

CONTACTOR, AC3: 45KW/400V, 1NO+1NC, 20-33VAC/DC, 3-POLE, 3NO, SIZE: S3, SCREW TERMINALS, INTEGRATED VARISTOR



Figure similar

product brandname	SIRIUS
Product designation	Power contactor
Product type designation	3RT2

General technical data	
Size of contactor	S3
Product extension	
• function module for communication	No
• Auxiliary switch	Yes
Insulation voltage	
• rated value	1 000 V
Degree of pollution	3
Surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
• between coil and main contacts acc. to EN 60947-1	400 V
Protection class IP	
• on the front	IP20

<ul style="list-style-type: none"> <li>• of the terminal</li> </ul>	IP00
<b>Shock resistance at rectangular impulse</b> <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>	6.7 g / 5 ms, 4.0 g / 10 ms 6.7 g / 5 ms, 4.0 g / 10 ms
<b>Shock resistance with sine pulse</b> <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>	10.6 g / 5 ms, 6.3 g / 10 ms 10.6 g / 5 ms, 6.3 g / 10 ms
<b>Mechanical service life (switching cycles)</b> <ul style="list-style-type: none"> <li>• of contactor typical</li> <li>• of the contactor with added electronics-compatible 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

### Ambient conditions

<b>Ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul>	-25 ... +60 °C -55 ... +80 °C
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### 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> <ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>	1 000 V
<b>Operating current</b> <ul style="list-style-type: none"> <li>• at AC-1 at 400 V           <ul style="list-style-type: none"> <li>— at ambient temperature 40 °C rated value</li> </ul> </li> <li>• at AC-1           <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 40 °C rated value</li> <li>— up to 690 V at ambient temperature 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 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul>	130 A 130 A 110 A 95 A 95 A 95 A 78 A
<b>Connectable conductor cross-section in main circuit at AC-1</b> <ul style="list-style-type: none"> <li>• at 60 °C minimum permissible</li> <li>• at 40 °C minimum permissible</li> </ul>	35 mm <sup>2</sup> 50 mm <sup>2</sup>
<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>	42 A

<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	30 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> <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-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> <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>	100 A 9 A 2 A 0.6 A 0.4 A  100 A 100 A 10 A 1.8 A 1 A  100 A 100 A 80 A 4.5 A 2.6 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>	40 A 2.5 A 1 A 0.15 A 0.06 A  100 A 100 A 7 A 0.42 A 0.16 A  100 A 100 A 35 A 0.8 A 0.35 A
<b>Operating power</b>	
<ul style="list-style-type: none"> <li>• at AC-1</li> </ul>	

— at 230 V rated value	49 kW
— at 230 V at 60 °C rated value	42 kW
— at 400 V rated value	86 kW
— at 400 V at 60 °C rated value	72 kW
— at 690 V rated value	148 kW
— at 690 V at 60 °C rated value	125 kW
• at AC-2 at 400 V rated value	45 kW
<b>• at AC-3</b>	
— at 230 V rated value	22 kW
— at 400 V rated value	45 kW
— at 500 V rated value	55 kW
— at 690 V rated value	75 kW
<b>Operating power for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	22 kW
• at 690 V rated value	27.4 kW
<b>Thermal short-time current limited to 10 s</b>	760 A
<b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b>	6.6 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	900 1/h
• at AC-2 maximum	350 1/h
• at AC-3 maximum	850 1/h
• at AC-4 maximum	250 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	20 ... 33 V
• at 60 Hz rated value	20 ... 33 V
<b>Control supply voltage at DC</b>	
• rated value	20 ... 33 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	0.8 ... 1.1
<b>Design of the surge suppressor</b>	with varistor
<b>Inrush current peak</b>	
• at 24 V	4.2 A
<b>Apparent pick-up power of magnet coil at AC</b>	

<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	163 V·A 163 V·A
<b>Apparent holding power of magnet coil at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	3.5 V·A 3.5 V·A
<b>Closing power of magnet coil at DC</b>	76 W
<b>Holding power of magnet coil at DC</b>	2.7 W
<b>Closing delay</b>	
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	50 ... 70 ms
<b>Opening delay</b>	
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	38 ... 57 ms
<b>Arcing time</b>	10 ... 20 ms
<b>Residual current of the electronics for control with signal &lt;0&gt;</b>	
<ul style="list-style-type: none"> <li>• at AC at 230 V maximum permissible</li> <li>• at DC at 24 V maximum permissible</li> </ul>	20 mA 20 mA

### Auxiliary circuit

<b>Number of NC contacts</b>	
<ul style="list-style-type: none"> <li>• for auxiliary contacts           <ul style="list-style-type: none"> <li>— instantaneous contact</li> </ul> </li> </ul>	1
<b>Number of NO contacts</b>	
<ul style="list-style-type: none"> <li>• for auxiliary contacts           <ul style="list-style-type: none"> <li>— instantaneous contact</li> </ul> </li> </ul>	1
<b>Operating current at AC-12 maximum</b>	10 A
<b>Operating current at AC-15</b>	
<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> </ul>	6 A 3 A 2 A 1 A
<b>Operating current at DC-12</b>	
<ul style="list-style-type: none"> <li>• at 24 V rated value</li> <li>• at 48 V rated value</li> <li>• at 60 V rated value</li> <li>• at 110 V rated value</li> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>	10 A 6 A 6 A 3 A 2 A 1 A 0.15 A
<b>Operating current at DC-13</b>	
<ul style="list-style-type: none"> <li>• at 24 V rated value</li> <li>• at 48 V rated value</li> <li>• at 60 V rated value</li> <li>• at 110 V rated value</li> </ul>	10 A 2 A 2 A 1 A

<ul style="list-style-type: none"> <li>• at 125 V rated value</li> </ul>	0.9 A
<ul style="list-style-type: none"> <li>• at 220 V rated value</li> </ul>	0.3 A
<ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>	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>	
<ul style="list-style-type: none"> <li>• at 480 V rated value</li> </ul>	96 A
<ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>	77 A
<b>Yielded mechanical performance [hp]</b>	
<ul style="list-style-type: none"> <li>• for single-phase AC motor <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul> </li> <li>• for three-phase AC motor <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul>	10 hp 20 hp 30 hp 30 hp 75 hp 75 hp
<b>Contact rating of auxiliary contacts according to UL</b>	A600 / P600

### Short-circuit protection

<b>Design of the fuse link</b>	
<ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> <li>— with type of assignment 2 required</li> </ul> </li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul>	gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 250 A gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 160 A fuse gG: 10 A

### Installation/ mounting/ dimensions

<b>Mounting position</b>	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
<b>Mounting type</b>	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
<ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul>	Yes
<b>Height</b>	140 mm
<b>Width</b>	70 mm
<b>Depth</b>	152 mm
<b>Required spacing</b>	
<ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— Backwards</li> <li>— upwards</li> <li>— downwards</li> </ul> </li> </ul>	0 mm 0 mm 0 mm 0 mm

— at the side	0 mm
• for grounded parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	10 mm
— at the side	10 mm
— downwards	10 mm
• for live parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm




## Connections/Terminals

<b>Type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for auxiliary and control current circuit	screw-type terminals
<b>Type of connectable conductor cross-sections</b>	
• for main contacts	
— finely stranded with core end processing	2x (2.5 ... 35 mm <sup>2</sup> ), 1x (2.5 ... 50 mm <sup>2</sup> )
• at AWG conductors for main contacts	2x (10 ... 1/0), 1x (10 ... 2)
<b>Type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— single or multi-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 conductors for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14)

## Safety related data

<b>B10 value</b>	
• with high demand rate acc. to SN 31920	1 000 000
<b>Proportion of dangerous failures</b>	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	73 %
<b>Product function</b>	
• Mirror contact acc. to IEC 60947-4-1	Yes
• positively driven operation acc. to IEC 60947-5-1	No
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y
<b>Protection against electrical shock</b>	finger-safe when touched vertically from front acc. to IEC 60529

## Certificates/approvals

General Product Approval	Test Certificates	other
  	<a href="#">Typrüfbescheinigung/Werkszeugnis</a>	<a href="#">Bestätigungen</a>

#### Further information

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

<http://www.siemens.com/industrial-controls/catalogs>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2046-1NB30>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2046-1NB30>

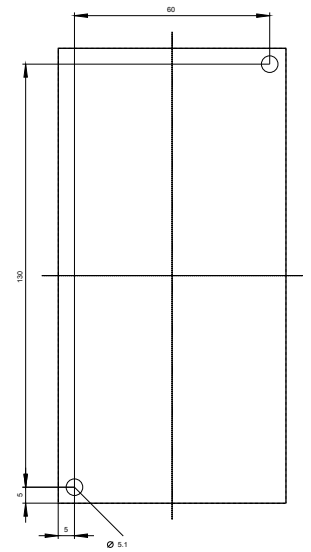
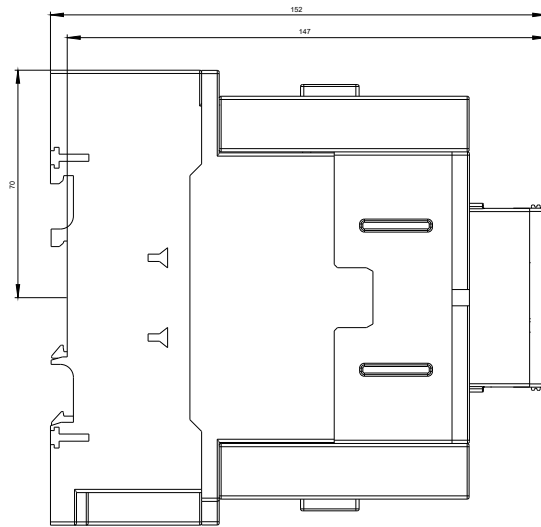
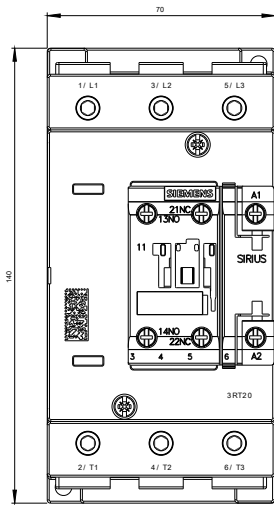
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

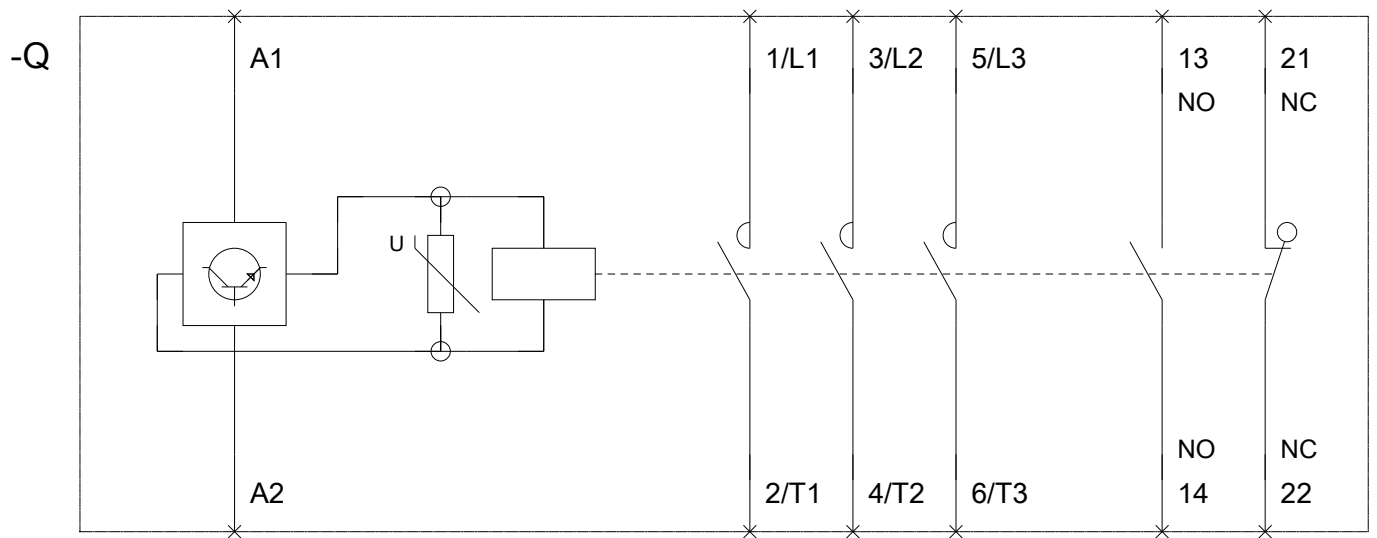
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2046-1NB30>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2046-1NB30&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2046-1NB30&lang=en)







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