVRPE250DC**
	110-127V AC	UN	**UVRPN120**
	220-240V AC	UR	**UVRPR240**
	208V AC	UP	**UVRPP208**
	277V AC	US	**UVRPS277**
	380-415V AC	UT	**UVRPT415**
	440-480V AC	UU	**UVRPU480**

		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.

		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							

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.

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: 50°C (122° F)	60° C (140° F)	Siemens Breaker Frames
50	46	42	DG
60	56	52	
70	65	60	
90	84	78	
100	94	87	
125	114	100	
150	136	120	
175	159	140	FG
200	182	160	
225	205	180	
250	235	220	JG
300	276	252	
350	325	301	
400	372	340	LG
500	468	435	
600	564	525	MG
700	658	613	
800	754	704	
900	828	749	NG
1000	900	825	
1200	1090	1000	
1400	1304	1148	PG
1600	1500	1320	

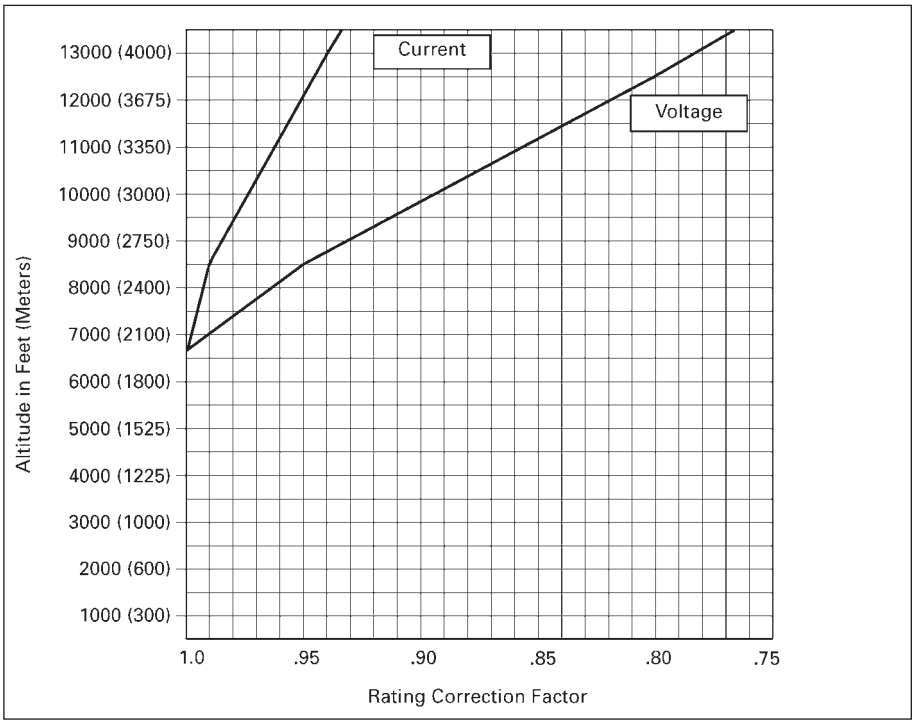


Figure 1 – Altitude adjustment

Unusual Operating Conditions 400 Hz Systems

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.

Interrupting Rating

Circuit breakers used in 400 Hz systems are limited to a 5000 A interrupting rating. If higher ratings are required, consult Siemens.

Breaker type	Maximum continuous ampere rating at 40°C (104°F)②			75°C (167F) Copper cable per pole	
	60HZ	400HZ			
	Open air	Open air③	Enclosed after derating	No of pieces	Wire size
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
	150	125	100	1	#1/0
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
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
	600	420	336	2	350 kcmil

Breaker type	Maximum continuous ampere rating at 40°C (104°F)②			75°C (167F) Copper cable per pole	
	60HZ	400HZ			
	Open air	Open air③	Enclosed after derating	No of pieces	Wire size
LG	400	300	240	2	#3/0
	500	375	300	2	250 kcmil
	600	420	336	2	350 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
NG 100% Rated	900	600	600	3	350 kcmil
	1000	650	650	3	400 kcmil
	1200	780	780	4	350 kcmil
	1200	780	624	4	400 kcmil
PG	1400	850	680	4	500 kcmil
	1600	960	768	5	500 kcmil
	1200	780	780	4	400 kcmil
PG 100% Rated	1400	850	850	4	500 kcmil
	1600	960	960	5	500 kcmil

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.

The term "Series Connected Short Circuit Rating" refers to the application of series circuit breakers in a combination that allows downstream breakers to have lower individual interrupting ratings than the available fault current.

This is permitted as long as the series combination has been tested and certified by UL.

The tables on these pages list specific main and branch breaker combinations that may be used for the short circuit interrupting ratings shown.

No substitutions are permitted. All combinations shown have been tested and are UL Listed. This information is provided as a reference tool only. **For verification of specific combination ratings consult the UL Recognized Components Directory**.

240V Breaker Series Ratings

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
22000	QPH, BQH, BLH	70 (1P) 125 (2P) 100 (3P)	QP, BQ, BL	1 2 3	120/240 240 240	15-70 15-125 15-100
			QE, BLE, QPF, BLF	2	120/240	15-60
			QE, BLE, BE, QPF, BQF, BLF QPF2, BLF2	1	240	15-30
			QT	1, 2	120/240	15-40
			QG, BG, BLG	1, 2	120/240	15-30
			BAF, QAF, QAF2, BAF2, QFGA2, BFGA2	1	120	15-20
			BAF, QAF	2	120/240	15-20
	QPMH	200 (2P)	QP	1	120 120/240	15-25 35-70
				2	120/240	15-25 35-125
			QE, QPF	1 2	120/240	15-30 15-60
			QAF, BAF	1 2	120 120/240	15-20 15-20
			QT	2	120/240	15-30
	QJH2	225 (2P, 3P)	QP, BQ, BL	1 2 3	120/240 240 240	15-70 15-125 60-100
			QPF, BQF, BLF, BG, BLG QE, BE, BLE, QPF2, BLF2	1	120	15-30
			QPF, BLF, BG, BLG, QE BE, BLE	2	120/240	15-60
			BAF, QAF, QAF2, BAF2	1	120	15-20
			BAF, QAF	2	120/240	15-20
			QT	1, 2	120/240	15, 20, 40
			QR2	2,3	240	100-225
	QPPH	225 (2P)	QP, BQ, BL	1 2	120/240 120/240	15-70 15-125
			QE, BLE, BE, QPF, BQF, BLF, QPF2, BLF2	1	120	15-30
			QE, BLE, BE, QPF, BLF	2	120/240	15-60
			BAF, QAF, QAF2, BAF2	1	120	15-20
			BAF, QAF	2	120/240	15-20
			QPP	2	120/240	125-200
			QT	1, 2	120/240	15-40
	QRH2	250 (2, 3P)	QP,BQ,BL	1 2 2 3	120/240 120/240 240 240	15-70 15-125 15-125 15-100
			QG, BG, BLG	1 2	120 120/240	15-30 15-30
			QT	1,2	120/240	15-50
			QFGA2, BFGA2, QAF2, BAF2, QAF, BAF	1	120	15-20
			QAF, BAF	2	120/240	15-20
			QPF2, BLF2, QPF, BQF, BLF, QE, BLE, BE	1	120	15-30
			QPF, BLF, QE, BLE	2	120/240	15-60
			QN, QNR	2	120/240	150-200
			QS	2	120/240	100-225
			QR2	2	120/240	100-250
42000	QJ2H	225 (2, 3P)	QP, BQ, BL	1 2 3	120/240 120/240 240	15-70 15-125 60-100
			QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QR2, QRH2	2,3	240	100-225
			QJH2	2, 3	240	60-225
65000	HQP, HBQ, HBL	70 (1P) 125 (2P) 100 (3P)	QP, BQ, BL, QPH, BQH, BLH	1 2 3	120/240 240 240	15-70 15-125 15-100
			QPF, BQF, BLF, BE, QPHF, BQHF, BLHF, QEH, BLEH, QE, BLE, QPF2, BLF2, QPHF2, BLHF2, QPHF2, BLHF2	1	120	15-30
			QEH, BLEH, QE, QPHF, BLHF, BLE, QPF, BLF	2	120/240	15-60
			QT	1, 2	120/240	15-40
			QG, BG, BLG	1, 2	120/240	15-30

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
65000 (cont.)	HQP, HBQ, HBL	70 (1P) 125 (2P) 100 (3P)	BAF, QAF, BQAF, QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			BAF, QAF	2	120/240	15-20
	ED4, ED4, ED6	100 (1P) 125 (2P, 3P)	QP, BQ, BL QPH, BQH, BLH	1 2 3	120/240 240 240	15-70 15-125 15-100
			QPHF, BQHF, BLHF, QPF, BQF, BLF, QE, QEH, BLEH, BE, BLE, QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QEH, BLEH, QE, QPHF, BLHF,BLE, QPF, BLF	2	120/240	15-60
			QAF2, BAF2, BAF, QAF, BQAF, QAFH2, BAFH2, QAFH, BQAFH, BAFH, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QAF, BAF, QAFH, BAFH	2	120/240	15-20
			ED2	1,2,3	120/240	15-100
			QT	1,2	120/240	15-40
	NDGA, NDGB	150 (2P, 3P)	QPH, BQH, BLH	1 2 3	120/240 240 240	15-70 15-125 15-100
	HQPP	225 (2P)	QP, BQ, BL, QPH, BQH, BLH	1 2	120/240 120/240	15-70 15-125
			QPF, BQF, BLF, QPHF, BQHF, BLHF, QEH, BLEH, QE, BLE, BE, BLF2, QPF2, QFGA2, BFGA2	1	120/240	15-30
			QEH, BLEH, QE, QPHF, BLHF, BLE, QPF, BLF	2	120/240	15-60
			BAF, QAF, BQAF, QAF2, BAF2, QAFH2, BAFH2, QAFH, BQAFH, QFGAH2, BFGAH2	1	120	15-20
			BAF, QAF, QAFH, BAFH	2	120/240	15-20
			QT	1, 2	120	15-40
			QPPH, QPP	2	120/240	125-200
	FD6-A, FXD6-A	250 (2P,3P)	QP, BQ, BL QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QPF, QPHF, BLF, BLHF	1,2	120/240	15-60
			QPF2, BLF2, QPHF2, BLHF2	1 2	120 120/240	15-30 15-60
			QAF, BAF, QAF2, BAF2, BQAF, QAFH2, BAFH2, QAFH, BQAFH, BAFH, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QAF, BAF, QAFH, BAFH	2	120/240	15-20
			QR2, QRH2	2,3	240	100-225
			QJ2H, QJ2, QJH2	2,3	240	60-225
			QPPH	2	120/240	125-225
	NFGA, NFGB		QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QR2, QRH2	2,3	240	100-250
	HQR2		QP, BQ, BL	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QT	1,2	120/240	15-50
			QFGA2, BFGA2, QAF2, BAF2, QAF, BAF	1	120	15-20
			QAF, BAF	2	120/240	15-20
			QPF2, BLF2, QPF, BQF, BLF, QE, BLE, BE	1	120	15-30
			QPF, BLF, QE, BLE	2	120/240	15-60
			QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
65000 (cont.)	HQR2 (cont.)	250 (2P, 3P)	QFGAH2, BFGAH2, QAFH2, BAFH2, QAFH, BAFH	1	120	15-20
			QAFH, BAFH	2	120/240	15-20
			QPHF, BLHF, QPHF2, BLHF2, QEH, BLEH	1	120	15-30
			QEH, BLEH, QPHF, BLHF	2	120/240	15-60
			QN, QNH, QNR, QNRH	2	120/240	150-200
			QS, QSH, QSHH	2	120/240	100-225
			QR2, QRH2	2,3	240	100-250
	JXD2-A, JD6-A JXD6-A	400 (2P, 3P)	QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2	2,3	240	100-250
			QJ2H, QJH2	2,3	240	60-225
	NJGA/ NJJA		QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QR2, QRH2	2,3	240	100-250
			QN, QNH	2	120/240	150-200
			QNR, QNRH	2	120/240	150-200
	SJD6-A SJD6-B		QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2	2,3	240	100-250
	HJD6-A, HJXD6		QPH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
	LD6-A LXD6-A	600 (2P, 3P)	QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QR2, QRH2	2,3	240	100-250
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QJ2H, QJH2	2,3	240	60-225
	NLGA, NLGB		QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QR2, QRH2	2,3	240	100-250
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QN, QNH	2	120/240	150-200
			QNR, QNRH	2	120/240	150-200
	SLD6-A SLD6-B		QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2	2,3	240	100-250
	HLD6-A, HLXD6-A		QPH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
	MD6, MXD6	800 (2P, 3P)	QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2	2,3	240	100-250

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
65000 (cont.)	NMG, HMG	800 (2P, 3P) (cont.)	QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2	2,3	240	100-250
			QN, QNH	2	120/240	150-200
			QNR, QNRH	2	120/240	150-200
	SMD6 SMD6-B		QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2	2,3	240	100-250
	HMXD6 HMD6		QPH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
	ND6, NXD	1200 (2P, 3P)	QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2	2,3	240	100-250
	NNG, HNG		QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2	2,3	240	100-250
			QN, QNH	2	120/240	150-200
			QNR, QNRH	2	120/240	150-200
	SND6 SND6-B		QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2	2,3	240	100-250
	HND6, HNXD6		QPH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, QPHF2, BLHF2	1	120	15-30
	SPD6, SPD6-B, PD6, PXD6	1600 (2P, 3P)	QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QR2, QRH2	2,3	240	100-250
	NPG		QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QR2, QRH2	2,3	240	100-250
			QN, QNH	2	120/240	150-200
			QNR, QNRH	2	120/240	150-200
	HPD6, HPXD6		QPH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
	HRD6, HRXD6	2000 (2P, 3P)	QPH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QR2, QRH2	2,3	240	100-250
	RD6, RXD6		QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
100000	HED4	100 (1P)	ED2, ED4	1	120	15-100
	HED4, HED6	125 (2P, 3P)	QP, BQ, BL, QPH, BQH, BLH, HQP, HBQ, HBL,	1 2 3	120/240 240 240	15-70 15-125 15-100
			QAF2, BAF2, QAF, BQAF, BAF, QAFH2, BAFH2, HQAF2, HBAF2, QAFH, BQAFH, BAFH, QFGA2, BFGA2 HQFGA2, HBF-GA2, QFGAH2, BFGAH2	1	120	15-20
			QAF, BAF, QAFH, BAFH	2	120/240	15-20
			QEH,BLEH, QE, BE, QPHF,BQHF, BLHF, QPF, BLF, BQF, BLE, QPF2, BLF2, QPHF2, BLHF2, HQPF2, HBLF2	1	120	15-30
			QEH, BLEH, QPHF, QE, BLHF,QPF,BLF, BLE	2	120/240	15-60
			ED2	1,2,3	120/240	15-100
			ED4	1	120	15-100
			ED4, ED6	2,3	240	15-125
			QT	1,2	120/240	15-40
	NGB, HGB, LBG		QAF2, QAFH2, QAF, BQAF, BAF, BAFH2, HQAF2, HBAF2, QAFH, BQAFH, BAFH, QFGA2, BFGA2 HQFGA2, HBF-GA2, QFGAH2, BFGAH2	1	120	15-20
			QAF, BAF, QAFH, BAFH	2	120/240	15-20
			QPF,BQF,BLF, QPHF, BQHF, BLHF, QPF2, BLF2, QPHF2, BLHF2, HQPF2, HBLF2	1	120	15-30
			QPF, BLF	2	120/240	15-60
	NGB, HGB, LBG		QP, BQ, BL, QPH, BQH, BLH, HQP, HBQ,HBL	1 2 3	120 120/240 240	15-70 15-125 15-100
	HDGA, HDGB	150 (2P, 3P)	ED4, ED6	1	240	15-100
			ED4, ED6	2,3	240	15-125
			NDGA, NDGB	2,3	240	50-150
	HQPPH	225 (2P)	QP, BQ, BL, QPH, BQH, BLH, HQP, HBQ, HBL	1 2	120/240 120/240	15-70 15-125
			HQPP, QPPH, QPP	2	120/240	125-225
			QAF2, BAF2, QAF, BQAF, BAF, QAFH2, BAFH2, HQAF2, HBAF2, QAFH, BQAFH, BAFH, QFGA2, BFGA2 HQFGA2, HBF-GA2, QFGAH2, BFGAH2	1	120	15-20
			QAF, BAF, QAFH, BAFH	2	120/240	15-20
			QEH, BLEH, QE, BE, QPHF, BQHF, BLHF, QPF, BQF, BLF, BLE, QPF2, BLF2, QPFH2, BLHF2, HQPF2, HBLF2	1	120	15-30
			QE, QEH, BLEH, QPHF,BLHF,QPF,BLF,BLE	2	120/240	15-60
			QR2, QRH2, HQR2	2	120/240	100-225
			QT	1,2	120/240	15-40
	HQJ2H	225 (2P, 3P)	QP, BP, QL	1	120/240	15-25 35-70
				2	120/240	15-25 35-125
				3	240	15-100
			QR2, QRH2, HQR2	2,3	240	100-225
			QPH, BQH, BLH, HQP, HBQ ,HBL	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAF, BQAF, BAF, QAFH2, BAFH2, HQAF2, HBAF2, QAFH, BQAFH, BAFH, QFGA2, BFGA2 HQFGA2, HBF-GA2, QFGAH2, BFGAH2	1	120	15-20
			QAF, BAF, QAFH, QAFH	2	120/240	15-20
			QEH, BLEH, QE, BE, QPHF, BQHF, BLHF, QPF, BQF, BLF, BLE, QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QEH, BLEH, QPHF, BLE, BLHF, QE, QPF, BLF	2	120/240	15-60
			QT	1	120/240	15-50

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
100000 (cont.)	HFD6, HFXD6	250 (2P, 3P)	QP, BQ, BL, QPH, BQH, BLH, HQP, HBQ, HBL	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAF, BQAF, BAF, QAFH2, BAFH2, HQAF2, HBAF2, QAFH, BQAFH, BAFH, QFGA2, BFGA2 HQFGA2, HBF-GA2, QFGAH2, BFGAH2	1	120	15-20
			QAF, BAF, QAFH, BAFH	2	120/240	15-20
			QE, BE, BLE, QPHF, BQHF, BLHF, QPF, BQF, BLF, QEH, BLEH, QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QPF, BLF, BLE, BLEH, QPHF, BLHF, QEH, QE	2	120/240	15-60
			ED4	1	120	15-100
			ED4, ED6	2,3	240	15-125
			FD6-A, FXD6-A	2,3	240	70-250
			QJ2, QJH2, QJ2H	2,3	240	60-225
			HQPP, QPPH, QPP	2	120/240	125-225
			QR2, QRH2, HQR2	2,3	240	100-250
			QT	1,2	120/240	15-40
			NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
	HFGA, HFGB		ED4, ED6	1	240	15-100
			ED4, ED6	2,3	240	15-125
			NFGA, NFGB	2, 3	240	70-250
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2, HQR2	2,3	240	100-250
			FD6, FXD6	2, 3	240	70-250
			FD6-A, FXD6-A	2, 3	240	70-250
	HQR2H		QP, BQ, BL	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QT	1,2	120/240	15-50
			QFGA2, BFGA2, QAF2, BAF2, QAF, BAF	1	120	15-20
			QAF, BAF	2	120/240	15-20
			QPF2, BLF2, QPF, BQF, BLF, QE, BLE, BE	1	120	15-30
			QPF, BLF, QE, BLE	2	120/240	15-60
			QPH, BQH, BLH	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QFGAH2, BFGAH2, QAFH2, BAFH2, HQFGA2, HBFGA2, HQAF2, HBAF2, QAFH, BAFH	1	120	15-20
			QAFH, BAFH	2	120/240	15-20
			QPHF, BLHF, QPHF2, BLHF2, QEH, BLEH, HQPF2, HBLF2	1	120	15-30
			QEH, BLEH, QPHF, BLHF	2	120/240	15-60
			HQP, HBQ, HBL	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QS, QSH, QSHH, HQS	2	120/240	100-225
			QR2, QRH2, HQR2	2,3	240	100-250
	HJD6-A, HJXD6-A	400 (2P, 3P)	ED4	1	120	15-100
			ED4, ED6	2, 3	240	15-125
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2, HQR2	2,3	240	100-250
			FD6-A, FXD6-A	2, 3	240	70-250
			JD6-A, JXD6-A JXD2-A, SJD6-A	2, 3	240	200-400
			NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
100000 (cont.)	HJGA	400 (2P, 3P)	ED4, ED6	1	240	15-100
			ED4, ED6	2,3	240	15-125
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			NFGA, NFGB	2, 3	240	70-250
			FD6, FXD6	2, 3	240	70-250
			FD6-A, FXD6-A	2, 3	240	70-250
			QR2, QRH2, HQR2	2,3	240	100-250
			NJGA, NJJA	2, 3	240	200-400
			JD6, JXD6	2, 3	240	200-400
			JD6-A, JXD6-A	2, 3	240	200-400
	SHJD6, SHJD6-A, SHJD6-B	400 (3P)	ED4	1	120	15-100
			ED4, ED6	2, 3	240	15-125
			FD6-A, FXD6-A	2, 3	240	70-250
			JD6-A, JXD6-A JXD2-A, SJD6-A, SJD6-B	2, 3	240	200-400
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2, HQR2	2,3	240	100-250
			NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
	HLD6-A, HLXD6-A	600 (2P, 3P)	ED4	1	120	15-100
			ED4, ED6	2,3	240	15-125
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			FD6-A, FXD6-A	2,3	240	70-250
			JD6-A, JXD6-A, JXD2-A, SJD6-A, SJD6-B	2,3	240	200-400
			LD6-A	2,3	240	200-600
			LXD6-A	2,3	240	450-600
			SLD6-A, SLD6-B	3	240	300-600
			QR2, QRH2, HQR2	2,3	240	100-250
			NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
	HLGA, HLGB		ED4, ED6	1	240	15-100
			ED4, ED6	2,3	240	15-125
			NFGA, NFGB	2, 3	240	70-250
			FD6, FXD6	2, 3	240	70-250
			FD6-A, FXD6-A	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			JD6, JXD6	2, 3	240	200-400
			JD6-A, JXD6-A	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2, HQR2	2,3	240	100-250
			LD6, LD6-A	2, 3	240	200-600
			LXD6, LXD6-A	2, 3	240	450-600
	SHLD6, SHLD6-A, SHLD6-B	600 (3P)	ED4	1	120	15-100
			ED4, ED6	2,3	240	15-125
			FD6-A, FXD6-A	2,3	240	70-250
			JD6-A, JXD6-A, JXD2-A, SJD6-A, SJD6-B	2,3	240	200-400
			LD6-A	2,3	240	200-600
			LXD6-A	2,3	240	450-600
			SLD6-A, SLD6-B	3	240	300-600
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
100000 (cont.)	SHLD6, SHLD6-A SHLD6-B (cont.)	600 (3P) (cont.)	QR2, QRH2, HQR2	2,3	240	100-250
			NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
	HMG	800 (2P, 3P)	ED4, ED6	1	240	15-100
			ED4, ED6	2,3	240	15-125
			NFGA, NFGB	2, 3	240	70-250
			FD6, FXD6	2, 3	240	70-250
			FD6-A, FXD6-A	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			JD6, JXD6	2, 3	240	200-400
			JD6-A, JXD6-A	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
			LD6, LD6-A	2, 3	240	200-600
			LXD6, LXD6-A	2, 3	240	450-600
			NMG	2, 3	240	600-800
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2, HQR2	2,3	240	100-250
			LMD6, LMXD6	2, 3	240	600-800
			MD6, MXD6	2, 3	240	400-800
	HMD6, HMXD6		NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
			NMG	2, 3	240	600-800
			ED4	1	120	15-100
			ED4, ED6	2,3	240	15-125
			FD6-A, FXD6-A	2,3	240	70-250
			JD6-A, JXD6-A, JXD2-A, SJD6-A	2,3	240	200-400
			LD6-A	2,3	240	200-600
			LXD6-A	2,3	240	450-600
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2, HQR2	2,3	240	100-250
			SLD6-A, SLD6-B	3	240	300-600
			MD6, MXD6	2,3	240	500-800
			SMD6, SMD6-B	3	240	600-800
	SHMD6, SHMD6-B	800 (3P)	NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
			NMG	2, 3	240	600-800
			ED4	1	120	15-100
			ED4, ED6	2,3	240	15-125
			FD6-A, FXD6-A	2,3	240	70-250
			JD6-A, JXD6-A, JXD2-A	2,3	240	200-400
			SJD6-A, SJD6-B	2,3	240	200-400
			LD6-A	2,3	240	200-600
			LXD6-A	2,3	240	450-600
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2, HQR2	2,3	240	100-250
			SLD6-A, SLD6-B	3	240	300-600
			MD6, MXD6, SMD6, SMD6-B	2,3	240	500-800
	HNG	1200 (2P, 3P)	ED4, ED6	1	240	15-100
			ED4, ED6	2,3	240	15-125
			NFGA, NFGB	2, 3	240	70-250
			FD6, FXD6	2, 3	240	70-250
			FD6-A, FXD6-A	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			JD6, JXD6	2, 3	240	200-400
			JD6-A, JXD6-A	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
			LD6, LD6-A	2, 3	240	200-600
			LXD6, LXD6-A	2, 3	240	450-600

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
100000 (cont.)	HNG (cont.)	1200 (2P, 3P)	QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2, HQR2	2,3	240	100-250
			NMG	2, 3	240	600-800
			LMD6, LMXD6	2, 3	240	600-800
			NNG	2, 3	240	800-1200
			ND6, NXD6	2,3	240	600-1200
	HND6, HNXD6		ED4	1	240	15-100
			ED4, ED6	2,3	240	15-125
			FD6-A, FXD6-A	2,3	240	70-250
			JD6-A, JXD6-A, JXD2-A, SJD6-A	2,3	240	200-400
			LD6-A	2,3	240	200-600
			LXD6-A	2,3	240	450-600
			SLD6-A, SLD6-B	3	240	300-600
			MD6, MXD6, SMD6	2,3	240	500-800
			ND6, NXD6, SND6, SND6-B	2,3	240	500-1200
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2, HQR2	2,3	240	100-250
			NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
			NMG	2, 3	240	600-800
			NNG	2, 3	240	800-1200
	SHND6, SHND6-B	1200 (3P)	ED4	1	240	15-100
			ED4, ED6	2,3	240	15-125
			FD6-A, FXD6-A	2,3	240	70-250
			JD6-A, JXD6-A, JXD2-A, SJD6-A	2,3	240	200-400
			LD6-A	2,3	240	200-600
			LXD6-A	2,3	240	450-600
			SLD6-A, SLD6-B	3	240	300-600
			MD6, MXD6, SMD6, SMD6-B	2,3	240	500-800
			ND6, NXD6, SND6, SND6-B	2,3	240	500-1200
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2 HQFGA2, HBFGA2, QFGAH2, BFGAH2	1	120	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	120	15-30
			QR2, QRH2, HQR2	2,3	240	100-250
			NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
			NMG	2, 3	240	600-800
			NNG	2, 3	240	800-1200
	HPG	1600 (2P, 3P)	ED4, ED6	1	240	15-100
			ED4, ED6	2,3	240	15-125
			NFGA, NFGB	2, 3	240	70-250
			FD6, FXD6	2, 3	240	70-250
			FD6-A, FXD6-A	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			JD6, JXD6	2, 3	240	200-400
			JD6-A, JXD6-A	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
			LD6, LD6-A	2, 3	240	200-600
			LXD6, LXD6-A	2, 3	240	450-600
			QR2, QRH2, HQR2	2,3	240	100-250
			NMG	2, 3	240	600-800
			LMD6, LMXD6	2, 3	240	600-800
			MD6, MXD6	2, 3	240	400-800
			NNG	2, 3	240	800-1200
			ND6, NXD6	2, 3	240	600-1200
			NPG	2, 3	240	1200-1600
			PD6, PXD6	2, 3	240	1200-1600

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
100000 (cont.)	HPD6, HPXD6, SHPD6 SHPD6-B	1600 (3P)	ED4	1	240	15-100
			ED4, ED6	2,3	240	15-125
			JD6-A, JXD6-A JXD2-A	2,3	240	200-400
			SJD6-A, SJD6-B	3	240	200-400
			LD6-A	2,3	240	200-600
			LXD6-A	2,3	240	450-600
			SLD6-A, SLD6-B	3	240	300-600
			MD6, MXD6,	2,3	240	500-800
			SMD6, SMD6-B	3	240	600-800
			ND6, NXD6, SND6, SND6-B	2,3	240	500-1200
			PD6, PXD6	2,3	240	1200-1600
			SPD6, SPD6-B	3	240	1400-1600
			QR2, QRH2, HQR2	2,3	240	100-250
			NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			NLGA, NLGB	2, 3	240	400-600
			NMG	2, 3	240	600-800
			NNG	2, 3	240	800-1200
			NPG	2, 3	240	1200-1600
	SHPD6, SHPD6-B		ED4	1	240	15-100
			ED4, ED6	2,3	240	15-125
			FD6-A, FXD6-A	2,3	240	70-250
			JD6-A, JXD6-A, JXD2-A	2,3	240	200-400
			SJD6-A, SJD6-B	3	240	200-400
			LD6-A	2,3	240	200-600
			LXD6-A	2,3	240	450-600
			SLD6-A, SLD6-B	3	240	300-600
			MD6, MXD6,	2,3	240	500-800
			SMD6, SMD6-B	3	240	500-800
			ND6, NXD6	2,3	240	500-1200
			SND6, SND6-B	3	240	500-1200
			NPG, PD6, PXD6	2,3	240	1200-1600
			SPD6, SPD6-B	3	240	1400-1600
			NDGA, NDGB	2, 3	240	50-150
			NFGA, NFGB	2, 3	240	70-250
			NJGA, NJJA	2, 3	240	200-400
			NLGA	2, 3	240	400-600
			NMG	2, 3	240	600-800
			NNG	2, 3	240	800-1200
			NPG	2, 3	240	1200-1600
	HRD6, HRXD6	2000 (3P)	ED4	1	240	15-100
			ED4, ED6	2,3	240	15-125
			JD6-A, JXD6-A, JXD2-A	2,3	240	200-400
			SJD6-A, SJD6-B	3	240	200-400
			LD6-A	2,3	240	200-600
			LXD6-A	2,3	240	450-600
			SLD6-A, SLD6-B	3	240	300-600
			MD6,MXD6	2,3	240	500-800
			SMD6, SMD6-B	3	240	500-800
			ND6, NXD6,	2,3	240	500-1200
			SND6, SND6-B	3	240	500-1200
			PD6, PXD6	2,3	240	1200-1600
			SPD6, SPD6-B	3	240	1200-1600
			RD6, RXD6	2,3	240	1600-2000
			QR2, QRH2, HQR2	2,3	240	100-250
			NDGA, NDGB	2,3	240	50-150
			NFGA, NFGB	2,3	240	70-250
			NJGA, NJJA	2,3	240	200-400
			NLGA, NLGB	2,3	240	400-600
			NMG	2,3	240	600-800
			NNG	2,3	240	800-1200
			NPG	2,3	240	1200-1600
200000	CED6	125 (2P, 3P)	QP, BQ, BL QPH, BQH, BLH, HQP, HBQ, HBL	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAF, BQAF, BAF, QAFH2, BAFH2, HQAF2, HBAF2, QAFH, BQAFH, BAFH, HQFGA2, HBFGA2, QFGA2, QF-GAH2, BFGAH2	1	120	15-20
			BAF, QAF, BAFH, QAFH	2	120/240	15-20
			QPHF, BQHF, BLHF,QPF, BQF, BLF, QEH, QE, BE, BLEH, BLE	1	120	15-30
			QEH, BLEH, QAHF, QE, QPHF, BLHF, QPF, BLE, BLF	2	120/240	15-60
			ED4, HED4	1	120	15-100
			ED4, ED6, HED4, HED6	2,3	240	15-125
			QT	1,2	120/240	15-40
			NGB,HGB,LBG	1,2,3	240	15-125

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
200000 (cont.)	LDGA, LDGB	150 (2P, 3P)	NGB,HGB,LBG	1,2,3	240	15-125
			NDGA, NDGB, HDGA, HDGB	2, 3	240	50-150
	CFD6	250 (2P, 3P)	QP, BQ, BL, QPH, BQH, BLH, HQP, HBQ, HBL	1 2 3	120/240 120/240 240	15-70 15-125 15-100
			QAF2, BAF2, QAF, BQAF, BAF, QAFH2, BAFH2, HQAF2, HBAF2, QAFH, BQAFH, BAFH, HQFGA2, HBFGA2, QFGA2, QF-GAH2, BFGAH2	1	120	15-20
			BAF, QAF, BAFH, QAFH	2	120/240	15-20
			QPHF, BQHF, BLHF, QE, BE, BLE, QPF, BQF, BLF, QEH, BLEH, QAF, BAF	1	120	15-30
			QPHF, BLHF, QE, BLE, QPF, BLF, QEH, BLEH, QAF, BAF	2	120/240	15-60
			ED2	1,2,3	120/240	15-100
			HED4, ED4	1	120	15-100
			ED4, ED6, HED4, HED6	2,3	240	15-125
			FD6-A, FXD6-A HFD6, HFXD6	2,3	240	70-250
			QJ2H, QJH2, QJ2	2,3	240	60-225
			QPPH, QPP	2	120/240	125-225
			QT	1,2	120/240	15-40
			NGB,HGB,LBG	1,2,3	240	15-125
			NDGA, NDGB, HDGA, HDGB	2, 3	240	50-150
			NFGA, NFGB, HFGA, HFGB	2, 3	240	70-250
	LFGA, LFGB		NGB,HGB,LBG	1,2,3	240	15-125
			NDGA, NDGB, HDGA, HDGB	2, 3	240	50-150
			NFGA, NFGB, HFGA, HFGB		240	70-250
			HFD6, HFXD6		240	70-250
	CJD6-A	400 (2P, 3P)	QPH, BQH, BLH, HQP, HBQ, HBL	2 3	120/240 240	100-125 100
			ED4, ED6	2,3	240	15-125
			FD6-A, FXD6-A HFD6, HFXD6	2,3	240	70-250
			JXD2-A, JD6-A, JXD6-A, HJD6-A, HJXD6-A	2,3	240	200-400
			QT	1,2	120/240	15-30
			NGB,HGB,LBG	1,2,3	240	15-125
			NDGA, NDGB, HDGA, HDGB	2, 3	240	50-150
			NFGA, NFGB, HFGA, HFGB		240	70-250
			NJGA, HJGA, NJJA		240	200-400
	LJGA		NGB,HGB,LBG	1,2,3	240	15-125
			NDGA, NDGB, HDGA, HDGB	2, 3	240	50-150
			NFGA, NFGB, HFGA, HFGB		240	70-250
			HFD6, HFXD6		240	70-250
			NJGA, HJGA, NJJA		240	200-400
	HHJD6, HHJXD6		FD6-A, FXD6-A HFD6, HFXD6	2 3	240	70-250
			NDGA, NDGB, HDGA, HDGB	2, 3	240	50-150
			NFGA, NFGB, HFGA, HFGB		240	70-250
			NJGA, HJGA, NJJA		240	200-400
	HHLD6, HHLXD6	600 (2P, 3P)	FD6-A, FXD6-A HFD6, HFXD6	2, 3	240	70-250
			NDGA, NDGB, HDGA, HDGB	2, 3	240	50-150
			NFGA, NFGB, HFGA, HFGB		240	70-250
			NJGA, HJGA, NJJA		240	200-400
			NLGA, HLGA, NLGB, HLGB		240	400-600
	CLD6-A		QPH, BQH, BLH HQP, HBQ, HBL	2 3	120/240 240	100-125 100
			ED4, ED6	2,3	240	15-125
			FD6-A, FXD6-A HFD6, HFXD6	2,3	240	70-250
			JXD2-A, JD6-A, JXD6-A, HJD6-A, HJXD6-A	2,3	240	200-400
			LD6-A, HLD6-A	2,3	240	200-600

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
200000 (cont.)	CLD6-A (cont.)	600 (2P, 3P	LXD6-A, HJXD6-A	2,3	240	450-600
			QT	1,2	120/240	15-30
			NGB,HGB,LBG	1,2,3	240	15-125
			NDGA, NDGB, HDGA, HDGB	2 - 3	240	50-150
			NFGA, NFGB, HFGA, HFGB		240	70-250
			NJGA, HJGA, NJJA		240	200-400
			NLGA, HLGA, NLGB, HLGB		240	400-600
	LLGA, LLGB		NGB,HGB,LBG	1,2,3	240	15-125
			NDGA, NDGB, HDGA, HDGB	2, 3	240	50-150
			NFGA, NFGB, HFGA, HFGB		240	70-250
			HFD6, HFXD6		240	70-250
			NJGA, HJGA, NJJA		240	200-400
			NLGA, HLGA, NLGB, HLGB		240	400-600
	CMD6	800 (2P, 3P	ED4	1	240	15
			ED4, ED6, HED4, HED6	2,3	240	15-125
			FD6-A, FXD6-A, HFD6, HFXD6	2,3	240	70-250
			JXD2-A, JD6-A, JXD6-A, HJD6-A HJXD6-A	2,3	240	200-400
			LD6-A, HLD6-A	2,3	240	200-600
			LXD6-A, HLXD6-A	2,3	240	450-600
			MD6, MXD6, HMD6, HMXD6	2,3	240	500-800
			NDGA, NDGB, HDGA, HDGB	2,3	240	50-150
			NFGA, NFGB, HFGA, HFGB	2,3	240	70-250
			NJGA, HJGA, NJJA	2,3	240	200-400
			NLGA, HLGA, NLGB, HLGB	2,3	240	400-600
			NMG, HMG	2,3	240	600-800
	LMG		HFD6, HFXD6	2,3	240	70-250
			MD6, MXD6	2,3	240	400-800
			HMD6, HMXD6	2,3	240	400-800
			NDGA, NDGB, HDGA, HDGB	2,3	240	50-150
			NFGA, NFGB, HFGA, HFGB	2,3	240	70-250
			NJGA, HJGA, NJJA	2,3	240	200-400
			NLGA, HLGA, NLGB, HLGB	2,3	240	400-600
			NMG, HMG	2,3	240	600-800
	SCMD6, SCMD6-A SCMD6-B	800 (3P)	MD6, MXD6, HMD6, HMXD6	2,3	240	500-800
			NDGA, NDGB, HDGA, HDGB	2,3	240	50-150
			NFGA, NFGB, HFGA, HFGB	2,3	240	70-250
			NJGA, HJGA, NJJA	2,3	240	200-400
			NLGA, HLGA, NLGB, HLGB	2,3	240	400-600
			NMG, HMG	2,3	240	600-800
	CND6-A	1200 (2P, 3P)	ED4, ED6	1	240	15
			ED4, ED6, HED4, HED6	2,3	240	15-125
			FD6-A, FXD6-A, HFD6, HFXD6	2,3	240	70-250
			JXD2-A, JD6-A, JXD6-A, HJD6-A, HJXD6-A	2,3	240	200-400
			LD6-A, HLD6-A	2,3	240	200-600
			LXD6-A, HLXD6-A	2,3	240	450-600
			MD6, MXD6, HMD6, HMXD6	2,3	240	500-800
			ND6, NXD6, SHND6, HND6,HNXD6	2,3	240	500-1200
			NDGA, NDGB, HDGA, HDGB	2,3	240	50-150
			NFGA, NFGB, HFGA, HFGB	2,3	240	70-250
			NJGA, HJGA, NJJA	2,3	240	200-400
			NLGA, HLGA, NLGB, HLGB	2,3	240	400-600
			NMG, HMG	2,3	240	600-800

240V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
200000 (cont.)	LNG	1200 (2P, 3P)	HFD6, HFXD6	2,3	240	70-250
			MD6, MXD6 HMD6, HMXD6	2,3	240	400-800
			ND6,NXD6,HND6,HNXD6	2,3	240	600-1200
			NDGA, NDGB, HDGA, HDGB	2,3	240	50-150
			NFGA, NFGB, HFGA, HFGB	2,3	240	70-250
			NJGA, HJGA, NJJA	2,3	240	200-400
			NLGA, HLGA, NLGB, HLGB	2,3	240	400-600
			NMG, HMG	2,3	240	600-800
	SCND6-A, SCND6-B	1200 (3P)	MD6, HMD6, HMXD6, MXD6, MXD6	2,3	240	400-800
			SHMD6, SMD6, SHMD6-B, SMD6-B	2,3	240	400-800
			NMG, HMG	2,3	240	600-800
			ND6, HND6, NXD6, HNXD6	2,3	240	500-1200
			SHND6, SND6, SHND6-B, SND6-B	3	240	500-1200
	SCND6-A, SCND6-B	1200 (2P, 3P)	NDGA, NDGB, HNDGA, NDGB	2,3	240	50-150
			NFGA, NFGB, HFGA, HFGB	2,3	240	70-250
			NJGA, HJGA, NJJA	2,3	240	200-400
			NLGA, HLGA, NLGB, HLGB	2,3	240	400-600
			NMG, HMG	2,3	240	600-800
	CPD6	1600 (3P)	FD6-A, FXD6-A, HFD6, HFXD6	2,3	240	70-250
			JXD2-A, JD6-A, JXD6-A, HJD6-A, HJXD6-A	2,3	240	200-400
			LD6-A, HLD6-A	2,3	240	200-600
			LXD6-A, HLXD6-A	2,3	240	450-600
			MD6, MXD6, HMD6, HMXD6	2,3	240	500-800
			ND6, NXD6, HND6, HNXD6, SND6	2,3	240	500-1200
			NDGA, NDGB, HDGA, HDGB	2,3	240	50-150
			NFGA, NFGB, HFGA, HFGB	2,3	240	70-250
			NJGA, HJGA, NJJA	2,3	240	200-400
			NLGA, HLGA, NLGB, HLGB	2,3	240	400-600
			NMG, HMG	2,3	240	600-800
	LPG	1600 (2P, 3P)	MD6,MXD6, HMD6, HMXD6	2,3	240	400-800
			ND6,NXD6, HND6, HNXD6	2,3	240	600-1200
			PD6, PXD6, HPD6 HPXD6	2,3	240	1000-1600
			NDGA, NDGB, HDGA, HDGB	2,3	240	50-150
			NFGA, NFGB, HFGA, HFGB	2,3	240	70-250
			HFD6, HFXD6	2,3	240	70-250
			NJGA, HJGA, NJJA	2,3	240	200-400
			NLGA, HLGA, NLGB, HLGB	2,3	240	400-600
			NMG, HMG	2,3	240	600-800

480V Breaker Series Ratings

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
18,000	ED4	125 (2 & 3P)	BQD, CQD	1,2,3	15-100	277/480
25,000	ED6	125 (2P & 3P)	BQD, CQD	1,2,3	15-100	277/480
	NGB, HGB, LBG		BQD, CQD	1 2 3	15-100 15-100 15-100	277 277/480 277/480
	HED6		BQD, CQD	1,2,3	15-100	277/480
			ED4	1	15-100	277
			ED4, ED6	2,3	15-125	480
35,000	FD6-A, FXD6-A	250 (2P & 3P)	NGB,HGB,LBG	1 2 3	15-125 15-125 15-125	277 277/480 277/480
	JD6-A, JXD6-A	400 (2P & 3P)	NGB,HGB,LBG	1 2 3	15-125 15-125 15-125	277 277/480 277/480
42,000	HED4	125 (2P & 3P)	BQD, CQD	1,2,3	15-100	277/480
			ED4	1	15-100	277
			ED4, ED6	2,3	15-125	480
	HJD6-A, HJXD6-A	400 (2P & 3P)	NGB,HGB,LBG	1 2 3	15-125 15-125 15-125	277 277/480 277/480
50,000	HFD6, HFXD6	250 (2P & 3P)	NGB,HGB,LBG	1 2 3	15-125 15-125 15-125	277 277/480 277/480
	HJD6-A, HJXD6-A,	400 (2P & 3P)	HED4	2,3	15-50	480
	HLD6-A, HLXD6-A	600 (2P & 3P)	HED4	2,3	15-50	480
	MD6, MXD6	800 (2P & 3P)	FD6-A, FXD6-A	2,3	70-250	480
			JD6-A,JXD6-A	2,3	200-400	480
			SJD6-A, SJD6-B	3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			SLD6-A, SLD6-B	3	400-600	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
	SMD6 SMD6-B	800 (3P)	JD6-A, JXD6-A	2,3	200-400	480
			SJD6-A, SJD6-B	3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			SLD6-A, SLD6-B	3	400-600	480
			LMD6, LMXD6	2,3	600-800	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
	ND6, NXD6	1200 (2P & 3P)	FD6-A, FXD6-A	2,3	70-250	380
			JD6-A, JXD6-A	2,3	200-400	480
			SJD6-A, SJD6-B	3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			SLD6-A, SLD6-B	3	400-600	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG, LMD6, LMXD6	2,3	600-800	480
	SND6 SND6-B	1200 (3P)	JD6-A, JXD6-A	2,3	200-400	480
			SJD6-A, SJD6-B	3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			SLD6-A, SLD6-B	3	400-600	480
			LMD6, LMXD6	2,3	600-800	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
	SPD6, SPD6-B	1600 (3P)	JD6-A, JXD6-A	2,3	200-400	480
			SJD6-A, SJD6-B	3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			SLD6-A, SLD6-B	3	400-600	480

480V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
50,000 (cont.)	PD6, PXD6	1600 (3P)	FD6-A, FXD6-A	2,3	70-250	480
			JD6-A, JXD6-A	2,3	200-400	480
			SJD6-A	3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			SLD6-A, SLD6-B	3	400-600	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
			NNG	2,3	800-1200	480
			NPG	2,3	1200-1600	480
	RD6, RXD6	18-2000 (3P)	FD6-A, FXD6-A	2,3	70-250	480
			JD6-A, JXD6-A	2,3	200-400	480
			SJD6-A, SJD6-B	3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			SLD6-A, SLD6-B	3	400-600	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
			NNG	2,3	800-1200	480
			NPG	2,3	1200-1600	480
65,000	HDGA, HDGB	150 (2P & 3P)	NDGA, NDGB	2,3	50-150	480
	HFD6, HFXD6	250 (2P & 3P)	BQD, CQD	1,2,3	15-100	277/480
			ED4, HED4	1	15-100	277
			ED4, ED6, HED4, HED6	2,3	15-125	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB		70-250	480
	HFGA, HFGB		NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB		70-250	480
	HJD6-A, HJXD6-A	400 (2P & 3P)	HED4, ED4	1	15-100	277
			FD6-A, FXD6-A	2,3	70-250	480
			JD6-A, JXD6-A	2,3	200-400	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
	HJGA		NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NGB,HGB,LBG	1 2 3	15-125 15-125 15-125	277 277/480 277/480
	HHJD6, HHJXD6		NGB,HGB,LBG	1 2 3	15-125* 15-125* 15-125*	277 277/480 277/480
	HLD6-A, HLXD6-A	600 (2P & 3P)	ED4, HED4	1	15-100	277
			FD6-A, FXD6-A	2,3	70-250	480
			JD6-A, JXD6-A	2,3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
	HHLD6, HHLXD6		NGB,HGB,LBG	1 2 3	15-125 15-125 15-125	277 277/480 277/480
	HLGA, HLGB		NGB,HGB,LBG	1 2 3	15-125* 15-125* 15-125*	277 277/480 277/480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
	HMD6, HMXD6	800 (2P & 3P)	FD6-A, FXD6-A	2,3	70-250	480
			JD6-A, JXD6-A	2,3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			LMD6, LMXD6	2,3	600-800	480
			MD6, MXD6	2,3	400-800	480
			NDGA, NDGB, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480

480V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
65,000 (cont.)	HMG	800 (2P & 3P) (cont.)	LMD6,LMXD6	2,3	600-800	480
			MD6,MXD6	2,3	400-800	480
			SMD6, SMD6-B	3	500-800	480
			NDGA, NDGB, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
	HND6, HNXD6	1200 (2P & 3P)	FD6-A, FXD6-A	2,3	70-250	480
			JD6-A, JXD6-A	2,3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			MD6, MXD6	2,3	500-800	480
			SMD6, SMD6-B	3	500-800	480
			LMD6, LMXD6	2,3	600-800	480
			NDGA, NDGB, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
			NNG	2,3	800-1200	480
	HNG		LMD6,LMXD6	2,3	600-800	480
			MD6, MXD6	2,3	400-800	480
			ND6,NXD6	2,3	800-1200	480
			NDGA, NDGB, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
			NNG	2,3	800-1200	480
	HPD6, HPXD6	1600 (3P)	FD6-A, FXD6-A	2,3	70-250	480
			NDGA, NDGB, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
			NNG	2,3	800-1200	480
			NPG	2,3	1200-1600	480
	HPG	1600 (2P & 3P)	LMD6,LMXD6	2,3	600-800	480
			MD6, MXD6	2,3	400-800	480
			ND6,NXD6	2,3	800-1200	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
			NNG	2,3	800-1200	480
			NPG	2,3	1200-1600	480
	HRD6, HRXD6	18-2000 (3P)	FD6-A, FXD6-A	2,3	70-250	480
			JD6-A, JXD6-A	2,3	200-400	480
			LD6-A	2,3	200-600	480
			LXD6-A	2,3	450-600	480
			NDGA, NDGB	2,3	50-150	480
			NFGA, NFGB	2,3	70-250	480
			NJGA	2,3	250-400	480
			NLGA, NLGB	2,3	400-600	480
			NMG	2,3	600-800	480
			NNG	2,3	800-1200	480
			NPG	2,3	1200-1600	480
100,000	LDGA, LDGB	150 (2P & 3P)	NGB,HGB,LBG	1 2 3	15-125* 15-125* 15-125*	277 277/480 277/480
	CFD6	250 (2P & 3P)	BQD, CQD	1 2,3	15-100 15-30	277/480 277/480
	LFGA, LFGB		NGB,HGB,LBG	1 2 3	15-125* 15-125* 15-125*	277 277/480 277/480
			NDGA, NDGB, HDGA, HDGB	2,3	50-150	480
			NFGA, NFGB, HFGA, HFGB	2,3	70-250	480
			HFD6, HFXD6	2, 3	70-250	480
	HHFD6, HHFXD6		NGB,HGB,LBG	1 2 3	15-125* 15-125* 15-125*	277 277/480 277/480

480V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
100,000 (cont.)	HHJXD6, HHJD6,	400 (2P, 3P)	ED4, ED6, HED4, HED6	1	15-100	277
			HFD6, HFXD6, FXD6-A, FD6-A	2,3	70-250	480
			NDGA, NDGB, HDGA, HDGB	2,3	50-150	480
			NFGA, NFGB, HFGA, HFGB	2,3	70-250	480
			NJGA, HJGA	2,3	200-400	480
	CJD6-A		NGB,HGB,LBG	1 2 3	15-125* 15-125* 15-125*	277 277/480 277/480
	LJGA		NDGA, NDGB, HDGA, HDGB	2,3	50-150	480
			NFGA, NFGB, HFGA, HFGB	2,3	70-250	480
			HFD6, HFXD6	2,3	70-250	480
	HHLD6, HHLXD6	600 (2P, 3P)	ED4, ED6, HED4, HED6	1	15-100	277
			HFD6, HFXD6, FXD6-A, FD6-A	2,3	70-250	480
			NDGA, NDGB, HDGA, HDGB	2,3	50-150	480
			NFGA, NFGB, HFGA, HFGB	2,3	70-250	480
			NJGA, HJGA	2,3	200-400	480
	LLGA, LLGB		NDGA, NDGB, HDGA, HDGB	2,3	50-150	480
			NFGA, NFGB, HFGA, HFGB	2,3	70-250	480
			HFD6, HFXD6	2,3	70-250	480
			NJGA , HJGA	2,3	200-400	480
	CMD6	800 (3P)	FD6-A, FXD6-A HFD6-A, HFXD6-A	2,3	70-250	480
			JD6-A, HJD6-A, JXD6-A, HJXD6-A	2,3	200-400	480
			LD6-A, HLD6-A	2,3	200-600	480
			LXD6-A, HLXD6-A	2,3	450-600	480
			MD6, MXD6, HMD6, HMXD6	2,3	500-800	480
			NDGA, NDGB, HDGA, HDGB	2,3	50-150	480
			NFGA, NFGB, HFGA, HFGB	2,3	70-250	480
			NJGA, HJGA	2,3	200-400	480
			NLGA, HLGA, NLGB, HLGB	2,3	400-600	480
	LMG	800 (2P, 3P)	NDGA, NDGB, HDGA, HDGB	2,3	50-150	480
			NFGA, NFGB, HFGA, HFGB	2,3	70-250	480
			HFD6, HFXD6	2,3	70-250	480
			NJGA, HJGA	2,3	200-400	480
			NLGA, NLGB, HLGA, HLGB	2,3	400-600	480
			MD6, MXD6, HMD6, HMXD6	2,3	500-800	480
	SCMD-A SCMD6-B	800 (3P)	HFD6, HFXD6	2,3	70-250	480
	SCND6-A SCND6-B	1200 (3P)	HFD6, HFXD6	2,3	70-250	480
	LNG	1200 (2P, 3P)	NDGA, NDGB, HDGA, HDGB	2,3	50-150	480
			NFGA, NFGB, HFGA, HFGB	2,3	70-250	480
			HFD6, HFXD6	2,3	70-250	480
			NJGA, HJGA	2,3	200-400	480
			NLGA, HLGA, NLGB, HLGB	2,3	400-600	480
			MD6, MXD6, HMD6 HMXD6	2,3	400-800	480
			ND6, NXD6, HND6 HNXD6	2,3	600-1200	480

480V Breaker Series Ratings (continued)

Series Rating kAIR	Main Breaker		Branch Breaker			
	Type	Max. Amperes	Type	Number of Poles	Voltage	Amperes
100,000 (cont.)	CND6	1200 (3P)	FD6-A, FXD6-A	2,3	70-250	480
			HFD6-A, HFXD6-A	2,3	70-250	480
			JD6-A, HJD6-A JXD6-A, HJXD6-A	2,3	200-400	480
			LD6-A, HLD6-A	2,3	200-600	480
			LXD6-A, HLXD6-A	2,3	450-600	480
			MD6, MXD6 HMD6, HMXD6	2,3	500-800	480
			ND6, NXD6 HND6, HNXD6	2,3	500-1200	480
			NDGA, NDGB, HDGA, HDGB	2 - 3	50-150	480
			NFGA, NFGB, HFGA, HFGB		70-250	480
			NJGA, HJGA		200-400	480
			NLGA, HLGA, NLGB, HLGB		400-600	480
	CPD6	1600 (3P)	FD6-A, FXD6-A HFD6-A, HFXD6-A	2,3	70-250	480
			NDGA, NDGB, HDGA, HDGB	2,3	50-150	480
			NFGA, NFGB, HFGA, HFGB	2,3	70-250	480
			NJGA, HJGA	2,3	200-400	480
			NLGA, HLGA, NLGB, HLGB	2,3	400-600	480
	LPG (2,3P)	1600 (2P, 3P)	NDGA, NDGB, HDGA, HDGB	2,3	50-150	480
			NFGA, NFGB, HFGA, HFGB	2,3	70-250	480
			HFD6, HFXD6	2,3	70-250	480
			NJGA, HJGA	2,3	200-400	480
			NLGA, NLGB, HLGA, HLGB	2,3	400-600	480
			MD6, MXD6, HMD6, HMXD6	2,3	500-800	480
			ND6, NXD6, HND6 HNXD6	2,3	500-1200	480
			PD6,PXD6, HPD6 HPXD6	2,3	1200-1600	480
150,000	CJD6-A	400 (2P, 3P)	ED4	1	15-100	277
			HFD6, HFXD6	2,3	70-250	480
			JD6-A, HJD6-A, JXD6-A, HJXD6-A	2,3	200-400	480
	CLD6-A	600 (2P, 3P)	ED4	1	15-100	277
			HFD6, HFXD6	2,3	70-250	480
			JD6-A, HJD6-A, JXD6-A, HJXD6-A	2,3	200-400	480
			LD6-A, HLD6-A	2,3	200-600	480
			LXD6-A, HLXD6-A	2,3	450-600	480
200,000	CED6	125 (2P, 3P)	BQD, CQD	1	15-100	277
				2,3	20-30	277/480
			ED4, HED4	1	15-100	277
			ED4, ED6, HED4, HED6	2,3	15-125	480
			NGB,HGB,LBG	1 2 3	15-125 15-125 15-125	277 277/480 277/480
	CFD6	250 (2P, 3P)	BQD, CQD	1	15-100	277
				2,3	20-30	277/480
			ED4, ED6	2,3	15-50	277
			ED4, HED4	1	15-100	480
			HED4, HED6	2,3	15-125	480
			FD6-A, FXD6-A, HFD6, HFXD6	2,3	70-250	480
			NGB,HGB,LBG	1 2 3	15-125 15-125 15-125	277 277/480 277/480

240V Fuse Series Ratings

Series Rating kAIR	Main Fuse		Branch Breaker		
	Type	Max. Amperes	Type	Number of Poles	Max. Amperes
65,000	J, R	15-600 (1,2,3P)	QPH, BQH, BLH	1,2,3	15-125
	T	15-1200 (1,2,3P)	QPH, BQH, BLH	1,2,3	15-125
	L	601-6000 (1,2,3P)	QPH, BQH, BLH	1,2,3	15-125
100,000	T (300V)	15-200 (1,2,3P)	QP, BQ, BL	1,2,3	15-125
			HQP, HBQ, HBL, QPH, BQH, BLH	3	15-100
			QPF, BQF, BLF, QHPF, QE, BE, BLE, QEH, BLEH, BLHF, BQHF, QAF, BAF, QAFH, BAFH	1	15-30
			QEH, BLEH, QE, QPF, QPHF, BLHF, BLE, BLF, QAF, BAF, QAFH, BAFH	2	15-60
			QT	1,2	15-50
		15-600 (1,2,3P)	QPH, BQH, BLH, HQP, HBQ, HBL	1,2	15-125
	J, R	15-600 (2,3P)	ED4, HED4	1	15-100
			ED4, ED6, HED4, HED6	2,3	15-125
			QAF2, BAF2, QAFH2, BAFH2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	15-30
		70-600 (2,3P)	FD6-A, FXD6-A	2,3	70-250
		100-600 (2,3P)	QR2, QRH2, HQR2	2,3	100-250
		200-600 (2,3P)	JD6-A, JXD6-A, JXD2-A, SJD6-A, SJD6-B	2,3	200-400
			LD6-A	2,3	200-600
		300-600 (3P)	SLD6-A, SLD6-B	3	300-600
		450-600 (2,3P)	LXD6-A	2,3	450-600
	T	15-1200 (2,3P)	ED4, HED4	1	15-100
			ED4, ED6, HED4, HED6	2,3	15-125
			QAF2, BAF2, QAFH2, BAFH2, HQAF2, HBAF2, QFGA2, BFGA2, QFGAH2, BFGAH2	1	15-20
			QPF2, BLF2, HQPF2, HBLF2, QPHF2, BLHF2	1	15-30
		70-1200 (2,3P)	FXD6-A, FD6-A	2,3	70-250
		100-600 (2,3P)	QR2, QRH2, HQR2	2,3	100-250
		450-1200 (2,3P)	LXD6-A	2,3	450-600
		200-1200 (2,3P)	JD6-A, JXD6-A, JXD2-A	2,3	200-400
			SJD6-A, SJD6-B	3	200-400
			LD6-A	2,3	200-600
		300-1200 (3P)	SLD6-A, SLD6-B	3	300-600
	L	601-6000 (2,3P)	ED4, HED4	1	15-100
			ED4, ED6, HED4, HED6	2,3	
			FD6-A, FXD6-A	2,3	70-250
			JD6-A, JXD6-A, JXD2-A	2,3	200-400
			SJD6-A, SJD6-B	3	200-400
			LD6-A	2,3	200-600
			LXD6-A	2,3	450-600
			SLD6-A, SLD6-B	3	300-600
			SMD6, SMD6-B	3	500-800
			SND6, SND6-B	3	500-1200
			PD6, PXD6, SPD6	3	1200-1600
			RD6, RXD6	3	1600-2000

240V Fuse Series Ratings (continued)

Series Rating kAIR	Main Fuse		Branch Breaker		
	Type	Max. Amperes	Type	Number of Poles	Max. Amperes
200,000	R	125-200 (2,3P)	QJH2, QJ2H, QJ2	2,3	125-200
	T, J	125-600 (2,3P)	QJH2, QJ2H	2,3	125-225
		125-400 (2,3P)	QJ2	2,3	125-225
	J, R	70-600 (2,3P)	HFD6, HFXD6	2,3	70-250
	T	70-1200	HFD6, HFXD6	2,3	70-250
		600-1200 (2,3P)	NMG, HMG	2,3	600-800
	L	601-6000 (2,3P)	HFD6, HFXD6	2,3	70-250
			MD6, MXD6, HMD6, HMXD6	2,3	500-800
			NMG, HMG	2,3	600-800
			ND6, NXD6, HND6, HNXD6	2,3	500-1200
	J,R	15-600 (1,2,3P)	NGB,HGB,LBG	1,2,3	15-125
	J,R	50-600 (2,3P)	NDGA, HDGA	2,3	50-150
	J,R	70-600 (2,3P)	NFGA, HFGA	2,3	70-250
	J,R	200-600 (2,3P)	NJGA, HJGA	2,3	200-400
	J,R	400,600 (1,2,3P)	NLGA, HLGA	2,3	400-600
	T	15-1200 (1,2,3P)	NGB,HGB,LBG	1,2,3	15-125
	T	50-1200 (2,3P)	NDGA, HDGA	2,3	50-150
	T	70-1200 (2,3P)	NFGA, HFGA	2,3	70-250
	T	200-1200 (2,3)	NJGA, HJGA	2,3	200-400
	T	400-1200 (2,3P)	NLGA, HLGA	2,3	400-600
	L	601-6000 (2,3P)	NDGA, HDGA	2,3	50-150
			NFGA, HFGA	2,3	70-250
			NJGA, HJGA	2,3	200-400
			NJGA, HLGA	2,3	400-600

480V Fuse Series Ratings

Series Rating kAIR	Main Fuse		Branch Breaker		
	Type	Max. Amperes	Type	Number of Poles	Max. Amperes
50,000	J	60-400 (1,2,3P)	ED4	1	60-100
		15-400 (2,3P)	ED4	2,3	15-100
100,000	J	15-400 (1,2,3P)	ED4	1	15-50
	T, J	70-600 (2,3P)	FD6-A, FXD6-A	2,3	70-250
	J, R	70-600 (2,3P)	HFD6, HFXD6	2,3	70-250
	T, J, R	200-600 (2,3P)	JD6-A, JXD6-A HJD6-A, HJX	2,3	200-400
			LD6-A, HLD6	2,3	200-600
		450-600 (2,3P)	LXD6-A, HLD6	2,3	450-600
	T	70-1200 (2,3P)	HFD6, HFXD6	2,3	70-250
	T, L	601-1200 (2,3P)	JD6-A, JXD6-A HJD6-A, HJX	2,3	200-400
			LD6-A, HLD6	2,3	200-600
			LXD6-A, HLX	2,3	450-600
	L	601-6000 (2,3P)	HFD6, HFXD6	2,3	70-250
			MD6, MXD6 HMD6, HMXD6	2,3	500-800
			ND6, NXD6 HND6, HNXD6	2,3	500-1200
			NDGA, HDGA	2,3	50-150
			NFGA, HFGA	2,3	70-250
			NJGA, HJGA	2,3	200-400
			NLGA, HLGA	2,3	400-600
	J,R	50-600 (2,3P)	NDGA, HDGA	2,3	50-150
	J,R	70-600 (2,3P)	NFGA, HFGA	2,3	70-250
	J,R	200-600 (2,3P)	NJGA, HJGA	2,3	200-400
	J,R	400-600 (2,3P)	NLGA, HLGA	2,3	400-600
	T	601-1200 (2,3P)	NDGA, HDGA	2,3	50-150
	T	601-1200 (2,3P)	NFGA, HFGA	2,3	70-250
	T	601-1200 (2,3P)	NJGA, HJGA	2,3	200-400
	T	601-1200 (2,3P)	NLGA, HLGA	2,3	400-600
	L	601-6000 (2,3P)	NDGA, HDGA	2,3	50-150
			NFGA, HFGA	2,3	70-250
			NJGA, HJGA	2,3	200-400
			NLGA, HLGA	2,3	400-600
200,000	R	15-100 (1,2,3P)	BQD, CQD	1	15-100
			BQD, CQD	2,3	20-30
	T, J	15-200 (1,2,3P)	BQD, CQD	1	15-100
			BQD, CQD	2,3	20-30

IEC 947-2® AC Interrupting Ratings, 50/60 HZ KA

Reference

Ampere Rating	Breaker Frame	Breaker Type	220/240 Volts		380/415 Volts		500 Volts	
			Icu	Ics	Icu	Ics	Icu	Ics
15-125	ED	ED6	65	17	35	9	—	—
70-250	FD	FXD6	65	33	35	18	—	—
		FD6	65	33	35	18	—	—
		HFD6	100	50	65	33	—	—
		HFXD6	100	50	65	33	—	—
		HHFD6	200	100	100	50	—	—
		HHFXD6	200	100	100	50	—	—
250-400	JD	JXD6(A)	65	33	40	20	—	—
		JD6(A)	65	33	40	20	—	—
		HJD6(A)	100	50	65	33	—	—
		HJXD6(A)	100	50	65	33	—	—
		HHJD6	200	100	100	50	—	—
		HHJXD6	200	100	100	50	—	—
400-600	LD	LXD6(A)	65	33	40	20	—	—
		LD6(A)	65	33	40	20	—	—
		HLD6(A)	100	50	65	33	—	—
		HLXD6(A)	100	50	65	33	—	—
		HHLD6(A)	200	100	100	50	—	—
		HHLXD6	200	100	100	50	—	—
600-800	MD	MXD6	65	33	40	20	—	—
		MD6	65	33	40	20	—	—
		HMXD6	100	50	65	33	—	—
		HMD6	100	50	65	33	—	—
800-1200	ND	NXD6	65	33	40	20	—	—
		ND6	65	33	40	20	—	—
		HNXD6	100	50	65	33	—	—
		HND6	100	50	65	33	—	—

General Specifications

Molded case circuit breakers shall provide circuit overcurrent protection with inverse time and instantaneous tripping characteristics and shall be Siemens Sentron, Sensitrip or approved equal.

All circuit breakers shall be listed by Underwriters' Laboratories, Inc., conform to applicable requirements of NEMA Standard Publication No. AB1 and meet appropriate classifications of Federal Specifications W C 375B/Gen.

All circuit breakers shall have a quick-make, quick-break over center toggle type mechanism and the handle mechanism shall be trip free to prevent holding contacts closed against a short circuit or sustained overload. All circuit breaker handles shall assume a position between "ON" and "OFF when tripped automatically. Multi-pole circuit breakers shall be common-trip such that an overload or short circuit on any one pole will result in all poles opening simultaneously. Arc extinction is to be accomplished by magnetic arc chutes. All ratings are to be clearly visible. When reverse feed is indicated on the drawings, in accordance with UL, circuit breakers with sealed trip units shall be supplied.

Thermal Magnetic Specifications

Unless otherwise noted on the drawings, all Circuit breakers 2000 Ampere and below shall have thermal-magnetic trip units, with inverse time-current characteristics. Automatic operation of these circuit breakers shall be obtained by means of thermal-magnetic tripping devices located in each pole providing inverse time delay and instantaneous circuit protection. Circuit breakers shall be ambient compensating in that, as the ambient temperature increases over 40°C, the circuit breaker automatically derates itself so as to better protect its associated conductor. Thermal magnetic breakers from 250 to 2000A frames shall have thermal interchangeable trip units, with instantaneous magnetic trip settings that are adjustable and accessible from the front of all circuit breakers on frame sizes 250 Amperes and above. Where indicated, provide circuit breakers UL listed for application at 100% of their continuous ampere rating in their intended enclosure.

Motor Circuit Protectors

Where indicated on the drawings and in the combination motor starter/motor control center schedule, furnish instantaneous magnetic trip only circuit breakers for motor short circuit protection. The magnetic trips shall be adjustable and accessible from the front of all circuit breakers frames. The continuous current rating shall be between 1 and 800 Amperes as indicated on the drawing.

The interrupting rating of the circuit breakers shall be as indicated in the specifications, and shown on the drawing or single line diagram. The interrupting rating of the circuit breakers shall be at least equal to the available short circuit current at the line terminals of the circuit breaker and correspond to the UL listed integrated short circuit current rating specified.

Internal Accessories

Provide shunt trips, bell alarms, and auxiliary switches as shown on the contract drawings. Gold plated auxiliary switches shall be supplied for PLC connection. Internal accessories for all breakers shall be UL listed for field installation and modification.

Connection Accessories

Unless otherwise noted, Mechanical lugs shall be provided with all Molded Case Breakers. Where indicated on the drawings, compression lugs shall be provided on 1200 Ampere frame and below circuit breakers. All compression lugs shall be supplied by the Circuit Breaker Manufacturer. Where indicated on the drawings, UL listed plug-in or rear connectors shall be supplied.

Solid State Sensing Specifications

As indicated on the drawings, circuit breaker frames 400 Ampere through 3200-Ampere shall have microprocessor-based RMS sensing trip units, with the capability to measure through to the 21st harmonic. Automatic operation of all circuit breaker frames 400A and larger shall be obtained by means of solid state tripping elements providing inverse time delay and (instantaneous) and/or (short-time delay) circuit protection. Continuous current ratings shall be adjustable from 20% to 100% of the trip unit rating, without the need for a rating plug. Long-time delay and instantaneous trip shall be adjustable. The optional short-time trip function shall have adjustable pick-up settings, three fixed times, and I^2t ramp. Circuit breaker frames 400A and larger, and where indicated on the drawings, shall be 100% equipment rated.

Integral Ground Fault Option

Main and feeder circuit breakers, as indicated on the drawings, shall be provided with integral ground fault protection. Ground fault pick-up shall be adjustable from 20% to 70% of the circuit breakers maximum continuous current rating. Ground fault time delay shall be adjustable with three 1^2t ramps.

Metering Option

When indicated on the drawings, solid state trip breakers shall be furnished with a plug-in or panel mounted metering device. This device shall simultaneously display all three phase currents, as well as average current, ground current, and phase unbalance. In addition it shall display breaker status, a max log, and a trip log. The trip log will retain and display date, time and type of trip (overload, short circuit or ground fault) for the most recent 5 trip events.

Current Limiting Specifications

Where indicated on the drawings, Siemens current limiting circuit breakers are to be furnished. Current limiting circuit breakers shall limit the let-through I^2t to a value less than the I^2t of one-half cycle wave of the symmetrical prospective current without any fusible elements when operating within its current range.

Series Connected Combination Specifications

Where protective devices are applied in series combination, such that the prospective available fault current exceeds the interrupting rating (AIR) of the downstream protective devices, such combinations shall be UL recognized combinations. All electrical equipment using these UL recognized circuit breaker combinations shall be clearly marked in accordance with NEC Section 240-83(c).

Sentron Series	Note	Superseded	Note	Superseded
CED62B015-CED62B125	①	CLE62B015-CLE62B100	③	CE2B015-CE2B100
CED62S100A	①	CLE62S100	③	CE2S100
CED63A001-CED63A125	①	CLE63A001-CLE63A125		
CED63B015-CED63B125	①	CLE63B015-CLE63B100	③	CE3B015-CEB100
CED63S100A	①	CLE63S100	③	CE3S100
HHED63B015-HHED63B125	①	HED63B015-HED63B125		
CFD62A150, CFD62L150, CFD62A250	①	CLF62A150, CLF62A250		
CFD62B070-CFD62B250	①	CLF62B070-CLF62B240	③	CJ2B125-CJ2B250
CFD62S250A	①	CLF62S250		
CFD63A150, CFD63L150, CFD63A250	①	CLF63A150, CLF63A250		
CFD63B070-CFD63B250	①	CLF63B070-CLF63B250	③	CJ3B125-CJ3B250
CFD63S250A	①	CLF63S250		
CJD62B200-CJD62B400	①	CLJ62B100-CLJ62B400	④	CJ2B300-CJ2B400
CJD62H400, CJD62L400	①	CLJ62L400, CLJ62H400		
CJD62S400A	①	CLJ62S400	④	CJ2S400
CJD63B200-CJD63B400	①	CLJ63B200-CLJ63B400	④	CJ3B300-CJ3B400
CJD63H400, CJD63L400	①	CLJ63L400, CLJ63H400		
CJD63S400A	①	CLJ63S400	④	CJ3S400
CPD63B120-CPD63B160	⑤	CP3B120-CP3B160		
ED21B015-ED21B100	①	E21B015-E21B100	②	EE1B015-EE1B100
ED22B015-ED22B100	①	E22B015-E22B100	②	EE2B015-EE2B100
ED22S100A	①	E22S100A	②	EE2S100
ED23B015-ED23B100	①	E23B015-E23B100	②	EE3B015-EE3B100
ED23S100A	①	E23S100A	②	EE3S100
ED41B015-ED41B100	①	E41B015-E41B100	②	EH1B015-EH1B100
ED42B015-ED42B125	①	E42B015-E42B100	②	EH2B015-ED2B125
ED42S100A	①	E42S100	②	EH2S100
ED43B015-ED43B125	①	E43B015-E43B100	②	EH3B015-EH3B100
ED43S100A	①	E43S100	②	EH3S100
ED61B015-ED61B100	①	E61B015-E61B100	②	EF1B015-EF1B020
ED62B015-ED62B125	①	E62B015-E62B100	②	EF2B015-EF2B100
ED62S100A	①	E62S100A	②	EF2S100
ED63A001-ED63A125	①	E63A001-E63A125	②	EF3A003, EF3J050, EF3L050-EF3A100, EF3H1
ED63B015-ED63B125	①	E63B015-E63B100	②	EF3B015-EF3B100
ED63S100A	①	E63S100A	②	EF3S100
HHED63B015-HHED63B125	①	HED63B015-HED63B125		
FD62B070-FD62B250⑥	①	F62B070, F62B250		
FD63B070-FD63B250⑥	①	F63B070-F63B250		
FXD62A150, FXD62L150, FXD62A250	①	FJ62A150, FJ62L150-FJ62A250		
FXD62B070-FXD62B250⑥	①	FJ62B070-FJ62B250	②	FJ2B070-FJ2B225
FXD62S250A	①	FJ62S250	②	FJ2S225
FXD63A150, FXD63L150, FXD63A250	①	FJ63A150, FJ63L150-FJ63A250	②	FJ3A225
FXD63B070-FXD63B250⑥	①	FJ63B070-FJ63B250	②	FJ3B070-FJ3B225
FXD63S250A	①	FJ63S250	②	FJ3S225
HED41B015-HED41B100	①	HE41B015-HE41B100		
HED42B015-HED42B125	①	HE42B015-HE42B100		
HED43B015-HED43B125	①	HE43B015-HE43B100		
HED61B015-HED61B100	①	HE61B015-HE61B100	②	HE2B015-HE2B100
HED63B015-HED63B125	①	HE63B015-HE63B100	②	HE3B015-HE3B100
HFD62B070-HFD62B250	①	HF62B070-HF62B250		
HFD63B070-HFD63B250	①	HF63B070-HF63B250		
HHED63B015-HHED63B125	①	HED63B015-HED63B125		
HJD63B200-HJD63B400	①	HJ63B200-HJ63B400	②	HJ3B125-HJ3B400
HLD63B250-HLD63B600	①	HL63B450-HL63B600	②	HL3B450-HL3B600
HMD63B500-HMD63B800	②	HN3B500-HN3B800		
HND63B100-HND63B120	②	HK3B100-HK3B120		
HPD63B120-HPD63B160	②	HP3B120-HP3B160		
HRD63B160-HRD63B200	②	HR3B160-HR3B200		

①Mechanically and electrically interchangeable.
②Electrically interchangeable only, refer to sales office for further details.
③Electrically interchangeable only if the system interrupting capacity is less than or equal to:
200 kA at 240V AC
200 kA at 480V AC
100 kA at 600V AC

④Electrically interchangeable only if the system interrupting capacity is less than or equal to:
200 kA at 240V AC
150 kA at 480V AC
100 kA at 600V AC
⑤Refer to local sales office for replacement information.

⑥Effective 1994 — The FD6 and FXD6 types have been replaced by FD6-A and FXD6-A type thermal / magnetic circuit breakers — mechanically and electrically interchangeable with the exception that FXD6-A and FD6-A have 22kA at 600V AC ratings versus 18kA at 600V AC for types FXD6 and FD6.

Sentron Series	Note	Superseded	Note	Superseded
JD62B200-JD62B400	①	JLB200-JL62B400	②	JL2B070-JL2B400
JD63B200-JD63B400	①	JL63B200-JL63B400	②	JL3B0L0-JL3B400
JXD22B200-JXD22B400	①	JD22B200-JD22B400	②	JD2B250-JD2B400
JXD22S400A	①	JD22S400	②	JD2S400
JXD23B200-JXD23B400	①	JD23B200-JD23B400	②	JD3B250-JD3B400
JXD23S400A	①	JD23S400	②	JD3S400
JXD62B200-JXD62B400	①	JJ62B200-JJ62B400	②	JJ2B250-JJ2B400
JXD62H400, JXD62L400	①	JL62L400, JL62H400	②	JL2L400-JL2H400
JXD62S400A	①	JJ62S400A		
JXD63B200-JXD63B400	①	JJ63B200-JJ63B400	②	JJ3B200-JJ3B400
JXD63H400, JXD63L400	①	JL63A400, JL63H400, JL63L400	②	JL3H400, JL3L400, JL3A225
JXD63S400A	①	JJ63S400A		
LD62B250-LD62B500	①	LL63B250-LL62B600	②	LL2B450-LL2B600
LD62B250-LD63B600	①	LL63B250-LL63B600	②	LL3B450-LL3B600
LXD62B450-LXD62B600	①	LJ62B450-LJ62B600		
LXD62J600, LXD62L600	②	LL2H600, LL2U600, LL2X600		
LXD62S600A	①	LJ62S600		
LXD63B450-LXD63B600	①	LJ63B450-LJ63B600		
LXD64H600, LXD63L600	①	LL63H600, LL63L600	②	LL3A450, LL3H600
LXD63S600A	①	LJ63S600A	②	LL3S600
MD62B500-MD62B800	②	KM2B500-KM2B800		
MD63B500-MD63B800	②	KM3B500-KM3B800		
MXD62A800, MXD62H800, MXD62L800	②	KM2A800, KM2H800, KM2L800		
MXD62S800A	②	KM2S800		
MXD63A800, MXD63H800, MXD63L800	②	KM3A600, KM3H800, KM3L800		
MXD63S800A	②	KM3S800		
ND63B100-ND63B900	②	KP3B100-KP3B900		
NXD63S120A	②	KP3S120		
PD63B120-PD63B160	②	HP3B120-HP3B160		
PXD63S160A	②	HP3S160		
RD63B160-RD63B200	②	HR3B160-HR3B200		
QR22B100 – QR22B225		QJ22B060-QJ22B225		
QR22B100H – QR22B225H		QJ22B060H-QJ22B225H		
HQR23S250HA		QJ22S225		
QJ23B100 – QR23B225		QJ23B060-QJ23B225		
QR23B100H – QR23B225H		QJ23B060H-QJ23B225H		
QRH22B100 – QRH22B225		QJH22B060-QJH22B225		
QRH23B100 – QRH23B225		QJH23B060-QJH23B225		
HQR23S250HA		QJH23S225	①	
QJH22B060-QJH22B225	①	QJ2H125-QJ2B225		
QJH23B060-QJH23B225	①	QJ3H125-QJ3H225		
QJH23S225	①	QJ3S225		
RD63B160-RD63B200	②	HR3B160-HR3B200		
RXD63S200A	②	HR3S200		
SCJD6B200LI-SCJD6B400LI	①	SCJD69200-SCJD69400		
SCJD6B200LIG-SCJD6B400LIG	①	SCJD69200G-SCJD69400G		
SCJD6B200LSIG-SCJD6B400LSIG	①	SCJD69200NGT-SCJD69400NGT		
SCJD6B200LSI-SCJD6B400LSI	①	SCJD69200NT-SCJD69400NT		
SCLD6B300LI-SCLD6B600LI	①	SCLD69300-SCLD69600		
SCLD6B300LIG-SCLD6B600LIG	①	SCLD69300G-SCLD69600G		
SCLD6B300LSIG-SCLD6B600LSIG	①	SCLD69300NGT-SCLD69600NGT		
SCLD6B300LSI-SCLD6B600LSI	①	SCLD69300NT-SCLD69600NT		
SCMD6B600LI-SCMD6B800LI	①	SCMD69600A-SCMD69800A		
SCMD6B600LIG-SCMD6B800LIG	①	SCMD69600AG-SCMD69800AG		
SCMD6B600LSIG-SCMD6B800LSIG	①	SCMD69600ANGT-SCMD69800ANGT		
SCMD6B600LSI-SCMD6B800LSI	①	SCMD69600ANT-SCMD69800ANT		

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200 kA at 240V AC
200 kA at 480V AC
100 kA at 600V AC

④Electrically interchangeable only if the system interrupting capacity is less than or equal to:
200 kA at 240V AC
150 kA at 480V AC
100 kA at 600V AC

⑤Refer to local sales office for replacement information.

Sentron Series	Note	Superseded	Note	Superseded
SCND6B800LI-SCND6B120LI	①	SCND69800A-SCND69120A		
SCND6B800LIG-SCND6B120LIG	①	SCND69800AG-SCND69120AG		
SCND6B800LSIG-SCND6B120LSIG	①	SCND69800ANGT-SCND69120ANGT		
SCND6B800LSI-SCND6B120LSI	①	SCND69800ANT-SCND69120ANT		
SHJD6B200LI-SHJD6B400LI	①	SHJD69200-SHJD69400	①	SHJ63B200-SHJ63B400G
SHJD6B200LIG-SHJD6B400LIG	①	SHJD69200G-SHJD69400G	①	SHJ63B200G-SHJ63B400G
SHJD6B200LSIG-SHJD6B400LSIG	①	SHJD69200NGT-SHJD69400NGT	①	SHJ63N200G-SHJ63N400G
SHJD6B200LSI-SHJD6B400LSI	①	SHJD69200NT-SHJD69400NT	①	SHJ63N200-SHJ63N400
SHLD6B300LI-SHLD6B600LI	①	SHLD69300-SHLD69600	①	SHL63B300-SHL63B600
SHLD6B300LIG-SHLD6B600LIG	①	SHLD69300G-SHLD69600G	①	SHL63B300G-SHL63B600G
SHLD6B300LSIG-SHLD6B600LSIG	①	SHLD69300NGT-SHLD69600NG	①	SHL63N300G-SHL63N600G
SHLD6B300LSI-SHLD6B600LSI	①	SHLD69300NT-SHLD69600NT	①	SHL63N300-SHL63N600
SHND6B100LI-SHND6B120LI	①	SHND69100A-SHND69120A	①	SHND69100-SHND69800
SHND6B100LIG-SHND6B120LIG	①	SHND69100AG-SHND69120AG	①	SHND69100G-SHND69800G
SHPD6B140LI-SHPD6B160LI	①	SHPD69140-SHPD69160	②	SHPF3B120-SHPF3B160
SHPD6B140LIG-SHPD6B160LIG	①	SHPD69140G-SHPD69160G	②	SHPF3B120G-SHPF3B160G
SHND6B100LSIG-SHND6B120LSIG	①	SHND69100NGT-SHND69800NGT	①	SHKF3N100G-SHKF3N800G
SHND6B100LSI-SHND6B120LSI	①	SHND69100NT-SHND69800NT	②	SHKF3N100-SHKF3N800
SJD6B200LI-SJD6B400LI	①	SJD69200-SJ369400	①	SJL63B200-SJL63B400
SJD6B200LIG-SJD6B400LIG	①	SJD69200G-SJD69400G	①	SJL63B200G-SJL63B400G
SJD6B200LSIG-SJD6B400LSIG	①	SJD69200NGT-SJD69400NGT	①	SJL63N200G-SJL63N400G
SJD6B200LSI-SJD6B400LSI	①	SJD69200NT-SJD69400NT	①	SJL63N200-SJL63N400
SLD6B300LI-SLD6B600LI	①	SLD69300-SLD69600	①	SLL63B300-SLL63B600
SLD6B300LIG-SLD6B600LIG	①	SLD69300G-SLD69600G	①	SLL63B300G-SLL63B600G
SLD6B300LSIG-SLD6B600LSIG	①	SLD69300NGT-SLD69600NGT	①	SLL63N300G-SLL63N600G
SLD6B300LSI-SLD6B600LSI	①	SLD69300NT-SLD69600NT	①	SLL63N300-SLL63N600
SMD6B600LI-SMD6B800LI	①	SMD69600A-SMD69800A	①	SMD69600-SMD69800
SMD6B600LIG-SMD6B800LIG	①	SMD69600AG-SMD69800AG	①	SMD69600G-SMD69800G
SMD6B600LSIG-SMD6B800LSIG	①	SMD69600ANGT-SMD69800ANGT	①	SMD69600NGT-SMD69800NGT
SMD6B600LSI-SMD6B800LSI	①	SMD69600ANT-SMD69800ANT	①	SMD69600NT-SMD69800NT
SND6B800LI-SND6B120LI	①	SND69800A-SND69120A	①	SND69100-SND69800
SND6B800LIG-SND6B120LIG	①	SND69800AG-SND69120AG	①	SND69100G-SND69800G
SND6B800LSIG-SND6B120LSIG	①	SND69800ANGT-SND69120ANGT	①	SND69100NGT-SND69800NGT
SND6B800LSI-SND6B120LSI	①	SND69800ANT-SND69120ANT	①	SND69100NT-SND69800NT
SHPD6B140LI-SHPD6B160LI	①	SPD69140-SPD69160	②	SHPF3B120-SHPF3B160
SHPD6B140LIG-SHPD6B160LIG	①	SPD69140G-SPD69160G	②	SHPF3B120G-SHPF3B160G
SHPD6B140LSIG-SHPD6B160LSIG	①	SPD69140NGT-SPD69160NGT	②	SHPF3N120-SHPF3N160G
SHPD6B140LSI-SHPD6B160LSI	①	SPD69140NT-SPD69160NT	②	SHPF3N120G-SHPF3N160G
— —	④	BQCC1B015-BQC1B030		
— —	④	CC1B015-CC1B030		
— —	④	CC2B015-CC2B030		
— —	④	CC3B015-CC3B030		
— —	④	EF2A003, EF2H050, EF2L050, EF2A100		
— —	④	EF2H150, EF2L150		
— —	④	EH1B015-EH1B100		
— —	④	EH2B015-EH2B100		
— —	④	EH3B015-EH3B100		
— —	③	HE2A003, HE2H050, HE2L050-HE2A100		
— —	③	HE3A003, HE3H050, HE3L050-HE3A100		
— —	③	HE3B015-HE3B100		

①Mechanically and electrically interchangeable.
②Electrically interchangeable only, refer to sales office for further details.
③These units are for replacement purposes only. Consult sales office for availability.
④These units are no longer manufactured, and no replacement is available.

Notes