Ordering

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

1. As separately ordered frames, trip units and lugs
2. As frame, trip unit and lugs ordered as one catalog number and shipped unassembled or assembled
3. As Frame and Trip Unit shipped assembled and with the trip unit made non-removable, in compliance with UL 489 / CSA C22.2 No. 5 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.

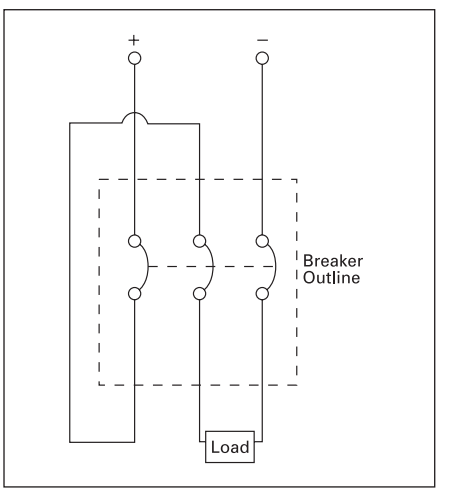
Frame, Trip Unit and Lugs Ordered Together

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 CSA C22.2 No. 5-13 / 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 CSA C22.2 No. 5-13 / 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.

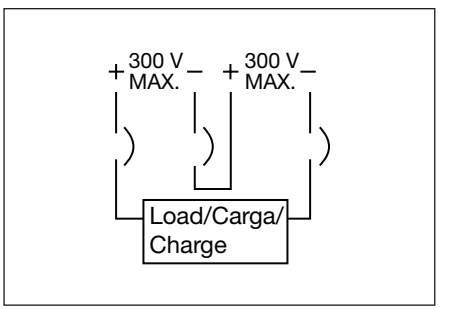


500V DC Wiring Configuration

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.

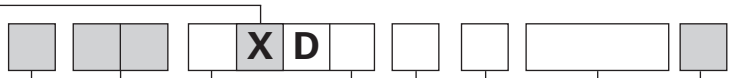
See below for an alternative connection diagram. For a list of Sentron breakers with the DC ratings, please refer to pages 5-8 - 5-19.



Molded Case Circuit Breakers

Catalogue Numbering System

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

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

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

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.

Applicable Standards

CSA–C22.2 No. 5, C22.2 No. 14

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

NOTE:

(A) Molded case circuit breakers are designed and tested in accordance to applicable portions of UL 489 and CSA22.2 No. 5 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 and Canadian Electric Code.

① Interrupting ratings are not limited to the values or groups of values listed. However, the values listed are minimum values for the class specified.
② Single-unit or duplex construction must be specified.
③ Use minimum frame size for ampere rating.

Type HED4[6]

Black Label

Continuous Current Rating @ 40°C	1-Pole 277V AC 125V DC Catalogue Number	2-Pole 480V AC 250V DC Catalogue Number	3-Pole 480V AC Catalogue Number
15	HED41B015[1]	HED42B015	HED43B015
20	HED41B020[1]	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

Fuseless Current Limiting Type CED6

Red Label

Continuous Current Rating @ 40°C	2-Pole 600V AC, 250V DC Catalogue Number	3-Pole 600V AC, 500V DC[2] Catalogue Number
15	—	CED63B015
20	CED62B020	CED63B020
25	—	—
30	CED62B030	CED63B030
35	—	—
40	CED62B040	CED63B040
45	—	—
50	CED62B050	CED63B050
60	CED62B060	CED63B060
70	CED62B070	CED63B070
80	CED62B080	CED63B080
90	CED62B090	CED63B090
100	CED62B100	CED63B100
110	—	CED63B110
125	CED62B125	CED63B125

FIGURE1 - ED, HED, HHED

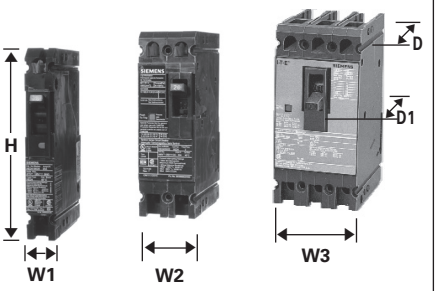
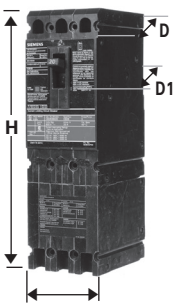


FIGURE 2 - CED (3-Pole shown)



Dimensions (in inches)

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

Interrupting Ratings

Breaker Type	CSA C22.2 No.5-02 / UL 489 AIR (File #E10848) RMS Symmetrical Amperes (KA) Volts AC 120	240	277	347	480	600	Volts DC 125	250	500[2]	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	—	— 18	—	30	—	—	—	—	—	—	—	—
ED4 (2, 3-P)	—	65	—	—		—	—	30 (2-P)	—	—	—	—	—	—	—
ED6 (1P)	—	—	—	30[5]	— 25	—	—	—	—	—	—	—	—	—	—
ED6 (2, 3-P)	—	65	—	—		18	—	30 (2-P)	18 (3-P)	65	17	35	9	18	5
HED4 (1-P) (15–30A)	100	—	65	—	—	—	30	—	—	—	—	—	—	—	—
	100	— 100	25	—	—	—	30	—	—	—	—	—	—	—	—
HED4 (1-P) (35–100A)	—		—	—	42		—	30 (2-P)		—	—	—	—	—	—
HED4 (2, 3-P)[3]															
CED6 (2, 3-P)	—	200	—	—	200	100	—	30 (2-P)	50 (3-P)	—	—	—	—	—	—

[1] SWD rated.

[2] When wired as shown on page 5-4, this circuit breaker is CSA Certified / UL listed and rated for use on 500V DC ungrounded UPS systems.

[3] HED4 type circuit breakers meet the CSA / UL criteria for "current limiting" at 240V AC.

[4] ED6-ETI, CED6-ETI, see page 5-101 for ordering information.

[5] Single Pole 15-30A 30KA @ 347V CSA only. 35-100A 18KA @ 347V CSA only.

[6] HACR rated.