



power contactor, AC-3e/AC-3 115 A, 55 kW / 400 V, AC (50-60 Hz) / DC  
 Uc: 96-127 V PLC input 24 V DC 3-pole, auxiliary contacts 2 NO + 2 NC  
 drive: electronic main circuit: busbar control and auxiliary circuit: screw terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT1

### General technical data

size of contactor	S6
product extension	
<ul style="list-style-type: none"> <li>function module for communication</li> <li>auxiliary switch</li> </ul>	No Yes
power loss [W] for rated value of the current	
<ul style="list-style-type: none"> <li>at AC in hot operating state</li> <li>at AC in hot operating state per pole</li> <li>without load current share typical</li> </ul>	21 W 7 W 2.8 W
insulation voltage	
<ul style="list-style-type: none"> <li>of main circuit with degree of pollution 3 rated value</li> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	1 000 V 500 V
surge voltage resistance	
<ul style="list-style-type: none"> <li>of main circuit rated value</li> <li>of auxiliary circuit rated value</li> </ul>	8 kV 6 kV
maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1	690 V
shock resistance at rectangular impulse	
<ul style="list-style-type: none"> <li>at AC</li> <li>at DC</li> </ul>	8,5g / 5 ms, 4,2g / 10 ms 8,5g / 5 ms, 4,2g / 10 ms
shock resistance with sine pulse	
<ul style="list-style-type: none"> <li>at AC</li> <li>at DC</li> </ul>	13,4g / 5 ms, 6,5g / 10 ms 13,4g / 5 ms, 6,5g / 10 ms
mechanical service life (operating cycles)	
<ul style="list-style-type: none"> <li>of contactor typical</li> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> <li>of the contactor with added auxiliary switch block typical</li> </ul>	10 000 000 5 000 000 10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibition (Date)	05/01/2012

### Ambient conditions

installation altitude at height above sea level maximum	2 000 m
ambient temperature	
<ul style="list-style-type: none"> <li>during operation</li> <li>during storage</li> </ul>	-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

<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	160 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	160 A
— up to 690 V at ambient temperature 60 °C rated value	140 A
— up to 1000 V at ambient temperature 40 °C rated value	80 A
— up to 1000 V at ambient temperature 60 °C rated value	80 A
• at AC-3	
— at 400 V rated value	115 A
— at 500 V rated value	115 A
— at 690 V rated value	115 A
— at 1000 V rated value	53 A
• at AC-3e	
— at 400 V rated value	115 A
— at 500 V rated value	115 A
— at 690 V rated value	115 A
— at 1000 V rated value	53 A
• at AC-4 at 400 V rated value	97 A
• at AC-5a up to 690 V rated value	140 A
• at AC-5b up to 400 V rated value	95 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	115 A
— up to 400 V for current peak value n=20 rated value	115 A
— up to 500 V for current peak value n=20 rated value	115 A
— up to 690 V for current peak value n=20 rated value	115 A
— up to 1000 V for current peak value n=20 rated value	53 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	98 A
— up to 400 V for current peak value n=30 rated value	98 A
— up to 500 V for current peak value n=30 rated value	98 A
— up to 690 V for current peak value n=30 rated value	98 A
— up to 1000 V for current peak value n=30 rated value	53 A
minimum cross-section in main circuit at maximum AC-1 rated value	70 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	54 A
• at 690 V rated value	48 A
<b>operational current</b>	
• at 1 current path at DC-1	
— 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>• with 2 current paths in series at DC-1 <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>• with 3 current paths in series at DC-1 <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>• at 1 current path at DC-3 at DC-5 <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>• with 2 current paths in series at DC-3 at DC-5 <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>• with 3 current paths in series at DC-3 at DC-5 <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>	160 A 160 A 160 A 20 A 3.2 A 1.6 A  160 A 160 A 160 A 160 A 11.5 A 4 A  160 A 7.5 A 0.6 A 0.17 A 0.12 A  160 A 160 A 160 A 2.5 A 0.65 A 0.37 A  160 A 160 A 160 A 160 A 1.4 A 0.75 A
<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>	37 kW 55 kW 75 kW 110 kW 75 kW  37 kW 55 kW 75 kW 110 kW 75 kW
<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>	29 kW 48 kW
<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>	40 000 kVA 80 000 VA 100 000 VA 130 000 VA 90 000 VA
<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>	30 000 VA 60 000 VA 80 000 VA 110 000 VA 90 000 VA

**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

2 565 A; Use minimum cross-section acc. to AC-1 rated value  
 1 654 A; Use minimum cross-section acc. to AC-1 rated value  
 1 170 A; Use minimum cross-section acc. to AC-1 rated value  
 729 A; Use minimum cross-section acc. to AC-1 rated value  
 572 A; Use minimum cross-section acc. to AC-1 rated value

1 000 1/h  
 1 000 1/h

800 1/h  
 400 1/h  
 1 000 1/h  
 1 000 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

96 ... 127 V  
 96 ... 127 V

**control supply voltage at DC**

- rated value

96 ... 127 V

**type of PLC-control input according to IEC 60947-1**

Type 2

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

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  
 with varistor

**design of the surge suppressor****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

2  
  
 2

instantaneous contact  
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

6 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

124 A  
125 A

**yielded mechanical performance [hp]**

- for single-phase AC motor
  - 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

25 hp  
40 hp  
50 hp  
100 hp  
125 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
  - with type of assignment 2 required
- for short-circuit protection of the auxiliary switch required

gG: 355 A (690 V, 100 kA)  
gG: 250 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 250 A (415 V, 50 kA)  
gG: 10 A (500 V, 1 kA)

**Installation/ mounting/ dimensions**

**mounting position**

with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back

**fastening method**

- side-by-side mounting

screw fixing

**height**

Yes

**width**

172 mm

**depth**

120 mm

**required spacing**

170 mm

- with side-by-side mounting
  - forwards
  - upwards
  - downwards
  - at the side
- for grounded parts
  - forwards
  - upwards
  - at the side
  - downwards

20 mm  
10 mm  
10 mm  
0 mm  
20 mm  
10 mm  
10 mm  
10 mm

- for live parts
  - forwards
  - upwards
  - downwards
  - at the side

20 mm  
10 mm  
10 mm  
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

### width of connection bar

### thickness of connection bar

### diameter of holes

### number of holes

### connectable conductor cross-section for main contacts

- stranded

### connectable conductor cross-section for auxiliary contacts

- solid or stranded
- finely stranded with core end processing

### 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

### AWG number as coded connectable conductor cross section

- for auxiliary contacts

Connection bar  
screw-type terminals  
Screw-type terminals  
Screw-type terminals  
17 mm  
3 mm  
9 mm  
1  
  
25 ... 120 mm<sup>2</sup>  
  
0.5 ... 4 mm<sup>2</sup>  
0.5 ... 2.5 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>), 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  
  
18 ... 14

## Safety related data

### product function

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

B10 value with high 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

Yes  
No  
  
1 000 000  
20 a  
  
IP00; IP20 with box terminal/cover  
finger-safe, for vertical contact from the front with box terminal/cover  
  
Yes

## Certificates/ approvals

### General Product Approval



[Confirmation](#)



[KC](#)



EMC	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates
-----	---------------------------------------	---------------------------	-------------------



[Type Examination Certificate](#)



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

## Marine / Shipping

other



[Confirmation](#)

other

Railway

[Miscellaneous](#)

[Miscellaneous](#)

[Confirmation](#)

[Special Test Certificate](#)

[Vibration and Shock](#)

## 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=3RT1054-6NF36>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-6NF36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-6NF36>

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

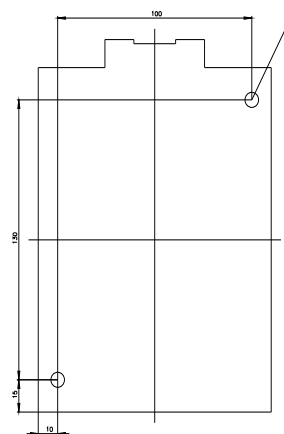
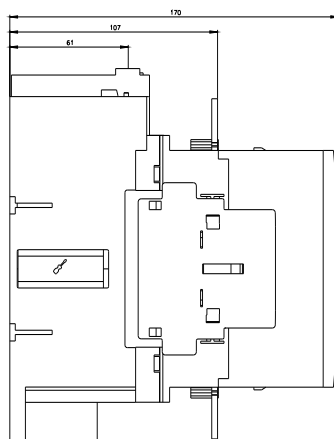
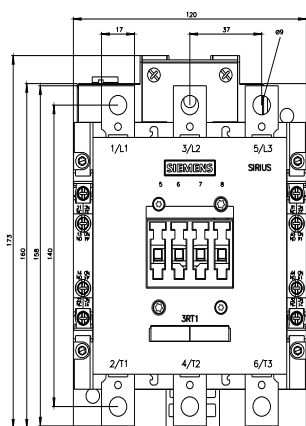
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1054-6NF36&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-6NF36&lang=en)

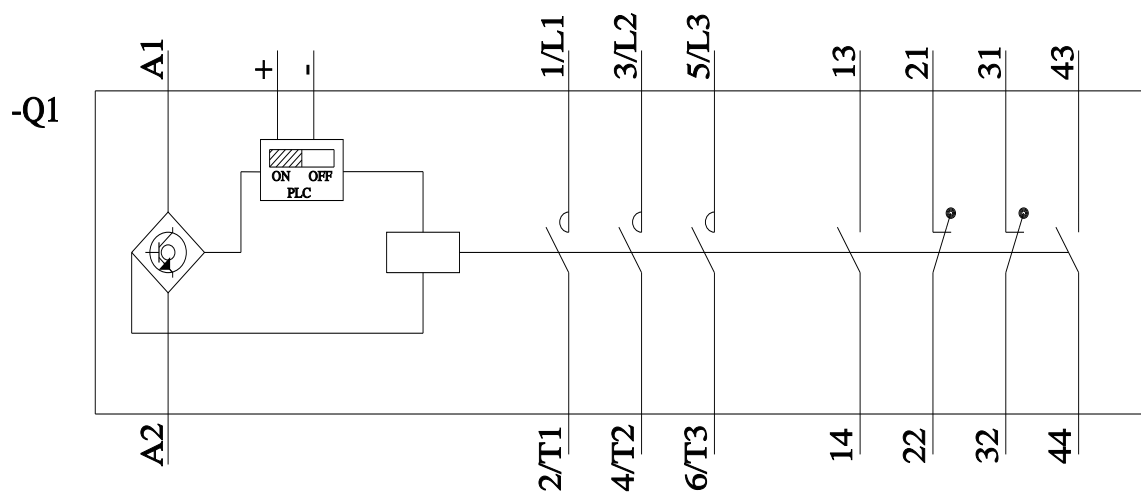
### Characteristic: Tripping characteristics, $I^2t$ , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-6NF36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-6NF36&objecttype=14&gridview=view1>





last modified:

2/10/2023 