

Molded Case Circuit Breakers

600V Circuit Breakers



Sentron MD Breakers

Selection and ordering data

	480V	600V
MD, SMD6	50KAIC	25KAIC
HMD, SHMD6	65KAIC	50KAIC
CMD, SCMD6	100KAIC	65KAIC

2- & 3-pole up to 800A for circuit protection up to 600 volt circuits (UL/CSA)

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Sentron ND Breakers

Selection and ordering data

	480V	600V
ND, SND6	50KAIC	25KAIC
HND, SHND6	65KAIC	50KAIC
CND, SCND6	100KAIC	65KAIC

2- & 3-pole up to 1600A for circuit protection up to 600 volt circuits (UL/CSA)

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Sentron PD Breakers

Selection and ordering data

	480V	600V
PD, SPD6	50KAIC	25KAIC
HPD, SHPD6	65KAIC	50KAIC
CPD	100KAIC	65KAIC

2- & 3-pole up to 1600A for circuit protection up to 600 volt circuits (UL/CSA)

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600V Circuit Breakers



Sentron RD Breakers

Selection and ordering data

	480V	600V
RD	50KAIC	25KAIC
HRD	65KAIC	50KAIC

2- & 3-pole up to 2000A for circuit protection up to 600 volt circuits (UL/CSA)

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Sentron Circuit Breakers: Additional Information

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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.

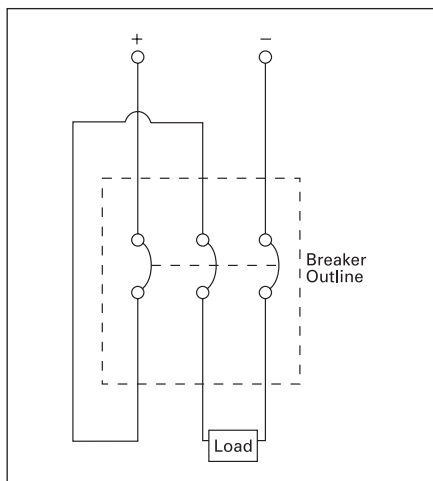
Frame, Trip Unit and Lugs Ordered Together

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

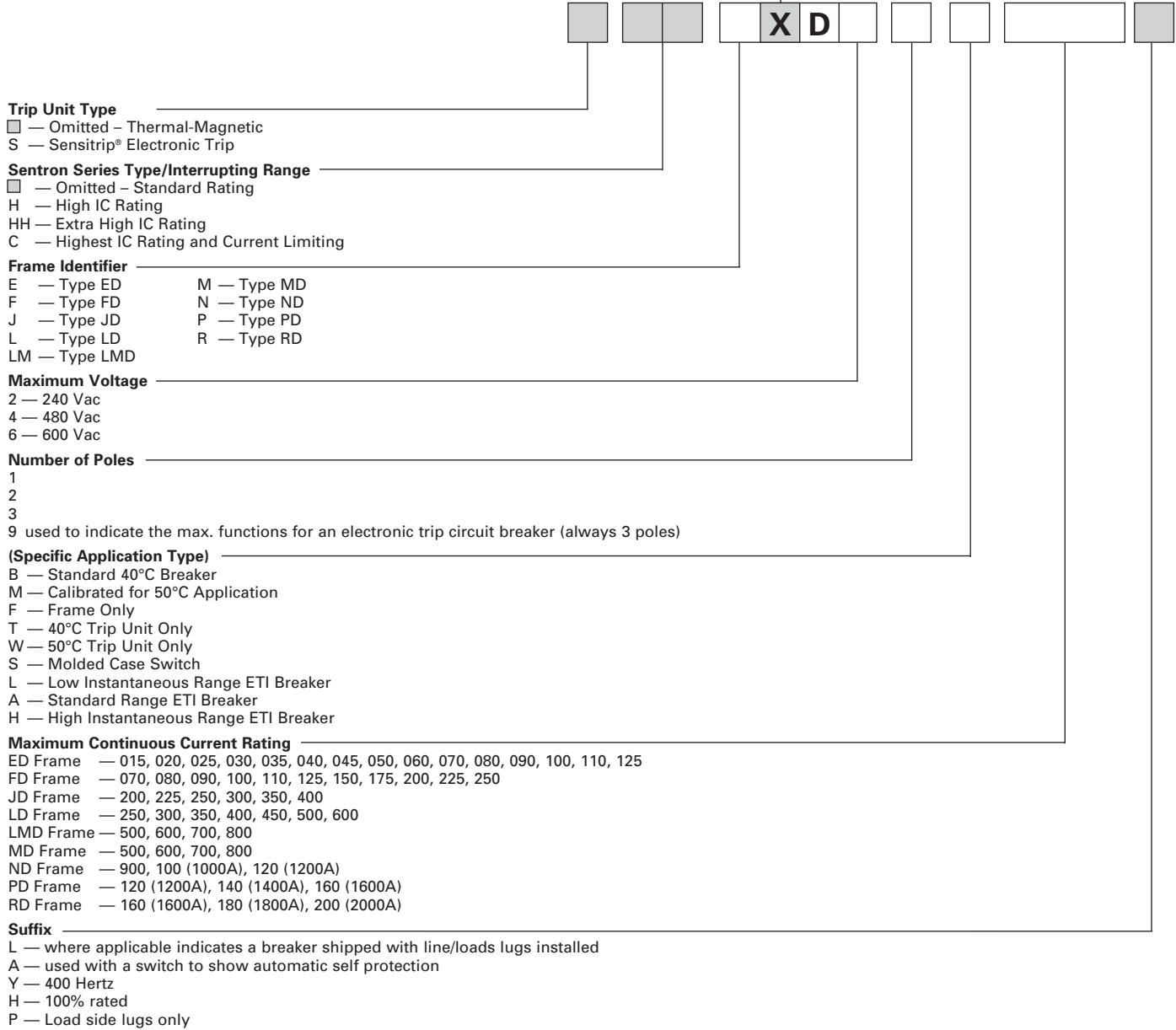
Most Siemens thermal magnetic trip MCCBs are applicable on direct current (dc) systems. Generally, for 250 V dc systems a two pole breaker is used, with one pole on each leg of the supply circuit. For three pole breakers applied on 500 V undergrounded DC systems, it is important to connect the power 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.

General Application Molded Case Circuit Breakers

Catalog Numbering System

Selection/Application

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.



NOTE:

□ — Position omitted if not used.

Sentron Molded Case Circuit Breakers

ND 1200A Frame Sentron Series

Selection

Type NXD6 ^{①③}		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 ND6 ^⑧			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 DC^②			
800	ND62B800■	ND62F120	MD62T800■
900	ND62B900■		ND62T900■
1000	ND62B100■		ND62T100■
1200	ND62B120		ND62T120

3-Pole 600V AC, 500V DC^③			
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	500 ^④	220/240		380/415		500	
						(lcu)	(lcs)	(lcu)	(lcs)	(lcu)	(lcs)
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
900-1200	5000	5715	6430	7145	7860	8575	9290	10000

■ 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 17/5, 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 17/101.

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 17/104 for additional information.

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 17/104.

400Hz Applications see page 17/104.

Lugs^⑥

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)

2TA4P8500 ^④ 3TA4P8500 ^⑤	4	250-500 kcmil Cu/Al
2TA4N8500 ^⑤ 3TA4N8500 ^⑤	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

Modifications page 17/104

Accessories pages 17/86 and 17/108 to 17/113

Sentron Molded Case Circuit Breakers

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
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	—	—
	800	5000	5715	6430	7145	7860	8575	9290	10000	—	—	—
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

Molded Case Circuit Breakers

Modifications

General Selection

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.

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.

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, QJ2, and ED Frame Circuit Breakers
 - Replace 'B' in catalog number with 'M'No Charge
(Example: BQ3M060, QJ23M200, 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 6-152 and order standard circuit breakers.

Fungus Proofing

- All BQD, COD, 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 BreakersAdd \$10.00 net per pole
 - Consult Sales Office for Availability
- For all other Circuit Breaker TypesAdd \$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.

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, ED6, 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