

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3RT13 Contactors for Switching Resistive Loads (AC-1)

4-pole, 4 NO, 18 ... 140 A

Technical specifications

Contactor	Type Size		3RT13 16 S00	3RT13 17 S0	3RT13 25 S0	3RT13 26 S2	3RT13 36 S3	3RT13 44 S3	3RT13 46 S3
General data									
Permissible mounting position ¹⁾									
Mechanical endurance	Operating cycles		30 million		10 million				
Electrical endurance at $I_e/AC-1$	Operating cycles		Approx. 0.5 million						
Rated insulation voltage U_i (degree of pollution 3)	V		690						
Permissible ambient temperature	During operation	°C	-25 ... +60						
	During storage	°C	-55 ... +80						
Degree of protection	Device		IP20				IP20		
Acc. to EN 60947-1, Appendix C	Connection range						IP00		
Touch protection acc. to EN 50274			Finger-safe						
Short-circuit protection of contactors without overload relays									
Main circuit									
Fuse links, gL/gG operational class LV HRC, 3NA, DIAZED, 5SB, NEOZED, 5SE - According to IEC 60947-4-1/ EN 60947-4-1	Type of coordination *1* ¹⁾	A	35	63	160	250	250		
	Type of coordination *2* ¹⁾	A	20	25/35	63	125	160		
	Weld-free	A	10	16	50	63	100		
Control									
Magnetic coil operating range	AC at 50 Hz AC at 60 Hz DC at 50 °C DC at 60 °C AC/DC		0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s		0.8 ... 1.1 x U_s				
Power consumption of the magnetic coils (when coil is cold and 1.0 x U_s)									
AC operation, 50 Hz	• Closing	VA	61	145	270				
	• P.f.	VA	0.82	0.79	0.68				
	• Closed	VA	7.8	12.5	22				
	• P.f.	VA	0.24	0.36	0.27				
AC operation, 50/60 Hz	• Closing	VA	26.5/24.3	64/63	170/155	298/274			
	• P.f.	VA	0.79/0.75	0.82/0.74	0.76/0.72	0.72/0.62			
	• Closed	VA	4.4/3.4	8.4/6.8	15/11.8	27/20			
	• P.f.	VA	0.27/0.27	0.24/0.28	0.35/0.38	0.29/0.31			
DC operation	• Closing = Closed	W	3.3	5.6	13.3	15			
Operating times for 0.8 ... 1.1 x U_s ²⁾ Total break time = Opening delay + Arcing time									
• DC operation	Closing delay	ms	25 ... 100	30 ... 90	50 ... 110	110 ... 200			
	Opening delay	ms	7 ... 10	13 ... 40	15 ... 30	14 ... 20			
• AC operation	Closing delay	ms	8 ... 35	6 ... 30	4 ... 35	20 ... 50			
	Opening delay	ms	4 ... 30	13 ... 25	10 ... 30	10 ... 25			
• Arcing time		ms	10 ... 15	10 ... 15	10 ... 15	10 ... 15			
Main circuit									
AC capacity									
Utilization category AC-1, switching resistive loads									
Rated operational currents I_e	at 40 °C up to 690 V	A	18	22	35	40	60	110	140
	at 60 °C up to 690 V	A	16	20	30	35	55	100	120
Rated power for AC loads with P.f = 0.95 (at 40 °C)	at 230 V	kW	7	8.5	12.5	15	23	42	53
	400 V	kW	12	14.5	22	26	39	72	92
Minimum conductor cross-section for loads with I_e	at 40 °C	mm ²	2.5	2.5	10	10	16	50	50
	at 60 °C	mm ²	2.5	2.5	10	10	16	50	50
Utilization category AC-2 and AC-3									
Rated operational currents I_e		at 60 °C, for 400 V	A	9	12	17	25	26	--
Rated power of slipping or squirrel-cage motors at 50 Hz and 60 Hz	at 230 V	kW	3	3	4	5.5	5.5	--	--
	400 V	kW	4	5.5	7.5	11	11	--	--

1) In accordance with the corresponding 3-pole 3RT1 contactors.

2) With size S00, DC operation: Operating times at 0.85 ... 1.1 x U_s.

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Main circuit						
Load rating with DC						
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)						
Rated operational current I_e (at 40 °C)						
• 1 conducting path	up to 24 V	A	18	22	35	
	60 V	A	18	22	20	
	110 V	A	2.1	2.1	4.5	
	220 V	A	0.8	0.8	1	
	440 V	A	0.6	0.6	0.4	
• 2 conducting paths in series	up to 24 V	A	18	22	35	
	60 V	A	18	22	35	
	110 V	A	12	12	35	
	220 V	A	1.6	1.6	5	
	440 V	A	0.8	0.8	1	
• 3 conducting paths in series	up to 24 V	A	18	22	35	
	60 V	A	18	22	35	
	110 V	A	18	22	35	
	220 V	A	18	22	35	
	440 V	A	1.3	1.3	2.9	
• 4 conducting paths in series	up to 24 V	A	18	22	35	
	60 V	A	18	22	35	
	110 V	A	18	22	35	
	220 V	A	18	22	35	
	440 V	A	1.3	1.3	2,9	
Utilization category DC-3/DC-5						
Shunt-wound and series-wound motors ($L/R \leq 15$ ms)						
Rated operational current I_e (at 40 °C)						
• 1 conducting path	up to 24 V	A	18	20	20	
	60 V	A	0.5	0.5	5	
	110 V	A	0.15	0.15	2.5	
	220 V	A	--	--	1	
	440 V	A	--	--	0.09	
• 2 conducting paths in series	up to 24 V	A	18	20	35	
	60 V	A	5	5	35	
	110 V	A	0.35	0.35	15	
	220 V	A	--	--	3	
	440 V	A	--	--	0.27	
• 3 conducting paths in series	up to 24 V	A	18	20	35	
	60 V	A	18	20	35	
	110 V	A	18	20	35	
	220 V	A	1.5	1.5	10	
	440 V	A	0.2	0.2	0.6	
• 4 conducting paths in series	up to 24 V	A	18	20	35	
	60 V	A	18	20	35	
	110 V	A	18	20	35	
	220 V	A	1.5	1.5	35	
	440 V	A	0.2	0.2	0.6	

For more technical specifications, see 3RT10 Contactors from page 3/20 onwards.

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Contactor	Type Size		3RT13 36 S2	3RT13 44 S3	3RT13 46 S3
Main circuit					
Load rating with DC					
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)					
Rated operational currents I_e (at 40 °C)					
• 1 conducting path	up to 24 V	A	50	70	80
	60 V	A	23	23	60
	110 V	A	4.5	4.5	9
	220 V	A	1	1	2
	440 V	A	0.4	0.4	0.6
• 2 conducting paths in series	up to 24 V	A	50	70	80
	60 V	A	45	70	80
	110 V	A	45	70	80
	220 V	A	5	5	10
	440 V	A	1	1	1.8
• 3 conducting paths in series	up to 24 V	A	50	70	80
	60 V	A	45	70	80
	110 V	A	45	70	80
	220 V	A	45	70	80
	440 V	A	2,9	2,9	4.5
• 4 conducting paths in series	up to 24 V	A	50	70	80
	60 V	A	45	70	80
	110 V	A	45	70	80
	220 V	A	45	70	80
	440 V	A	2,9	2,9	4.5
Utilization category DC-3/DC-5					
Shunt-wound and series-wound motors ($L/R \leq 15$ ms)					
Rated operational currents I_e (at 40 °C)					
• 1 conducting path	up to 24 V	A	20	20	20
	60 V	A	6	6	6.5
	110 V	A	2.5	2.5	2.5
	220 V	A	1	1	1
	440 V	A	0.1	0.15	0.15
• 2 conducting paths in series	up to 24 V	A	45	70	80
	60 V	A	45	70	80
	110 V	A	25	70	80
	220 V	A	5	7	7
	440 V	A	0.27	0.42	0.42
• 3 conducting paths in series	up to 24 V	A	45	70	80
	60 V	A	45	70	80
	110 V	A	45	70	80
	220 V	A	25	35	35
	440 V	A	0.6	0.8	0.8
• 4 conducting paths in series	up to 24 V	A	45	70	80
	60 V	A	45	70	80
	110 V	A	45	70	80
	220 V	A	45	70	80
	440 V	A	0.6	0.8	0.8

For more technical specifications, see 3RT10 Contactors from page 3/28 onwards.