SIEMENS

Data sheet

3RT2024-2AV00



power contactor, AC-3e/AC-3, 12 A, 5.5 kW / 400 V, 3-pole, 400 V AC, 50 Hz, auxiliary contacts: 1 NO + 1 NC, spring-loaded terminal, size: S0

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	SO
product extension	
 function module for communication 	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
 at AC in hot operating state 	0.9 W
 at AC in hot operating state per pole 	0.3 W
 without load current share typical 	7.6 W
insulation voltage	
 of main circuit with degree of pollution 3 rated value 	690 V
of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
 of main circuit rated value 	6 kV
 of auxiliary circuit rated value 	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	7,5g / 5 ms, 4,7g / 10 ms
shock resistance with sine pulse	
● at AC	11,8g / 5 ms, 7,4g / 10 ms
mechanical service life (operating cycles)	
 of contactor typical 	10 000 000
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000
 of the contactor with added auxiliary switch block typical 	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2009
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
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Main circuit	
number of poles for main current circuit	3

number of NO contacts for main contacts	3
	3
 operating voltage at AC-3 rated value maximum 	690 V
at AC-3e rated value maximum	690 V
operational current	
at AC-1 at 400 V at ambient temperature 40 °C rated	40 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated	40 A
value	
— up to 690 V at ambient temperature 60 °C rated value	35 A
• at AC-3	
— at 400 V rated value	12 A
— at 500 V rated value	12 A
— at 690 V rated value	9 A
• at AC-3e	
— at 400 V rated value	12 A
— at 500 V rated value	12 A
— at 690 V rated value	9 A
at AC-4 at 400 V rated value	12.5 A
• at AC-5a up to 690 V rated value	35.2 A
• at AC-5b up to 400 V rated value	9.9 A
● at AC-6a	
— up to 230 V for current peak value n=20 rated value	11.4 A
— up to 400 V for current peak value n=20 rated value	11.4 A
— up to 500 V for current peak value n=20 rated value	11.3 A
— up to 690 V for current peak value n=20 rated value	9 A
● at AC-6a	
— up to 230 V for current peak value n=30 rated value	7.6 A
 — up to 400 V for current peak value n=30 rated value 	7.6 A
 — up to 500 V for current peak value n=30 rated value 	7.6 A
 — up to 690 V for current peak value n=30 rated value 	7.6 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 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	5.5 A
operational current	
 at 1 current path at DC-1 	
— at 24 V rated value	35 A
— at 60 V rated value	20 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
— at 600 V rated value	0.8 A
with 3 current paths in series at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
- at 110 V rated value	35 A
- at 220 V rated value	35 A
— at 440 V rated value	2.9 A
- at 600 V rated value	1.4 A
 at 1 current path at DC-3 at DC-5 	

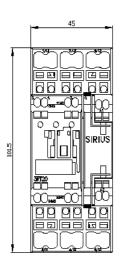
— at 24 V rated value	20 A
— at 60 V rated value	5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 A
— at 600 V rated value	0.06 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
 with 3 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
operating power	
• at AC-3	
— at 230 V rated value	3 kW
— at 400 V rated value	5.5 kW
— at 500 V rated value	5.5 kW
— at 690 V rated value	7.5 kW
• at AC-3e	
— at 230 V rated value	3 kW
— at 400 V rated value	5.5 kW
— at 500 V rated value	5.5 kW
— at 690 V rated value	7.5 kW
operating power for approx. 200000 operating cycles at AC-	
4	
• at 400 V rated value	2.6 kW
● at 690 V rated value	4.6 kW
operating apparent power at AC-6a	
 up to 230 V for current peak value n=20 rated value 	4.5 kVA
 up to 400 V for current peak value n=20 rated value 	7.8 kVA
 up to 500 V for current peak value n=20 rated value 	9.8 kVA
 up to 690 V for current peak value n=20 rated value 	10.7 kVA
operating apparent power at AC-6a	
 up to 230 V for current peak value n=30 rated value 	3 kVA
 up to 400 V for current peak value n=30 rated value 	5.2 kVA
 up to 500 V for current peak value n=30 rated value 	6.5 kVA
 up to 690 V for current peak value n=30 rated value 	9 kVA
short-time withstand current in cold operating state up to	
40 °C	
Imited to 1 s switching at zero current maximum	210 A; Use minimum cross-section acc. to AC-1 rated value
Imited to 5 s switching at zero current maximum	210 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	170 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	126 A; Use minimum cross-section acc. to AC-1 rated value
Imited to 60 s switching at zero current maximum	105 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	5 000 4/h
• at AC	5 000 1/h
operating frequency	1 000 1/b
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	1 000 1/h
• at AC-3 maximum	1 000 1/h
• at AC-3e maximum	1 000 1/h
at AC-4 maximum Control circuit/ Control	300 1/h
type of voltage of the control supply voltage	AC

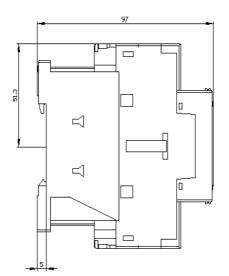
and the large state of the second state of the	
control supply voltage at AC	400.1/
at 50 Hz rated value	400 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	65 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.82
apparent holding power of magnet coil at AC	0.02
• at 50 Hz	7.6 VA
inductive power factor with the holding power of the coil	1.0 V/
• at 50 Hz	0.25
closing delay	
• at AC	8 40 ms
opening delay	
• at AC	4 16 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous	1
contact	
number of NO contacts for auxiliary contacts instantaneous	1
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	1 A
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
• 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
operational 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 3-phase AC motor	
• at 480 V rated value	11 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	3 hp
— at 460/480 V rated value	7.5 hp
— at 575/600 V rated value	10 hp
contact rating of auxiliary contacts according to UL	A600 / P600

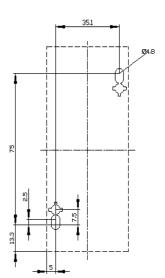
Short-circuit protection	
design of the fuse link	
 for short-circuit protection of the main circuit 	
— with type of coordination 1 required	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)
 — with type of assignment 2 required 	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)
 for short-circuit protection of the auxiliary switch required 	gG: 10 A (500 V, 1 kA)
nstallation/ mounting/ dimensions	
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and
	backward by +/- 22.5° on vertical mounting surface
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
 side-by-side mounting 	Yes
height	102 mm
width	45 mm
depth	97 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
Connections/ Terminals	
type of electrical connection	
for main current circuit	spring-loaded terminals
for auxiliary and control circuit	spring-loaded terminals
at contactor for auxiliary contacts	Spring-type terminals
of magnet coil	Spring-type terminals
type of connectable conductor cross-sections for main contacts	$2x (1 - 10 \text{ mm}^2)$
• solid	2x (1 10 mm ²)
solid or stranded	2x (1 10 mm ²)
 finely stranded with core end processing finely stranded without core and processing 	$2x (1 6 mm^2)$
finely stranded without core end processing	2x (1 6 mm²)
connectable conductor cross-section for main contacts	1 10 mm²
• solid	1 10 mm ²
• stranded	1 10 mm ²
• finely stranded with core end processing	1 6 mm ²
finely stranded without core end processing	1 6 mm²
connectable conductor cross-section for auxiliary contacts	
solid or stranded	0.5 2.5 mm ²
 finely stranded with core end processing 	0.5 1.5 mm²
 finely stranded without core end processing 	0.5 2.5 mm²
type of connectable conductor cross-sections	
 for auxiliary contacts 	
— solid or stranded	2x (0.5 2.5 mm²)
 finely stranded with core end processing 	2x (0.5 1.5 mm²)
- finely stranded without core end processing	2x (0.5 2.5 mm²)
 for AWG cables for auxiliary contacts 	2x (20 14)
AWG number as coded connectable conductor cross section	
 for main contacts 	18 8
 for auxiliary contacts 	20 14

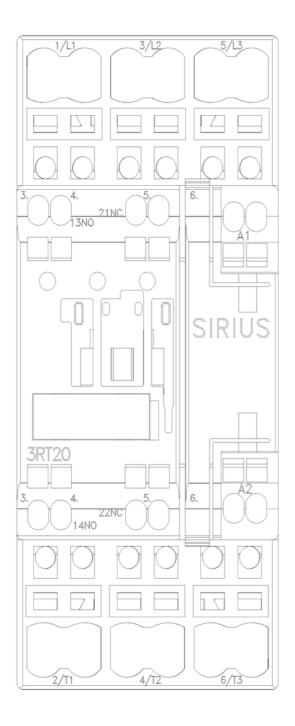
product function					
 mirror contact a 	according to IEC 60947-4-1		Yes		
B10 value with high de	emand rate according to SN	N 31920	450 000		
proportion of danger	rous failures				
 with low deman 	nd rate according to SN 319	20	40 %		
 with high demain 	nd rate according to SN 31	920	73 %		
failure rate [FIT] with l	ow demand rate according	to SN 31920	100 FIT		
T1 value for proof test 61508	t interval or service life acco	ording to IEC	20 a		
protection class IP o	on the front according to I	EC 60529	IP20		
touch protection on	the front according to IEC	60529	finger-safe, for vertical contac	t from the front	
suitability for use					
 safety-related s ertificates/ approvals 	Ŭ	_	Yes	_	
General Product Ap					
(SP)	<u>Confirmation</u>			KC	EHC
EMC	Functional Safety/Safety of Ma- chinery	Declaration of C	onformity	Test Certificates	
RCM	<u>Type Examination Cer-</u> <u>tificate</u>	CE EG-Konf.	UK CA	<u>Special Test Certific-</u> <u>ate</u>	<u>Type Test Certific-</u> ates/Test Report
ABS	BUREAU VERITAS		Lloyds Register us	PRS	RINA
ABS	BUREAU VERITAS		Lloyds Register uis	Prs Railway	RINA Environment
ABS Marine / Shipping	Other Confirmation		Lioyds urs	Railway Vibration and Shock	Environment Environmental Con- firmations
wither information		VDE ket (see here).	Confirmation		Environmental Con-

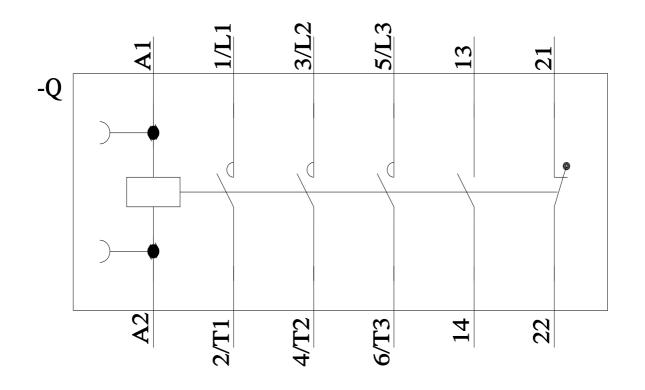
6/28/2023











last modified:

2/10/2023 🖸