



power contactor, AC-3e/AC-3, 32 A, 15 kW / 400 V, 3-pole, 230 V AC, 50/60 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Power contactor
<b>product type designation</b>	3RT2
<b>General technical data</b>	
<b>size of contactor</b>	S0
<b>product extension</b>	
• function module for communication	No
• auxiliary switch	Yes
<b>power loss [W] for rated value of the current</b>	
• at AC in hot operating state	6.3 W
• at AC in hot operating state per pole	2.3 W
• without load current share typical	10.5 W
<b>insulation voltage</b>	
• of main circuit with degree of pollution 3 rated value	690 V
• of auxiliary circuit with degree of pollution 3 rated value	690 V
<b>surge voltage resistance</b>	
• 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
<b>shock resistance at rectangular impulse</b>	
• at AC	8,3g / 5 ms, 5,3g / 10 ms
<b>shock resistance with sine pulse</b>	
• at AC	13,5g / 5 ms, 8,3g / 10 ms
<b>mechanical service life (operating cycles)</b>	
• 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
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (Date)</b>	10/01/2009
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C
<b>relative humidity minimum</b>	10 %
<b>relative humidity at 55 °C according to IEC 60068-2-30 maximum</b>	95 %
<b>Main circuit</b>	

<b>number of poles for main current circuit</b>	3
<b>number of NO contacts for main contacts</b>	3
<b>operating voltage</b>	
• at AC-3 rated value maximum	690 V
• at AC-3e rated value maximum	690 V
<b>operational current</b>	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	50 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	50 A
— up to 690 V at ambient temperature 60 °C rated value	42 A
• at AC-3	
— at 400 V rated value	32 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-3e	
— at 400 V rated value	32 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-4 at 400 V rated value	22 A
• at AC-5a up to 690 V rated value	44 A
• at AC-5b up to 400 V rated value	26.5 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	30.8 A
— up to 400 V for current peak value n=20 rated value	30.8 A
— up to 500 V for current peak value n=20 rated value	27 A
— up to 690 V for current peak value n=20 rated value	21 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	20.5 A
— up to 400 V for current peak value n=30 rated value	20.5 A
— up to 500 V for current peak value n=30 rated value	18 A
— up to 690 V for current peak value n=30 rated value	18 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	12 A
• at 690 V rated value	12 A
<b>operational current</b>	
• <b>at 1 current path at DC-1</b>	
— 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
• <b>with 2 current paths in series at DC-1</b>	
— 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
• <b>with 3 current paths in series at DC-1</b>	
— 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
<b>● at 1 current path at DC-3 at DC-5</b>	
— at 24 V rated value	20 A
— at 60 V rated value	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
<b>● with 2 current paths in series at DC-3 at DC-5</b>	
— 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
<b>● with 3 current paths in series at DC-3 at DC-5</b>	
— 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
<b>operating power</b>	
● at AC-3	
— at 230 V rated value	7.5 kW
— at 400 V rated value	15 kW
— at 500 V rated value	15 kW
— at 690 V rated value	18.5 kW
● at AC-3e	
— at 230 V rated value	7.5 kW
— at 400 V rated value	15 kW
— at 500 V rated value	15 kW
— at 690 V rated value	18.5 kW
<b>operating power for approx. 200000 operating cycles at AC-4</b>	
● at 400 V rated value	6 kW
● at 690 V rated value	10.3 kW
<b>operating apparent power at AC-6a</b>	
● up to 230 V for current peak value n=20 rated value	12.2 kVA
● up to 400 V for current peak value n=20 rated value	21.3 kVA
● up to 500 V for current peak value n=20 rated value	23.3 kVA
● up to 690 V for current peak value n=20 rated value	25 kVA
<b>operating apparent power at AC-6a</b>	
● up to 230 V for current peak value n=30 rated value	8.1 kVA
● up to 400 V for current peak value n=30 rated value	14.2 kVA
● up to 500 V for current peak value n=30 rated value	15.5 kVA
● up to 690 V for current peak value n=30 rated value	21.5 kVA
<b>short-time withstand current in cold operating state up to 40 °C</b>	
● limited to 1 s switching at zero current maximum	499 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 5 s switching at zero current maximum	341 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 10 s switching at zero current maximum	260 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 30 s switching at zero current maximum	199 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum	162 A; Use minimum cross-section acc. to AC-1 rated value
<b>no-load switching frequency</b>	
● at AC	5 000 1/h
<b>operating frequency</b>	
● at AC-1 maximum	1 000 1/h
● at AC-2 maximum	750 1/h
● at AC-3 maximum	750 1/h
● at AC-3e maximum	750 1/h
● at AC-4 maximum	250 1/h

**Control circuit/ Control**

<b>type of voltage of the control supply voltage</b>	AC
<b>control supply voltage at AC</b>	
• at 50 Hz rated value	230 V
• at 60 Hz rated value	230 V
<b>operating range factor control supply voltage rated value of magnet coil at AC</b>	
• at 50 Hz	0.8 ... 1.1
• at 60 Hz	0.85 ... 1.1
<b>apparent pick-up power of magnet coil at AC</b>	
• at 50 Hz	81 VA
• at 60 Hz	79 VA
<b>inductive power factor with closing power of the coil</b>	
• at 50 Hz	0.72
• at 60 Hz	0.74
<b>apparent holding power of magnet coil at AC</b>	
• at 50 Hz	10.5 VA
• at 60 Hz	8.5 VA
<b>inductive power factor with the holding power of the coil</b>	
• at 50 Hz	0.25
• at 60 Hz	0.28
<b>closing delay</b>	
• at AC	8 ... 40 ms
<b>opening delay</b>	
• at AC	4 ... 16 ms
<b>arcing time</b>	10 ... 10 ms
<b>control version of the switch operating mechanism</b>	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
<b>operational current at AC-15</b>	
• 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
<b>operational current at DC-12</b>	
• 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
<b>operational current at DC-13</b>	
• 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
<b>contact reliability of auxiliary contacts</b>	1 faulty switching per 100 million (17 V, 1 mA)

**UL/CSA ratings**

<b>full-load current (FLA) for 3-phase AC motor</b>	
• at 480 V rated value	27 A
• at 600 V rated value	27 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 110/120 V rated value	2 hp
— at 230 V rated value	5 hp

- for 3-phase AC motor
    - at 200/208 V rated value 10 hp
    - at 220/230 V rated value 10 hp
    - at 460/480 V rated value 20 hp
    - at 575/600 V rated value 25 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: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)
  - with type of assignment 2 required gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (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

85 mm

#### width

45 mm

#### depth

97 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
- at contactor for auxiliary contacts Screw-type terminals
- of magnet coil Screw-type terminals

type of connectable conductor cross-sections for main contacts

- solid 2x (1 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 10 mm<sup>2</sup>)
- solid or stranded 2x (1 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 10 mm<sup>2</sup>)
- finely stranded with core end processing 2x (1 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 6 mm<sup>2</sup>), 1x 10 mm<sup>2</sup>

#### connectable conductor cross-section for main contacts

- solid 1 ... 10 mm<sup>2</sup>
- stranded 1 ... 10 mm<sup>2</sup>
- finely stranded with core end processing 1 ... 10 mm<sup>2</sup>

#### connectable conductor cross-section for auxiliary contacts

- solid or stranded 0.5 ... 2.5 mm<sup>2</sup>
- finely stranded with core end processing 0.5 ... 2.5 mm<sup>2</sup>

#### type of connectable conductor cross-sections

- for auxiliary contacts
  - solid or stranded 2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)
  - finely stranded with core end processing 2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)
- at AWG cables for auxiliary contacts 2x (20 ... 16), 2x (18 ... 14)

**AWG number as coded connectable conductor cross section**

- for main contacts 16 ... 8
- for auxiliary contacts 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 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](#)



[KC](#)



EMC	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates
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[Type Examination Certificate](#)



EG-Konf.



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

**Marine / Shipping**



ABS



BUREAU VERITAS



DNV



LRS



RINA



RMRS

other	Railway
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[Confirmation](#)



VDE

[Confirmation](#)

[Vibration and Shock](#)

**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=3RT2027-1AL20>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2027-1AL20>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1AL20>

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

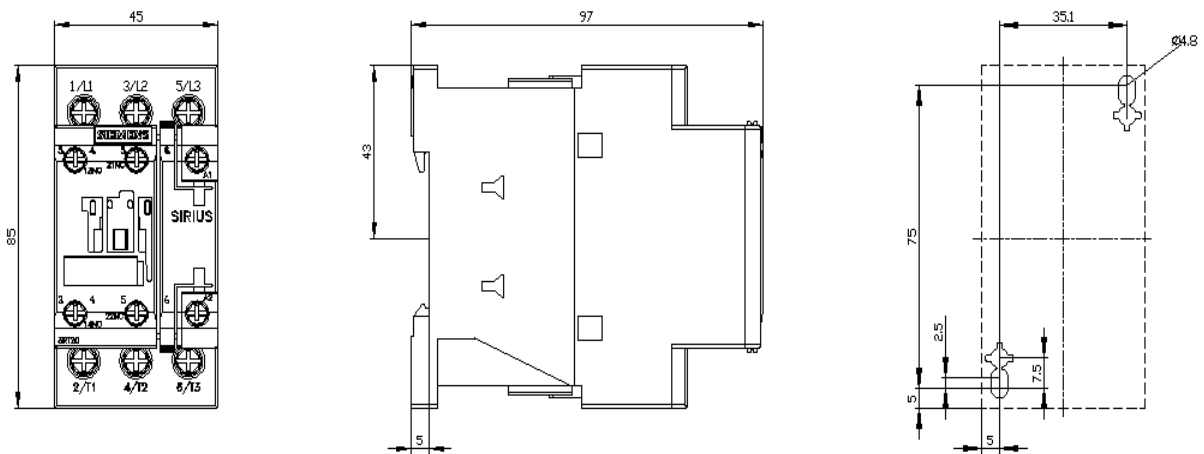
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2027-1AL20&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2027-1AL20&lang=en)

Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1AL20/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-1AL20&objecttype=14&gridview=view1>









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