



Reference: 3RT2016-1BB42-1AA0

CONTACTOR, AC-3, 4KW/400V, 1NC, DC 24V, 3-POLE, SZ S00 SCREW TERMINAL UPRIGHT MOUNTING POSITION

Buy it at Electric Automation Network



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product brand name	SIRIUS
Product designation	3RT2 contactor
General technical data:	
Size of contactor	500
Product extension	
function module for communication	No
Auxiliary switch	Yes
Insulation voltage	
rated value	690 V
Degree of pollution	3
Surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
between coil and main contacts acc. to EN 60947-1	400 V
Protection class IP	
on the front	IP20
of the terminal	IP20
Shock resistance	
at rectangular impulse	
— at DC	6,7g / 5 ms, 4,2g / 10 ms
with sine pulse	
— at DC	10,5g / 5 ms, 6,6g / 10 ms

Mechanical service life (switching cycles) of contactor typical 30 000 000 of the contactor with atd> 5 000 000 of the contactor with atd> 10 000 000 Ambient conditions: Installation altitude at height above sea level maximum 2 000 m Ambient temperature during operation 25 +60 °C during storage -55 +80 °C Main circult: Number of NO contacts for main contacts 3 Number of NO contacts for main contacts 0 Operating voltage -50 000 000 000 000 000 000 000 000 000		
of the contactor with atd> 5 000 000 of the contactor with atd> 10 000 000 Ambient conditions: Installation altitude at height above sea level maximum 2 000 m Ambient temperature during operation -25 +60 °C during storage -35 +80 °C Main circuit: Number of NO contacts for main contacts 3 Number of NC contacts for main contacts 0 Operating voltage -4 c.3 -4 c.3 -4 c.4 at 400 V — at ambient temperature 40 °C rated value 22 A at AC-1 at 400 V — at ambient temperature 40 °C rated value 22 A at AC-2 at 400 V rated value 9 A at AC-2 at 400 V rated value 9 A at AC-3 -4 c.5 ov rated value 9 A at 600 V rated value 7.7 A — at 600 V rated value 4.1 A AC-1 at 400 V rated value 4.1 A at 600 C minimum permissible 4.1 A at 400 V rated value 4.1 A at 600 V rated value 7.7 A at 400 V rated value 7.7 A at 400 V rated value 7.7 A at 600 V rated value 7.7 A at 400 V rated value 7.7 A at	Mechanical service life (switching cycles)	
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during operation -25 +60 °C during storage -55 +80 °C Main circuit: Number of NO contacts for main contacts 3 Number of NC contacts for main contacts 0 Operating voltage at AC-3 rated value maximum 690 V Operating current at AC-1 at 400 V - at ambient temperature 40 °C rated value at AC-1 - up to 690 V at ambient temperature 40 °C rated value value 22 A at AC-2 - up to 690 V at ambient temperature 60 °C rated value at AC-3 - at 400 V rated value 9 A at AC-3 - at 400 V rated value 10 - at 500 V rated value 20 A at AC-3 - at 400 V rated value 20 A at AC-1 - at 690 V rated value 20 A at AC-2 in 400 V rated value 20 A at AC-3 - at 400 V rated value 20 A at AC-1 - at 690 V rated value 20 A at 60 °C minimum permissible 40 °C minimum permissible 41 AC-4 41 400 V rated value 41 AC-4 41 400 V rated value 33 A Operating current 41 current path at DC-1 - at 24 V rated value 20 A - at 110 V rated value 21 A	Installation altitude at height above sea level maximum	2 000 m
during storage -55 +80 °C Main circuit: Number of NO contacts for main contacts 3 Number of NC contacts for main contacts 0 Operating voltage at AC-3 rated value maximum 690 V Operating current at AC-1 at 400 V — at ambient temperature 40 °C rated value 22 A at AC-1 - up to 690 V at ambient temperature 40 °C rated value 22 A — up to 690 V at ambient temperature 60 °C rated value 9 A at AC-2 at 400 V rated value 9 A at AC-3 — at 400 V rated value 9 A at AC-3 — at 400 V rated value 7.7 A — at 500 V rated value 7.7 A — at 690 V rated value 6.7 A Connectable conductor cross-section in main circuit at AC-1 at 690 V rated value 4 mm² Operating current for approx. 200000 operating cycles at AC-4 at 400 V rated value 4.1 A at 690 V rated value 4.1 A operating current for approx. 200000 operating cycles at AC-4 at 400 V rated value 3.3 A Operating current for approx. 200000 operating cycles at AC-4 at 400 V rated value 4.1 A at 590 V rated value 3.3 A Operating current at 1 current path at DC-1 — at 24 V rated value 20 A — at 110 V rated value 2.1 A	Ambient temperature	
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Number of NC contacts for main contacts Operating voltage at AC-3 rated value maximum Operating current at AC-1 — up to 690 V at ambient temperature 40 °C rated value at AC-2 at 400 V rated value at AC-3 — at 400 V rated value at AC-3 — at 400 V rated value at AC-3 — at 690 V rated value at 60 °C rated value at 60 °C rated value 40 °C rated value 41 AC-3 — at 400 V rated value 42 A AC-3 — at 400 V rated value 57.7 A — at 690 V rated value 40 °C rated value 57.7 A AC-1 AC-1	Main circuit:	
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at 1 current path at DC-1 — at 24 V rated value 20 A — at 110 V rated value 2.1 A	at 690 V rated value	3.3 A
 – at 24 V rated value – at 110 V rated value 20 A 2.1 A 	Operating current	
- at 110 V rated value 2.1 A	at 1 current path at DC-1	
	— at 24 V rated value	20 A
— at 220 V rated value 0.8 A	— at 110 V rated value	2.1 A
	— at 220 V rated value	0.8 A

— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
with 2 current paths in series at DC-1	
— at 24 V rated value	20 A
— at 110 V rated value	12 A
— at 220 V rated value	1.6 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.7 A
with 3 current paths in series at DC-1	
— at 24 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	20 A
— at 440 V rated value	1.3 A
— at 600 V rated value	1 A
Operating current	
at 1 current path at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 110 V rated value	0.1 A
with 2 current paths in series at DC-3 at DC-5	
— at 110 V rated value	0.35 A
— at 24 V rated value	20 A
with 3 current paths in series at DC-3 at DC-5	
— at 110 V rated value	20 A
— at 220 V rated value	1.5 A
— at 24 V rated value	20 A
— at 440 V rated value	0.2 A
— at 600 V rated value	0.2 A
Operating power	
at AC-1	
— at 230 V rated value	7.5 kW
— at 230 V at 60 °C rated value	7.5 kW
— at 400 V rated value	13 kW
— at 400 V at 60 °C rated value	13 kW
— at 690 V rated value	22 kW
— at 690 V at 60 °C rated value	22 kW
at AC-2 at 400 V rated value	4 kW
at AC-3	
— at 230 V rated value	2.2 kW

— at 690 V rated value Operating power for approx. 200000 operating cycles at AC-4 at 400 V rated value at 690 V rated value 2 kW Thermal short-time current limited to 10 s Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor No-load switching frequency at DC 10 000 1/h Operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum 750 1/h at AC-3 maximum 750 1/h Control circuit/ Control: Type of voltage of the control supply voltage Control supply voltage at DC rated value Operating range factor control supply voltage rated value of magnet coil at DC Holding power of magnet coil at DC Closing power of magnet coil at DC A W Closing delay at DC Opening delay at DC 7 13 ms Arcing time	
at 400 V rated value at 690 V rated value 2.5 kW Thermal short-time current limited to 10 s Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor No-load switching frequency at DC 10 000 1/h Operating frequency at AC-1 maximum 1 000 1/h at AC-2 maximum 750 1/h at AC-3 maximum 750 1/h Control circuit/ Control: Type of voltage of the control supply voltage Control supply voltage at DC rated value Operating range factor control supply voltage rated value of magnet coil at DC Closing power of magnet coil at DC Closing delay at DC Opening delay at DC 7 13 ms	
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Thermal short-time current limited to 10 s Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor No-load switching frequency at DC 10 000 1/h Operating frequency at AC-1 maximum 1 000 1/h at AC-2 maximum 3750 1/h at AC-3 maximum 3750 1/h Control circuit/ Control: Type of voltage of the control supply voltage Control supply voltage at DC rated value Operating range factor control supply voltage rated value of magnet coil at DC Closing power of magnet coil at DC Holding power of magnet coil at DC Closing delay at DC Opening delay at DC 7 13 ms	
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Closing delay at DC 30 100 ms Opening delay at DC 7 13 ms	
at DC 30 100 ms Opening delay at DC 7 13 ms	
Opening delay at DC 7 13 ms	
at DC 7 13 ms	
Arcing time 10 15 ms	
Residual current of the electronics for control with signal <0>	
at AC at 230 V maximum permissible 3 mA	
at DC at 24 V maximum permissible 10 mA	
Auxiliary circuit:	
Number of NC contacts	
for auxiliary contacts	
— instantaneous contact 1	
Number of NO contacts	
for auxiliary contacts	
— instantaneous contact 0	

Operating current at AC-12 maximum	10 A
Operating current at AC-15	
at 230 V rated value	10 A
at 400 V rated value	3 A
at 500 V rated value	2 A
at 690 V rated value	1 A
Operating current at DC-12	
at 24 V rated value	10 A
at 48 V rated value	6 A
at 60 V rated value	6 A
at 110 V rated value	3 A
at 125 V rated value	2 A
at 220 V rated value	1 A
at 600 V rated value	0.15 A
Operating current at DC-13	
at 24 V rated value	10 A
at 48 V rated value	2 A
at 60 V rated value	2 A
at 110 V rated value	1 A
at 125 V rated value	0.9 A
at 220 V rated value	0.3 A
at 600 V rated value	0.1 A
Contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings:	
Full-load current (FLA) for three-phase AC motor	
at 480 V rated value	7.6 A
at 600 V rated value	9 A
Yielded mechanical performance [hp]	
for single-phase AC motor	
— at 110/120 V rated value	0.33 hp
— at 230 V rated value	1 hp
for three-phase AC motor	
— at 200/208 V rated value	2 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	5 hp
— at 575/600 V rated value	7.5 hp
Contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	

Design of the fuse link	
for short-circuit protection of the main circuit	
— with type of coordination 1 required	gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 35 A
— with type of assignment 2 required	gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 20 A
for short-circuit protection of the auxiliary switch required	fuse gL/gG: 10 A
Installation/ mounting/ dimensions:	
Mounting position	standing, on horizontal mounting surface
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022
Side-by-side mounting	Yes
Height	58 mm
Witd>	45 mm
Depth	73 mm
Required spacing	
with side-by-side mounting	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	0 mm
for grounded parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— at the side	6 mm
— downwards	0 mm
for live parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	6 mm
Connections/Terminals:	
Type of electrical connection	
for main current circuit	screw-type terminals
for auxiliary and control current circuit	screw-type terminals
Type of connectable conductor cross-sections	
for main contacts	

— solid	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²
— single or multi-stranded	2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²), 2x 4 mm²
— finely stranded with core end processing	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
at AWG conductors for main contacts	2x (20 16), 2x (18 14), 2x 12
Type of connectable conductor cross-sections	
for auxiliary contacts	
— single or multi-stranded	2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²), 2x 4 mm²
— finely stranded with core end processing	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
at AWG conductors for auxiliary contacts	2x (20 16), 2x (18 14), 2x 12
Safety related data:	
B10 value	
with high demand rate acc. to SN 31920	1 000 000
Proportion of dangerous failures	
with low demand rate acc. to SN 31920	40 %
with high demand rate acc. to SN 31920	73 %
Failure rate [FIT]	
with low demand rate acc. to SN 31920	100 FIT
Product function	
Mirror contact acc. to IEC 60947-4-1	Yes
T1 value for proof test interval or service life acc. to IEC 61508	20 y