SIEMENS

3RT2038-1AP00 **Data sheet**



power contactor, AC-3e/AC-3, 80 A, 37 kW / 400 V, 3-pole, 230 V AC, 50 Hz, auxiliary contacts: 1 NO + 1 NC, 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 	17.1 W
at AC in hot operating state per pole	5.7 W
 without load current share typical 	16 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 safe isolation 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	90 A
rated value	
• at AC-1	
 up to 690 V at ambient temperature 40 °C 	90 A
rated value	
— up to 690 V at ambient temperature 60 °C	80 A
rated value	
• at AC-3	
— at 400 V rated value	80 A
— at 500 V rated value	80 A
— at 690 V rated value	58 A
• at AC-3e	
— at 400 V rated value	80 A
— at 500 V rated value	80 A
— at 690 V rated value	58 A
• at AC-4 at 400 V rated value	55 A
at AC-5a up to 690 V rated value	79.2 A
at AC-5b up to 400 V rated value	66.4 A
• at AC-6a	70.4
 up to 230 V for current peak value n=20 rated value 	70 A
— up to 400 V for current peak value n=20 rated	70 A
value	
 up to 500 V for current peak value n=20 rated 	70 A
value	
— up to 690 V for current peak value n=20 rated	58 A
value	
• at AC-6a	
 up to 230 V for current peak value n=30 rated value 	46.7 A
— up to 400 V for current peak value n=30 rated	46.7 A
value	TU.1 /\
— up to 500 V for current peak value n=30 rated	46.7 A
value	
— up to 690 V for current peak value n=30 rated	46.7 A
value	
minimum cross-section in main circuit at maximum AC-1 rated value	35 mm ²
operational current for approx. 200000 operating	
cycles at AC-4	
at 400 V rated value	30 A
at 690 V rated value	24 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	35 A
— at 60 V rated value	6 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	FF A
— at 24 V rated value	55 A 45 A
— at 60 V rated value— 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	0.1074
— 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	37 kW
• at AC-3	
— at 230 V rated value	22 kW
— at 400 V rated value	37 kW
— at 500 V rated value	37 kW
— at 690 V rated value	45 kW
• at AC-3e	
— at 230 V rated value	22 kW
— at 400 V rated value	37 kW
— at 500 V rated value	37 kW
— at 690 V rated value	45 kW
operating power for approx. 200000 operating cycles	
at AC-4	
at 400 V rated value	15.8 kW
at 690 V rated value	21.8 kW
operating apparent power at AC-6a	
• up to 230 V for current peak value n=20 rated value	27.8 kVA
• up to 400 V for current peak value n=20 rated value	48.4 kVA
• up to 500 V for current peak value n=20 rated value	60.6 kVA
• up to 690 V for current peak value n=20 rated value	69.3 kVA
operating apparent power at AC-6a	10 6 10/0
up to 230 V for current peak value n=30 rated value up to 400 V for current peak value n=30 rated value	18.6 kVA
• up to 400 V for current peak value n=30 rated value	32.3 kVA
up to 500 V for current peak value n=30 rated value	40.4 kVA
up to 690 V for current peak value n=30 rated value short time withstand current in sold operating state.	55.8 kVA
short-time withstand current in cold operating state up to 40 °C	
Iimited to 1 s switching at zero current maximum	1 298 A; Use minimum cross-section acc. to AC-1 rated value
limited to 7 s switching at zero current maximum	898 A; Use minimum cross-section acc. to AC-1 rated value
limited to 10 s switching at zero current maximum	640 A; Use minimum cross-section acc. to AC-1 rated value
limited to 30 s switching at zero current maximum	414 A; Use minimum cross-section acc. to AC-1 rated value
limited to 60 s switching at zero current maximum	333 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	700 1/h
• at AC-2 maximum	350 1/h
• at AC-3 maximum	500 1/h
• at AC-3e maximum	500 1/h

• at AC-4 maximum	150 1/h
Control circuit/ Control	
	AC
type of voltage of the control supply voltage control supply voltage at AC	AC
at 50 Hz rated value	230 V
operating range factor control supply voltage rated	200 V
value of magnet coil at AC	
• at 50 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	190 VA
inductive power factor with closing power of the coil	
● at 50 Hz	0.72
apparent holding power of magnet coil at AC	
● at 50 Hz	16 VA
inductive power factor with the holding power of the	
coil	0.07
• at 50 Hz	0.37
closing delay	40 00 mg
at AC opening delay	10 80 ms
• 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	1
instantaneous contact	
number of NO contacts for auxiliary contacts	1
instantaneous 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	40.4
at 24 V rated value	10 A
 at 48 V rated value at 60 V rated value 	6 A 6 A
 at 110 V rated value at 125 V rated value 	3 A 2 A
at 220 V rated value at 220 V rated value	1 A
at 600 V rated value	0.15 A
operational current at DC-13	0.10 A
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	65 A
 at 600 V rated value 	62 A
yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 110/120 V rated value	5 hp
— at 230 V rated value	15 hp
 for 3-phase AC motor 	
— at 200/208 V rated value	20 hp
— at 220/230 V rated value	25 hp
— at 460/480 V rated value	50 hp
— at 575/600 V rated value	60 hp

contact rating of auxiliary contacts according to UL	A600 / P600
hort-circuit protection	
design of the fuse link	
 for short-circuit protection of the main circuit 	
 — with type of coordination 1 required 	gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A
	(415 V, 80 kA)
 — with type of assignment 2 required 	gG: 160A (690V,100kA), aM: 80A (690V,100kA), BS88: 125A (415V,80kA)
a for abort circuit protection of the qualitary quitab	
 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
mounting position	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	
— 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 Screw-type terminals
type of connectable conductor cross-sections for main	Salah tipo taminata
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 mm ²
 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)
AWG number as coded connectable conductor cross	
section	
Section	18 1
• for main contacts	
	20 14
for main contacts for auxiliary contacts	
for main contacts for auxiliary contacts afety related data	
• for main contacts	

5-1

B10 value with high demand rate according to SN 31920 proportion of dangerous failures

• with low demand rate according to SN 31920

• with high demand rate according to SN 31920

failure rate [FIT] with low demand rate according to SN 31920

T1 value for proof test interval or service life according to IEC 61508

protection class IP on the front according to IEC 60529

touch protection on the front according to IEC 60529 suitability for use

• safety-related switching OFF

1 000 000

40 %

73 %

100 FIT

20 a

IP20

finger-safe, for vertical contact from the front

Yes

Certificates/ approvals

General Product Approval



Confirmation





<u>KC</u>



EMC

Functional Safety/Safety of Machinery

Declaration of Conformity

Test Certificates



Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

Marine / Shipping













Marine / Shipping

other

Railway

Dangerous Good

Environment



Confirmation

Confirmation

Vibration and Shock

<u>Transport Information</u>

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=3RT2038-1AP00

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT2038-1AP00}$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-1AP00

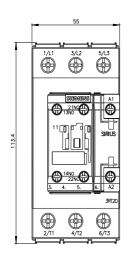
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

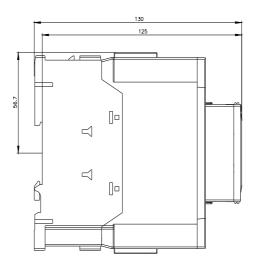
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2038-1AP00&lang=en

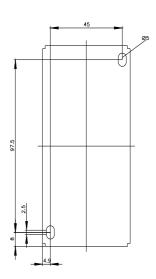
Characteristic: Tripping characteristics, I2t, Let-through current

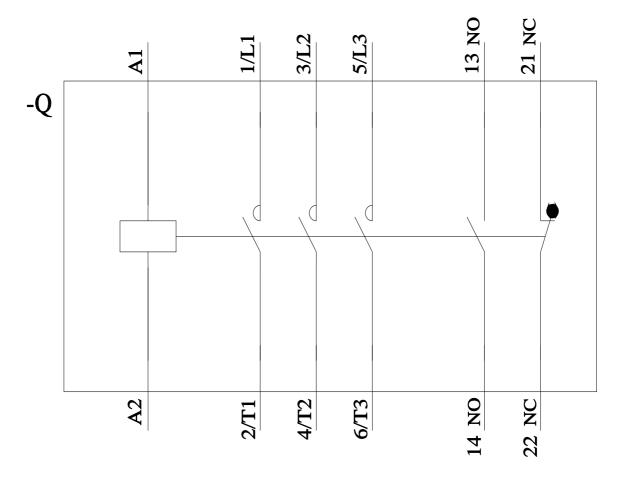
https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-1AP00/char

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









last modified: 2/10/2023 🖸