SIEMENS

Data sheet

3RT2018-1AV02



power contactor, AC-3e/AC-3, 16 A, 7.5 kW / 400 V, 1 NC, 400 V AC, 50/60 Hz 3-pole, frame size S00 screw terminal

product brand name SIRUS product designation Power contactor product type designation 3RT2 Cenaral technical data Stop size of contactor S00 product extension No • auxiliary switch Ye s • auxiliary switch Ye s • at AC in hot operating state per pole 1 W • at AC in hot operating state per pole 1 W • of main circuit with degree of pollution 3 rated value 690 V • of main circuit with degree of pollution 3 rated value 680 V • of main circuit with degree of pollution 3 rated value 61 V • of main circuit with degree of pollution 3 rated value 61 V • of main circuit with degree of pollution 9 rated 61 V • of main circuit with degree of pollution 9 rated 61 V • of auxiliary circuit rated value 61 V • of main circuit with degree of pollution 9 rated 600 V • of main circuit with degree of pollution 9 rated 600 V • of auxiliary circuit rated value 61 V • of auxiliary switch bick type 10 V 73g / 5 ms, 4.7g / 10 ms		
product type designation 3RT2 General technical data	product brand name	SIRIUS
General technical data S00 size of contactor S00 product extension No • auxiliary switch Yes power loss [W] for rated value of the current 3 W • at AC in hot operating state 3 W • at AC in hot operating state per pole 1 W • of main circuit with degree of pollution 3 rated value 690 V • of main circuit with degree of pollution 3 rated value 690 V • of auxiliary circuit with degree of pollution 3 rated value 690 V • of auxiliary circuit rated value 6 kV • at AC 7.3g / 5 ms, 4.7g / 10 ms mechanical service life (switching cycles) 30 000 000 • of the contactor typical 30 000 000 • of the contactor with added auxiliary switch block typical 10 000 100 • of the contactor with added auxiliary switch block typical 10 000 100 • of the contactor with added auxiliary switch block typical 10 000	product designation	Power contactor
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relative humidity at 55 °C according to IEC 60068-2-30 95 %	 during storage 	-55 +80 °C
maximum	relative humidity minimum	10 %
Main circuit		95 %
	Main circuit	

number of poles for main current circuit	3
number of NO contacts for main contacts	3
operating voltage	
at AC-3 rated value maximum	690 V
at AC-3e rated value maximum	690 V
operational current	00.4
 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	22 A
rated value	
— up to 690 V at ambient temperature 60 °C	20 A
rated value	
• at AC-3	
— at 400 V rated value	16 A
— at 500 V rated value	12.4 A
— at 690 V rated value	8.9 A
• at AC-3e	16 A
— at 400 V rated value — at 500 V rated value	10 A 12.4 A
— at 500 V rated value	12.4 A 8.9 A
 at AC-4 at 400 V rated value 	0.9 A 11.5 A
 at AC-5a up to 690 V rated value 	19.4 A
 at AC-5b up to 400 V rated value 	13.2 A
• at AC-6a	10.27
— up to 230 V for current peak value n=20 rated	9.6 A
value	01071
 up to 400 V for current peak value n=20 rated value 	9.6 A
— up to 500 V for current peak value n=20 rated	9.6 A
value	0.07.
 — up to 690 V for current peak value n=20 rated value 	8.9 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated	6.6 A
value	01071
— up to 400 V for current peak value n=30 rated	6.4 A
value — up to 500 V for current peak value n=30 rated	6.4 A
value	
— up to 690 V for current peak value n=30 rated value	6.4 A
minimum cross-section in main circuit at maximum AC-1 rated value	4 mm ²
operational current for approx. 200000 operating	
cycles at AC-4	
• at 400 V rated value	5.5 A
 at 690 V rated value 	4.4 A
operational current	
 at 1 current path at DC-1 	
— at 24 V rated value	20 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	20.4
— at 24 V rated value — at 110 V rated value	20 A 12 A
— at 220 V rated value	12 A 1.6 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.8 A 0.7 A
• with 3 current paths in series at DC-1	0.17
— 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 COO) (rated value	4 4
— at 600 V rated value	1 A
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 110 V rated value	0.15 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	20 A
— at 110 V rated value	0.35 A
 with 3 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	1.5 A
— at 440 V rated value	0.2 A
— at 600 V rated value	0.2 A
operating power	0.2 A
• at AC-2 at 400 V rated value	7.5 kW
• at AC-3	
— at 230 V rated value	4 kW
— at 400 V rated value	7.5 kW
— at 500 V rated value	7.5 kW
— at 690 V rated value	7.5 kW
• at AC-3e	
— at 230 V rated value	4 kW
— at 400 V rated value	7.5 kW
— at 500 V rated value	7.5 kW
— at 690 V rated value	7.5 kW
	7.5 KW
operating power for approx. 200000 operating cycles at AC-4	
at 400 V rated value	2.5 kW
at 690 V rated value	3.5 kW
operating apparent power at AC-6a	0.0 KW
	2.0 1// //
• up to 230 V for current peak value n=20 rated value	3.8 kVA
• up to 400 V for current peak value n=20 rated value	6.6 kVA
 up to 500 V for current peak value n=20 rated value 	8.3 kVA
 up to 690 V for current peak value n=20 rated value 	10.6 kVA
operating apparent power at AC-6a	
 up to 230 V for current peak value n=30 rated value 	2.5 kVA
 up to 400 V for current peak value n=30 rated value 	4.4 kVA
 up to 500 V for current peak value n=30 rated value 	5.5 kVA
• up to 690 V for current peak value n=30 rated value	7.6 kVA
short-time withstand current in cold operating state	
up to 40 °C	
 limited to 1 s switching at zero current maximum 	300 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	169 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	128 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	92 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 50 s switching at zero current maximum limited to 60 s switching at zero current maximum 	74 A; Use minimum cross-section acc. to AC-1 rated value
_	
no-load switching frequency	10 000 1/h
• at AC	
operating frequency	4 000 4/b
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	750 1/h
 at AC-3 maximum 	750 1/h
 at AC-3e maximum 	750 1/h
 at AC-4 maximum 	250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
• at 50 Hz rated value	400 V
• at 60 Hz rated value	400 V
operating range factor control supply voltage rated	
value of magnet coil at AC	
• at 50 Hz	0.8 1.1
• at 60 Hz	0.85 1.1
apparent pick-up power of magnet coil at AC	
apparent pick-up power of magnet coll at AC	

• at 50 Hz	37 VA
• at 60 Hz	33 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.8
• at 60 Hz	0.75
apparent holding power of magnet coil at AC	
• at 50 Hz	5.7 VA
• at 60 Hz	4.4 VA
inductive power factor with the holding power of the	
coil	
• at 50 Hz	0.25
• at 60 Hz	0.25
closing delay	
• at AC	9 35 ms
opening delay	
• at AC	4 15 ms
arcing time	10 15 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
	1
number of NC contacts for auxiliary contacts instantaneous contact	
operational current at AC-12 maximum	10 A
operational 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	1A
operational 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
	3 A
at 110 V rated value	2 A
at 125 V rated value	
at 220 V rated value	1A
• at 600 V rated value	0.15 A
operational current at DC-13	10.4
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 3-phase AC motor	
• at 480 V rated value	14 A
• at 600 V rated value	11 A
yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 110/120 V rated value	1 hp
— at 230 V rated value	2 hp
 for 3-phase AC motor 	
— at 200/208 V rated value	3 hp
— at 220/230 V rated value	5 hp
— at 460/480 V rated value	10 hp
— at 575/600 V rated value	10 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	gG: 50A (690V,100kA), aM: 25A (690V,100kA), BS88: 50A (415V,80kA)
— with type of assignment 2 required	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)
 for short-circuit protection of the auxiliary switch 	gG: 10 A (500 V, 1 kA)

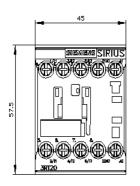
required	
required	
Installation/ mounting/ dimensions	
mounting position fastening method	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
Ū.	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
 side-by-side mounting 	Yes
height	58 mm
width	45 mm
depth	73 mm
required spacing	
 with side-by-side mounting 	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
 for grounded parts 	
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
for live parts	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm
	· mm
Connections/ Terminals	
type of electrical connection	
for main current circuit	screw-type terminals
 for auxiliary and control circuit 	screw-type terminals
 at contactor for auxiliary contacts 	Screw-type terminals
 of magnet coil 	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
— solid or 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 cables for main contacts 	2x (20 16), 2x (18 14), 2x 12
connectable conductor cross-section for main contacts	
• solid	0.5 4 mm²
• stranded	0.5 4 mm ²
 finely stranded with core end processing 	0.5 2.5 mm²
connectable conductor cross-section for auxiliary contacts	
 solid or stranded 	0.5 4 mm²
 finely stranded with core end processing 	0.5 2.5 mm²
type of connectable conductor cross-sections	
 for auxiliary contacts 	
— solid or 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 cables for auxiliary contacts	2x (20 16), 2x (18 14), 2x 12
AWG number as coded connectable conductor cross	
section	
 for main contacts 	20 12
 for auxiliary contacts 	20 12
Safety related data	
product function	
 mirror contact according to IEC 60947-4-1 	Yes
B10 value with high demand rate according to SN 31920	1 000 000
proportion of dangerous failures	
with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	73 %

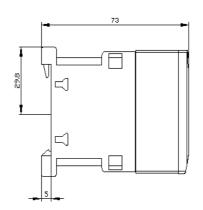
• with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN

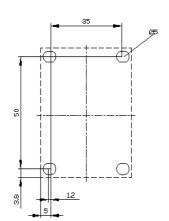
73 %

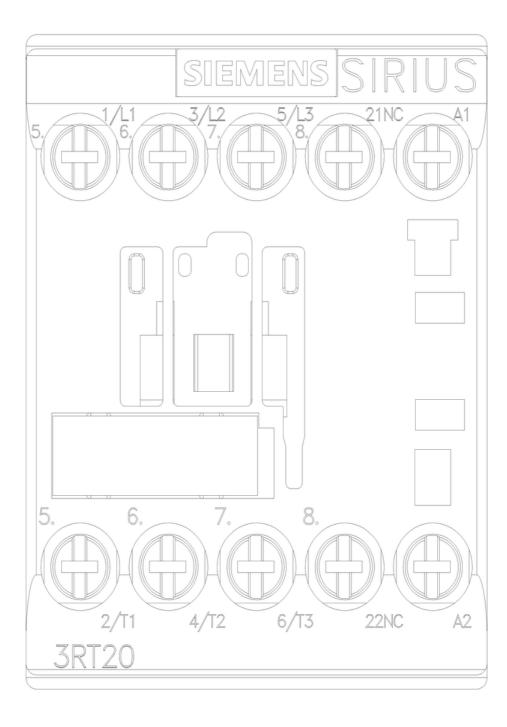
100 FIT

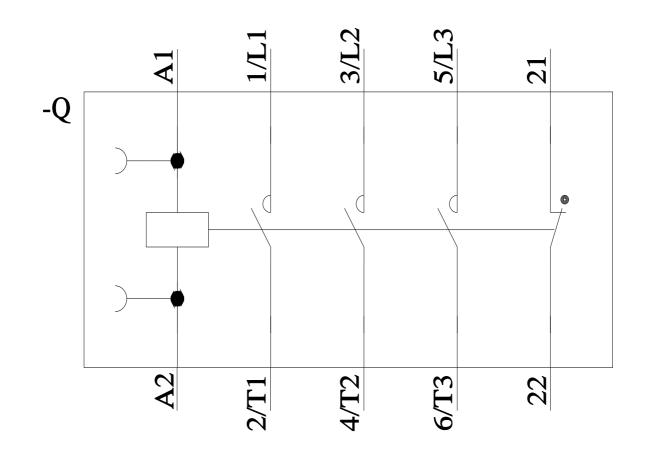
t interval or service life	according to	20 у		
on the front according	to IEC	IP20		
the front according to	DIEC 60529	finger-safe, for vertical cont	act from the front	
switching OFF		Yes		
ls				
oproval				
<u>Confirmation</u>			<u>KC</u>	EHC
Functional Safety/Safety of Machinery	Declaration of	Conformity	Test Certificates	
<u>Type Examination</u> <u>Certificate</u>	CE EG-Konf.	UK CA	<u>Type Test Certific-</u> ates/Test Report	<u>Special Test Certific-</u> <u>ate</u>
		Lloyd's Register uts	PRS	RINA
other			Railway	
<u>Confirmation</u>		<u>Confirmation</u>	Vibration and Shock	
<u>.com/ic10</u> e ordering system) iemens.com/mall/en/en or	/Catalog/product?	mlfb=3RT2018-1AV02 aspx?lang=en&mlfb=3RT20	<u>118-1AV02</u>	
	on the front according to switching OFF s oproval Confirmation Functional Safety/Safety of Machinery Type Examination Certificate Certificate other Confirmation	Soproval Confirmation Confirmation Functional Safety/Safety of Machinery Declaration of Machinery Type Examination Certificate Certificate Certificate Confirmation Certificate Confirmation Confirmation Confirmation Confirmation Confirmat	on the front according to IEC IP20 the front according to IEC 60529 finger-safe, for vertical contents switching OFF Yes some state in the front according to IEC 60529 Yes switching OFF Yes some state in the front according to IEC 60529 Yes some state in the front according to IEC 60529 Yes some state in the front according to IEC 60529 Yes some state in the front according to IEC 60529 Yes some state in the front according to IEC 60529 Yes some state in the front according to IEC 60529 Image: some state in the front according to IEC 60529 Some state in the front according to IEC 60529 Image: some state in the front according to IEC 60529 Some state in the front according to IEC 60529 Image: some state in the front according to IEC 60529 Some state in the front according to IEC 60529 Image: some state in the front according to IEC 60529 Some state in the front according to IEC 60529 Image: some state in the front according to IEC 60529 Some state in the front according to IEC 60529 Image: some state in the front according to IEC 60529 Some state in the front according to IEC 60529 Image: some state in the front according to IEC 60529 Some state in the front according to IEC 60529 Image: some state in the front according to IEC 60529 Some state in the front according to IEC 60529 Image: some state in the front according to IEC 60529 Some state in the front according to IEC 60529 Image: some state in the front according to IEC 60529	un the front according to IEC IP20 the front according to IEC 60529 finger-safe, for vertical contact from the front witching OFF Yes proval Confirmation Image: construction of the form the front of the form the











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