3RT2038-1AP04-3MA0

**Data sheet** 



power contactor, AC-3e/AC-3, 80 A, 37 kW / 400 V, 3-pole, 230 V AC, 50 Hz, auxiliary contacts: 2 NO + 2 NC, screw terminal, size: S2, captive auxiliary switch

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S2
product extension	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	No
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	17.1 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	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 protective separation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	9.8g / 5 ms, 6.5g / 10 ms
shock resistance with sine pulse	
• at AC	15.3g / 5 ms, 10.1g / 10 ms
mechanical service life (operating cycles)	
of contactor typical	10 000 000
<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)	10/01/2014
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

3
690 V
690 V
90 A
90 A
80 A
80 A
80 A
58 A
80 A
80 A
58 A
55 A
79.2 A
66.4 A
70 A
70 A
70 A
58 A
46.7 A
46.7 A
46.7 A
46.7 A
35 mm²
30 A
24 A
55 A
23 A
4.5 A
4.5 A 1 A
1 A
1 A 0.4 A
1 A 0.4 A
1 A 0.4 A 0.25 A
1 A 0.4 A 0.25 A 55 A 45 A
1 A 0.4 A 0.25 A 55 A 45 A
1 A 0.4 A 0.25 A 55 A 45 A 45 A 5 A
1 A 0.4 A 0.25 A  55 A 45 A 45 A 5 A 1 A
1 A 0.4 A 0.25 A 55 A 45 A 45 A 5 A
1 A 0.4 A 0.25 A  55 A 45 A 45 A 5 A 1 A 0.8 A
1 A 0.4 A 0.25 A  55 A 45 A 45 A 5 A 1 A 0.8 A
1 A 0.4 A 0.25 A  55 A 45 A 45 A 5 A 1 A 0.8 A
1 A 0.4 A 0.25 A  55 A 45 A 45 A 1 A 0.8 A
1 A 0.4 A 0.25 A  55 A 45 A 5 A 1 A 0.8 A  55 A 55 A 55 A 55 A
1 A 0.4 A 0.25 A  55 A 45 A 45 A 5 A 1 A 0.8 A

1041/	05.4
— 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
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— 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
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— 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
	40 KVV
• at AC-3e	22 144
— 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-	
at 400 V rated value	15.8 kW
at 490 V rated value     at 690 V rated value	21.8 kW
operating apparent power at AC-6a	21.0 KW
• up to 230 V for current peak value n=20 rated value	27.8 kVA
	48.4 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	60.6 kVA
up to 690 V for current peak value n=20 rated value	69.3 kVA
operating apparent power at AC-6a	40.0 13/4
• up to 230 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
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	40.4 kVA
up to 690 V for current peak value n=30 rated value	55.8 kVA
short-time withstand current in cold operating state up to 40 °C	
	1.200 At Hoo minimum group coation ago to AC 4 rated value
Iimited to 1 s switching at zero current maximum	1 298 A; Use minimum cross-section acc. to AC-1 rated value
Ilimited to 5 s switching at zero current maximum	898 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 10 s switching at zero current maximum	640 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	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	
	700.48
• at AC-1 maximum	700 1/h
<ul><li>at AC-1 maximum</li><li>at AC-2 maximum</li></ul>	700 1/h 350 1/h
• at AC-2 maximum	350 1/h
<ul><li>at AC-2 maximum</li><li>at AC-3 maximum</li></ul>	350 1/h 500 1/h
<ul><li>at AC-2 maximum</li><li>at AC-3 maximum</li><li>at AC-3e maximum</li></ul>	350 1/h 500 1/h 500 1/h

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type of voltage of the control supply voltage	AC
control supply voltage at AC	220.1/
at 50 Hz rated value  operating range factor control supply voltage rated value of	230 V
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	
• at 50 Hz	0.37
closing delay	40 90 mg
• 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	2
contact	-
number of NO contacts for auxiliary contacts instantaneous contact	2
operational current at AC-12 maximum	10 A
operational current at AC-15	
• at 230 V rated value	6 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
<ul> <li>at 60 V rated value</li> </ul>	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     at 40 V rated value	6 A
at 48 V rated value     at 60 V rated value	2 A 2 A
<ul> <li>at 60 V rated value</li> <li>at 110 V rated value</li> </ul>	1.4
at 110 V rated value     at 125 V rated value	0.9 A
at 123 V rated value     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
<ul> <li>at 575/600 V rated value</li> </ul>	60 hp

contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link	
<ul> <li>for short-circuit protection of the main circuit</li> </ul>	
— 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)
<ul> <li>— with type of assignment 2 required</li> </ul>	gG: 160A (690V,100kA), aM: 80A (690V,100kA), BS88: 125A (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	174 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	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
<ul> <li>for auxiliary and control circuit</li> </ul>	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 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	
<ul> <li>finely stranded with core end processing</li> </ul>	1 35 mm²
connectable conductor cross-section for auxiliary contacts	
<ul> <li>solid or stranded</li> </ul>	0.5 2.5 mm <sup>2</sup>
<ul> <li>finely stranded with core end processing</li> </ul>	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)
<ul> <li>finely stranded with core end processing</li> </ul>	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
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
Dio value with high demand rate according to SN 31920	1 000 000
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 %
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	
<ul> <li>safety-related switching OFF</li> </ul>	Yes
Cartificates/ approvals	

Certificates/ approvals

## **General Product Approval**





Confirmation



**KC** 



**Functional** EMC Safety/Safety of Machinery

**Declaration of Conformity** 

**Test Certificates** 



Type Examination Cer**tificate** 





Type Test Certificates/Test Report

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

## Marine / Shipping













Marine / Shipping

other

Railway

**Dangerous Good** 



Confirmation

Confirmation

Vibration and Shock

**Transport 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,...)

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2038-1AP04-3MA0

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2038-1AP04-3MA0

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-1AP04

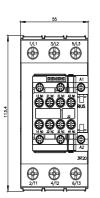
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) <a href="http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2038-1AP04-3MA0&lang=en">http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2038-1AP04-3MA0&lang=en</a>

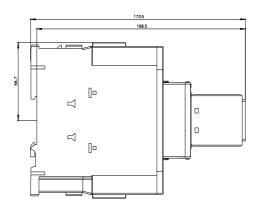
Characteristic: Tripping characteristics, I2t, Let-through current

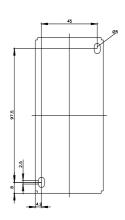
https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-1AP04-3MA0/char

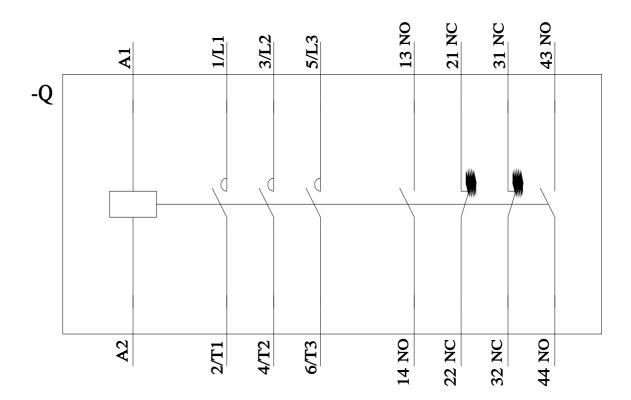
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2038-1AP04-3MA0&objecttype=14&gridview=view1









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