

## 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.

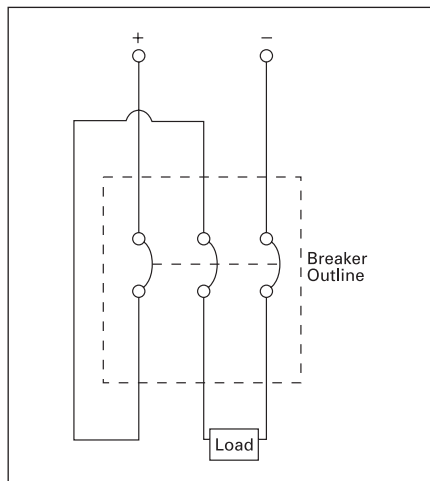
### Frame, Trip Unit and Lugs Ordered Together

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.

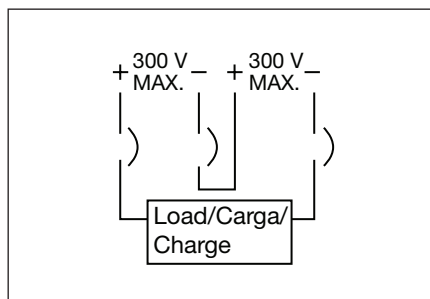


500V DC Wiring Configuration

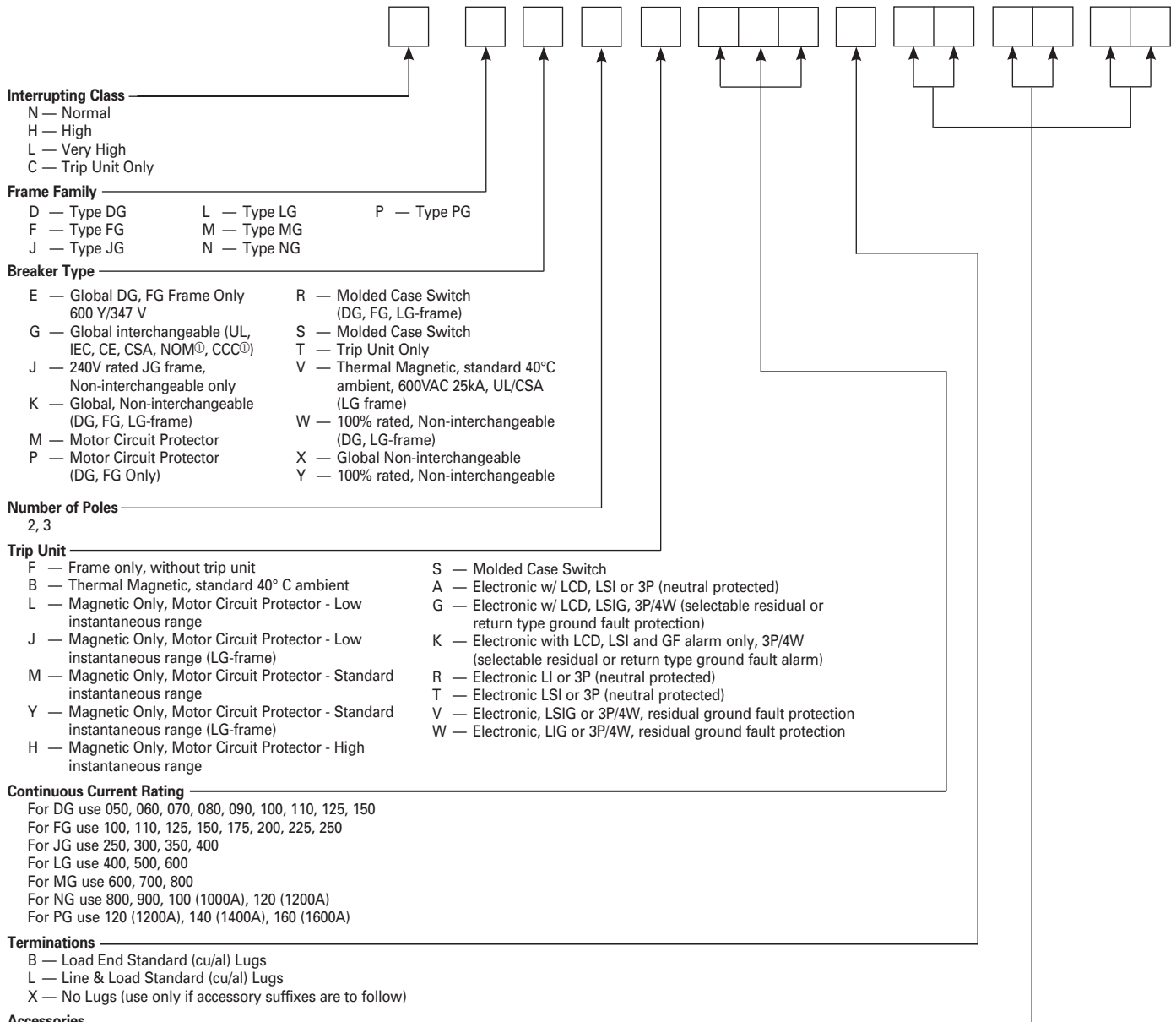
## Connecting Breakers for DC Application

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.



# VL Molded Case Circuit Breakers



**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, NOM<sup>®</sup>, CCC<sup>®</sup>)
- 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)                   |

**Shunt Trips**

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

**Under Voltage Releases**

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

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

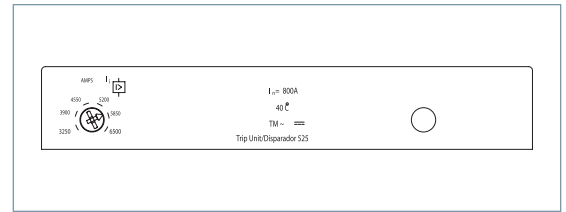
LCD = Liquid Crystal Display  
 LI = Long Delay & Instantaneous trip functions  
 LSI = Long Delay, Short Delay, & Instantaneous trip functions  
 LSIG = Long Delay, Short Delay, Instantaneous, & Ground Fault trip functions  
 GF = Ground Fault  
 3P = 3-pole  
 4W = 4-wire

© Select Frames

# VL Circuit Breakers

MG 800A Thermal-Magnetic Trip Unit

Selection



Model 525 Trip Unit

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

Continuous Ampere Rating	N-Interrupting Class	H-Interrupting Class	L-Interrupting Class	TRIP UNIT ONLY	
	Catalog Number	Catalog Number	Catalog Number		Catalog Number
	FRAME ONLY				
	NMG2F800	HMG2F800	LMG2F800		
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER				
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	TRIP UNIT ONLY	
	Catalog Number	Catalog Number	Catalog Number		Catalog Number
	FRAME ONLY				
	NMG3F800	HMG3F800	LMG3F800		
	COMPLETE FACTORY ASSEMBLED CIRCUIT BREAKER				
600	NMG3B600L	HMG3B600L	LMG3B600L	CMT3B600	
700	NMG3B700L	HMG3B700L	LMG3B700L	CMT3B700	
800	NMG3B800L	HMG3B800L	LMG3B800L	CMT3B800	

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MOLDED CASE  
CIRCUIT BREAKERS