



SIRIUS 3RT102

Contactor	Type	Unit of Measure	3RT102		
Mechanical life	Basic unit Basic unit with mounted auxiliary contact block Basic unit with mounted solid state compatible auxiliary contact block	Operating cycles	10 million 10 million 5 million		
Rated insulation voltage U_i (pollution severity 3)		V	690		
Safe isolation between coil and contacts (acc. to DIN VDE 0106 Part 101 and A1 (draft 2/89))		V	400		
Positively driven contacts			Yes, in the auxiliary contact block as well as between basic unit and mounted auxiliary contact block. The solid state compatible auxiliary contact blocks have no positively driven contacts.		
Permissible ambient temperature		operation storage	–25 to + 60°C –55 to + 80°C –13 to + 140°F –67 to + 176°F		
Degree of protection according to IEC 947-1 and DIN 40 050			IP 20, coil system IP 20		
Shock resistance	Rectangular pulse AC DC Sine pulse AC DC	g/ms g/ms g/ms g/ms	8.2/5 and 4.9/10 10/5 and 7.5/10 12.5/5 and 7.8/10 15/5 and 10/10		
Conductor cross-sections					
Screw connection (1 or 2 conductor connections possible)	Main conductor: solid finely stranded with end sleeve AWG conductor connections, solid or stranded Terminal screws Tightening torque Auxiliary conductor: solid finely stranded with end sleeve AWG conductor connections, solid or stranded Terminal screws Tightening torque	mm ² mm ² AWG Nm (in lbs.) mm ² mm ² AWG Nm (in lbs.)	2 × (1 to 2.5); 2 × (2.5 × 6) 2 × (1 to 2.5); 2 × (2.5 × 6) acc. to IEC947; max 1 × 10 2 × (14 to 10) M4 (Pozidrive - size 2) 2.0 to 2.5 (18 to 22) 2 u (0.5 to 1.5); 2 u (0.75 to 2.5) acc. to IEC 947; max 2 u (0.75 to 4) 2 u (0.5 to 1.5); 2 u (0.75 to 2.5) 2 u (18 to 14) M3 0.8 to 1.2 (7 to 10.3)		
Cage Clamp connection (1 or 2 conductor connections possible) For conductor cross-sections ≤ 1 mm ² an "insulation stop" has to be used, 3RT1916-4JA02.	Auxiliary conductor: solid finely stranded with end sleeve finely stranded without end sleeve AWG conductor connections, solid or stranded	mm ² mm ² mm ² AWG	2 × (0.5 to 2.5) 2 × (0.5 to 1.5) 2 × (0.5 to 2.5) 2 × (18 to 14)		
Short-circuit protection of the 3RT1024 to 3RT1026 contactors without overload relays for export applications					
Contactor	Type	3RT1023/24	3RT1025	3RT1026	
Main circuit Fuses, utilization category gL/gG or miniature circuit breakers with C-characteristics	LV HRC DIAZED NEOZED	Type 3NA Type 5SB Type 5SE			
With fuses – according to IEC 947-4/DIN VDE 0660 Part 102	Type of coord. "1" ⊕ Type of coord. "2" ⊕ Weld-free	A A A	63 25 10	63 25 10	100 35 16
With miniature circuit-breakers		A	25	25	32
Auxiliary circuit Fuses, utilization category gL/gG (weld-free protection at $I_k \geq 1\text{ kA}$) or miniature circuit breaker with C-characteristic (short circuit current $I_k < 400\text{ A}$)	DIAZED NEOZED	Type 5SB Type 5SE			
With fuses, utilization category gL/gG		A	10	10	10
With miniature circuit-breakers	NEOZED, DIAZED	A	10	10	10

⊕According to excerpt from IEC 947-4/DIN VDE 0660 Part 102:

Type of coordination "1": Destruction of contactor and overload relay is permissible. Contactor and/or overload relay must be replaced, if necessary.
Type of coordination "2": No damage can be tolerated on the overload relay, but contact welding on the contactor is permitted if the contacts can easily be separated.

4 IEC Control



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Contactor Control						
Contactor	Type	Unit of Measure	3RT102			
Coil voltage tolerance	AC coil DC coil		0.8 to 1.1 × U _s 0.8 to 1.1 × U _s			
Power consumption of the coils (with cold coil and 1.0 × U _s)						
AC coil		Hz	50	50/60	60 (K6, P6, U6, V6, T6)	
	inrush	VA	61	64/63	69	
	p.f.		0.82	0.82/0.74	0.76	
	sealed	VA	7.8	8.4/6.8	7.5	
	p.f.		0.24	0.24/0.28	0.28	
DC coil	inrush = sealed	W	5.4	5.4	5.4	
Permissible residual current of the electronics (at 0 signal)			AC coil		DC coil	
Coil voltage tolerance 0.8 to 1.1 × U _s			< 6 mA × (230V / U _s)		< 1.6 mA × (24V / U _s)	
Operating times ^① , coil voltage tolerance 0.8 to 1.1 × U _s						
Break-time = opening time + arcing time						
AC coil	Closing time	ms	8 to 44			
	Opening time	ms	4 to 20			
DC coil	Closing time	ms	50 to 170			
	Opening time	ms	13.5 to 15.5			
Arcing time		ms	10			
Operating times at nominal coil voltage, 1.0 × U _s ^②						
AC coil	Closing time	ms	10 to 17			
	Opening time	ms	4 to 20			
DC coil	Closing time	ms	55 to 85			
	Opening time	ms	14 to 15.5			
Main Circuit—AC Load Ratings for export applications						
Contactor	Type	Unit of Measure	3RT1023	3RT1024	3RT1025	3RT1026
AC-1 duty, switching resistive load						
Rated operational currents I _e		A	40	40	40	40
	at 40°C up to 690V	A	35	35	35	35
	at 60°C up to 690V	A	35	35	35	35
Ratings of three-phase loads ^②		kW	13.3	13.5	13.3	13.3
	up to 230V	kW	23	23	23	23
	400V	kW	23	23	23	23
p.f. = 0.95 at 60°C (140°F)		kW	29	29	29	29
	500V	kW	29	29	29	29
	690V	kW	40	40	40	40
Minimum conductor cross-section at I _e load		mm ²	10	10	10	10
	at 40°C	mm ²	10	10	10	10
	60°C	mm ²	10	10	10	10
AC-2 and AC-3 duty						
Rated operational currents I _e		A	9	12	17	25
	up to 400V	A	6.5	12	17	18
	500V	A	6.5	12	17	18
	690V	A	5.2	9	13	13
Ratings of motors with slipring and squirrel-cage rotor at 50 and 60Hz		kW				
	up to 110V	kW	1.1	1.5	2.2	3
	120V	kW	1.1	1.5	2.2	3
	127V	kW	1.1	1.5	2.2	3
	200V	kW	2.2	3	4	5.5
	220V	kW	3	3	4	5.5
	230V	kW	3	3	4	5.5
	240V	kW	3	3	4	5.5
	380V	kW	4	5.5	7.5	11
	400V	kW	4	5.5	7.5	11
	415V	kW	4	5.5	7.5	11
	440V	kW	4	5.5	9	11
	460V	kW	4	5.5	9	11
	500V	kW	4.5	7.5	10	11
	575V	kW	4.5	7.5	10	11
	660V	kW	5.5	7.5	11	11
	690V	kW	5.5	7.5	11	11
Thermal load	10 s current ^③	A	110	110	150	200
Power loss per current path	at I _e /AC-3	W	0.5	0.5	0.9	1.6
Weight	AC coil	kg	0.31	0.31	0.31	0.31
	DC coil	kg	0.55	0.55	0.55	0.55

①The opening times of the NO contacts and the closing times of the NC contacts increase when the contactor coils are protected against voltage peaks (suppression diode 6 to 10 times; diode combination 2 to 6 times; varistor +2 to 5 ms).

②Industrial furnaces and electric heaters with resistance heating for example (higher current input during heating-up allowed for).

③According to DIN VDE 0660 Part 102.



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Main Current - DC Load Ratings											
Contactor	Type	Unit of Measure	3RT1023/24			3RT1025			3RT1026		
DC-1 duty, switching resistive load ($L/R \leq 1$ ms)											
	Number of conducting paths in series		1	2	3	1	2	3	1	2	3
Rated operational current I_b (at 60°C/140°F)	up to 24V	A	35	35	35	35	35	35	35	35	35
	60V	A	20	35	35	20	35	35	20	35	35
	110V	A	4.5	35	35	4.5	35	35	4.5	35	35
	220V	A	1	5	35	1	5	35	1	5	35
	440V	A	0.4	1	2.9	0.4	1	2.9	0.4	1	2.9
	600V	A	0.25	0.8	1.4	0.25	0.8	1.4	0.25	0.8	1.4
DC-3 and DC-5 duty, shunt and series motors ($L/R \leq 15$ ms)											
	Number of conducting paths in series		1	2	3	1	2	3	1	2	3
Rated operational current I_b (at 60°C/140°F)	up to 24V	A	20	35	35	20	35	35	20	35	35
	60V	A	5	35	35	5	35	35	5	35	35
	110V	A	2.5	15	35	2.5	15	35	2.5	15	35
	220V	A	1	3	10	1	3	10	1	3	10
	440V	A	0.09	0.27	0.6	0.09	0.27	0.6	0.09	0.27	0.6
	600V	A	0.06	0.16	0.6	0.06	0.16	0.6	0.06	0.16	0.6
Switching frequency											
Switching frequency z in operating cycles per hour		coil	AC	DC	AC	DC	AC	DC	AC	DC	
Contactors without overload relay	No-load operating frequency	1/h	5000	1500	5000	1500	5000	1500	5000	1500	
Interdependence of operating frequency z' on rated operational current and rated operational voltage: $z' = z \cdot \frac{I_b}{I'} \cdot \left(\frac{400 \text{ V}}{U'}\right)^{1.5} \text{ 1/h}$	at AC-1 at AC-2 at AC-3 at AC-4	coil	AC/DC		AC/DC		AC/DC		AC/DC		
		1/h	1000		1000		1000		1000		
		1/h	1000		1000		750		750		
		1/h	300		300		250		250		
Contactors with overload relay (average value)		1/h	15		15		15		15		
Permissible mounting position											
The contactors are designed for operation on vertical mounting surface.											