

# SIEMENS

## Data sheet

3RT2015-1AF01



power contactor, AC-3e/AC-3, 7 A, 3 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	
• function module for communication	No
• auxiliary switch	Yes
power loss [W] for rated value of the current	
• at AC in hot operating state	0.6 W
• at AC in hot operating state per pole	0.2 W
• without load current share typical	1.1 W
type of calculation of power loss depending on pole	quadratic
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	6,7g / 5 ms, 4,2g / 10 ms
shock resistance with sine pulse	
• at AC	10,5g / 5 ms, 6,6g / 10 ms
mechanical service life (operating cycles)	
• of contactor typical	30 000 000
• 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
Weight	0.233 kg
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 %

Environmental footprint	
Environmental Product Declaration(EPD)	Yes
Global Warming Potential [CO2 eq] total	39.6 kg
Global Warming Potential [CO2 eq] during manufacturing	1.18 kg
Global Warming Potential [CO2 eq] during operation	38.5 kg
Global Warming Potential [CO2 eq] after end of life	-0.155 kg
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	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	18 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	18 A
— up to 690 V at ambient temperature 60 °C rated value	16 A
• at AC-3	
— at 400 V rated value	7 A
— at 500 V rated value	6 A
— at 690 V rated value	4.9 A
• at AC-3e	
— at 400 V rated value	7 A
— at 500 V rated value	6 A
— at 690 V rated value	4.9 A
• at AC-4 at 400 V rated value	6.5 A
• at AC-5a up to 690 V rated value	15.8 A
• at AC-5b up to 400 V rated value	5.8 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	4 A
— up to 400 V for current peak value n=20 rated value	4 A
— up to 500 V for current peak value n=20 rated value	3.8 A
— up to 690 V for current peak value n=20 rated value	3.6 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	2.7 A
— up to 400 V for current peak value n=30 rated value	2.7 A
— up to 500 V for current peak value n=30 rated value	2.5 A
— up to 690 V for current peak value n=30 rated value	2.4 A
minimum cross-section in main circuit at maximum AC-1 rated value	2.5 mm²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	2.6 A
• at 690 V rated value	1.8 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	15 A
— at 60 V rated value	15 A
— at 110 V rated value	1.5 A
— at 220 V rated value	0.6 A
— at 440 V rated value	0.42 A
— at 600 V rated value	0.42 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	15 A
— at 60 V rated value	15 A
— at 110 V rated value	8.4 A
— at 220 V rated value	1.2 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.5 A

<div><div>● with 3 current paths in series at DC-1</div><div><div>— at 24 V rated value</div><div>— at 60 V rated value</div><div>— at 110 V rated value</div><div>— at 220 V rated value</div><div>— at 440 V rated value</div><div>— at 600 V rated value</div></div></div> <div><div>● at 1 current path at DC-3 at DC-5</div><div><div>— at 24 V rated value</div><div>— at 60 V rated value</div><div>— at 110 V rated value</div></div></div> <div><div>● with 2 current paths in series at DC-3 at DC-5</div><div><div>— at 24 V rated value</div><div>— at 60 V rated value</div><div>— at 110 V rated value</div></div></div> <div><div>● with 3 current paths in series at DC-3 at DC-5</div><div><div>— at 24 V rated value</div><div>— at 60 V rated value</div><div>— at 110 V rated value</div><div>— at 220 V rated value</div><div>— at 440 V rated value</div><div>— at 600 V rated value</div></div></div>	<div>15 A</div> <div>15 A</div> <div>15 A</div> <div>15 A</div> <div>0.9 A</div> <div>0.7 A</div> <div>15 A</div> <div>0.35 A</div> <div>0.1 A</div> <div>15 A</div> <div>3.5 A</div> <div>0.25 A</div> <div>15 A</div> <div>15 A</div> <div>15 A</div> <div>1.2 A</div> <div>0.14 A</div> <div>0.14 A</div>
<div>operating power</div> <div><div>● at AC-3</div><div><div>— at 230 V rated value</div><div>— at 400 V rated value</div><div>— at 500 V rated value</div><div>— at 690 V rated value</div></div></div> <div><div>● at AC-3e</div><div><div>— at 230 V rated value</div><div>— at 400 V rated value</div><div>— at 500 V rated value</div><div>— at 690 V rated value</div></div></div>	<div>1.5 kW</div> <div>3 kW</div> <div>3 kW</div> <div>4 kW</div> <div>1.5 kW</div> <div>3 kW</div> <div>3 kW</div> <div>4 kW</div>
<div>operating power for approx. 200000 operating cycles at AC-4</div> <div><div>● at 400 V rated value</div><div>● at 690 V rated value</div></div>	<div>1.15 kW</div> <div>1.15 kW</div>
<div>operating apparent power at AC-6a</div> <div><div>● up to 230 V for current peak value n=20 rated value</div><div>● up to 400 V for current peak value n=20 rated value</div><div>● up to 500 V for current peak value n=20 rated value</div><div>● up to 690 V for current peak value n=20 rated value</div></div>	<div>1.5 kVA</div> <div>2.7 kVA</div> <div>3.3 kVA</div> <div>4.3 kVA</div>
<div>operating apparent power at AC-6a</div> <div><div>● up to 230 V for current peak value n=30 rated value</div><div>● up to 400 V for current peak value n=30 rated value</div><div>● up to 500 V for current peak value n=30 rated value</div><div>● up to 690 V for current peak value n=30 rated value</div></div>	<div>1 kVA</div> <div>1.8 kVA</div> <div>2.2 kVA</div> <div>2.9 kVA</div>
<div>short-time withstand current in cold operating state up to 40 °C</div> <div><div>● limited to 1 s switching at zero current maximum</div><div>● limited to 5 s switching at zero current maximum</div><div>● limited to 10 s switching at zero current maximum</div><div>● limited to 30 s switching at zero current maximum</div><div>● limited to 60 s switching at zero current maximum</div></div>	<div>120 A; Use minimum cross-section acc. to AC-1 rated value</div> <div>86 A; Use minimum cross-section acc. to AC-1 rated value</div> <div>67 A; Use minimum cross-section acc. to AC-1 rated value</div> <div>52 A; Use minimum cross-section acc. to AC-1 rated value</div> <div>43 A; Use minimum cross-section acc. to AC-1 rated value</div>
<div>no-load switching frequency</div> <div><div>● at AC</div></div>	<div>10 000 1/h</div>
<div>operating frequency</div> <div><div>● at AC-1 maximum</div><div>● at AC-2 maximum</div><div>● at AC-3 maximum</div><div>● at AC-3e maximum</div></div>	<div>1 000 1/h</div> <div>750 1/h</div> <div>750 1/h</div> <div>750 1/h</div>

● 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	110 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	
● at 50 Hz	27 VA
● at 60 Hz	24.3 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	4.2 VA
● at 60 Hz	3.3 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	
● 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	4.8 A
● at 600 V rated value	6.1 A
yielded mechanical performance [hp]	
● for single-phase AC motor	
— at 110/120 V rated value	0.25 hp

<div>— at 230 V rated value</div> <div>• for 3-phase AC motor</div> <div>— at 200/208 V rated value</div> <div>— at 220/230 V rated value</div> <div>— at 460/480 V rated value</div> <div>— at 575/600 V rated value</div>	0.75 hp  1.5 hp 2 hp 3 hp 5 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link	
<div>• for short-circuit protection of the main circuit</div> <div>— with type of coordination 1 required</div> <div>— with type of assignment 2 required</div> <div>• for short-circuit protection of the auxiliary switch required</div>	gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA) gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA) 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° on vertical mounting surface
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
height	58 mm
width	45 mm
depth	73 mm
required spacing	
<div>• with side-by-side mounting</div> <div>— forwards</div> <div>— upwards</div> <div>— downwards</div> <div>— at the side</div> <div>• for grounded parts</div> <div>— forwards</div> <div>— upwards</div> <div>— at the side</div> <div>— downwards</div> <div>• for live parts</div> <div>— forwards</div> <div>— upwards</div> <div>— downwards</div> <div>— at the side</div>	10 mm 10 mm 10 mm 0 mm  10 mm 10 mm 6 mm 10 mm  10 mm 10 mm 10 mm 6 mm
Connections/ Terminals	
type of electrical connection	
<div>• for main current circuit</div> <div>• for auxiliary and control circuit</div> <div>• at contactor for auxiliary contacts</div> <div>• of magnet coil</div>	screw-type terminals screw-type terminals Screw-type terminals Screw-type terminals
type of connectable conductor cross-sections	
<div>• for main contacts</div> <div>— solid</div> <div>— solid or stranded</div> <div>— finely stranded with core end processing</div> <div>• for AWG cables for main contacts</div>	2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), 2x 4 mm² 2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), 2x 4 mm² 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) 2x (20 ... 16), 2x (18 ... 14), 2x 12
connectable conductor cross-section for main contacts	
<div>• solid</div> <div>• stranded</div> <div>• finely stranded with core end processing</div>	0.5 ... 4 mm² 0.5 ... 4 mm² 0.5 ... 2.5 mm²
connectable conductor cross-section for auxiliary contacts	
<div>• solid or stranded</div> <div>• finely stranded with core end processing</div>	0.5 ... 4 mm² 0.5 ... 2.5 mm²
type of connectable conductor cross-sections	
<div>• for auxiliary contacts</div> <div>— solid or stranded</div> <div>— finely stranded with core end processing</div> <div>• for AWG cables for auxiliary contacts</div>	2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), 2x 4 mm² 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) 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; with 3RH29
• positively driven operation according to IEC 60947-5-1	No
• suitable for safety function	Yes
suitability for use safety-related switching OFF	Yes
service life maximum	20 a
test wear-related service life necessary	Yes
proportion of dangerous failures	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	73 %
B10 value with high demand rate according to SN 31920	1 000 000
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
safety device type according to IEC 61508-2	Type A
Electrical Safety	
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
Approvals Certificates	
General Product Approval	



Confirmation



KC

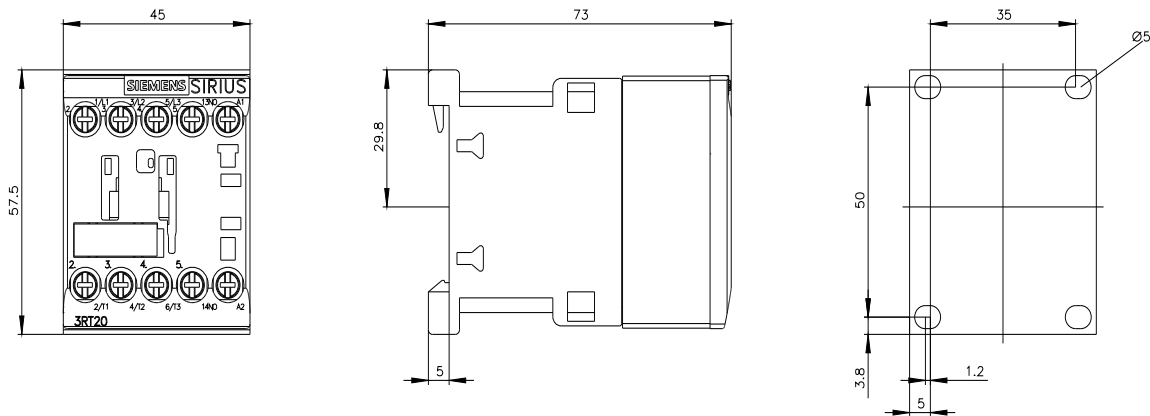
General Product Approval	EMV	Functional Safety	Test Certificates	Marine / Shipping
		<a href="#">Type Examination Certificate</a>	<a href="#">Type Test Certificates/Test Report</a>	<a href="#">Special Test Certificate</a>

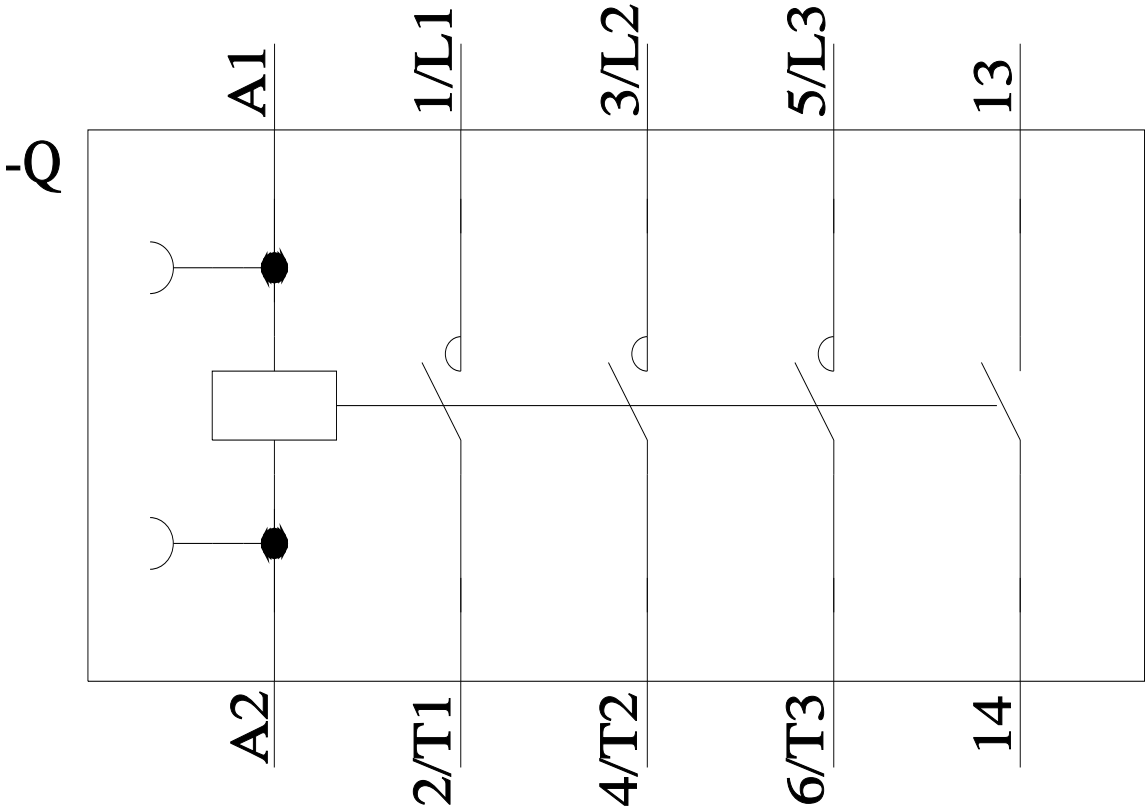
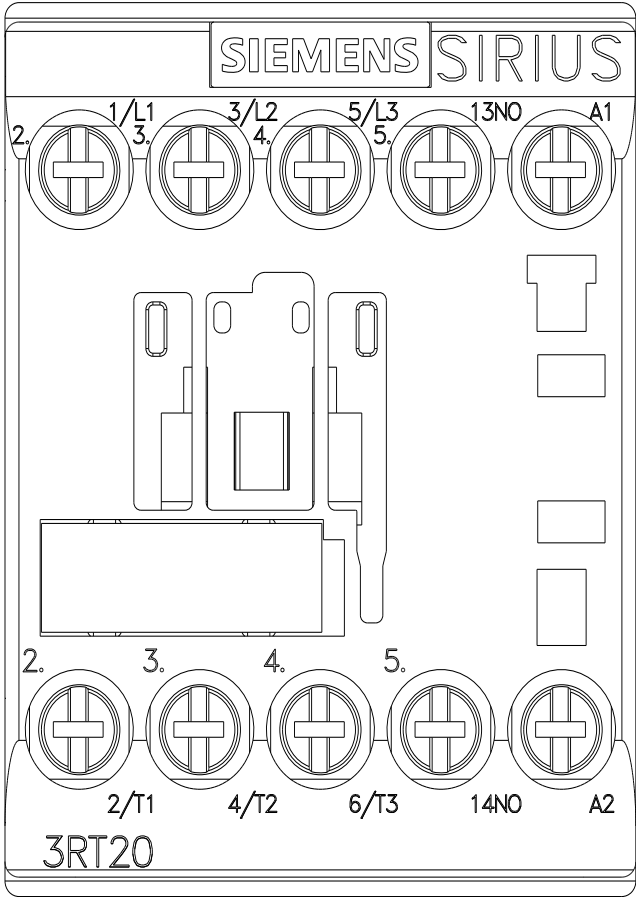
Marine / Shipping	other
	<a href="#">Miscellaneous</a>

other	Railway	Environment
<a href="#">Confirmation</a>	<a href="#">Confirmation</a>	<a href="#">Special Test Certificate</a>
		<a href="#">Environmental Confirmations</a>

Further information
Information on the packaging
<a href="https://support.industry.siemens.com/cs/ww/en/view/109813875">https://support.industry.siemens.com/cs/ww/en/view/109813875</a>
Information- and Downloadcenter (Catalogs, Brochures,...)
<a href="https://www.siemens.com/ic10">https://www.siemens.com/ic10</a>
Industry Mall (Online ordering system)
<a href="https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2015-1AF01">https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2015-1AF01</a>

Cax online generator  
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2015-1AF01>  
 Service&Support (Manuals, Certificates, Characteristics, FAQs,...)  
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2015-1AF01>  
 Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)  
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2015-1AF01&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2015-1AF01&lang=en)  
 Characteristic: Tripping characteristics, I²t, Let-through current  
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2015-1AF01/char>  
 Further characteristics (e.g. electrical endurance, switching frequency)  
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2015-1AF01&objecttype=14&gridview=view1>





last modified:

7/19/2024