

Low voltage

Masterpact NT and NW

LV power circuit breakers
and switch-disconnectors

Catalogue
2011



Masterpact NT and NW

The standard for power circuit breakers around the world.

Over the years, other major manufacturers have tried to keep up by developing products incorporating Masterpact's most innovative features, including the breaking principle, modular design and the use of composite materials.

In addition to the traditional features of power circuit breakers (withdrawability, discrimination and low maintenance), Masterpact NT and NW ranges offer built-in communications and metering functions, all in optimised frame sizes.

Masterpact NT and NW incorporate the latest technology to enhance both performance and safety. Easy to install, with user-friendly, intuitive operation and environment-friendly design, Masterpact NT and NW are, quite simply, circuit breakers of their time.



Circuit breakers and switch-disconnectors

NT06 to NT16

PE100355A19



Common characteristics

Number of poles		3/4
Rated insulation voltage (V)	Ui	1000
Impulse withstand voltage (kV)	Uimp	12
Rated operational voltage (V AC 50/60 Hz)	Ue	690
Suitability for isolation	IEC 60947-2	
Degree of pollution	IEC 60664-1	3

Basic switchgear

Circuit-breaker as per IEC 60947-2

Rated current (A)	In	at 40 °C/50 °C ⁽¹⁾
Rating of 4th pole (A)		
Sensor ratings (A)		
Type of circuit breaker		
Ultimate breaking capacity (kA rms) V AC 50/60 Hz	Icu	220/415 V 440 V 525 V 690 V
Rated service breaking capacity (kA rms)	Ics	% Icu
Utilisation category		
Rated short-time withstand current (kA rms) V AC 50/60 Hz	Icw	0.5 s 1 s 3 s
Integrated instantaneous protection (kA peak ±10 %)		
Rated making capacity (kA peak) V AC 50/60 Hz	Icm	220/415 V 440 V 525 V 690 V

Break time (ms) between tripping order and arc extinction

Closing time (ms)

Circuit-breaker as per NEMA AB1

Breaking capacity (kA) V AC 50/60 Hz	240 V 480 V 600 V
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Switch-disconnector as per IEC 60947-3 and Annex A

Type of switch-disconnector		
Rated making capacity (kA peak) AC23A/AC3 category V AC 50/60 Hz	Icm	220 V 440 V 525/690 V
Rated short-time withstand current (kA rms) AC23A/AC3 category V AC 50/60 Hz	Icw	0.5 s 1 s 3 s
Ultimate breaking capacity Icu (kA rms) with an external protection relay Maximum time delay: 350 ms		690 V

Mechanical and electrical durability as per IEC 60947-2/3 at In/Ie

Service life	Mechanical	without maintenance	
C/O cycles x 1000			
Type of circuit breaker			
Rated current		In (A)	
C/O cycles x 1000	Electrical	without maintenance	440 V ⁽⁴⁾ 690 V
IEC 60947-2			
Type of circuit breaker or switch-disconnector			
Rated operational current		Ie (A)	AC23A
C/O cycles x 1000	Electrical	without maintenance	440 V ⁽⁴⁾ 690 V
IEC 60947-3			
Type of circuit breaker or switch-disconnector			
Rated operational current		Ie (A)	AC3 ⁽⁵⁾
Motor power			380/415 V (kW) 440 V (kW)
C/O cycles x 1000	Electrical	without maintenance	440 V ⁽⁴⁾ 690 V
IEC 60947-3 Annex M/IEC 60947-4-1			

⁽¹⁾ 50 °C: rear vertical connected. Refer to temperature derating tables for other connection types.

⁽²⁾ See the current-limiting curves in the "additional characteristics" section.

⁽³⁾ SELLIM system.

⁽⁴⁾ Available for 480 V NEMA.

⁽⁵⁾ Suitable for motor control (direct-on-line starting).

Sensor selection

Sensor rating (A)	250 ⁽¹⁾	400	630	800	1000	1250	1600
Ir threshold setting(A)	100 to 250	160 to 400	250 to 630	320 to 800	400 to 1000	500 to 1250	640 to 1600

⁽¹⁾ For circuit-breaker NT02, please consult us.

	NT06			NT08			NT10			NT12		NT16	
	630			800			1000			1250		1600	
	630			800			1000			1250		1600	
	400 to 630			400 to 800			400 to 1000			630 to 1250		800 to 1600	
	H1	H2	L1 ⁽²⁾							H1	H2		
	42	50	150							42	50		
	42	50	130							42	50		
	42	42	100							42	42		
	42	42	25							42	42		
	100 %									100 %			
	B	B	A							B	B		
	42	36	10							42	36		
	42	36	-							42	36		
	24	20	-							24	20		
	-	90	10 x ln ⁽³⁾							-	90		
	88	105	330							88	105		
	88	105	286							88	105		
	88	88	220							88	88		
	88	88	52							88	88		
	25	25	9							25	25		
	< 50									< 50			
	42	50	150							42	50		
	42	50	100							42	50		
	42	42	25							42	42		
	HA									HA			
	75									75			
	75									75			
	75									75			
	36									36			
	36									36			
	20									20			
	36									36			
	12.5												
	H1	H2	L1	H1	H2	L1	H1	H2	L1	H1	H2	H1	H2
	630			800			1000			1250			
	6	6	3	6	6	3	6	6	3	6	6	3	3
	3	3	2	3	3	2	3	3	2	3	3	1	1
	H1/H2/HA												
	630			800			1000			1250		1600	
	6			6			6			6		3	
	3			3			3			3		1	
	H1/H2/HA												
	500			630			800			1000		1000	
	γ 250			250 to 335			335 to 450			450 to 560		450 to 560	
	γ 300			300 to 400			400 to 500			500 to 630		500 to 630	
	6												
	-												

Circuit breakers and switch-disconnectors

NW08 to NW63

PB100363A35



PB100362A65



Common characteristics

Number of poles		3/4
Rated insulation voltage (V)	Ui	1000/1250
Impulse withstand voltage (kV)	U_{imp}	12
Rated operational voltage (V AC 50/60 Hz)	U_e	690/1150
Suitability for isolation	IEC 60947-2	
Degree of pollution	IEC 60664-1	4 (1000 V) / 3 (1250 V)

Basic circuit-breaker

Circuit-breaker as per IEC 60947-2

Rated current (A)	at 40 °C / 50 °C ⁽¹⁾
Rating of 4th pole (A)	
Sensor ratings (A)	

Type of circuit breaker

Ultimate breaking capacity (kA rms) V AC 50/60 Hz	I_{cu}	220/415/440 V 525 V 690 V 1150 V
Rated service breaking capacity (kA rms)	I_{cs}	% I _{cu}
Utilisation category		
Rated short-time withstand current (kA rms) V AC 50/60 Hz	I_{cw}	1 s 3 s
Integrated instantaneous protection (kA peak ± 10 %)		
Rated making capacity (kA peak) V AC 50/60 Hz	I_{cm}	220/415/440 V 525 V 690 V 1150 V

Break time (ms) between tripping order and arc extinction

Closing time (ms)

Circuit-breaker as per NEMA AB1

Breaking capacity (kA) V AC 50/60 Hz	240/480 V 600 V
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Unprotected circuit-breaker

Tripping by shunt trip as per IEC 60947-2

Type of circuit breaker

Ultimate breaking capacity (kA rms) V AC 50/60 Hz	I_{cu}	220...690 V
Rated service breaking capacity (kA rms)	I_{cs}	% I _{cu}
Rated short-time withstand current (kA rms)	I_{cw}	1 s 3 s

Overload and short-circuit protection

External protection relay: short-circuit protection, maximum delay: 350 ms ⁽⁴⁾

Rated making capacity (kA peak) V AC 50/60 Hz	I_{cm}	220...690 V
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Switch-disconnector as per IEC 60947-3 and Annex A

Type of switch-disconnector

Rated making capacity (kA peak) AC23A/AC3 category V AC 50/60 Hz	I_{cm}	220...690 V 1150 V
Rated short-time withstand current (kA rms) AC23A/AC3 category V AC 50/60 Hz	I_{cw}	1 s 3 s

Earthing switch

Latching capacity (kA peak)	135
Rating short time withstand (kA rms)	I_{cw} 1 s 3 s

Mechanical and electrical durability as per IEC 60947-2/3 at I_n/I_e

Service life	Mechanical	with maintenance
C/O cycles x 1000		without maintenance

Type of circuit breaker

Rated current	I_n (A)	
C/O cycles x 1000	Electrical	without maintenance
IEC 60947-2		440 V ⁽⁵⁾ 690 V 1150 V

Type of circuit breaker or switch-disconnector

Rated operational current	I_e (A)	AC23A
C/O cycles x 1000	Electrical	without maintenance
IEC 60947-3		440 V ⁽⁵⁾ 690 V

Type of circuit breaker or switch-disconnector

Rated operational current	I_e (A)	AC3 ⁽⁶⁾
Motor power		380/415 V (kW) 440 V ⁽⁵⁾ (kW) 690 V (kW)
C/O cycles x 1000	Electrical	without maintenance
IEC 60947-3 Annex M/IEC 60947-4-1		440/690 V ⁽⁵⁾

(1) 50 °C: rear vertical connected. Refer to temperature derating tables for other connection types.

(2) See the current-limiting curves in the "additional characteristics" section.

(3) Equipped with a trip unit with a making current of 90 kA peak.

(4) External protection must comply with permissible thermal constraints of the circuit breaker (please consult us). No fault-trip indication by the SDE or the reset button.

(5) Available for 480 V NEMA.

(6) Suitable for motor control (direct-on-line starting).

(7) The use of NW08 to NW20 H1 in IT systems is limited to 500 V network voltage.

Sensor selection

Sensor rating (A)	250 ⁽¹⁾	400	630	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Ir threshold setting(A)	100 to 250	160 to 400	250 to 630	320 to 800	400 to 1000	500 to 1250	630 to 1600	800 to 2000	1000 to 2500	1250 to 3200	1600 to 4000	2000 to 5000	2500 to 6300

⁽¹⁾ For circuit-breaker NW02, please consult us.

	NW08	NW10	NW12	NW16	NW20					NW25	NW32	NW40	NW40b	NW50	NW63		
	800 800	1000 1000	1250 1250	1600 1600	2000 2000					2500 2500	3200 3200	4000 4000	4000 4000	5000 5000	6300 6300		
	400 to 800	400 to 1000	630 to 1250	800 to 1600	1000 to 2000					1250 to 2500	1600 to 3200	2000 to 4000	2000 to 4000	2500 to 5000	3200 to 6300		
	N1	H1 ⁽⁷⁾	H2	L1 ⁽²⁾	H10	H1 ⁽⁷⁾	H2	H3	L1 ⁽²⁾	H10	H1	H2	H3	H10	H1	H2	
	42	65	100	150	-	65	100	150	150	-	65	100	150	-	100	150	
	42	65	85	130	-	65	85	130	130	-	65	85	130	-	100	130	
	42	65	85	100	-	65	85	100	100	-	65	85	100	-	100	100	
	-	-	-	-	50	-	-	-	-	50	-	-	-	50	-	-	
	100 %					100 %					100 %				100 %		
	B					B					B				B		
	42	65	85	30	50	65	85	65	30	50	65	85	65	50	100	100	
	22	36	50	30	50	36	75	65	30	50	65	75	65	50	100	100	
	-	-	190	80	-	-	190	150	80	-	-	190	150	-	-	270	
	88	143	220	330	-	143	220	330	330	-	143	220	330	-	220	330	
	88	143	187	286	-	143	187	286	286	-	143	187	286	-	220	286	
	88	143	187	220	-	143	187	220	220	-	143	187	220	-	220	220	
	-	-	-	-	105	-	-	-	-	105	-	-	-	105	-	-	
	25	25	25	10	25	25	25	25	10	25	25	25	25	25	25	25	
	< 70					< 70					< 70				< 80		
	42	65	100	150	-	65	100	150	150	-	65	100	150	-	100	150	
	42	65	85	100	-	65	85	100	100	-	65	85	100	-	100	100	
	HA					HA					HA				HA		
	50					50					55				85		
	100 %					100 %					100 %				100 %		
	50					50					55				85		
	36					36					55				85		
	-					-					-				-		
	105					105					121				187		
	NW08/NW10/NW12/NW16					NW20					NW25/NW32/NW40				NW40b/NW50/NW63		
	NA	HA	HF	HA10		HA	HF	HA10		HA	HF	HA10		HA			
	88	105	187	-		105	187	-		121	187	-		187			
	-	-	-	105		-	-	105		-	-	105		-			
	42	50	85	50		50	85	50		55	85	50		85			
	-	36	50	50		36	75	50		55	75	50		85			
	60 Hz					60 Hz					60 Hz					60 Hz	
	50 Hz					50 Hz					50 Hz					50 Hz	
	25					20					10						
	12.5					10					5						
	N1/H1/H2	L1	H10		H1/H2	H3	L1	H10	H1/H2	H3	H10	H1	H2				
	800/1000/1250/1600					2000					2500/3200/4000				4000b/5000/6300		
	10	3	-		8	2	3	-	5	1.25	-	1.5	1.5				
	10	3	-		6	2	3	-	2.5	1.25	-	1.5	1.5				
	-	-	0.5		-	-	-	0.5	-	-	0.5	-	-				
	H1/H2/NA/HA/HF					H1/H2/H3/HA/HF					H1/H2/H3/HA/HF				H1/H2/HA		
	800/1000/1250/1600					2000					2500/3200/4000				4000b/5000/6300		
	10					8					5				1.5		
	10					6					2.5				1.5		
	H1/H2/NA/HA/HF					H1/H2/H3/HA/HF											
	800		1000		1250	1600		2000									
	335 to 450		450 to 560		560 to 670	670 to 900		900 to 1150									
	400 to 500		500 to 630		500 to 800	800 to 1000		1000 to 1300									
	y 800		800 to 1000		1000 to 1250	1250 to 1600		1600 to 2000									
	6																