# **SIEMENS**

Data sheet 3RT2017-1AF01



power contactor, AC-3e/AC-3, 12 A, 5.5 kW / 400 V, 3-pole, 110 V AC, 50/60 Hz, auxiliary contacts: 1 NO, screw terminal, size: S00  $\,$ 

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S00
product extension	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	1.5 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	0.5 W
without load current share typical	1.5 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	
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	7,3g / 5 ms, 4,7g / 10 ms
shock resistance with sine pulse	
• at AC	11,4g / 5 ms, 7,3g / 10 ms
mechanical service life (operating cycles)	
of contactor typical	30 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	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 NO contacts for main contacts	3
operating voltage	
<ul> <li>at AC-3 rated value maximum</li> </ul>	690 V
at AC-3e rated value maximum	690 V
operational current	
<ul> <li>at AC-1 at 400 V at ambient temperature 40 °C rated</li> </ul>	22 A
value	
• at AC-1	
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> </ul>	22 A
— up to 690 V at ambient temperature 60 °C rated	20 A
value	2071
• at AC-3	
— at 400 V rated value	12 A
— at 500 V rated value	9.2 A
— at 690 V rated value	6.7 A
• at AC-3e	
— at 400 V rated value	12 A
— at 500 V rated value	9.2 A
— at 690 V rated value	6.7 A
• at AC-4 at 400 V rated value	8.5 A
• at AC-5a up to 690 V rated value	19.4 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	7.2 A
— up to 400 V for current peak value n=20 rated value	7.2 A
— up to 500 V for current peak value n=20 rated value	7.2 A
— up to 690 V for current peak value n=20 rated value	6.7 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	4.8 A
— up to 400 V for current peak value n=30 rated value	4.8 A
— up to 500 V for current peak value n=30 rated value	4.8 A
— up to 690 V for current peak value n=30 rated value	4.8 A
minimum cross-section in main circuit at maximum AC-1 rated	4 mm²
value	
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	4.1 A
• at 690 V rated value	3.3 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	20 A
— at 60 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	
— at 24 V rated value	20 A
— at 60 V rated value	20 A
	12 A
— at 110 V rated value	IZ A
<ul><li>— at 110 V rated value</li><li>— at 220 V rated value</li></ul>	1.6 A
— at 220 V rated value	1.6 A
<ul><li>at 220 V rated value</li><li>at 440 V rated value</li><li>at 600 V rated value</li></ul>	1.6 A 0.8 A
<ul> <li>at 220 V rated value</li> <li>at 440 V rated value</li> <li>at 600 V rated value</li> <li>with 3 current paths in series at DC-1</li> </ul>	1.6 A 0.8 A 0.7 A
<ul> <li>at 220 V rated value</li> <li>at 440 V rated value</li> <li>at 600 V rated value</li> <li>with 3 current paths in series at DC-1</li> <li>at 24 V rated value</li> </ul>	1.6 A 0.8 A 0.7 A
<ul> <li>at 220 V rated value</li> <li>at 440 V rated value</li> <li>at 600 V rated value</li> <li>with 3 current paths in series at DC-1</li> <li>at 24 V rated value</li> <li>at 60 V rated value</li> </ul>	1.6 A 0.8 A 0.7 A 20 A 20 A
<ul> <li>at 220 V rated value</li> <li>at 440 V rated value</li> <li>at 600 V rated value</li> <li>with 3 current paths in series at DC-1</li> <li>at 24 V rated value</li> <li>at 60 V rated value</li> <li>at 110 V rated value</li> </ul>	1.6 A 0.8 A 0.7 A 20 A 20 A
<ul> <li>at 220 V rated value</li> <li>at 440 V rated value</li> <li>at 600 V rated value</li> <li>with 3 current paths in series at DC-1</li> <li>at 24 V rated value</li> <li>at 60 V rated value</li> <li>at 110 V rated value</li> <li>at 220 V rated value</li> </ul>	1.6 A 0.8 A 0.7 A 20 A 20 A 20 A
<ul> <li>at 220 V rated value</li> <li>at 440 V rated value</li> <li>at 600 V rated value</li> <li>with 3 current paths in series at DC-1</li> <li>at 24 V rated value</li> <li>at 60 V rated value</li> <li>at 110 V rated value</li> </ul>	1.6 A 0.8 A 0.7 A 20 A 20 A

— at 24 V rated value	20 A
— at 60 V rated value	0.5 A
— at 110 V rated value	0.15 A
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	20 A
— at 60 V rated value	5 A
— at 110 V rated value	0.35 A
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	20 A
— at 60 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
	0.2 A
operating power	
• at AC-3	2114
— 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	5.5 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	5.5 kW
operating power for approx. 200000 operating cycles at AC-	
4	
at 400 V rated value	2 kW
at 690 V rated value	2.5 kW
operating apparent power at AC-6a	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	2.8 kVA
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	4.9 kVA
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	6.2 kVA
<ul> <li>up to 690 V for current peak value n=20 rated value</li> </ul>	8 kVA
operating apparent power at AC-6a	
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	1.9 kVA
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	3.3 kVA
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	4.1 kVA
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	5.7 kVA
short-time withstand current in cold operating state up to	
40 °C	
<ul> <li>limited to 1 s switching at zero current maximum</li> </ul>	200 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	123 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	96 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	74 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	61 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	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
• 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	110 V
at 60 Hz rated value     at 60 Hz rated value	110 V
operating range factor control supply voltage rated value of	110 V
magnet coil at AC	
• at 50 Hz	0.8 1.1
<del></del>	

● at 60 Hz	0.85 1.1
apparent pick-up power of magnet coil 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	
number of NO contacts for auxiliary contacts instantaneous contact	1
operational current at AC-12 maximum	10 A
operational current at AC-15	
<ul> <li>at 230 V rated value</li> </ul>	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
<ul> <li>at 48 V rated value</li> </ul>	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]	
<ul> <li>for single-phase AC motor</li> </ul>	
— at 110/120 V rated value	0.5 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 / Q600
Short-circuit protection	
design of the fuse link	

• for short-circuit protection of the main circuit		
<ul> <li>— with type of coordination 1 required</li> </ul>	gG: 50A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)	
— with type of assignment 2 required	gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)	
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)	
Installation/ mounting/ dimensions		
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- $22.5^\circ$ 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	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	
— forwards	10 mm 10 mm	
— upwards — at the side	6 mm	
— at the side  — downwards	10 mm	
for live parts	TV TITLE	
— 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		
• 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)	
connectable conductor cross-section for main contacts		
• solid	0.5 4 mm²	
• stranded	0.5 4 mm²	
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 mm <sup>2</sup>	
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	
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	
for AWG cables for auxiliary contacts	2x (20 16), 2x (18 14), 2x 12	
AWG number as coded connectable conductor cross section	00 40	
• for main contacts	20 12	
• for auxiliary contacts	20 12	
Safety related data		
product function	W W 001100	
mirror contact according to IEC 60947-4-1	Yes; with 3RH29	
suitability for use safety-related switching OFF	Yes	
B10 value with high demand rate according to SN 31920	1 000 000	
proportion of dangerous failures	40.07	
with low demand rate according to SN 31920	40 %	

<ul> <li>with high demand rate according to SN 31920</li> </ul>	73 %	
failure rate [FIT] with low demand rate according to SN 31920	100 FIT	
T1 value for proof test interval or service life according to IEC 61508	20 a	
protection class IP on the front according to IEC 60529	IP20	
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front	
0		

Certificates/ approvals

### **General Product Approval**



Confirmation





<u>KC</u>



Functional  EMC Safety/Safety of Ma- Declaration of Conformity Test Certificates chinery
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Type Examination Certificate





Type Test Certificates/Test Report

Special Test Certificate

### Marine / Shipping













Marine / Shipping	other	Railway	Environment
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Confirmation



Confirmation

Vibration and Shock

Environmental Confirmations

### Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

Information- and Downloadcenter (Catalogs, Brochures,...)

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2017-1AF01

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2017-1AF01

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1AF01

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

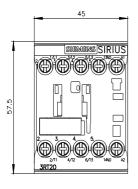
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2017-1AF01&lang=en

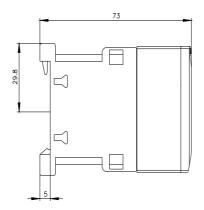
 $\label{eq:Characteristic: Tripping characteristics, I^2t, Let-through current} \label{eq:Characteristic: Tripping characteristics, I^2t, Let-through current}$ 

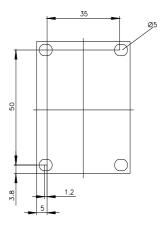
https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1AF01/cha

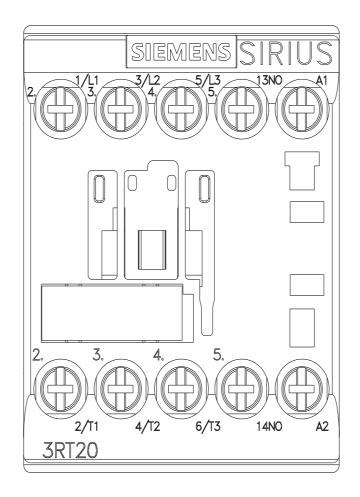
Further characteristics (e.g. electrical endurance, switching frequency)

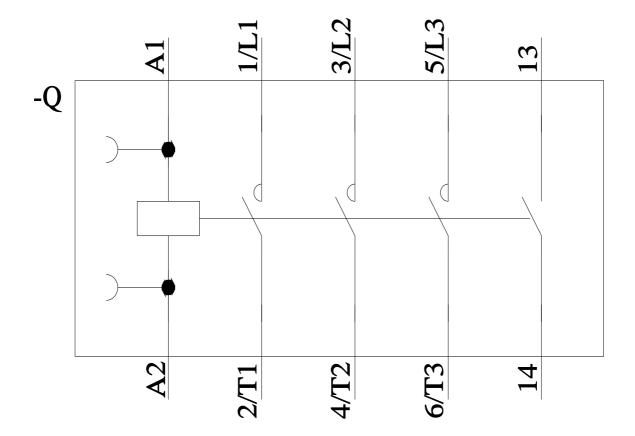
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2017-1AF01&objecttype=14&gridview=view1











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