SIEMENS

Data sheet 3RT2016-2BM41



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 220 V DC, auxiliary contacts: 1 NO, spring-loaded terminal, size: S00 $\,$

product type designation 98T2 Size of contactor \$500 product extension No No No No No No No	product brand name	SIRIUS
product type designation 3RT2 General technical data size of contactor S00 product extension • function module for communication • function module for communication • function module for rated value of the current • at AC in hot operating state per pole • without load current share typical 4W insulation voitage • of main circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit rated value • at DC shock resistance at rectangular impulse • at DC shock resistance with sine pulse • at DC of contactor typical • of the contactor with added electronically optimized of the contactor with added electronically optimized • of the contactor with added electronically optimized of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary sw	•	
Size of contactor Forduct extension • function module for communication • auxiliary switch • at AC in hot operating state • at AC in hot operating state per pole • without load current share typical • of main circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit vith degree of pollution 3 rated value • of auxiliary circuit rated value • of auxiliary circuit rated value • of auxiliary circuit rated value • of auxiliary switch block typical • at DC • at DC • at DC • of contactor typical • of the contactor with added auxiliary switch block typical • of the		3RT2
product extension • function module for communication • auxilliary switch power loss [W] for rated value of the current • at AC in hot operating state • at AC in hot operating state per pole • without load current share typical • of main circuit with degree of pollution 3 rated value • of auxilliary circuit with degree of pollution 3 rated value • of main circuit rated value • of auxilliary circuit with degree of pollution 3 rated value • of auxilliary circuit with degree of pollution 3 rated value • of main circuit rated value • of auxilliary circuit with degree of pollution 3 rated value • of auxilliary circuit with degree of pollution 3 rated value • of auxilliary circuit value • of auxilliary switch sine pulse • at DC • of auxilliary switch sine pulse • at DC • of contactor with added electronically optimized auxillary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block typical • of the contactor with added auxilliary switch block ty	General technical data	
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maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1 shock resistance at rectangular impulse • at DC • at DC shock resistance with sine pulse • at DC mechanical service life (operating cycles) • of contactor typical • of the contactor with added electronically optimized auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of	of main circuit rated value	6 kV
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relative humidity at 55 °C according to IEC 60068-2-30 95 % maximum Main circuit	during storage	-55 +80 °C
maximum Main circuit	relative humidity minimum	10 %
		95 %
number of poles for main current circuit 3	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 	22 A
value	
• at AC-1	
 up to 690 V at ambient temperature 40 °C rated value 	22 A
— up to 690 V at ambient temperature 60 °C rated	20 A
value	2071
• at AC-3	
— at 400 V rated value	9 A
— at 500 V rated value	7.7 A
— at 690 V rated value	6.7 A
• at AC-3e	
— at 400 V rated value	9 A
— at 500 V rated value	7.7 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	7.4 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	5.3 A
— up to 400 V for current peak value n=20 rated value	5.3 A
— up to 500 V for current peak value n=20 rated value	5.3 A
— up to 690 V for current peak value n=20 rated value	5 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	3.5 A
— up to 400 V for current peak value n=30 rated value	3.5 A
— up to 500 V for current peak value n=30 rated value	3.6 A
— up to 690 V for current peak value n=30 rated value	3.3 A
minimum cross-section in main circuit at maximum AC-1 rated value	4 mm²
operational current for approx. 200000 operating cycles at	
AC-4	44.0
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
— at 110 V rated value	12 A
— at 220 V rated value	1.6 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.7 A
with 3 current paths in series at DC-1	
— 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	20 A
— at 440 V rated value	1.3 A
— at 600 V rated value	1 A
 at 1 current path at DC-3 at DC-5 	

— at 24 V rated value	20 A
— at 60 V rated value	0.5 A
— at 110 V rated value	0.15 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	20 A
— at 60 V rated value	5 A
— at 110 V rated value	0.35 A
 with 3 current paths in series at DC-3 at DC-5 	
— 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	0.01114
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	5.5 kW
• at AC-3e	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	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	
 up to 230 V for current peak value n=20 rated value 	2 kVA
 up to 400 V for current peak value n=20 rated value 	3.6 kVA
 up to 500 V for current peak value n=20 rated value 	4.6 kVA
up to 690 V for current peak value n=20 rated value	5.9 kVA
operating apparent power at AC-6a	
 up to 230 V for current peak value n=30 rated value 	1.3 kVA
 up to 400 V for current peak value n=30 rated value 	2.4 kVA
 up to 500 V for current peak value n=30 rated value 	3.1 kVA
 up to 690 V for current peak value n=30 rated value 	4 kVA
short-time withstand current in cold operating state up to	
40 °C	
 limited to 1 s switching at zero current maximum 	155 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	111 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	86 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	66 A; Use minimum cross-section acc. to AC-1 rated value
limited to 60 s switching at zero current maximum	55 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	250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC	
• rated value	220 V
operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.8
• full-scale value	11
♥ run-acare value	

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	
• 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	1A
at 110 V lated value at 125 V rated value	0.9 A
at 220 V rated value at 220 V rated value	0.3 A
at 600 V rated value	0.3 A 0.1 A
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings	Tradity Switching per 100 million (17 V, 1 mz)
<u> </u>	
full-load current (FLA) for 3-phase AC motor	7.6.4
at 480 V rated value	7.6 A
at 600 V rated value	9 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	0.33 hp
— at 230 V rated value	1 hp
• for 3-phase AC motor	
— at 200/208 V rated value	2 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	5 hp
— at 575/600 V rated value	7.5 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 	
 — 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)
• 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° 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	70 mm
width	45 mm
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depth	73 mm
required spacing	
with side-by-side mounting	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
	Offiliti
for grounded parts forwards	10 mm
— forwards — upwards	10 mm
— upwards — at the side	6 mm
— downwards	10 mm
• for live parts	40
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm
Connections/ Terminals	
type of electrical connection	
for main current circuit	spring-loaded terminals
for auxiliary and control circuit	spring-loaded terminals
 at contactor for auxiliary contacts 	Spring-type terminals
of magnet coil	Spring-type terminals
type of connectable conductor cross-sections for main contacts	
• solid	2x (0.5 4 mm²)
solid or stranded	2x (0,5 4 mm²)
 finely stranded with core end processing 	2x (0.5 2.5 mm²)
finely stranded without core end processing	2x (0.5 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 mm ²
finely stranded without 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
finely stranded without core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	
 for auxiliary contacts 	
— solid or stranded	2x (0,5 4 mm²)
 finely stranded with core end processing 	2x (0.5 2.5 mm²)
— finely stranded without core end processing	2x (0.5 2.5 mm²)
for AWG cables for auxiliary contacts	2x (20 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
B10 value with high demand rate according to SN 31920	1 000 000
proportion of dangerous failures	
 with low demand rate according to SN 31920 	40 %
with high demand rate according to SN 31920	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
suitability for use	
safety-related switching OFF	Yes

General Product Approval



Confirmation





<u>KC</u>



EMC

Functional Safety/Safety of Machinery

Declaration of Conformity

Test Certificates



Type Examination Certificate





Special Test Certific-<u>ate</u>

Type Test Certificates/Test Report

Marine / Shipping













Marine / Shipping

other

Railway

Dangerous Good

Environment



Confirmation



Vibration and Shock

Transport Information

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=3RT2016-2BM41

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT2016-2BM41}$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-2BM41

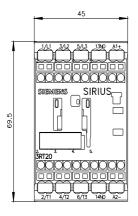
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

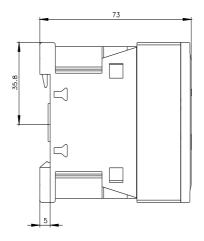
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-2BM41&lang=en

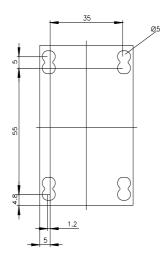
Characteristic: Tripping characteristics, I2t, Let-through current

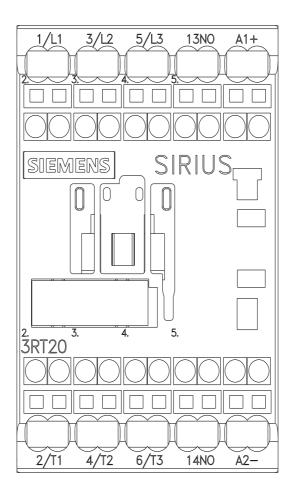
https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-2BM41/char

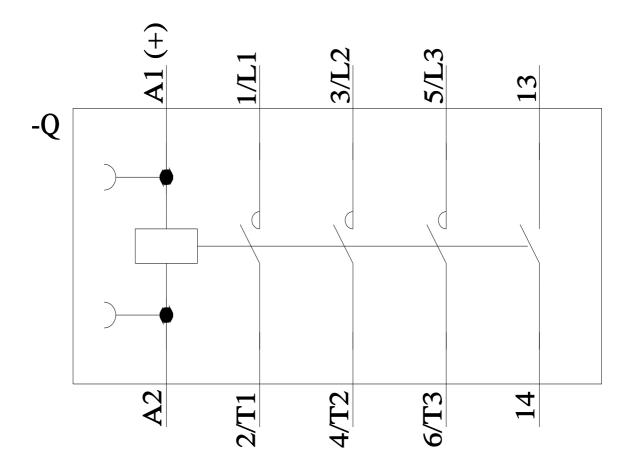
Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-2BM41&objecttype=14&gridview=view1











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