

Circuit breakers and switch-disconnectors characteristics NT06 to NT16



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)	Icu	220/415 V
V AC 50/60 Hz		440 V
		525 V
		690 V

Rated service breaking capacity (kA rms)	Ics	% Icu
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Utilisation category		
Rated short-time withstand current (kA rms)	Icw	0.5 s
V AC 50/60 Hz		1 s
		3 s

Integrated instantaneous protection (kA peak ±10 %)

Rated making capacity (kA peak)	Icm	220/415 V
V AC 50/60 Hz		440 V
		525 V
		690 V

Breaking time (ms) between tripping order and arc extinction

Closing time (ms)

Circuit breaker as per NEMA AB1

Breaking capacity (kA)		240 V
V AC 50/60 Hz		480 V
		600 V

Switch-disconnector as per IEC 60947-3 and Annex A

Type of switch-disconnector

Rated making capacity (kA peak)	Icm	220 V
AC23A/AC3 category V AC 50/60 Hz		440 V
		525/690 V

Rated short-time withstand current (kA rms)	Icw	0.5 s
AC23A/AC3 category V AC 50/60 Hz		1 s
		3 s

Ultimate breaking capacity Icu (kA rms) with an external protection relay

Maximum time delay: 350 ms

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

Durability 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⁾
IEC 60947-2		690 V

Type of circuit breaker or switch-disconnector

Rated operational current	Ie (A)	AC23A
C/O cycles x 1000 Electrical without maintenance		440 V ⁽⁴⁾
IEC 60947-3		690V

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⁾
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IEC 60947-3 Annex M/IEC 60947-4-1		690 V
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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	42	10							42	42				
	42	42	-							42	42				
	24	20	-							24	20				
	-	90	10 x In ⁽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			1600		
	6	6	3	6	6	3	6	6	3	6	6		6	6	
	3	3	2	3	3	2	3	3	2	3	3		3	3	
	H1/H2/HA														
	630			800			1000			1250			1600		
	6			6			6			6			6		
	3			3			3			3			3		
	H1/H2/HA														
	500			630			800			1000			1000		
	≤ 250			250 to 335			335 to 450			450 to 560			450 to 560		
	≤ 300			300 to 400			400 to 500			500 to 630			500 to 630		
	6														
	-														

⁽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).

Circuit breakers and switch-disconnectors characteristics

NW08 to NW63



Common characteristics

Number of poles	3/4		
Rated insulation voltage (V)	Ui	1000	1250 for H10, HA10
Impulse withstand voltage (kV)	Uimp	12	12
Rated operational voltage (V AC 50/60 Hz)	Ue	690	1150 for H10, HA10
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	Icu	220/415/440 V 525 V 690 V 1150 V
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Rated service breaking capacity (kA rms)

Utilisation category

Rated short-time withstand current (kA rms)

V AC 50/60 Hz

Integrated instantaneous protection (kA peak ±10 %)

Rated making capacity (kA peak) V AC 50/60 Hz	Icm	220/415/440 V 525 V 690 V 1150 V
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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	Icu	220...690 V
Rated service breaking capacity (kA rms)	Ics	% Icu
Rated short-time withstand current (kA rms)	Icw	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	Icm	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	Icm	220...690 V 1150 V
Rated short-time withstand current (kA rms) AC23A/AC3 category V AC 50/60 Hz	Icw	1 s 3 s

Earthing switch

Latching capacity (kA peak)

Rated short time withstand (kA rms)	Icw	135 1 s 3 s
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Mechanical and electrical durability as per IEC 60947-2/3 at In/Ie

Durability Mechanical with maintenance

C/O cycles x 1000 without maintenance

Type of circuit breaker

Rated current	In (A)	
C/O cycles x 1000	Electrical	without maintenance
IEC 60947-2		440 V ⁽⁴⁾ 690 V 1150 V

Type of circuit breaker or switch-disconnector

Rated operational current	Ie (A)	AC23A
C/O cycles x 1000	Electrical	without maintenance
IEC 60947-3		440 V ⁽⁴⁾ 690 V

Type of circuit breaker or switch-disconnector

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

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	1000	1250	1600	2000						2500	3200	4000	4000	5000	6300	
	800	1000	1250	1600	2000						2500	3200	4000	4000	5000	6300	
	400	400	630	800	1000 to 2000						1250	1600	2000 to 4000	2000	2500	3200	
	to 800	to 1000	to 1250	to 1600							to 2500	to 3200		to 4000	to 5000	to 6300	
	N1	H1	H2	L1 ⁽³⁾	H10	N1	H1	H2	H3	L1 ⁽³⁾	H10	H1	H2	H3	H10	H1	H2
	42	65	100	150	-	42	65	100	150	150	-	65	100	150	-	100	150
	42	65	85	130	-	42	65	85	130	130	-	65	85	130	-	100	130
	42	65	85	100	-	42	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	42	65	85	65	30	50	65	85	65	50	100	100
	22	36	50	30	50	22	36	75	65	30	50	65	75	65	50	100	100
	-	-	190	80	-	-	-	190	150	80	-	-	190	150	-	-	270
	88	143	220	330	-	88	143	220	330	330	-	143	220	330	-	220	330
	88	143	187	286	-	88	143	187	286	286	-	143	187	286	-	220	286
	88	143	187	220	-	88	143	187	220	220	-	143	187	220	-	220	220
	-	-	-	-	105	-	-	-	-	-	105	-	-	-	105	-	-
	25	25	25	10	25	25	25	25	25	10	25	25	25	25	25	25	25
	< 70					< 70	< 70					< 70				< 80	
	42	65	100	150	-	42	65	100	150	150	-	65	100	150	-	100	150
	42	65	85	100	-	42	65	85	100	100	-	65	85	100	-	100	100

	HA	HF ⁽³⁾		HA	HF ⁽³⁾		HA	HF ⁽³⁾		HA
50	85		50	85		55	85		85	
100 %			100 %			100 %			100 %	
50	85		50	85		55	85		85	
36	75		36	75		55	75		85	
-	-		-	-		-	-		-	
105	187		105	187		121	187		187	
NW08/NW10/NW12/NW16	HA	HF	HA10	NW20	HA	HF	HA10	NW25/NW32/NW40	HA	NW40b/NW50/NW63
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																	
50																	
25																	
12.5																	
N1/H1/H2	L1	H10		N1/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					
10	-	0.5		-	-	-	0.5	-	-	0.5	-	-					
H1/H2/NA/HA/HF	H1/H2/H3/HA/HF	H1/H2/H3/HA/HF	H1/H2/HA	H1/H2/H3/HA/HF	H1/H2/H3/HA/HF	H1/H2/HA	H1/H2/HA	H1/H2/H3/HA/HF	H1/H2/H3/HA/HF	H1/H2/HA	H1/H2/HA	H1/H2/HA					
800/1000/1250/1600	2000	2500/3200/4000	4000b/5000/6300	2000	2500/3200/4000	4000b/5000/6300	4000b/5000/6300	2000	2500/3200/4000	4000b/5000/6300	4000b/5000/6300	4000b/5000/6300					
10	8	5	1.5	8	5	1.5	1.5	10	5	1.5	1.5	1.5					
10	6	2.5		6	2.5			10	2.5								
H1/H2/NA/HA/HF	H1/H2/H3/HA/HF	H1/H2/H3/HA/HF	H1/H2/HA	H1/H2/H3/HA/HF	H1/H2/H3/HA/HF	H1/H2/HA	H1/H2/HA	H1/H2/H3/HA/HF	H1/H2/H3/HA/HF	H1/H2/HA	H1/H2/HA	H1/H2/HA					
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	630 to 800	800 to 1000	1000 to 1300													
≤ 800	800 to 1000	1000 to 1250	1250 to 1600	1600 to 2000													
6																	

⁽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).