## 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.

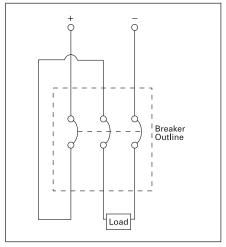
# Frame, Trip Unit and Lugs Ordered Together

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.

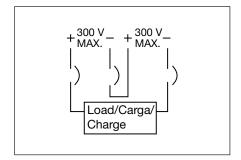


500V DC Wiring Configuration

# 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

#### **Catalog Numbering System** Selection/Application Interrupting Class N — Normal H — High Very High C — Trip Unit Only Frame Family D — Type DG L — Type LG P — Type PG — Type FG M — Type MG Type JG N — Type NG **Breaker Type** E — Global DG, FG Frame Only R — Molded Case Switch 600 Y/347 V (DG, FG, LG-frame) Global interchangeable (UL, Molded Case Switch IEC, CE, CSA, NOM<sup>®</sup>, CCC<sup>®</sup>) - Trip Unit Only 240V rated JG frame, - Thermal Magnetic, standard 40°C ambient, 600VAC 25kA, UL/CSA Non-interchangeable only K — Global, Non-interchangeable (LG frame) (DG, FG, LG-frame) 100% rated, Non-interchangeable Motor Circuit Protector (DG, LG-frame) - Motor Circuit Protector - Global Non-interchangeable (DG, FG Only) - 100% rated, Non-interchangeable **Number of Poles** 2, 3 Trip Unit - Frame only, without trip unit S - Molded Case Switch — Thermal Magnetic, standard 40° C ambient A — Electronic w/ LCD, LSI or 3P (neutral protected) В L — Magnetic Only, Motor Circuit Protector - Low G — Electronic w/ LCD, LSIG, 3P/4W (selectable residual or instantaneous range return type ground fault protection) J — Magnetic Only, Motor Circuit Protector - Low K — Electronic with LCD, LSI and GF alarm only, 3P/4W instantaneous range (LG-frame) (selectable residual or return type ground fault alarm) Magnetic Only, Motor Circuit Protector - Standard Electronic LI or 3P (neutral protected) instantaneous range Electronic LSI or 3P (neutral protected) Magnetic Only, Motor Circuit Protector - Standard V — Electronic, LSIG or 3P/4W, residual ground fault protection instantaneous range (LG-frame) W — Electronic, LIG or 3P/4W, residual ground fault protection H — Magnetic Only, Motor Circuit Protector - High instantaneous range 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** Description 1 Alarm (includes 1NO & 1NC switch with a 2 Aux./1 Alarm Base, for frames DG to LG) Note: A1 and A3 include 1NO and 1NC switch for 2 Aux (1NO & 1NC switch with a 3 Aux. Base, for frames DG to LG) alarm purposes, only one of these switches may A3 2 Aux + 1 Alarm (2NO & 2NC switches with a 2 Aux./1 Alarm Base, for frames DG to LG)

2 Aux + 2 Alarm (2NO & 2NC switches with a 2 Aux./2 Alarm Base, for frames MG to PG)

 4 Aux (2NO & 2NC switches with a 4 Aux. Base, for frames MG to PG) A4

## **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 RF - 250 VDC RV - 380-600 VAC

#### **Under Voltage Releases**

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

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