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.

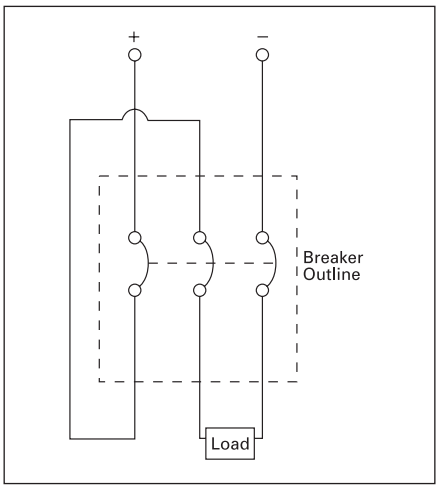
Frame, Trip Unit and Lugs Ordered Together

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.

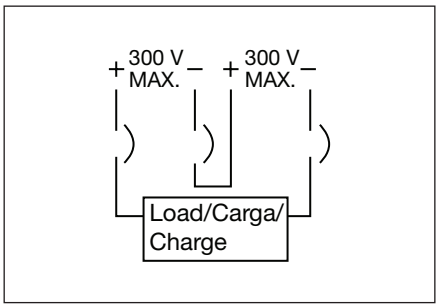


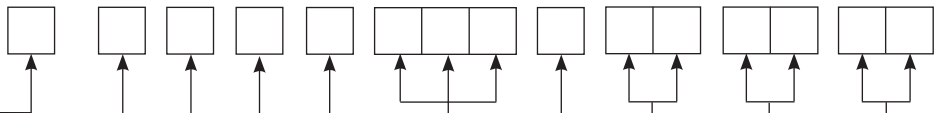
500V DC Wiring Configuration

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.





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

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)

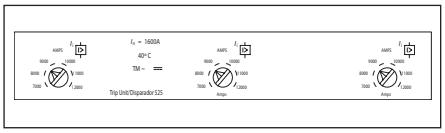
Connectors for 75°C Wire

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