

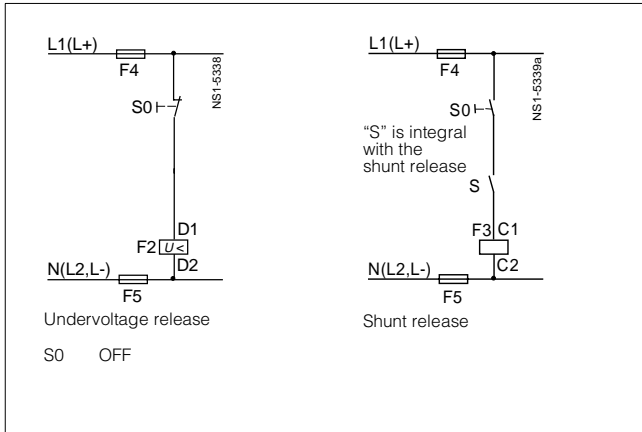
3VF2 to 3VF8 Circuit-Breakers

3- and 4-pole

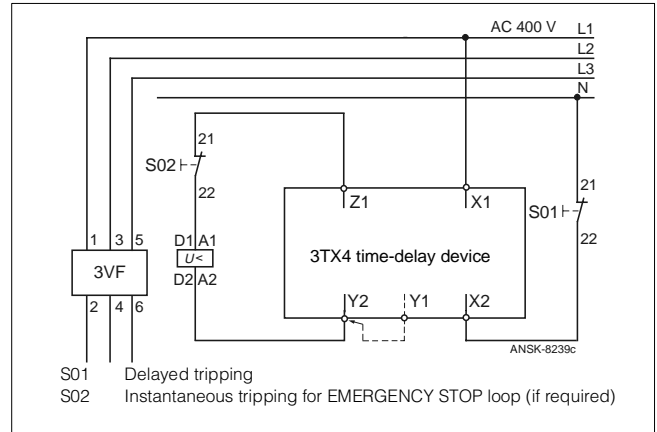
Circuit diagrams

For other circuit-breakers
(complete program)
see Catalog NS PS

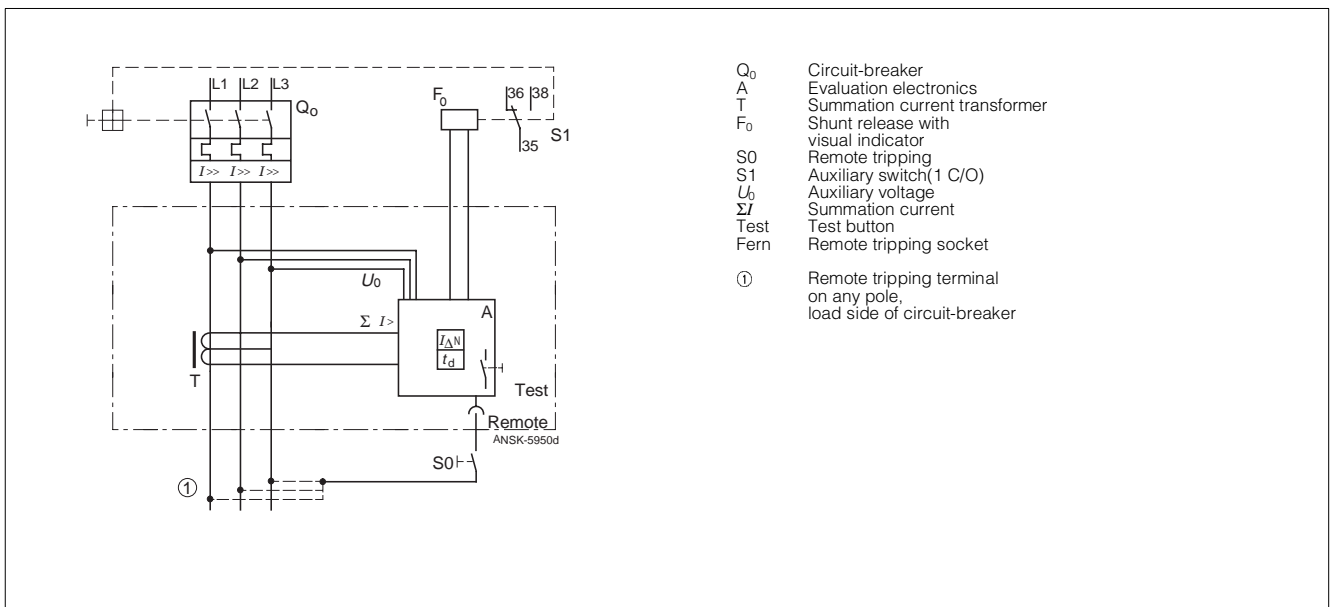
Auxiliary release for 3VF2 to 3VF8



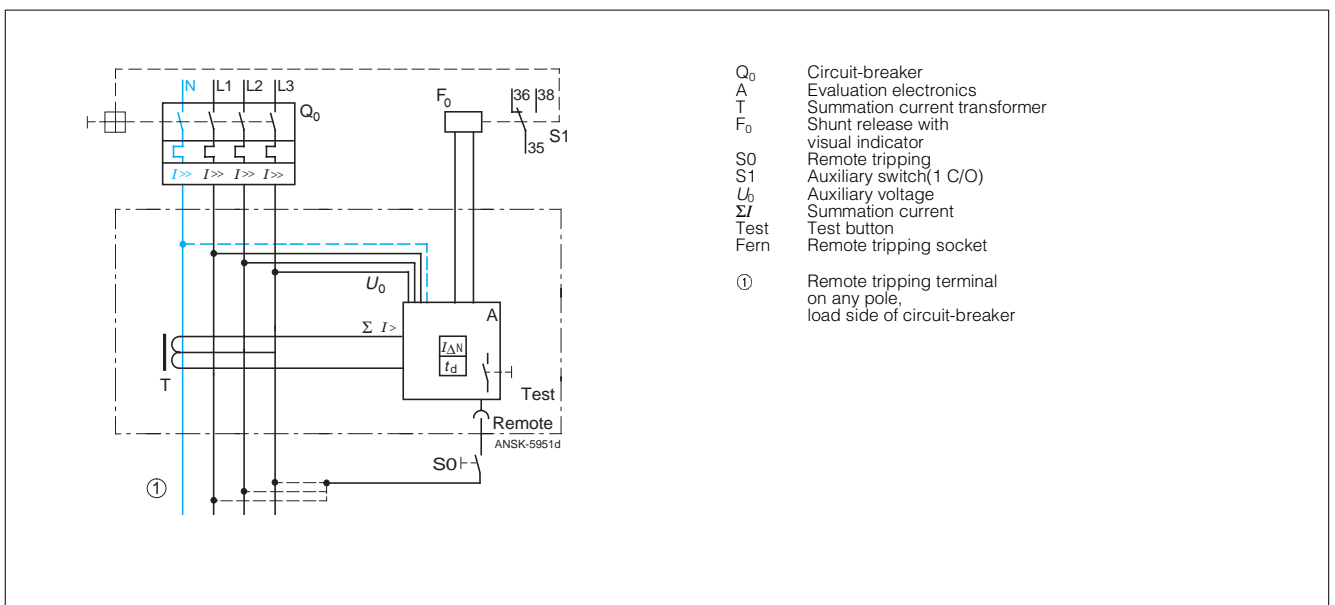
Delay device for undervoltage release for 3VF3 to 3VF8



Remote tripping of a 3-pole circuit-breaker with DI module



Remote tripping of a 4-pole circuit-breaker with DI module



3WN6 Circuit-Breakers

3-pole, up to 3200 A

Selection and ordering data

For other circuit breakers
(complete Program)
see Catalog NS PS



Rated operational voltage U_e up to 690 V AC
Rated ultimate short-circuit breaking capacity I_{CU} at up to AC 500 V/690 V:
Size I 65/50 kA; Size II 80/50 kA
Rated operational short-circuit breaking capacity $I_{CS} = I_{CU}$

With mechanical reclosing lockout, with trip indication switch (1 NO),
with ready-to-close indication/switch (1 NO)
Overcurrent release with LED indication independent of external voltage/
interrogation of reason for tripping, with LED operating status indication, with
test function for testing with and without tripping.

Size	Rated current $I_n =$ Current- transformer primary current I_N A	Current setting range I_r A	fixed-mounted circuit breakers with horizontal main connections at the rear		Withdrawable circuit-breakers with guide frame	
			Order No. (Order No. supplements required according to the table below)	Basic price	Order No. (Order No. supplements required according to the table below)	Basic price
Circuit-breakers with overcurrent releases for overload and short-circuit protection						
 NSK-8023a	I 630	252– 630	3WN6 061-0DB		3WN6 081-0DB	
	I 800	320– 800	3WN6 161-0EB		3WN6 181-0EB	
	I 1000	400–1000	3WN6 261-0FB		3WN6 281-0FB	
	I 1250	500–1250	3WN6 361-0GB		3WN6 381-0GB	
	I 1600	640–1600	3WN6 461-0HB		3WN6 481-0HB	
	II 2000	800–2000	3WN6 561-0JB		3WN6 581-0JB	
II 2500	1000–2500	3WN6 661-0KB		3WN6 681-0KB		
II 3200	1280–3200	3WN6 761-0MB		3WN6 781-0MB		
Circuit-breakers with overcurrent releases for overload, short-circuit and earth-fault protection						
 NSK-8024	I 630	252– 630	3WN6 061-0DC		3WN6 081-0DC	
	I 800	320– 800	3WN6 161-0EC		3WN6 181-0EC	
	I 1000	400–1000	3WN6 261-0FC		3WN6 281-0FC	
	I 1250	500–1250	3WN6 361-0GC		3WN6 381-0GC	
	I 1600	640–1600	3WN6 461-0HC		3WN6 481-0HC	
	II 2000	800–2000	3WN6 561-0JC		3WN6 581-0JC	
II 2500	1000–2500	3WN6 661-0KC		3WN6 681-0KC		
II 3200	1280–3200	3WN6 761-0MC		3WN6 781-0MC		
Non-automatic circuit-breakers, without overcurrent release						
I 630	–	3WN6 061-0WA		3WN6 081-0WA		
I 800		3WN6 161-0WA		3WN6 181-0WA		
I 1000		3WN6 261-0WA		3WN6 281-0WA		
I 1250		3WN6 361-0WA		3WN6 381-0WA		
I 1600		3WN6 461-0WA		3WN6 481-0WA		
II 2000		3WN6 561-0WA		3WN6 581-0WA		
II 2500		3WN6 661-0WA		3WN6 681-0WA		
II 3200		3WN6 761-0WA		3WN6 781-0WA		
			Order No. supplement	Additional price	Order No. supplement	Additional price
Manual operating mechanism with stored-energy feature with mechanical closing			05	none	05	none
Manual/motorized operating mechanism with stored-energy feature with mechanical and electrical closing 110–127 V AC, 50/60 Hz 220–240 V AC, 50/60 Hz			56 58		56 58	
1st auxiliary release Shunt release			0A 1B 1H 1K	none	0A 1B 1H 1K	none
Undervoltage release			3B 3H 3K		3B 3H 3K	
2nd auxiliary release Shunt release			A B H K	none	A B H K	none
Auxiliary switches			1 3	none	1 3	none
		2 NO + 2 NC 2 NO + 2 NC + 2 C/O				

3WN6 Circuit-breakers

4-pole, up to 3200 A

For other circuit-breakers
(complete Program)
see Catalog NS PS

Selection and ordering data



Rated operational voltage U_e up to 690 V AC
Rated ultimate short-circuit breaking capacity I_{CU} at up to AC 500 V/690 V:
Size I 65/50 kA; Size II 80/50 kA
Rated operational short-circuit breaking capacity $I_{CS} = I_{CU}$

With mechanical reclosing lockout, with trip indication switch (1 NO),
with ready-to-close indication/switch (1 NO)
Overcurrent release with LED indication independent of external voltage/
interrogation of reason for tripping, with LED operating status indication, with
test function for testing with and without tripping.

Size	Rated current $I_n =$ Current-transformer primary current I_N A	Current setting range I_r A	Fixed-mounted circuit breakers with horizontal main connections at the rear		Withdrawable circuit-breakers with guide frame		
			Order No. (Order No. supplements required according to the table below)	Basic price	Order No. (Order No. supplements required according to the table below)	Basic price	
Circuit-breakers with overcurrent releases for overload and short-circuit protection							
 NSK-8023a	I	630	252– 630	3WN6 063-0DB □ □ - □ □ □ □		3WN6 083-0DB □ □ - □ □ □ □	
	I	800	320– 800	3WN6 163-0EB □ □ - □ □ □ □		3WN6 183-0EB □ □ - □ □ □ □	
	I	1000	400–1000	3WN6 263-0FB □ □ - □ □ □ □		3WN6 283-0FB □ □ - □ □ □ □	
	I	1250	500–1250	3WN6 363-0GB □ □ - □ □ □ □		3WN6 383-0GB □ □ - □ □ □ □	
	I	1600	640–1600	3WN6 463-0HB □ □ - □ □ □ □		3WN6 483-0HB □ □ - □ □ □ □	
	II	2000	800–2000	3WN6 563-0JB □ □ - □ □ □ □		3WN6 583-0JB □ □ - □ □ □ □	
	II	2500	1000–2500	3WN6 663-0KB □ □ - □ □ □ □		3WN6 683-0KB □ □ - □ □ □ □	
	II	3200	1280–3200	3WN6 763-0MB □ □ - □ □ □ □		3WN6 783-0MB □ □ - □ □ □ □	
Circuit-breakers with overcurrent releases for overload, short-circuit and earth-fault protection							
 NSK-8024	I	630	252– 630	3WN6 063-0DG □ □ - □ □ □ □		3WN6 083-0DG □ □ - □ □ □ □	
	I	800	320– 800	3WN6 163-0EG □ □ - □ □ □ □		3WN6 183-0EG □ □ - □ □ □ □	
	I	1000	400–1000	3WN6 263-0FG □ □ - □ □ □ □		3WN6 283-0FG □ □ - □ □ □ □	
	I	1250	500–1250	3WN6 363-0GG □ □ - □ □ □ □		3WN6 383-0GG □ □ - □ □ □ □	
	I	1600	640–1600	3WN6 463-0HG □ □ - □ □ □ □		3WN6 483-0HG □ □ - □ □ □ □	
	II	2000	800–2000	3WN6 563-0JG □ □ - □ □ □ □		3WN6 583-0JG □ □ - □ □ □ □	
	II	2500	1000–2500	3WN6 663-0KG □ □ - □ □ □ □		3WN6 683-0KG □ □ - □ □ □ □	
	II	3200	1280–3200	3WN6 763-0MG □ □ - □ □ □ □		3WN6 783-0MG □ □ - □ □ □ □	
Non-automatic circuit-breakers, without overcurrent release							
I	630	–	3WN6 063-0WA □ □ - □ □ □ □		3WN6 083-0WA □ □ - □ □ □ □		
I	800		3WN6 163-0WA □ □ - □ □ □ □		3WN6 183-0WA □ □ - □ □ □ □		
I	1000		3WN6 263-0WA □ □ - □ □ □ □		3WN6 283-0WA □ □ - □ □ □ □		
I	1250		3WN6 363-0WA □ □ - □ □ □ □		3WN6 383-0WA □ □ - □ □ □ □		
I	1600		3WN6 463-0WA □ □ - □ □ □ □		3WN6 483-0WA □ □ - □ □ □ □		
II	2000		3WN6 563-0WA □ □ - □ □ □ □		3WN6 583-0WA □ □ - □ □ □ □		
II	2500		3WN6 663-0WA □ □ - □ □ □ □		3WN6 683-0WA □ □ - □ □ □ □		
II	3200		3WN6 763-0WA □ □ - □ □ □ □		3WN6 783-0WA □ □ - □ □ □ □		
			Order No. supplement	Additional price	Order No. supplement	Additional price	
Manual operating mechanism with stored-energy feature with mechanical closing			05	none	05	none	
Manual/motorized operating mechanism with stored-energy feature with mechanical and electrical closing 110–127 V AC, 50/60 Hz 220–240 V AC, 50/60 Hz			56 58		56 58		
1st auxiliary release Shunt release			0A 1B 1H 1K 3B 3H 3K	none	0A 1B 1H 1K 3B 3H 3K	none	
Undervoltage release			A B H K	none	A B H K	none	
2nd auxiliary release Shunt release			1 3	none	1 3	none	
Auxiliary switches							
2 NO + 2 NC 2 NO + 2 NC + 2 C/O							

3WN6 Circuit-Breakers

3- and 4-pole, up to 3200 A

For other circuit breakers (complete program) see Catalog NS PS

Further versions

Add "-Z" to the complete Order No. and indicate the appropriate Order Codes.

Circuit-breaker/
non-auto circuit breaker
with guide frame

Order
Code

Order No. with "-Z"

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 -Z

3WN6 -Z

and additional Order Code(s)

□□□ + +

Additional price

Guide frame

Order No. with "-Z"

1 2 3 4 5 6 7 8 9 10 11 12

3WX36 8 3 - . A . . . 0-Z

and additional Order Code(s)

□□□ + +

3-pole

4-pole

Code for
"further versions" -Z

For circuit-breakers/non-automatic circuit-breakers with guide frames For guide frames

Main connections for rated current

Top and bottom connections up to 1600 A
accessible from the front, 2000 A
drilling of connection bars 2500 A, 3200 A
in accordance with
DIN 43 673 (double hole)

R102

Top and bottom connections up to 1600 A
accessible from the front, 2000 A
connection bars with 2500 A, 3200 A
single hole

R103

□□□

Rear, vertical, up to 1600 A
connections 2000 A
top and bottom 2500 A, 3200 A

R107

With position indication switch (operated by withdrawable circuit-breaker)

Service position	Test position	Isolated pos.
1 NO + 1 NC	1 NO + 1 NC	1 NO + 1 NC
3 NO + 3 NC	2 NO + 2 NC	1 NO + 1 NC

R113

□□□

R114

With shutter, two-piece

up to 1600 A
2000 to 3200 A

R210

□□□

Mechanical cross-interlocking for 3WN6 circuit-breakers

Interlocking module with Bowden cable (2 m),
for interlocking of 3 circuit-breakers, and additional
Bowden cable is required (see below).

R513

□□□

For fixed-mounted circuit-breakers

Mechanical cross-interlocking for 3WN6 circuit-breakers

Interlocking module with Bowden cable (2 m),
for interlocking of 3 circuit-breakers, and additional
Bowden cable is required (see below).

S513

□□□

Accessories

Description	Rated current I_n	Size	No. of poles	Quantity required per circuit-breaker	Accessories for 3WN6 circuit-breakers	
					Order No.	Price
For fixed-mounted circuit-breakers, for retro-fitting						
Connection bars for connections accessible from the front	up to 1000 A	I	3-pole 4-pole	1 set = 3 units 1 set = 4 units	3WX36 21-1AB00 3WX36 21-1AC00	
	1250 and 1600 A	I	3-pole 4-pole	1 set = 3 units 1 set = 4 units	3WX36 21-1BB00 3WX36 21-1BC00	
Vertical single-hole bars	2000 A	II	3-pole 4-pole	1 set = 3 units 1 set = 4 units	3WX36 21-1DB00 3WX36 21-1DC00	
	2500 A and 3200 A	II	3-pole 4-pole	1 set = 3 units 1 set = 4 units	3WX36 21-1FB00 3WX36 21-1FC00	
For fixed-mounted and withdrawable circuit-breakers						
Bowden cable 2 m for cross-interlocking of 3 circuit-breakers					3WX36 66-8JA00	
Bowden cable 3 m for cross-interlocking of 3 circuit-breakers					3WX36 66-8JA01	

3WN6 Circuit-Breakers

3 and 4-pole, up to 3200 A

For other circuit-breakers
(complete Program)
see Catalog NS PS

Technical data

Specifications				IEC 60 947, EN 60 947							
Size				I				II			
Type				3WN6 0	3WN6 1	3WN6 2	3WN6 3	3WN6 4	3WN6 5	3WN6 6	3WN6 7
Rated current I_n at 55 °C, and 50/60 Hz	Main conductor	A	630	800	1000	1250	1600	2000	2500	3200	
	N conductor (4-pole only)	A	630	800	1000	1250	1600	2000	2500	3200	
Rated operational voltage U_e at 50/60 Hz	AC V		up to 690	up to 690	up to 690	up to 690	up to 690	up to 690	up to 690	up to 690	
Rated impulse withstand voltage U_{imp}	Main current paths ⁷⁾	kV	8	8	8	8	8	8	8	8	
	Auxiliary circuits	kV	4	4	4	4	4	4	4	4	
Utilization category			B	B	B	B	B	B	B	B	
Rated short-circuit making capacity I_{cm} (peak value)	up to 415 V AC	kA	143	143	143	143	143	176	176	176	
	up to 500 V AC	kA	143	143	143	143	143	176	176	176	
	up to 690 V AC	kA	110	110	110	110	110	110	110	110	
Rated service short-circuit breaking capacity I_{cs} (rms value)	up to 415 V AC	kA	65	65	65	65	65	80	80	80	
	up to 500 V AC	kA	65	65	65	65	65	80	80	80	
	up to 690 V AC	kA	50	50	50	50	50	50	50	50	
Rated ultimate short-circuit breaking capacity I_{cu} (rms value)	up to 415 V AC	kA	65	65	65	65	65	80	80	80	
	up to 500 V AC	kA	65	65	65	65	65	80	80	80	
	up to 690 V AC	kA	50	50	50	50	50	50	50	50	
Permissible ambient temperatures	Operation	°C	-20 ... +70								
	Storage	°C	-40 ... +80								
Rated short-time withstand current I_{cw} at 50/60 Hz	0.5 s	kA	50	50	50	50	50	65	65	65	
	1 s	kA	35/50 ¹⁾	35/50 ¹⁾	35/50 ¹⁾	50	50	65	65	65	
	2 s	kA	25/30 ¹⁾	25/30 ¹⁾	25/30 ¹⁾	30	30	60	60	60	
	3 s	kA	20/25 ¹⁾	20/25 ¹⁾	20/25 ¹⁾	25	25	50	50	50	
Permissible load of fixed and withdrawable circuit-breakers with internal cubicle temperatures as shown ²⁾³⁾⁴⁾	up to 55 °C	A	630	800	1000	1250	1600	2000	2500	3200	
	at 60 °C	A	630	800	1000	1250	1550	2000	2270	3050	
	at 70 °C	A	630	800	1000	1250	1450	2000	2030	2850	
Rated rotor operational voltage U_{er}	V		2000								
Power loss at I_n with symmetrical 3-phase load (without conductor bars and metal components) ²⁾⁴⁾	Fixed circuit-breaker	W	40	60	90	90	140	170	260	420	
	Withdrawable circuit-breaker including guide frame	W	80	130	205	205	310	310	510	760	
Endurance with maintenance ⁵⁾	mechanical	operating cycles	20 000	20 000	20 000	20 000	20 000	20 000	20 000	20 000	
	electrical	operating cycles	20 000	20 000	20 000	20 000	20 000	20 000	20 000	20 000	
without maintenance ⁵⁾	mechanical	operating cycles	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000	
	electrical ⁶⁾	operating cycles	6 000	6 000	6 000	6 000	6 000	2 000	2 000	2 000	
Frequency of operation	1/min		1	1	1	1	1	1	1	1	
Minimum interval between tripping on overload and next closing command (only with automatic mechanical resetting of the reclosing lockout)	ms		80	80	80	80	80	80	80	80	
Mounting position											
Degree of protection			Circuit-breaker IP 20 when mounted in a cubicle or on a frame Control panel with door sealing frame IP 54								
Minimum main conductor cross-sections	Bare Cu bars	Qty. mm ²	1 × 50 × 10	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10	2 × 60 × 10	2 × 100 × 10	3 × 100 × 10	3 × 100 × 10	
	Cu bars painted black	Qty. mm ²	1 × 40 × 10	1 × 50 × 10	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10	2 × 80 × 10	2 × 100 × 10	3 × 100 × 10	
Auxiliary connections (Cu)	Max. no of aux. connections × cross-section	solid or finely stranded with end sleeves	1 × 0.5 ... 2.5 mm ² ; 1 × AWG 14 2 × 1.0 mm ²								
Weights	3-pole circuit-breaker	Fixed mounting	approx. kg	34	34	34	36	36	57	59	61
		Withdrawable	approx. kg	36	36	36	38	38	59	61	63
		Guide frame	approx. kg	22	22	22	23	23	35	37	37
	4-pole circuit-breaker	Fixed mounting	approx. kg	47	47	47	49	49	70	72	74
		Withdrawable	approx. kg	49	49	49	51	51	72	74	76
		Guide frame	approx. kg	27	27	27	28	28	46	48	48

1) Values apply to circuit-breaker with Order Code "K03", see Catalog NS PS.

2) Horizontal connection with fixed-mounted version, vertical connection with withdrawable version.

3) The temperatures refer to the air space around the upper one-third of the circuit-breaker.

4) The values refer to sinusoidal current at (50/60 Hz). Heating and losses will rise in the case of harmonics and higher frequencies.

5) Maintenance: replacement of contact set.

6) Per contact set. Breaking of rated current I_n at $\cos \varphi = 0.8$.

7) Rated insulation voltage $U_i = AC 1000 V$.

3WN6 Circuit-Breakers

3 and 4-pole, up to 3200 A

For other circuit breakers
(complete Program)
see Catalog NS PS

Technical data

Closing solenoid/shunt release					
Working range				0.7 to $1.1 \times U_s$	
Extended working range for battery operation ¹⁾				at 24 to 240 V DC: 0.7 to $1.26 \times U_s$	
Power consumption	AC/DC	VA/W		15	
Minimum control command duration at U_s			ms	60	
Closing time at U_s from start of closing signal to closing solenoid, suitable for synchronizing tasks			ms	80	
Opening time of circuit-breaker at $U_s = 100\%$ for uninterrupted operating signal (100% ON), suitable for closing-proof lockout	AC/DC		ms	≤ 80	
Motorized operating mechanism					
Motor				Working range	
				0.7 to $1.1 \times U_s$	
				Extended operating range for battery operation ¹⁾	
				at 24 bis 240 V DC: 0.7 to $1.26 \times U_s$	
Motor power consumption	AC/DC	VA/W		40	
Time to charge the stored-energy mechanism at $1 \times U_s$			s	20	
Auxiliary releases					
Undervoltage release				Operating values	
				pickup	
				dropout	
				$\geq 0.85 \times U_s$ (breaker can be closed) $(0.35 \text{ to } 0.7) \times U_s$ (breaker is tripped)	
				Working range	
				$\geq 0.85 \text{ to } 1.1 \times U_s$	
				Extended operating range for battery operation ¹⁾	
				at 24 to 240 V DC: 0.7 to $1.26 \times U_s$	
Power consumption	AC/DC	VA/W		15	
Opening time of circuit-breaker at $U_s = 0$				selectable:	
				instantaneous	
			ms	≤ 100	
			ms	with 100 ms delay ≤ 200	
Auxiliary switches for switching position indication					
Switching capacity	AC	Rated operational voltage U_e	V	up to 240	up to 415
	50/60 Hz	Rated operational current $I_e/AC-12$	A	10	10
		$I_e/AC-15$	A	4	3
	DC	Rated operational voltage U_e	V	24	48
		Rated operational current $I_e/DC-12$	A	10	8
		$I_e/DC-13$	A	8	4
				110	220
				3.5	1
				1.2	0.4
Ready-to-close signalling switch and tripped signalling switch, to DIN VDE 0630					
Switching capacity	AC	Rated operational voltage U_e	V	110	220
	50/60 Hz	Rated operational current I_e	A	0.14	0.1
	DC	Rated operational voltage U_e	V	24	220
		Rated operational current I_e	A	0.2	0.1
Tripped signalling switch		Signal duration after tripping		Continuous until reset	
Position indication switched on guide frame					
Type of contact	Signal:	"Circuit-breaker in service position"		3 NO + 3 NC	1 NO + 1 NC
		"Circuit-breaker in test position"		2 NO + 2 NC or	1 NO + 1 NC
		"Circuit-breaker in isolated position"		1 NO + 1 NC	1 NO + 1 NC
Rated operational voltage U_e				240 V AC, 230 V DC	
Switching capacity		Rated operational current $I_e/AC-1$	A	8 to 240 V AC	
		$I_e/AC-15$	A	8 to 240 V AC	
		$I_e/DC-13$	A	10/24 V DC; 5/48 V DC; 1.5/115 V DC; 0.6/230 V DC	

See Catalog NS PS "Products and systems for power distribution"
for characteristics of 3WN6 circuit-breakers .

1) The operating range is only valid for the specified rated voltage and corresponds to the battery charging voltage.