SIEMENS

Data sheet 3RT2038-3AF04



power contactor, AC-3e/AC-3, 80 A, 37 kW / 400 V, 3-pole, 110 V AC, 50 Hz, auxiliary contacts: 2 NO + 2 NC, main circuit: screw terminal, control and auxiliary circuit: spring-loaded terminal, size: S2, removable auxiliary switch

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	No
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 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
 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 	90 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated	90 A
value	00.4
 up to 690 V at ambient temperature 60 °C rated value 	80 A
• 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
	58 A
— at 690 V rated value	
at AC-4 at 400 V rated value at AC-5 aug to 600 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	
— 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 value	70 A
 up to 500 V for current peak value n=20 rated value 	70 A
 up to 690 V for current peak value n=20 rated value 	58 A
• 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 value 	46.7 A
— up to 500 V for current peak value n=30 rated value	46.7 A
 up to 690 V for current peak value n=30 rated value 	46.7 A
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 440 V rated value — at 600 V rated value	0.8 A
	0.0 A
with 3 current paths in series at DC-1 at 24 V rated value.	EE A
— 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
With 2 current paths in series at DC-3 at DC-5	— at 220 V rated value	
### at AC 2 at 400 V rated value	— 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 220 V rated value at 400 V rated value at 800 V rated value at 800 V rated value swith 3 current paths in series at DC-3 at DC-5 at 20 V rated value 55 A at 90 V rated value 25 A at 110 V rated value 25 A at 1400 V rated value 25 A at 400 V rated value 25 A at 400 V rated value 25 A at 230 V rated value 27 A 28 A at 230 V rated value 27 A 28 A at 230 V rated value 27 A 28 A at 230 V rated value 27 A 28 A at 230 V rated value 27 A 28 A at 230 V rated value 28 A at 250 V rated value 250 A at 250 V rated value 250 A at 250	— at 60 V rated value	45 A
	— at 110 V rated value	25 A
	— at 220 V rated value	5 A
with 3 current paths in series at DC-3 at DC-5	— 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
A	— at 220 V rated value	25 A
operating power	— at 440 V rated value	0.6 A
operating power		
• at AC-2 at 400 V rated value • at AC-3 — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 600 V rated value — at 600 V rated value — at 600 V rated value • at AC-3e — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value operating apparent power at AC-6a • up to 230 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 690 V for current peak value n=20 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=40 rated value • up to 690 V for current peak value n=40 rated value • limited to 1 s switching at zero current maximum • limited to 5 s switching at zero current maximum • limited to 5 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero cur		
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- at 400 V rated value		22 kW
- at 500 V rated value		
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up to 500 V for current peak value n=30 rated value up to 690 V for current peak value n=30 rated value short-time withstand current in cold operating state up to 40 °C ilimited to 1 s switching at zero current maximum ilimited to 5 s switching at zero current maximum ilimited to 10 s switching at zero current maximum ilimited to 30 s switching at zero current maximum ilimited to 30 s switching at zero current maximum ilimited to 60 s switching at zero current maximum ilimited to 60 s switching at zero current maximum ilimited to 60 s switching at zero current maximum ilimited to 60 s switching at zero current maximum ilimited to 60 s switching at zero current maximum ro-load switching frequency at AC operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum substitute the first state of the substitute of		
 up to 690 V for current peak value n=30 rated value short-time withstand current in cold operating state up to 40 °C limited to 1 s switching at zero current maximum limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum limited to 60 s switching at zero current maximum limited to 60 s switching frequency at AC operating frequency at AC-2 maximum at AC-3 maximum 500 1/h 		
short-time withstand current in cold operating state up to 40 °C • limited to 1 s switching at zero current maximum • limited to 5 s switching at zero current maximum • limited to 10 s switching at zero current maximum • limited to 30 s switching at zero current maximum • limited to 30 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum 700 1/h • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-3 maximum 500 1/h		
• limited to 1 s switching at zero current maximum • limited to 5 s switching at zero current maximum • limited to 10 s switching at zero current maximum • limited to 30 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum 700 1/h • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • limited to 5 s switching at zero current maximum 1 298 A; Use minimum cross-section acc. to AC-1 rated value 440 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h 5 000 1/h 5 000 1/h		55.8 kVA
 limited to 1 s switching at zero current maximum limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum limited to 60 s switching at zero current maximum limited to 60 s switching at zero current maximum at AC operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum 1 298 A; Use minimum cross-section acc. to AC-1 rated value 640 A; Use minimum cross-section acc. to AC-1 rated value 333 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h 350 1/h 500 1/h 		
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum limited to 60 s switching at zero current maximum limited to 60 s switching at zero current maximum no-load switching frequency at AC at AC-1 maximum at AC-2 maximum at AC-3 maximum at AC-3 maximum 898 A; Use minimum cross-section acc. to AC-1 rated value 414 A; Use minimum cross-section acc. to AC-1 rated value 333 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h 350 1/h 500 1/h 		1 208 A: Use minimum cross section acc. to AC 1 reted value
 limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum limited to 60 s switching at zero current maximum no-load switching frequency at AC at AC-1 maximum at AC-2 maximum at AC-3 maximum at AC-3 maximum 640 A; Use minimum cross-section acc. to AC-1 rated value 333 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h 5 000 1/h 350 1/h 500 1/h 	-	
 limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum no-load switching frequency at AC at AC-1 maximum at AC-2 maximum at AC-3 maximum 414 A; Use minimum cross-section acc. to AC-1 rated value 333 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h 5 000 1/h 35 00 1/h 5 000 1/h 6 00 1/h 7 00 1/h 8 00 1/h 9 00 1/h 9 00 1/h 9 00 1/h 	-	
 limited to 60 s switching at zero current maximum no-load switching frequency at AC 5 000 1/h operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum 500 1/h 	-	
no-load switching frequency	-	
 at AC 5 000 1/h operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum 500 1/h 		333 A, Use minimum cross-section acc. to AU-1 rated value
operating frequency • at AC-1 maximum 700 1/h • at AC-2 maximum • at AC-3 maximum 350 1/h		5 000 4/h
 at AC-1 maximum at AC-2 maximum at AC-3 maximum 500 1/h 		5 000 1/h
 at AC-2 maximum at AC-3 maximum 500 1/h 		
• at AC-3 maximum 500 1/h		
a at ∆C 3a mayimum		
▼ at AO-06 Hiaxillium	• at AC-3e maximum	500 1/h
• at AC-4 maximum 150 1/h		150 1/h
Control circuit/ Control	Control circuit/ Control	

type of voltage of the control supply voltage	AC
control supply voltage at AC	
at 50 Hz rated value	110 V
operating range factor control supply voltage rated 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	
• at 50 Hz	0.37
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	2
number of NO contacts for auxiliary contacts instantaneous contact	2
operational current at AC-12 maximum	10 A
operational current at AC-15	10 A
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
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	6 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 / Q600
Short-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)
 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	178 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	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	opining type terminale
solid or stranded	2x (1 35 mm²), 1x (1 50 mm²)
finely stranded with core end processing	2x (1 35 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	00 11111
solid or stranded	0.5 2.5 mm²
finely stranded with core end processing	0.5 1.5 mm²
finely stranded with core end processing finely stranded without core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	0.0 2.0 mm
for auxiliary contacts	
•	2v (0 E 2 E mm²)
solid or stranded finely stranded with core and processing	2x (0.5 2.5 mm²)
finely stranded without core and processing	2x (0.5 1.5 mm²)
— finely stranded without core end processing	2x (0.5 2.5 mm²)
for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross section	2x (20 14)
	19 1
• for main contacts	18 1
for main contacts for auxiliary contacts	18 1 20 14
for main contacts for auxiliary contacts Safety related data	
for main contacts for auxiliary contacts Safety related data product function	20 14
for main contacts for auxiliary contacts Safety related data	

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>



Functional

EMC Safety/Safety of Machinery Declaration of Conformity Test Certificates



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)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2038-3AF04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2038-3AF04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-3AF04

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

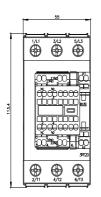
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2038-3AF04&lang=en

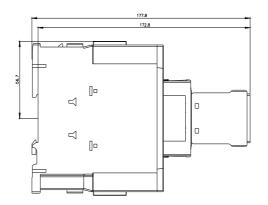
Characteristic: Tripping characteristics, I2t, Let-through current

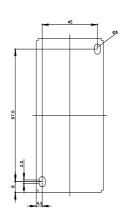
https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-3AF04/char

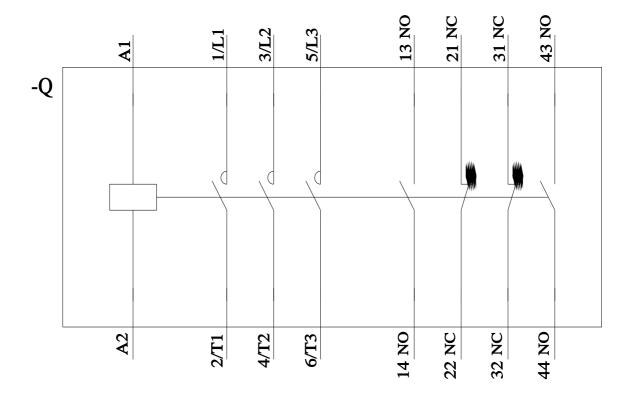
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2038-3AF04&objecttype=14&gridview=view1









last modified: 2/10/2023 🖸

