SIEMENS

Data sheet 3RT2035-1AL20



power contactor, AC-3e/AC-3, 41 A, 18.5 kW / 400 V, 3-pole, 230 V AC, 50/60 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S2

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S2
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 	6.6 W
 at AC in hot operating state per pole 	2.2 W
without load current share typical	17.2 W
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	11.8g / 5 ms, 7.4g / 10 ms
shock resistance with sine pulse	
• at AC	18.5g / 5 ms, 11.6g / 10 ms
mechanical service life (operating cycles)	
 of contactor typical 	10 000 000
 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)	10/01/2014
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 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 	60 A
value	
• at AC-1	
 up to 690 V at ambient temperature 40 °C rated value 	60 A
— up to 690 V at ambient temperature 60 °C rated	55 A
value	
• at AC-3	
— at 400 V rated value	41 A
— at 500 V rated value	41 A
— at 690 V rated value	24 A
• at AC-3e	
— at 400 V rated value	41 A
— at 500 V rated value	41 A
— at 690 V rated value	24 A
• at AC-4 at 400 V rated value	35 A
• at AC-5a up to 690 V rated value	52.8 A
• at AC-5b up to 400 V rated value	33.2 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	36.5 A
— up to 400 V for current peak value n=20 rated value	36.5 A
— up to 500 V for current peak value n=20 rated value	36.5 A
— up to 690 V for current peak value n=20 rated value	24 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	24.2 A
— up to 400 V for current peak value n=30 rated value	24.2 A
— up to 500 V for current peak value n=30 rated value	24.2 A
— up to 690 V for current peak value n=30 rated value	24 A
minimum cross-section in main circuit at maximum AC-1 rated value	16 mm²
operational current for approx. 200000 operating cycles at	
AC-4	00.4
• at 400 V rated value	22 A
at 690 V rated value	18.5 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	23 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
with 2 current paths in series at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	45 A
— at 110 V rated value	45 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
— at 600 V rated value	0.8 A
with 3 current paths in series at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	45 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
 at 1 current path at DC-3 at DC-5 	

at 24 V rated value	25 A		
— at 24 V rated value	35 A		
— at 60 V rated value	6.4		
— at 220 V rated value	1 A		
— at 440 V rated value	0.1 A		
— at 600 V rated value	0.06 A		
with 2 current paths in series at DC-3 at DC-5			
— at 24 V rated value	55 A		
— at 60 V rated value	45 A		
— at 110 V rated value	25 A		
— at 220 V rated value	5 A		
— at 440 V rated value	0.27 A		
— at 600 V rated value	0.16 A		
 with 3 current paths in series at DC-3 at DC-5 			
— at 24 V rated value	55 A		
— at 60 V rated value	55 A		
— at 110 V rated value	55 A		
— at 220 V rated value	25 A		
— at 440 V rated value	0.6 A		
— at 600 V rated value	0.35 A		
operating power			
• at AC-2 at 400 V rated value	18.5 kW		
• at AC-3			
— at 230 V rated value	11 kW		
— at 400 V rated value	18.5 kW		
— at 500 V rated value	22 kW		
— at 690 V rated value	22 kW		
• at AC-3e			
— at 230 V rated value	11 kW		
— at 400 V rated value	18.5 kW		
— at 500 V rated value	22 kW		
— at 690 V rated value	22 kW		
operating power for approx. 200000 operating cycles at AC-			
■ at 400 V rated value	11.6 kW		
at 690 V rated value at 690 V rated value	16.8 kW		
	IO.O KVV		
operating apparent power at AC-6a	14.5 14/4		
up to 230 V for current peak value n=20 rated value	14.5 kVA		
 up to 400 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value 	25.2 kVA		
·	31.6 kVA		
up to 690 V for current peak value n=20 rated value	28.6 kVA		
 operating apparent power at AC-6a up to 230 V for current peak value n=30 rated value 	9.6 kVA		
up to 400 V for current peak value n=30 rated value up to 400 V for current peak value n=30 rated value	16.8 kVA		
 up to 400 V for current peak value n=30 rated value up to 500 V for current peak value n=30 rated value 	21 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 	28.6 kVA		
short-time withstand current in cold operating state up to	20.0 11/7		
40 °C			
• limited to 1 s switching at zero current maximum	843 A; Use minimum cross-section acc. to AC-1 rated value		
• limited to 5 s switching at zero current maximum	596 A; Use minimum cross-section acc. to AC-1 rated value		
• limited to 10 s switching at zero current maximum	400 A; Use minimum cross-section acc. to AC-1 rated value		
• limited to 30 s switching at zero current maximum	241 A; Use minimum cross-section acc. to AC-1 rated value		
• limited to 60 s switching at zero current maximum	196 A; Use minimum cross-section acc. to AC-1 rated value		
no-load switching frequency			
• at AC	5 000 1/h		
operating frequency			
• at AC-1 maximum	1 200 1/h		
• at AC-2 maximum	750 1/h		
• at AC-3 maximum	1 000 1/h		
• at AC-3e maximum	1 000 1/h		
• at AC-4 maximum	300 1/h		
	000 1/11		
Control circuit/ Control			

type of voltage of the control supply voltage	AC	
control supply voltage at AC		
• at 50 Hz rated value	230 V	
at 60 Hz rated value	230 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	210 VA	
● at 60 Hz	188 VA	
inductive power factor with closing power of the coil		
• at 50 Hz	0.69	
• at 60 Hz	0.65	
apparent holding power of magnet coil at AC		
• at 50 Hz	17.2 VA	
• at 60 Hz	16.5 VA	
inductive power factor with the holding power of the coil		
● at 50 Hz	0.36	
• at 60 Hz	0.39	
closing delay		
• at AC	10 80 ms	
opening delay		
• at AC	10 18 ms	
arcing time	10 20 ms	
control version of the switch operating mechanism	Standard A1 - A2	
Auxiliary circuit		
number of NC contacts for auxiliary contacts instantaneous contact	1	
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	40 A	
at 600 V rated value	41 A	
yielded mechanical performance [hp]		
for single-phase AC motor		
 at 110/120 V rated value 	3 hp	

— at 230 V rated value	7.5 hp	
• for 3-phase AC motor		
— at 200/208 V rated value	10 hp	
— at 220/230 V rated value	15 hp	
— at 460/480 V rated value	30 hp	
— at 575/600 V rated value	40 hp	
contact rating of auxiliary contacts according to UL	A600 / P600	
Short-circuit protection		
design of the fuse link		
 for short-circuit protection of the main circuit 		
— with type of coordination 1 required	gG: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)	
 — with type of assignment 2 required 	gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (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	114 mm	
width	55 mm	
depth	130 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	O Hilli	
— forwards	10 mm	
— upwards	10 mm	
— 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	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 or stranded 	2x (1 35 mm²), 1x (1 50 mm²)	
finely stranded with core end processing	2x (1 25 mm²), 1x (1 35 mm²)	
connectable conductor cross-section for main contacts		
finely stranded with core end processing	1 35 mm²	
connectable conductor cross-section for auxiliary contacts		
 solid or stranded 	0.5 2.5 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)	
 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)	
AWG number as coded connectable conductor cross section		
for main contacts	18 1	
for auxiliary contacts	20 14	
io. damino, j contacto		

Safety related data	
product function	
 mirror contact according to IEC 60947-4-1 	Yes
 positively driven operation according to IEC 60947-5-1 	No
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

Certificates/ approvals

General Product Approval



Confirmation





<u>KC</u>



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





Type Test Certificates/Test Report

Special Test Certificate

Marine / Shipping













Marine / Shipping other Railway Dangerous Good Environment



Confirmation

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)

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT2035-1AL20}$

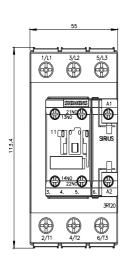
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

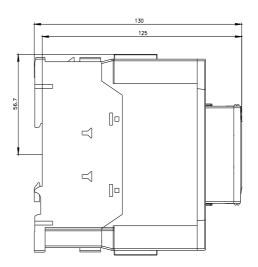
https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-1AL20

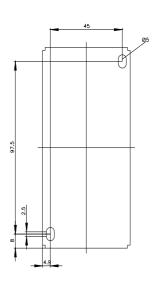
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

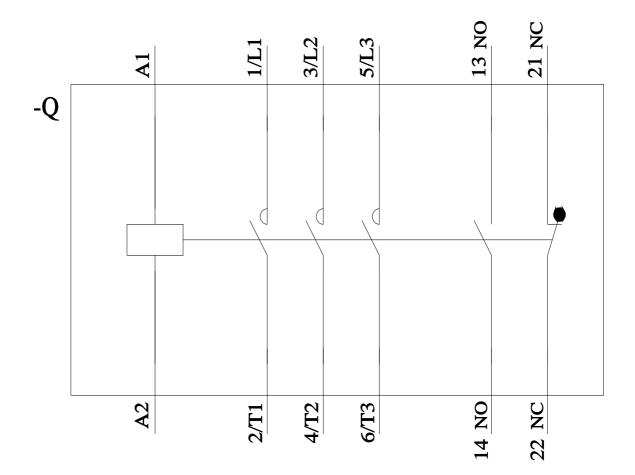
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2035-1AL20&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current









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