SIEMENS

Data sheet 3RT2036-1AM20



power contactor, AC-3 50 A, 22 kW / 400 V 1 NO + 1 NC, 208 V AC, 50 / 60 Hz, 3-pole, Size S2, screw terminal

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	12 W
• per pole	4 W
power loss [W] for rated value of the current without load current share typical	17.2 W
surge voltage resistance	
 of main circuit rated value 	6 kV
of auxiliary circuit rated value	_ 6 kV
maximum permissible voltage for safe isolation between coil and main contacts acc. 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 (switching 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 acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	01.10.2014 00:00:00
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature during operation	-25 +60 °C
ambient temperature during storage	-55 +80 °C
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

operational current	
 at AC-1 at 400 V at ambient temperature 40 °C rated value 	70 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C	70 A
rated value	
— up to 690 V at ambient temperature 60 °C	60 A
rated value	
• at AC-3	
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
at AC-4 at 400 V rated value	41 A
at AC-5a up to 690 V rated value	61.6 A
at AC-5b up to 400 V rated value	41.5 A
• at AC-6a	40.0 A
 up to 230 V for current peak value n=20 rated value 	43.2 A
— up to 400 V for current peak value n=20 rated	43.2 A
value	10.27
— up to 500 V for current peak value n=20 rated	43.2 A
value	
 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	28.8 A
value	20.0 A
— up to 400 V for current peak value n=30 rated	28.8 A
value	
— up to 500 V for current peak value n=30 rated	28.8 A
value	04.4
 up to 690 V for current peak value n=30 rated value 	24 A
minimum cross-section in main circuit at maximum AC-1	25 mm²
rated value	
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	24 A
at 400 V rated value at 690 V rated value	20 A
operational current	207
at 1 current path at DC-1	
— at 24 V rated value	55 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 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 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
operational current	
at 1 current path at DC-3 at DC-5	
— at 24 V rated value	35 A

— at 110 V rated value	2.5 A
— 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 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 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	22 kW
• at AC-3	
— at 230 V rated value	15 kW
— at 400 V rated value	22 kW
— at 500 V rated value	30 kW
— at 690 V rated value	22 kW
operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	12.6 kW
at 400 V rated value at 690 V rated value	18.2 kW
operating apparent power at AC-6a	IO.2 KVV
up to 230 V for current peak value n=20 rated value	17.2 kV·A
• up to 400 V for current peak value n=20 rated value	29.9 kV·A
• up to 500 V for current peak value n=20 rated value	37.4 kV·A
• up to 690 V for current peak value n=20 rated value	28.6 kV·A
operating apparent power at AC-6a	250 /.
• up to 230 V for current peak value n=30 rated value	11.4 kV·A
 up to 400 V for current peak value n=30 rated value 	19.9 kV·A
 up to 500 V for current peak value n=30 rated value 	24.9 kV·A
• up to 690 V for current peak value n=30 rated value	28.6 kV·A
short-time withstand current in cold operating state	
up to 40 °C	
Iimited to 1 s switching at zero current maximum	937 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 5 s switching at zero current maximum	697 A; Use minimum cross-section acc. to AC-1 rated value
limited to 10 s switching at zero current maximum	468 A; Use minimum cross-section acc. to AC-1 rated value
Ilmited to 30 s switching at zero current maximum	282 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 60 s switching at zero current maximum Polload switching frequency Polload switching	229 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency • at AC	5 000 1/h
	3 000 1/11
operating frequency • at AC-1 maximum	1 000 1/h
at AC-1 maximum at AC-2 maximum	600 1/h
• at AC-3 maximum	800 1/h
• 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	208 V
at 60 Hz rated value	208 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 V·A
• at 60 Hz	188 V·A
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 V·A
• at 60 Hz	16.5 V·A
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	
	1
number of NC contacts for auxiliary contacts instantaneous contact	
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 at 500 V rated value	2 A
at 690 V rated value at 690 V rated value	1 A
operational current at DC-12	TA .
• at 24 V rated value	40 A
	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	52 A
at 600 V rated value	52 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	3 hp
— at 230 V rated value	10 hp
for 3-phase AC motor	10 HP
— at 200/208 V rated value	15 hp
	15 hp
— at 220/230 V rated value	15 hp

— at 460/480 V rated value	40 hp
— at 575/600 V rated value	50 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 standard mounting 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 	
— 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
Connections/ Terminals	
type of electrical connection	
for main current circuit	screw-type terminals
for auxiliary and control circuit	screw-type terminals screw-type terminals
at contactor for auxiliary contactsof magnet coil	Screw-type terminals Screw-type terminals
type of connectable conductor cross-sections	Oolew-type terminals
for main contacts	
solid or stranded	2v (1 35 mm²\ 1v (1 50 mm²\
	2x (1 35 mm²), 1x (1 50 mm²)
 finely stranded with core end processing at AWG cables for main contacts 	2x (1 25 mm²), 1x (1 35 mm²)
	2x (18 2), 1x (18 1)
connectable conductor cross-section for main contacts	4 052
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)
at AWG cables for auxiliary contacts	2x (20 16), 2x (18 14)

18 ... 1 • AWG number as coded connectable conductor cross section for main contacts • AWG number as coded connectable conductor 20 ... 14 cross section for auxiliary contacts Safety related data B10 value with high demand rate acc. to SN 31920 1 000 000 proportion of dangerous failures • with low demand rate acc. to SN 31920 40 % • with high demand rate acc. to SN 31920 73 % failure rate [FIT] with low demand rate acc. to SN 31920 100 FIT product function • mirror contact acc. to IEC 60947-4-1 Yes • positively driven operation acc. to IEC 60947-5-1 No T1 value for proof test interval or service life acc. to 20 y **IEC 61508**

IP20

Certificates/ approvals

General Product Approval

EMC





protection class IP on the front acc. to IEC 60529

touch protection on the front acc. to IEC 60529

suitability for use safety-related switching OFF



<u>KC</u>

finger-safe, for vertical contact from the front





Declaration of Conformity

Test Certificates

Marine / Shipping

Miscellaneous



Type Test Certificates/Test Report

Special Test Certificate





Marine / Shipping













Confirmation

other

other

Confirmation

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=3RT2036-1AM20

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-1AM20

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

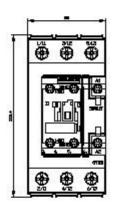
https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1AM20

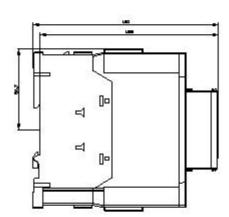
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

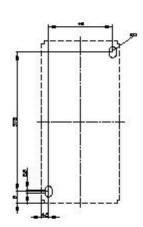
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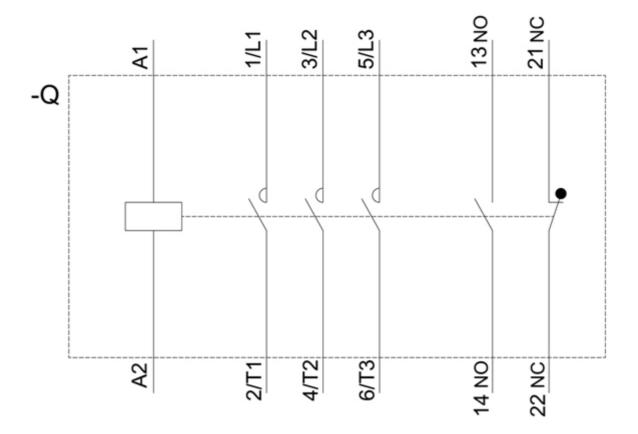
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1AM20/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2036-1AM20&objecttype=14&gridview=view1









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