## **SIEMENS**

Data sheet 3RT2015-1BB42



power contactor, AC-3e/AC-3, 7 A, 3 kW / 400 V, 3-pole, 24 V DC, auxiliary contacts: 1 NC, 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>	0.6 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	0.2 W
without load current share typical	4 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	690 V
of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	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
<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
Weight	0.292 kg
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 %

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	
<ul> <li>at AC-1 at 400 V at ambient temperature 40 °C rated value</li> <li>at AC-1</li> </ul>	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
<ul> <li>up to 230 V for current peak value n=20 rated value</li> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	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

with 2 summent wether in senior of PO 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 A
— 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	45.4
— 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	
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
up to 500 V for current peak value n=20 rated value	3.3 kVA
up to 690 V for current peak value n=20 rated value  up to 690 V for current peak value n=20 rated value	4.3 kVA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	1 kVA
up to 400 V for current peak value n=30 rated value	1.8 kVA
up to 500 V for current peak value n=30 rated value	2.2 kVA
up to 690 V for current peak value n=30 rated value	2.9 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>	120 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	86 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	67 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	52 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 60 s switching at zero current maximum</li> </ul>	40.4.11
	43 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	43 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency  • at DC	43 A; Use minimum cross-section acc. to AC-1 rated value  10 000 1/h
* * *	
• at DC	
at DC     operating frequency	10 000 1/h
at DC  operating frequency      at AC-1 maximum	10 000 1/h 1 000 1/h
at DC  operating frequency     at AC-1 maximum     at AC-2 maximum	10 000 1/h 1 000 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	7. 40	
• at DC	7 13 ms 10 15 ms	
arcing time  control version of the switch operating mechanism	Standard A1 - A2	
Auxiliary circuit	Standard A1 - A2	
number of NC 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	40.0	
at 24 V rated value	10 A	
at 48 V rated value     at 60 V rated value	6 A 6 A	
<ul><li>at 60 V rated value</li><li>at 110 V rated value</li></ul>	6 A 3 A	
at 110 V rated value     at 125 V rated value	2 A	
at 220 V rated value     at 220 V rated value	1A	
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	0.25 hp	
— at 110/120 V rated value	0.25 hp	
<ul><li>— at 230 V rated value</li><li>• for 3-phase AC motor</li></ul>	0.75 hp	
tor 3-pnase AC motor  — at 200/208 V rated value	1.5 hp	
— at 200/200 V rated value  — 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 or assignment 2 required      for short-circuit protection of the auxiliary switch required	gG: 20A (690V, 100KA), aim: 16A (690V, 100KA), BS88: 20A (415V, 80KA) gG: 10 A (500 V, 1 kA)
nstallation/ mounting/ dimensions	go. 1071 (666 V, 118 V)
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
<ul> <li>at contactor for auxiliary contacts</li> </ul>	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 mm <sup>2</sup>
• stranded	0.5 4 mm²
finely stranded with core end processing	0.5 2.5 mm²
connectable conductor cross-section for auxiliary contacts	0.5 42
solid or stranded	0.5 4 mm <sup>2</sup>
finely stranded with core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	
for auxiliary contacts	0.4 (0.5 4.5 mm²) 0.4 (0.75 0.5 mm²) 0.4 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 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
positively driven operation according to IEC 60947-5-1	No
	Yes
Suitable for Safety function	
suitable for safety function suitability for use safety-related switching OFF	Yes

test wear-related service life necessary	Yes
proportion of dangerous failures	
<ul> <li>with low demand rate according to SN 31920</li> </ul>	40 %
<ul> <li>with high demand rate according to SN 31920</li> </ul>	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	<b>Product</b>	Ap-
proval		

EMV

**Test Certificates** 







Special Test Certificate

Type Test Certificates/Test Report





Marine / Shipping





LRS







Miscellaneous

other

other Railway

Dangerous goods

Environment

Confirmation

Special Test Certificate

**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=3RT2015-1BB42

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2015-1BB42

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2015-1BB42

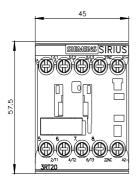
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

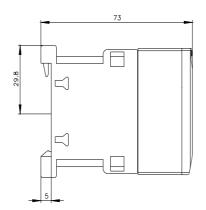
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2015-1BB42&lang=en

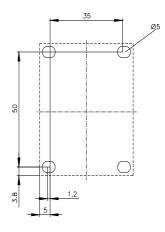
Characteristic: Tripping characteristics, I²t, Let-through current

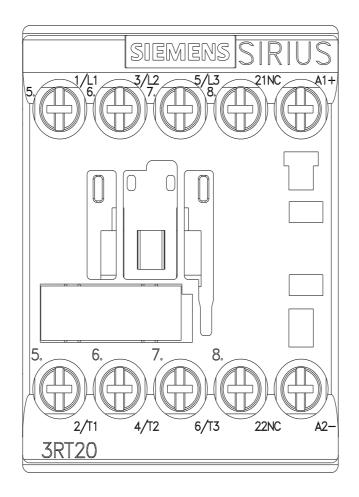
https://support.industry.siemens.com/cs/ww/en/ps/3RT2015-1BB42/char
Further characteristics (e.g. electrical endurance, switching frequency)

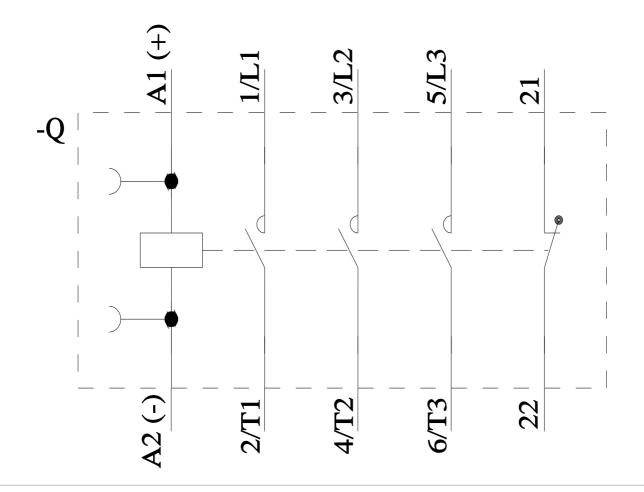
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2015-1BB42&objecttype=14&gridview=view1











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