

Power contactor, AC-3 115 A, 55 kW / 400 V AC (50-60 Hz) / DC operation 96-127 V UC Auxiliary contacts 2 NO + 2 NC 3-pole, Size S6 Busbar connections Drive: electronic with PLC interface 24 V DC Spring-type terminal



Product brand name	SIRIUS
Product designation	Power contactor
Product type designation	3RT1
General technical data	
Size of contactor	S6
Product extension	
• function module for communication	No
• Auxiliary switch	Yes
Surge voltage resistance	
• 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 acc. to EN 60947-1	690 V
Protection class IP	
• on the front	IP00; IP20 on the front with cover / box terminal
• of the terminal	IP00
Shock resistance at rectangular impulse	
• 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 (switching cycles)</b>	
• of contactor typical	10 000 000
• of the contactor with added electronics-compatible auxiliary switch block typical	5 000 000
• of the contactor with added auxiliary switch block typical	10 000 000
<b>Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750</b>	K
<b>Reference code acc. to DIN EN 81346-2</b>	Q

#### Ambient conditions

<b>Installation altitude at height above sea level</b>	
• maximum	2 000 m
<b>Ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C

#### 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
<b>Operating 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-2 at 400 V rated value	115 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

<ul style="list-style-type: none"> <li>• at AC-4 at 400 V rated value</li> </ul>	97 A
<ul style="list-style-type: none"> <li>• at AC-5a up to 690 V rated value</li> </ul>	140 A
<ul style="list-style-type: none"> <li>• at AC-5b up to 400 V rated value</li> </ul>	95 A
<ul style="list-style-type: none"> <li>• at AC-6a <ul style="list-style-type: none"> <li>— up to 230 V for current peak value n=20 rated value</li> </ul> </li> </ul>	115 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— up to 400 V for current peak value n=20 rated value</li> </ul> </li> </ul>	115 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— up to 500 V for current peak value n=20 rated value</li> </ul> </li> </ul>	115 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— up to 690 V for current peak value n=20 rated value</li> </ul> </li> </ul>	115 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— up to 1000 V for current peak value n=20 rated value</li> </ul> </li> </ul>	46.5 A
<ul style="list-style-type: none"> <li>• at AC-6a <ul style="list-style-type: none"> <li>— up to 230 V for current peak value n=30 rated value</li> </ul> </li> </ul>	90 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— up to 400 V for current peak value n=30 rated value</li> </ul> </li> </ul>	90 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— up to 500 V for current peak value n=30 rated value</li> </ul> </li> </ul>	90 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— up to 690 V for current peak value n=30 rated value</li> </ul> </li> </ul>	90 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— up to 1000 V for current peak value n=30 rated value</li> </ul> </li> </ul>	46.5 A
<b>Minimum cross-section in main circuit</b>	
<ul style="list-style-type: none"> <li>• at maximum AC-1 rated value</li> </ul>	70 mm²
<b>Operating current for approx. 200000 operating cycles at AC-4</b>	
<ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>	54 A
<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	48 A
<b>Operating current</b>	
<ul style="list-style-type: none"> <li>• at 1 current path at DC-1 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> </ul> </li> </ul>	160 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul> </li> </ul>	18 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul> </li> </ul>	3.4 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul> </li> </ul>	0.8 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 600 V rated value</li> </ul> </li> </ul>	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> </ul> </li> </ul>	160 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 110 V rated value</li> </ul> </li> </ul>	160 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 220 V rated value</li> </ul> </li> </ul>	20 A
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>— at 440 V rated value</li> </ul> </li> </ul>	3.2 A

<ul style="list-style-type: none"> <li>— at 600 V rated value</li> </ul>	1.6 A
<ul style="list-style-type: none"> <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 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 11.5 A 4 A
<b>Operating current</b>	
<ul style="list-style-type: none"> <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 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 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 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 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 2.5 A 0.6 A 0.17 A 0.12 A  160 A 160 A 2.5 A 0.65 A 0.37 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-1 <ul style="list-style-type: none"> <li>— at 230 V at 60 °C rated value</li> <li>— at 400 V rated value</li> <li>— at 400 V at 60 °C rated value</li> <li>— at 690 V rated value</li> <li>— at 690 V at 60 °C rated value</li> <li>— at 1000 V at 60 °C rated value</li> </ul> </li> <li>• at AC-2 at 400 V rated value</li> <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> </ul>	53 kW 92 kW 92 kW 159 kW 159 kW 131 kW 55 kW  37 kW 55 kW 75 kW 110 kW 75 kW

<b>Operating power for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	29 kW
• at 690 V rated value	48 kW
<b>Thermal short-time current limited to 10 s</b>	1 100 A
<b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b>	7 W
<b>No-load switching frequency</b>	
• at AC	1 000 1/h
• at DC	1 000 1/h
<b>Operating frequency</b>	
• at AC-1 maximum	800 1/h
• at AC-2 maximum	400 1/h
• at AC-3 maximum	1 000 1/h
• at AC-4 maximum	130 1/h

<b>Control circuit/ Control</b>	
<b>Type of voltage of the control supply voltage</b>	AC/DC
<b>Control supply voltage at AC</b>	
• at 50 Hz rated value	96 ... 127 V
• at 60 Hz rated value	96 ... 127 V
<b>Control supply voltage at DC</b>	
• rated value	96 ... 127 V
<b>Type of PLC-control input acc. to IEC 60947-1</b>	Type 2
<b>Consumed current at PLC-control input acc. to IEC 60947-1 maximum</b>	20 mA
<b>Voltage at PLC-control input rated value</b>	24 V
<b>Operating range factor of the voltage at PLC-control input</b>	0.8 ... 1.1
<b>Operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value	0.8
• Full-scale value	1.1
<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	0.8 ... 1.1
<b>Design of the surge suppressor</b>	with varistor
<b>Apparent pick-up power of magnet coil at AC</b>	
• at 50 Hz	280 V·A
<b>Inductive power factor with closing power of the coil</b>	
• at 50 Hz	0.8
<b>Apparent holding power of magnet coil at AC</b>	
• at 50 Hz	4.4 V·A

<b>Inductive power factor with the holding power of the coil</b>	
• at 50 Hz	0.5
<b>Closing power of magnet coil at DC</b>	320 W
<b>Holding power of magnet coil at DC</b>	2.8 W
<b>Closing delay</b>	
• at AC	35 ... 75 ms
• at DC	35 ... 75 ms
<b>Opening delay</b>	
• at AC	80 ... 90 ms
• at DC	80 ... 90 ms
<b>Arcing time</b>	10 ... 15 ms
<b>Control version of the switch operating mechanism</b>	PLC-IN or Standard A1 - A2 (adjustable)

#### Auxiliary circuit

<b>Number of NC contacts for auxiliary contacts</b>	
• instantaneous contact	2
<b>Number of NO contacts for auxiliary contacts</b>	
• instantaneous contact	2
<b>Operating current at AC-12 maximum</b>	10 A
<b>Operating 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>Operating 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>Operating 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 three-phase AC motor</b>	
• at 480 V rated value	124 A
• at 600 V rated value	125 A
<b>Yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 230 V rated value	25 hp
• for three-phase AC motor	
— at 200/208 V rated value	40 hp
— at 220/230 V rated value	50 hp
— at 460/480 V rated value	100 hp
— at 575/600 V rated value	125 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: 250 A (415 V, 50 kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)

## 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>Mounting type</b>	screw fixing
• Side-by-side mounting	Yes
<b>Height</b>	172 mm
<b>Width</b>	120 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

<b>Type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control current circuit</li> </ul>	Connection bar spring-loaded terminals
<b>Type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• at AWG conductors for main contacts</li> </ul>	4 ... 250 kcmil
<b>Connectable conductor cross-section for main contacts</b> <ul style="list-style-type: none"> <li>• stranded</li> </ul>	25 ... 120 mm <sup>2</sup>
<b>Connectable conductor cross-section for auxiliary contacts</b> <ul style="list-style-type: none"> <li>• single or multi-stranded</li> <li>• finely stranded with core end processing</li> <li>• finely stranded without core end processing</li> </ul>	0.25 ... 2.5 mm <sup>2</sup> 0.25 ... 1.5 mm <sup>2</sup> 0.25 ... 2.5 mm <sup>2</sup>
<b>Type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for auxiliary contacts               <ul style="list-style-type: none"> <li>— solid</li> <li>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>• at AWG conductors for auxiliary contacts</li> </ul>	2x (0.25 ... 2.5 mm <sup>2</sup> ) 2x (0,25 ... 2,5 mm <sup>2</sup> ) 2x (0.25 ... 1.5 mm <sup>2</sup> ) 2x (0.25 ... 2.5 mm <sup>2</sup> )  2x (24 ... 14)
<b>AWG number as coded connectable conductor cross section</b> <ul style="list-style-type: none"> <li>• for auxiliary contacts</li> </ul>	24 ... 14

## Safety related data

<b>B10 value</b> <ul style="list-style-type: none"> <li>• with high demand rate acc. to SN 31920</li> </ul>	1 000 000
<b>Product function</b> <ul style="list-style-type: none"> <li>• Mirror contact acc. to IEC 60947-4-1</li> <li>• positively driven operation acc. to IEC 60947-5-1</li> </ul>	Yes No
<b>Protection against electrical shock</b>	finger-safe when touched vertically from front acc. to IEC 60529

## Certificates/ approvals



General Product Approval	Functional Safety/Safety of Machinery	Declaration of Conformity
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[Type Examination Certificate](#)



Declaration of Conformity	Test Certificates	Marine / Shipping
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[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



other
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[Miscellaneous](#)

[Confirmation](#)

## Further information

**Information- and Downloadcenter (Catalogs, Brochures,...)**

[www.siemens.com/sirius/catalogs](http://www.siemens.com/sirius/catalogs)

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT1054-2NF36>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-2NF36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-2NF36>

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

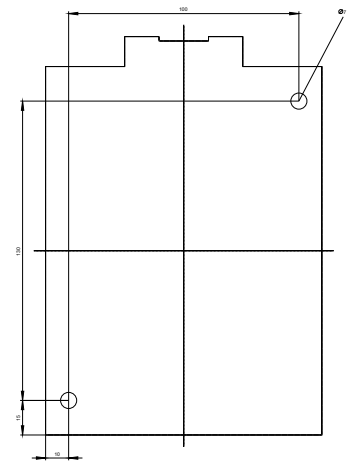
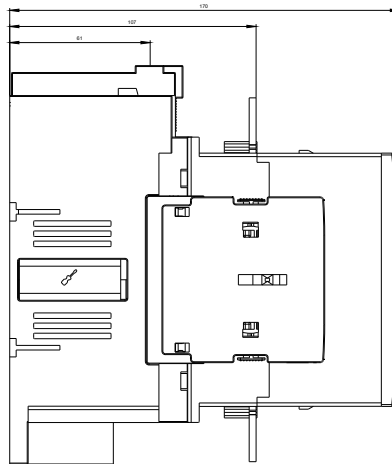
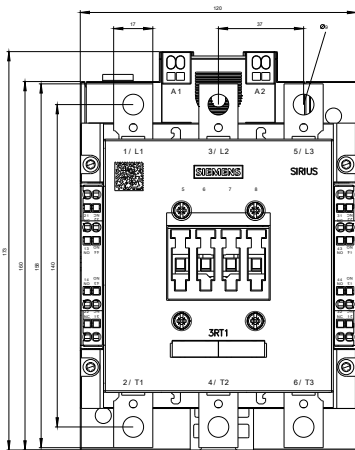
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1054-2NF36&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-2NF36&lang=en)

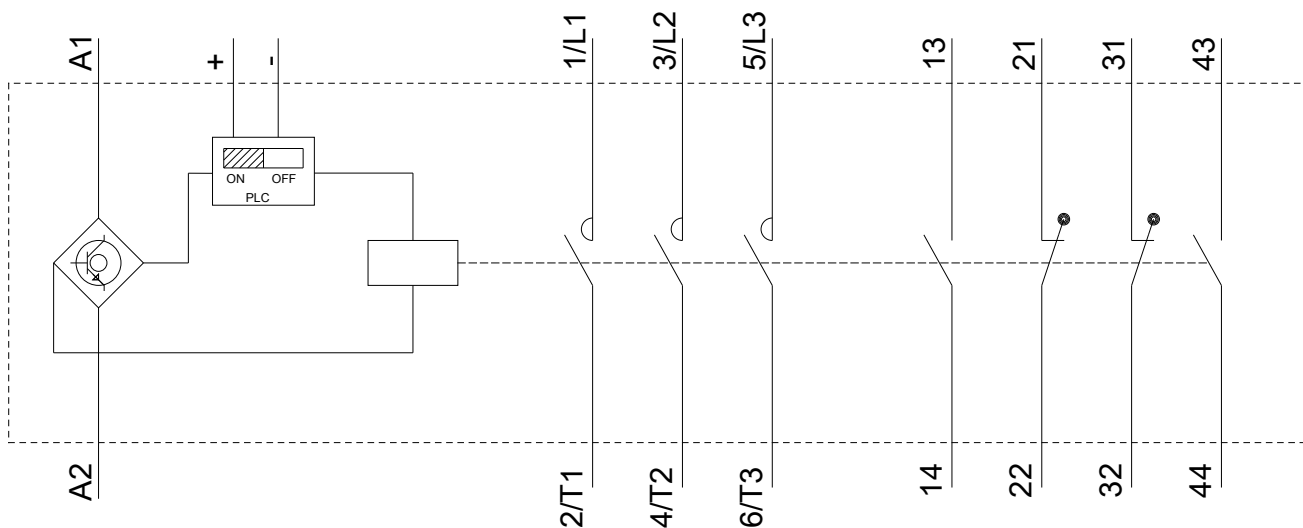
**Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-2NF36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-2NF36&objecttype=14&gridview=view1>





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