SIEMENS

Data sheet 3RT2015-1BB41



power contactor, AC-3e/AC-3, 7 A, 3 kW / 400 V, 3-pole, 24 V DC, 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	4 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 DC	6,7g / 5 ms, 4,2g / 10 ms
shock resistance with sine pulse	
• at DC	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	0.291 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	153 kg
global warming potential [CO2 eq] during manufacturing	1.42 kg
global warming potential [CO2 eq] during operation	152 kg
global warming potential [CO2 eq] after end of life	-0.305 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 at AC-1 	18 A
— up to 690 V at ambient temperature 40 °C rated value	18 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ 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	4 A
 up to 230 V for current peak value n=20 rated value 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	0.071
— 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	2.5 mm²
value operational current for approx. 200000 operating cycles at	
AC-4	26.4
at 600 V rated value at 600 V rated value	2.6 A
at 690 V rated value Operational current	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

- width 2 assument mother in and a 20 4	
with 3 current paths in series at DC-1 at 24 V roted value.	15 A
— at 24 V rated value	15 A
— at 60 V rated value	15 A
— at 110 V rated value	15 A
— at 220 V rated value	15 A
— at 440 V rated value	0.9 A
— at 600 V rated value	0.7 A
at 1 current path at DC-3 at DC-5	
— at 24 V rated value	15 A
— at 60 V rated value	0.35 A
with 2 current paths in series at DC-3 at DC-5	45.4
— at 24 V rated value	15 A
— at 60 V rated value	3.5 A
— at 110 V rated value	0.25 A
with 3 current paths in series at DC-3 at DC-5	
— at 24 V rated value	15 A
— at 60 V rated value	15 A
— at 110 V rated value	15 A
— at 220 V rated value	1.2 A
— at 440 V rated value	0.14 A
— at 600 V rated value	0.14 A
operating power	
• at AC-3	
— at 230 V rated value	1.5 kW
— at 400 V rated value	3 kW
— at 500 V rated value	3 kW
— at 690 V rated value	4 kW
• at AC-3e	
— at 230 V rated value	1.5 kW
— at 400 V rated value	3 kW
— at 500 V rated value	3 kW
— at 690 V rated value	4 kW
operating power for approx. 200000 operating cycles at AC-	
at 400 V rated value	1.15 kW
• at 690 V rated value	1.15 kW
operating apparent power at AC-6a	1.10 KW
up to 230 V for current peak value n=20 rated value	1.5 kVA
up to 400 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value	2.7 kVA
	3.3 kVA
up to 500 V for current peak value n=20 rated value up to 600 V for current peak value n=20 rated value	4.3 kVA
up to 690 V for current peak value n=20 rated value	T.J NVA
operating apparent power at AC-6a	1 6//
up to 230 V for current peak value n=30 rated value	1 kVA 1.8 kVA
up to 400 V for current peak value n=30 rated value	1.8 KVA 2.2 kVA
 up to 500 V for current peak value n=30 rated value up to 690 V for current peak value n=30 rated value 	2.2 kVA 2.9 kVA
short-time withstand current in cold operating state up to	L.J NVA
40 °C	
 limited to 1 s switching at zero current maximum 	120 A; Use minimum cross-section acc. to AC-1 rated value
limited to 5 s switching at zero current maximum	86 A; Use minimum cross-section acc. to AC-1 rated value
limited to 10 s switching at zero current maximum	67 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	52 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 60 s switching at zero current maximum	43 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at DC	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	
operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum at AC-3e maximum	1 000 1/h 750 1/h 750 1/h

Control circuit/ Control		
type of voltage of the control supply voltage	DC	
control supply voltage at DC rated value	24 V	
operating range factor control supply voltage rated value of magnet coil at DC		
• initial value	0.8	
• full-scale value	1.1	
closing power of magnet coil at DC	4 W	
holding power of magnet coil at DC	4 W	
closing delay		
• at DC	30 100 ms	
opening delay		
• at DC	7 13 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	40.4	
at 230 V rated value at 400 V rated value	10 A 3 A	
 at 400 V rated value at 500 V rated value 	3 A 2 A	
at 500 V rated value 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	
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	4.9.4	
 at 480 V rated value at 600 V rated value 	4.8 A 6.1 A	
vielded mechanical performance [hp]	U.1 A	
• for single-phase AC motor		
— at 110/120 V rated value	0.25 hp	
— at 230 V rated value	0.75 hp	
• for 3-phase AC motor		
— at 200/208 V rated value	1.5 hp	
— at 220/230 V rated value	2 hp	
— at 460/480 V rated value	3 hp	
— at 575/600 V rated value	5 hp	
contact rating of auxiliary contacts according to UL	A600 / Q600	
Short-circuit protection		
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA	
design of the fuse link		
• for short-circuit protection of the main circuit		
— with type of coordination 1 required	gG: 35A (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)	
with type of assignment 2 required gG: 20A (690V, 100KA), am: 16A (690V, 100KA), BS68: 20A (415V, 80K • 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 side-by-side mounting	Yes	
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		
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	
onnections/ 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)	
 for 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 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 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)	
for 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	
afety 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



<u>KC</u>

General	Product	Ap-
proval		

EMV

Test Certificates

Marine / Shipping





Special Test Certificate

Type Test Certificates/Test Report

Miscellaneous



Marine / Shipping













other

Railway

Dangerous goods

Environment

Miscellaneous

Confirmation

Special Test Certific-

Transport Information



Environmental Confirmations

Further information

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=3RT2015-1BB41

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2015-1BB41

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2015-1BB41

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

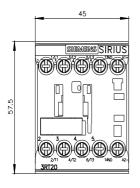
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2015-1BB41&lang=en

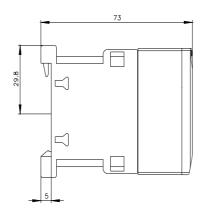
Characteristic: Tripping characteristics, I²t, Let-through current

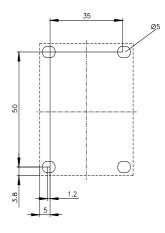
https://support.industry.siemens.com/cs/ww/en/ps/3RT2015-1BB41/char

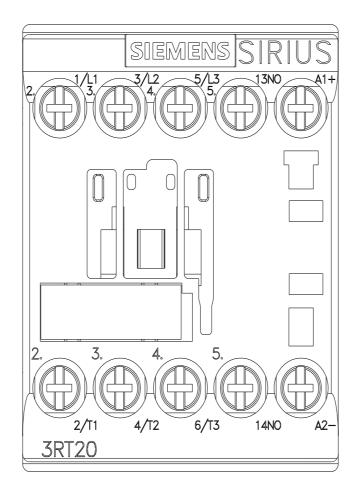
Further characteristics (e.g. electrical endurance, switching frequency)

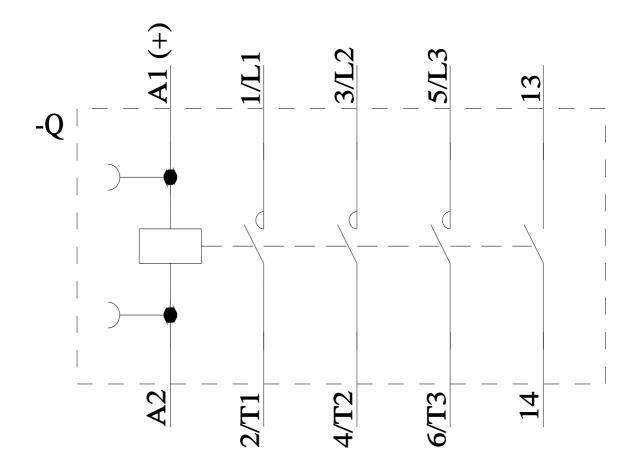
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