## SIEMENS

## Data sheet

## 3RT2025-1AB04



power contactor, AC-3e/AC-3, 17 A, 7.5 kW / 400 V, 3-pole, 24 V AC, 50 Hz, auxiliary contacts: 2 NO + 2 NC, screw terminal, size: S0, removable auxiliary switch

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	SO
product extension	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	No
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	1.8 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	0.6 W
<ul> <li>without load current share typical</li> </ul>	1.9 W
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	690 V
<ul> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	690 V
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	6 kV
<ul> <li>of auxiliary circuit rated value</li> </ul>	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)	
<ul> <li>of contactor typical</li> </ul>	10 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	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	
<ul> <li>during operation</li> </ul>	-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
operating voltage	
at AC-3 rated value maximum	690 V
<ul> <li>at AC-3e rated value maximum</li> </ul>	690 V
operational current	
<ul> <li>at AC-1 at 400 V at ambient temperature 40 °C rated</li> </ul>	40 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	40 A
— up to 690 V at ambient temperature 60 °C rated	35 A
value	
• at AC-3	
— at 400 V rated value	17 A
— at 500 V rated value	17 A
— at 690 V rated value	13 A
• at AC-3e	
— at 400 V rated value	17 A
— at 500 V rated value	17 A
— at 690 V rated value	13 A
• at AC-4 at 400 V rated value	15.5 A
at AC-5a up to 690 V rated value	35.2 A
• at AC-5b up to 400 V rated value	14.1 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	11.4 A
<ul> <li>up to 690 V for current peak value n=20 rated value</li> <li>at AC-6a</li> </ul>	11.3 A
	7.6 A
<ul> <li>— up to 230 V for current peak value n=30 rated value</li> <li>— up to 400 V for current peak value n=30 rated value</li> </ul>	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	10 mm <sup>2</sup>
value	
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	7.7 A
at 690 V rated value	7.7 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
<ul> <li>with 3 current paths in series at DC-1</li> </ul>	
— 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
<ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>	

— 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
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— 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
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— 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
	0.07
operating power • at AC-3	
	4 1404
- 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	11 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	11 kW
operating power for approx. 200000 operating cycles at AC-	
4	
• at 400 V rated value	3.5 kW
at 690 V rated value	6 kW
operating apparent power at AC-6a	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	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	9.9 kVA
<ul> <li>up to 690 V for current peak value n=20 rated value</li> </ul>	13.6 kVA
operating apparent power at AC-6a	
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	3 kVA
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	5.2 kVA
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	6.6 kVA
● up to 690 V for current peak value n=30 rated value	9.1 kVA
short-time withstand current in cold operating state up to	
40 °C	
• limited to 1 s switching at zero current maximum	225 A; Use minimum cross-section acc. to AC-1 rated value
Imited to 5 s switching at zero current maximum	225 A; Use minimum cross-section acc. to AC-1 rated value
Imited to 10 s switching at zero current maximum	189 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	140 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 60 s switching at zero current maximum</li> </ul>	115 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	5 000 1/h
operating frequency	
• 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	300 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC

control supply voltage at AC • at 50 Hz rated value	24 V
• at 50 HZ rated value operating range factor control supply voltage rated value of	<u>۲</u> ۷
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	
• at 50 Hz	7.6 VA
inductive power factor with the holding power of the coil	
• 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	2
contact	
number of NO contacts for auxiliary contacts instantaneous	2
operational current at AC-12 maximum	10 A
operational current at AC-15	
at 230 V rated value	6 A
• at 400 V rated value	3 A
at 500 V rated value	2 A
at 600 V rated value	1A
operational current at DC-12	
at 24 V rated value	10 A
at 24 V rated value	6 A
at 40 V rated value	6 A
at 110 V rated value	3 A
• at 125 V rated value	2 A
at 220 V rated value	1A
at 600 V rated value	0.15 A
operational current at DC-13	0.10 A
at 24 V rated value	6 A
at 48 V rated value	2 A
at 40 V rated value	2 A
at 10 V rated value	1A
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)
JL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
at 480 V rated value	14 A
at 600 V rated value	17 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	1 hp
— at 230 V rated value	
	3 hp
• for 3-phase AC motor	3 hp
<ul> <li>for 3-phase AC motor</li> <li>— at 200/208 V rated value</li> </ul>	3 hp
<ul> <li>for 3-phase AC motor</li> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> </ul>	3 hp 3 hp 5 hp
<ul> <li>for 3-phase AC motor</li> <li>— at 200/208 V rated value</li> </ul>	3 hp 3 hp

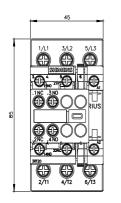
Short-circuit protection			
design of the fuse link			
<ul> <li>for short-circuit protection of the main circuit</li> </ul>			
- with type of coordination 1 required	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)		
- with type of assignment 2 required	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)		
<ul> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	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		
<ul> <li>side-by-side mounting</li> </ul>	Yes		
height	85 mm		
width	45 mm		
depth	141 mm		
required spacing			
<ul> <li>with side-by-side mounting</li> </ul>			
— forwards	10 mm		
— upwards	10 mm		
— downwards	10 mm		
— at the side	0 mm		
<ul> <li>for grounded parts</li> </ul>			
— 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	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	$2x(4, 25 mm^2)$ $2x(25, 40 mm^2)$		
• solid	$2x (1 2.5 mm^2), 2x (2.5 10 mm^2)$		
• solid or stranded	2x (1 2.5 mm <sup>2</sup> ), 2x (2.5 10 mm <sup>2</sup> )		
finely stranded with core end processing	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²		
connectable conductor cross-section for main contacts	4 40		
• solid	1 10 mm <sup>2</sup>		
• stranded	1 10 mm <sup>2</sup>		
finely stranded with core end processing	1 10 mm²		
connectable conductor cross-section for auxiliary contacts			
<ul> <li>solid or stranded</li> </ul>	0.5 2.5 mm²		
<ul> <li>finely stranded with core end processing</li> </ul>	0.5 2.5 mm²		
type of connectable conductor cross-sections			
<ul> <li>for auxiliary contacts</li> </ul>			
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)		
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)		
<ul> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (20 16), 2x (18 14)		
AWG number as coded connectable conductor cross section			
for main contacts	16 8		
<ul> <li>for auxiliary contacts</li> </ul>	20 14		
Safety related data			
Safety related data product function			
	Yes		
	Yes No		

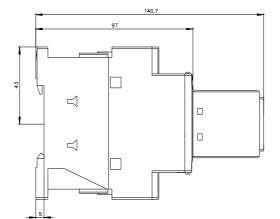
B10 value with high demand rate according to SN 31920		31920 45	450 000			
proportion of danger	rous failures					
<ul> <li>with low deman</li> </ul>	d rate according to SN 3192	20 40	%			
with high demand rate according to SN 31920		20 73	%			
failure rate [FIT] with low demand rate according to SN 31920		o SN 31920 10	0 FIT			
T1 value for proof test interval or service life according to IEC 61508		rding to IEC 20	20 a			
protection class IP o	n the front according to I	EC 60529	IP20			
touch protection on the front according to IEC 60529		60529 fing	finger-safe, for vertical contact from the front			
ertificates/ approvals						
General Product Ap	proval					
	<u>Confirmation</u>		(UL) JL	KC	EHC	
EMC	Functional Safety/Safety of Ma- chinery	Declaration of Cont	formity	Test Certificates		
RCM	Type Examination Cer- tificate	CE EG-Konf.	UK CA	<u>Type Test Certific-</u> ates/Test Report	Special Test Certific- ate	
Marine / Shipping			Lloyds Kegister uis	RINA	RMRS	
other			Railway	Environment		
<u>Confirmation</u>		Confirmation	Vibration and Shock	Environmental Con- firmations		
https://press.siemens. Siemens is working Please contact your lo EAC relevant market ( Information on the p https://support.industr Information- and Dow https://www.siemens.co Industry Mall (Online https://mall.industry.sie Cax online generation http://support.automat	(other than the sanctioned E ackaging y.siemens.com/cs/ww/en/vie wnloadcenter (Catalogs, B com/ic10 e ordering system) emens.com/mall/en/en/Cata r	/siemens-wind-down-r ent EAC certificates. tatus of validity of the E AEU member states R ew/109813875 srochures,)	EAC certification if you inten Russia or Belarus).		ly these products to an	
https://support.industr Image database (pro http://www.automation	<u>y.siemens.com/cs/ww/en/ps</u>	/ <u>/3RT2025-1AB04</u> on drawings, 3D mode e.aspx?mlfb=3RT2025	els, device circuit diagram 5-1AB04⟨=en	s, EPLAN macros,)		

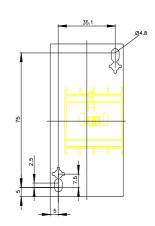
Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1AB04/char

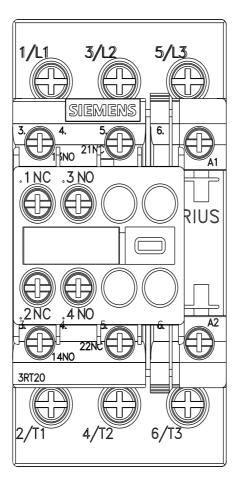
 Further characteristics (e.g. electrical endurance, switching frequency)

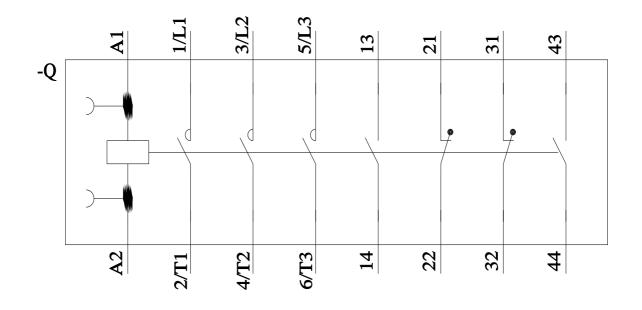
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