



power contactor, AC-3e/AC-3 185 A, 90 kW / 400 V AC (50-60 Hz) / DC  
 Uc: 200-277 V PLC input 24 V DC 3-pole, auxiliary contacts 1 NO + 1 NC  
 drive: electronic main circuit: busbar control and auxiliary circuit: screw  
 terminal with remaining lifetime indicator

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Power contactor
<b>product type designation</b>	3RT1
<b>General technical data</b>	
<b>size of contactor</b>	S6
<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	39 W
• at AC in hot operating state per pole	13 W
• without load current share typical	2.8 W
<b>insulation voltage</b>	
• of main circuit with degree of pollution 3 rated value	1 000 V
• of auxiliary circuit with degree of pollution 3 rated value	500 V
<b>surge voltage resistance</b>	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1	690 V
<b>shock resistance at rectangular impulse</b>	
• at AC	8,5g / 5 ms, 4,2g / 10 ms
• at DC	8,5g / 5 ms, 4,2g / 10 ms
<b>shock resistance with sine pulse</b>	
• at AC	13,4g / 5 ms, 6,5g / 10 ms
• at DC	13,4g / 5 ms, 6,5g / 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 Prohibition (Date)</b>	05/01/2012
<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 %

## Main circuit

<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	1 000 V
• at AC-3e rated value maximum	1 000 V
<b>operational current</b>	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	215 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	215 A
— up to 690 V at ambient temperature 60 °C rated value	185 A
— up to 1000 V at ambient temperature 40 °C rated value	100 A
— up to 1000 V at ambient temperature 60 °C rated value	100 A
• at AC-3	
— at 400 V rated value	185 A
— at 500 V rated value	185 A
— at 690 V rated value	170 A
— at 1000 V rated value	65 A
• at AC-3e	
— at 400 V rated value	185 A
— at 500 V rated value	185 A
— at 690 V rated value	170 A
— at 1000 V rated value	65 A
• at AC-4 at 400 V rated value	160 A
• at AC-5a up to 690 V rated value	189 A
• at AC-5b up to 400 V rated value	153 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	157 A
— up to 400 V for current peak value n=20 rated value	157 A
— up to 500 V for current peak value n=20 rated value	157 A
— up to 690 V for current peak value n=20 rated value	157 A
— up to 1000 V for current peak value n=20 rated value	65 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	105 A
— up to 400 V for current peak value n=30 rated value	105 A
— up to 500 V for current peak value n=30 rated value	105 A
— up to 690 V for current peak value n=30 rated value	105 A
— up to 1000 V for current peak value n=30 rated value	65 A
minimum cross-section in main circuit at maximum AC-1 rated value	95 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	81 A
• at 690 V rated value	65 A
<b>operational current</b>	
• <b>at 1 current path at DC-1</b>	
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	18 A
— at 220 V rated value	3.4 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.5 A

<ul style="list-style-type: none"> <li>● <b>with 2 current paths in series at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>● <b>with 3 current paths in series at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>● <b>at 1 current path at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>● <b>with 2 current paths in series at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>● <b>with 3 current paths in series at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>	<p>160 A 160 A 160 A 20 A 3.2 A 1.6 A</p> <p>160 A 160 A 160 A 160 A 11.5 A 4 A</p> <p>160 A 7.5 A 0.6 A 0.17 A 0.12 A</p> <p>160 A 160 A 160 A 2.5 A 0.65 A 0.37 A</p> <p>160 A 160 A 160 A 160 A 1.4 A 0.75 A</p>
<b>operating power</b>	
<ul style="list-style-type: none"> <li>● at AC-3 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> <li>— at 1000 V rated value</li> </ul> </li> <li>● at AC-3e <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> <li>— at 1000 V rated value</li> </ul> </li> </ul>	<p>55 kW 90 kW 132 kW 160 kW 90 kW</p> <p>55 kW 90 kW 132 kW 160 kW 90 kW</p>
<b>operating power for approx. 200000 operating cycles at AC-4</b>	
<ul style="list-style-type: none"> <li>● at 400 V rated value</li> <li>● at 690 V rated value</li> </ul>	<p>45 kW 65 kW</p>
<b>operating apparent power at AC-6a</b>	
<ul style="list-style-type: none"> <li>● up to 230 V for current peak value n=20 rated value</li> <li>● up to 400 V for current peak value n=20 rated value</li> <li>● up to 500 V for current peak value n=20 rated value</li> <li>● up to 690 V for current peak value n=20 rated value</li> <li>● up to 1000 V for current peak value n=20 rated value</li> </ul>	<p>60 000 kVA 100 000 VA 130 000 VA 180 000 VA 110 000 VA</p>
<b>operating apparent power at AC-6a</b>	
<ul style="list-style-type: none"> <li>● up to 230 V for current peak value n=30 rated value</li> <li>● up to 400 V for current peak value n=30 rated value</li> <li>● up to 500 V for current peak value n=30 rated value</li> <li>● up to 690 V for current peak value n=30 rated value</li> <li>● up to 1000 V for current peak value n=30 rated value</li> </ul>	<p>40 000 VA 70 000 VA 90 000 VA 120 000 VA 110 000 VA</p>

**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 60 s switching at zero current maximum

**no-load switching frequency**

- at AC
- at DC

**operating frequency**

- at AC-1 maximum
- at AC-2 maximum
- at AC-3 maximum
- at AC-3e maximum
- at AC-4 maximum

2 900 A; Use minimum cross-section acc. to AC-1 rated value  
 2 084 A; Use minimum cross-section acc. to AC-1 rated value  
 1 480 A; Use minimum cross-section acc. to AC-1 rated value  
 968 A; Use minimum cross-section acc. to AC-1 rated value  
 801 A; Use minimum cross-section acc. to AC-1 rated value

1 000 1/h  
 1 000 1/h

800 1/h  
 300 1/h  
 750 1/h  
 750 1/h  
 130 1/h

**Control circuit/ Control****type of voltage of the control supply voltage**

AC/DC

**control supply voltage at AC**

- at 50 Hz rated value
- at 60 Hz rated value

200 ... 277 V  
 200 ... 277 V

**control supply voltage at DC**

- rated value

200 ... 277 V

**type of PLC-control input according to IEC 60947-1 consumed current at PLC-control input according to IEC 60947-1 maximum**

Type 2  
 20 mA

**voltage at PLC-control input rated value**

24 V

**operating range factor of the voltage at PLC-control input**

0.8 ... 1.1

**operating range factor control supply voltage rated value of magnet coil at DC**

- initial value
- full-scale value

0.8  
 1.1

**operating range factor control supply voltage rated value of magnet coil at AC**

- at 50 Hz
- at 60 Hz

0.8 ... 1.1  
 0.8 ... 1.1

**design of the surge suppressor**

with varistor

**apparent pick-up power of magnet coil at AC**

- at 50 Hz
- at 60 Hz

280 VA  
 280 VA

**inductive power factor with closing power of the coil**

- at 50 Hz
- at 60 Hz

0.8  
 0.8

**apparent holding power of magnet coil at AC**

- at 50 Hz
- at 60 Hz

4.8 VA  
 4.8 VA

**inductive power factor with the holding power of the coil**

- at 50 Hz
- at 60 Hz

0.6  
 0.6

**closing power of magnet coil at DC**

320 W

**holding power of magnet coil at DC**

2.8 W

**closing delay**

- at AC
- at DC

35 ... 75 ms  
 35 ... 75 ms

**opening delay**

- at AC
- at DC

80 ... 90 ms  
 80 ... 90 ms

**arcing time**

10 ... 15 ms

**control version of the switch operating mechanism**

PLC-IN or Standard A1 - A2 (adjustable)

**Auxiliary circuit**

number of NC contacts for auxiliary contacts  
 instantaneous contact  
 number of NO contacts for auxiliary contacts

1  
  
 1

instantaneous contact	
operational current at AC-12 maximum	10 A
<b>operational current at AC-15</b>	
• 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
<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	180 A
• at 600 V rated value	192 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 230 V rated value	30 hp
• for 3-phase AC motor	
— at 200/208 V rated value	60 hp
— at 220/230 V rated value	75 hp
— at 460/480 V rated value	150 hp
— at 575/600 V rated value	200 hp
<b>contact rating of auxiliary contacts according to UL</b>	A600 / Q600

#### Short-circuit protection

<b>design of the fuse link</b>	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 355 A (690 V, 100 kA)
— with type of assignment 2 required	gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 315 A (415 V, 50 kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
• for short-circuit protection of the RLT relay output required	miniature fuse: 4 A FF (230 V, I <sub>k</sub> = 400 A)

#### Installation/ mounting/ dimensions

<b>mounting position</b>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
<b>fastening method</b>	screw fixing
• side-by-side mounting	Yes
<b>height</b>	172 mm
<b>width</b>	140 mm
<b>depth</b>	170 mm
<b>required spacing</b>	
• with side-by-side mounting	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
• for grounded parts	
— forwards	20 mm
— upwards	10 mm

— at the side	10 mm
— downwards	10 mm
• for live parts	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm

### Connections/ Terminals

#### type of electrical connection

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

Connection bar  
screw-type terminals  
Screw-type terminals  
Screw-type terminals

#### width of connection bar

17 mm

#### thickness of connection bar

3 mm

#### diameter of holes

9 mm

#### number of holes

1

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

- stranded

25 ... 120 mm<sup>2</sup>

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

- solid or stranded
- finely stranded with core end processing

0.5 ... 4 mm<sup>2</sup>

0.5 ... 2.5 mm<sup>2</sup>

#### type of connectable conductor cross-sections

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

2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>), max. 2x (0.75 ... 4 mm<sup>2</sup>)

2x (0,5 ... 1,5 mm<sup>2</sup>), 2x (0,75 ... 2,5 mm<sup>2</sup>), max. 2x (0,75 ... 4 mm<sup>2</sup>)

2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)

2x (20 ... 16), 2x (18 ... 14), 1x 12

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

- for auxiliary contacts

18 ... 14

### Safety related data

#### product function

- mirror contact according to IEC 60947-4-1
- positively driven operation according to IEC 60947-5-1

Yes

No

B10 value with high demand rate according to SN 31920  
T1 value for proof test interval or service life according to IEC 61508

1 000 000

20 a

#### protection class IP on the front according to IEC 60529

IP00; IP20 with box terminal/cover

#### touch protection on the front according to IEC 60529

finger-safe, for vertical contact from the front with box terminal/cover

#### 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.

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)


[Confirmation](#)
[Miscellaneous](#)
[Miscellaneous](#)
[Confirmation](#)
[Special Test Certificate](#)
[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=3RT1056-6PP35>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1056-6PP35>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6PP35>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1056-6PP35&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1056-6PP35&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6PP35/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1056-6PP35&objecttype=14&gridview=view1>



