Operating Conditions

See bulletin 0613IB1202, available in the Schneider Electric technical library, for information on normal and adverse operating conditions.

Ambient Temperature:

Masterpact circuit breakers can operate under the following temperature conditions:

- The electrical and mechanical characteristics are stipulated for an ambient temperature between -13°F (-25°C) and 158°F (70°C).
  Mechanical closing of the circuit breaker (by pushbutton) is possible down to -31°F (-35°C)
- At altitudes +13,000 ft. (3900 m).

Masterpact circuit breakers have been tested for operation in industrial atmospheres. It is recommended that the equipment be cooled or heated to the proper operating temperature and kept free of excessive vibration and dust. Operation at temperatures above 104°F (40°C) may require derating or overbussing the circuit breaker. See the appropriate instruction bulletin and page 17 of this catalog for additional information.

Storage Temperature

Circuit breakers with trip units without LCD displays may be stored in the original packaging at temperatures between -40°F (-40°C) and 185°F (85°C).

For circuit breakers with trip units with LCD displays, this range is -13°F (-25°C) to 185°F (85°C).

Altitude:

Masterpact circuit breakers are suitable for use at altitudes of 13,000 ft. (3900 m) and below. See Table 15 on page 17 for Altitude correction factors.

Vibration:

Masterpact circuit breakers meet IEC 60068-2-6 Standards for vibration.

- 2 to 13.2 Hz and amplitude 0.039 in. (1 mm)
- 13.2 to 100 Hz constant acceleration 0.024 oz. (0.7 g)

Humidity:

Masterpact circuit breakers have been tested to the following:

- IEC68-2-30—damp heat (temperature +55°C and relative humidity of 95%)
- IEC 68-2-52 level 2—salt mist

The materials used in Masterpact NT and NW circuit breakers will not support the growth of fungus and mold.

Table 12: Ratings for IEC 60947-2 Rated Masterpact NT Circuit Breakers

Frame Rating			800/1000 A			1250/1600 A	
Interrupting Rating Code			H1	H2	L1	H1	H2
Ultimate Breaking Capacity (kA)	I_{cu}	220/415 Vac, 50/60 Hz	42	50	150	42	50
		440 Vac, 50/60 Hz	42	50	130	42	50
		525 Vac, 50/60 Hz	42	42	100	42	42
		690 Vac, 50/60 Hz	42	42	25	42	42
		1000 Vac, 50/60 Hz	—	—	—	—	—
Service Breaking Capacity (kA)	I_{cs}	$\%I_{cu}$	100%	100%	100%	100%	100%
Short-Time Withstand Current (kA)	I_{cw}	Vac 50/60 Hz, 1 s	42	36	10 x I_n[1]	42	36
Built-In Instantaneous Override (kA ±10%)			—	90	10[2]	—	—
Rated Making Capacity (Peak kA)	I_{cm}	220/415 Vac, 50/60 Hz	88	105	330	88	105
		440 Vac, 50/60 Hz	88	105	286	88	105
		525 Vac, 50/60 Hz	88	88	220	88	88
		690 Vac, 50/60 Hz	88	88	52	88	88
		1000 Vac, 50/60 Hz	—	—	—	—	—
Break Time		ms	25	25	9	25	25
Closing Time		ms	50	50	50	50	50
Endurance Rating (C/O cycles) (with no maintenance)		Mechanical	12,500	12,500	12,500	12,500	12,500
		Electrical 440 V	6000	6000	3000	6000[3]	6000[3]
		Electrical 1000 V	—	—	—	—	—

1 For Icw, 10 kA is for 0.5 s

2 SELLIM system

3 1600 A, 3000 cycles

Table 13: Ratings for IEC 60947-3 Rated Non-Automatic Masterpact NT Switches

Frame Rating			800/1000 A	1250/1600 A
Withstand Rating Code			HA	HA
Rated Making Capacity (Peak kA)	I_{cm}	220/415 Vac, 50/60 Hz	75	75
		440 Vac, 50/60 Hz	75	75
		500/690 Vac, 50/60 Hz	75	75
		1000 Vac, 50/60 Hz	—	—
Short-Time Withstand Current (kA)	I_{cw}	Vac 50/60 Hz, 0.5 s	36	36
Breaking Capacity (kA at 690 Vac) (with external protection relay)	I_{cu}	maximum delay 350 ms	36	36

Correction Factors

Table 14: Temperature Correction Factors per ANSI C37.20.1 par. 7.4.2

	Maximum Ambient Temperature										
°F	140	122	104	86	77	68	50	32	14	–4	–22
°C	60	50	40	30	25	20	10	0	–10	–20	–30
Current	0.83	0.92	1.00	1.07	1.11	1.14	1.21	1.27	1.33	1.39	1.44

Table 15: Altitude Correction Factors per ANSI C37.20.1 par. 7.1.4.1 (Table 10)

	< 6600 ft. (2000 m)	8500 ft (2600 m)	13,000 ft. (3900 m)
Voltage	1.00	0.95	0.80
Current	1.00	0.99	0.96