



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 110 V DC,
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	S0
product extension	
- function module for communication - auxiliary switch	No Yes
power loss [W] for rated value of the current	
- at AC in hot operating state - at AC in hot operating state per pole - without load current share typical	0.6 W 0.2 W 5.9 W
insulation voltage	
- of main circuit with degree of pollution 3 rated value - of auxiliary circuit with degree of pollution 3 rated value	690 V 690 V
surge voltage resistance	
- of main circuit rated value - of auxiliary circuit rated value	6 kV 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 DC	10g / 5 ms, 7,5g / 10 ms
shock resistance with sine pulse	
at DC	15g / 5 ms, 10g / 10 ms
mechanical service life (operating cycles)	
- of contactor typical - of the contactor with added electronically optimized auxiliary switch block typical - of the contactor with added auxiliary switch block typical	10 000 000 5 000 000 10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2009

Ambient conditions

installation altitude at height above sea level maximum	2 000 m
ambient temperature	
- during operation - during storage	-25 ... +60 °C -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 value	40 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	40 A
— up to 690 V at ambient temperature 60 °C rated value	35 A
• at AC-3	
— at 400 V rated value	9 A
— at 500 V rated value	9 A
— at 690 V rated value	9 A
• at AC-3e	
— at 400 V rated value	9 A
— at 500 V rated value	9 A
— at 690 V rated value	9 A
• at AC-4 at 400 V rated value	8.5 A
• at AC-5a up to 690 V rated value	35.2 A
• at AC-5b up to 400 V rated value	7.4 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	11.4 A
— up to 400 V for current peak value n=20 rated value	11.4 A
— up to 500 V for current peak value n=20 rated value	9.1 A
— up to 690 V for current peak value n=20 rated value	9 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	7.6 A
— up to 400 V for current peak value n=30 rated value	7.6 A
— up to 500 V for current peak value n=30 rated value	6.1 A
— up to 690 V for current peak value n=30 rated value	6.1 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	4.1 A
• at 690 V rated value	3.3 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value	20 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	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 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	35 A
— at 60 V rated value	35 A

— at 110 V rated value	35 A
— at 220 V rated value	35 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	20 A
— at 60 V rated value	5 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 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	35 A
— at 60 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 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	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
operating power	
● at AC-2 at 400 V rated value	4 kW
● at AC-3	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	7.5 kW
● at AC-3e	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	7.5 kW
operating power for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	2 kW
● at 690 V rated value	2.5 kW
operating apparent power at AC-6a	
● up to 230 V for current peak value n=20 rated value	4.5 kVA
● up to 400 V for current peak value n=20 rated value	7.8 kVA
● up to 500 V for current peak value n=20 rated value	7.8 kVA
● up to 690 V for current peak value n=20 rated value	10.7 kVA
operating apparent power at AC-6a	
● up to 230 V for current peak value n=30 rated value	3 kVA
● up to 400 V for current peak value n=30 rated value	5.2 kVA
● up to 500 V for current peak value n=30 rated value	5.2 kVA
● up to 690 V for current peak value n=30 rated value	7.2 kVA
short-time withstand current in cold operating state up to 40 °C	
● limited to 1 s switching at zero current maximum	170 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 5 s switching at zero current maximum	170 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 10 s switching at zero current maximum	140 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 30 s switching at zero current maximum	104 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum	88 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
● at DC	1 500 1/h
operating frequency	
● at AC-1 maximum	1 000 1/h
● at AC-2 maximum	1 000 1/h
● at AC-3 maximum	1 000 1/h

• at AC-3e maximum • at AC-4 maximum	1 000 1/h 300 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC	
• rated value	110 V
operating range factor control supply voltage rated value of magnet coil at DC	
• initial value • full-scale value	0.8 1.1
closing power of magnet coil at DC	5.9 W
holding power of magnet coil at DC	5.9 W
closing delay	
• at DC	50 ... 170 ms
opening delay	
• at DC	15 ... 18 ms
arcing time	10 ... 10 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 • at 400 V rated value • at 500 V rated value • at 690 V rated value	10 A 3 A 2 A 1 A
operational current at DC-12	
• at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	10 A 6 A 6 A 3 A 2 A 1 A 0.15 A
operational current at DC-13	
• at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	10 A 2 A 2 A 1 A 0.9 A 0.3 A 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 • at 600 V rated value	7.6 A 9 A
yielded mechanical performance [hp]	
• for single-phase AC motor — at 110/120 V rated value — at 230 V rated value • for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value	1 hp 1 hp 2 hp 3 hp 5 hp 7.5 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
- with type of assignment 2 required
- for short-circuit protection of the auxiliary switch required

gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)
gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)
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

85 mm

width

45 mm

depth

107 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
- for auxiliary and control circuit
- at contactor for auxiliary contacts
- of magnet coil

screw-type terminals

screw-type terminals

Screw-type terminals

Screw-type terminals

type of connectable conductor cross-sections for main contacts

- solid
- solid or stranded
- finely stranded with core end processing

2x (1 ... 2.5 mm²), 2x (2.5 ... 10 mm²)

2x (1 ... 2.5 mm²), 2x (2.5 ... 10 mm²)

2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm²

connectable conductor cross-section for main contacts

- solid
- stranded
- finely stranded with core end processing

1 ... 10 mm²

1 ... 10 mm²

1 ... 10 mm²

connectable conductor cross-section for auxiliary contacts

- solid or stranded
- finely stranded with core end processing

0.5 ... 2.5 mm²

0.5 ... 2.5 mm²

type of connectable conductor cross-sections

- for auxiliary contacts
 - solid or stranded
 - finely stranded with core end processing
- at AWG cables for auxiliary contacts

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)

2x (20 ... 16), 2x (18 ... 14)

AWG number as coded connectable conductor cross section

- for main contacts
- for auxiliary contacts

16 ... 8

20 ... 14

Safety related data

product function

- mirror contact according to IEC 60947-4-1

Yes

B10 value with high demand rate according to SN 31920

450 000

proportion of dangerous failures

- with low demand rate according to SN 31920

40 %

- 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

73 %
100 FIT

20 a

IP20

finger-safe, for vertical contact from the front

Yes

Certificates/ approvals

General Product Approval



[Confirmation](#)



[KC](#)



EMC	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates
	Type Examination Certificate		Type Test Certificates/Test Report Special Test Certificate
RCM		EG-Konf.	

Marine / Shipping



other	Railway	Dangerous Good	Environment
Confirmation	Vibration and Shock	Transport Information	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=3RT2023-1BF40>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2023-1BF40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2023-1BF40>

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

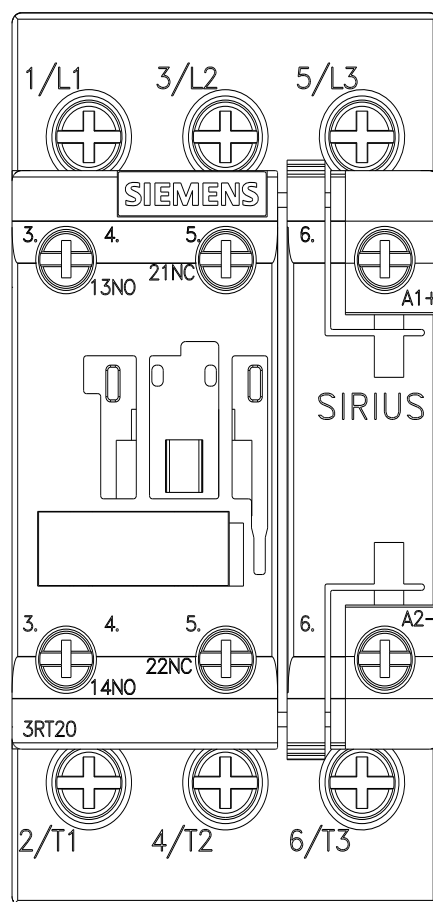
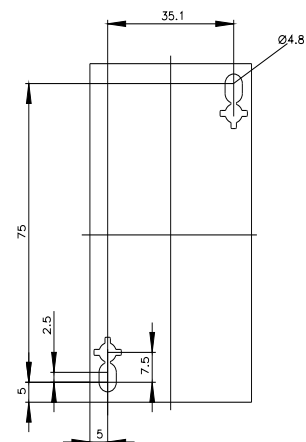
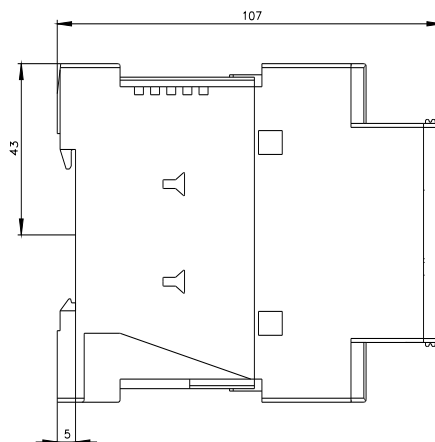
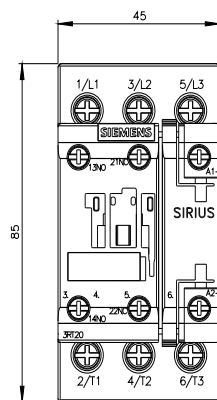
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2023-1BF40&lang=en

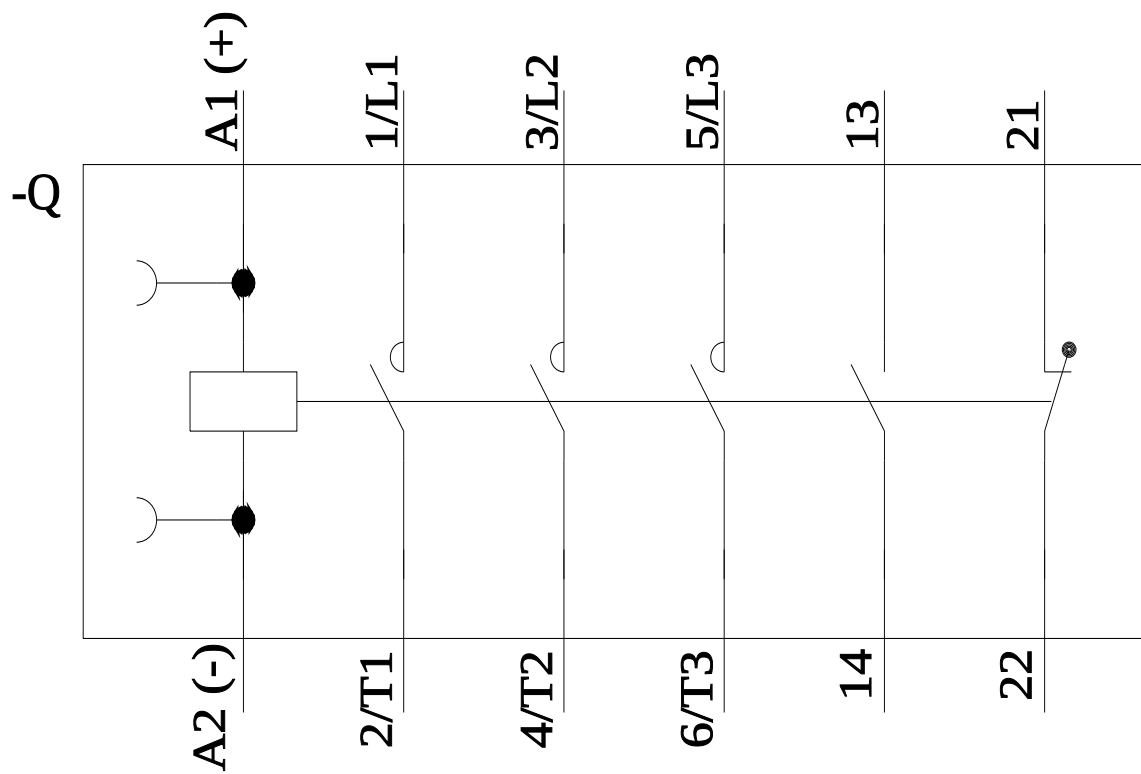
Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2023-1BF40/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2023-1BF40&objecttype=14&gridview=view1>





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