

Contactor, AC-1, 140 A/690 V/40 °C, S3, 3-pole, 220 V AC/50 Hz, 240 V/60 Hz, 1 NO+1 NC, box terminal/screw terminal



Product brand name	SIRIUS
Product designation	Contactor
Product type designation	3RT24

**General technical data**

Size of contactor	S3
Product extension	<ul style="list-style-type: none"> <li>• function module for communication No</li> <li>• Auxiliary switch Yes</li> </ul>
Insulation voltage	<ul style="list-style-type: none"> <li>• of main circuit with degree of pollution 3 rated value 1 000 V</li> <li>• of auxiliary circuit with degree of pollution 3 rated value 690 V</li> </ul>
Surge voltage resistance	<ul style="list-style-type: none"> <li>• of main circuit rated value 8 kV</li> <li>• of auxiliary circuit rated value 6 kV</li> </ul>
Protection class IP	<ul style="list-style-type: none"> <li>• on the front IP20; Finger-safe, for vertical contact from the front acc. to IEC 60529</li> </ul>

• of the terminal	IP00
<b>Shock resistance at rectangular impulse</b>	
• at AC	6.7 g / 5 ms, 4.0 g / 10 ms
<b>Shock resistance with sine pulse</b>	
• at AC	10.6 g / 5 ms, 6.3 g / 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 EN 81346-2</b>	Q

#### Ambient conditions

<b>Installation altitude at height above sea level</b>	
• maximum	2 000 m
Relative humidity during operation	0 ... 95 %

#### Main circuit

<b>Number of poles for main current circuit</b>	3
<b>Number of NO contacts for main contacts</b>	3
<b>Type of voltage for main current circuit</b>	AC
<b>Operating current</b>	
• at AC-1 at 400 V — rated value	130 A
• at AC-1 — up to 690 V at ambient temperature 40 °C rated value	140 A
— up to 690 V at ambient temperature 60 °C rated value	130 A
• at AC-3 — at 400 V rated value	44 A
<b>Minimum cross-section in main circuit</b>	
• at maximum AC-1 rated value	50 mm <sup>2</sup>
<b>No-load switching frequency</b>	
• at AC	5 000 1/h
<b>Operating frequency</b>	
• at AC-1 maximum	650 1/h

#### Control circuit/ Control

<b>Type of voltage</b>	AC
<b>Type of voltage of the control supply voltage</b>	AC
<b>Control supply voltage at AC</b>	
• at 50 Hz rated value	220 V
• at 60 Hz rated value	240 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>Apparent pick-up power of magnet coil at AC</b>	
• at 50 Hz	326 V·A
• at 60 Hz	326 V·A
<b>Inductive power factor with closing power of the coil</b>	
• at 50 Hz	0.62
• at 60 Hz	0.55
<b>Apparent holding power of magnet coil at AC</b>	
• at 50 Hz	22 V·A
• at 60 Hz	22 V·A
<b>Inductive power factor with the holding power of the coil</b>	
• at 50 Hz	0.36
• at 60 Hz	0.4
<b>Closing delay</b>	
• at AC	13 ... 50 ms
<b>Opening delay</b>	
• at AC	10 ... 21 ms
<b>Arcing time</b>	10 ... 20 ms
<b>Control version of the switch operating mechanism</b>	Standard A1 - A2

Auxiliary circuit	
<b>Number of NC contacts for auxiliary contacts</b>	1
• attachable	2
• instantaneous contact	1
<b>Number of NO contacts for auxiliary contacts</b>	1
• attachable	2
• instantaneous contact	1
Operating current at AC-12 maximum	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-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

<ul style="list-style-type: none"> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>	<p>0.3 A</p> <p>0.1 A</p>
<b>Design of the miniature circuit breaker</b> <ul style="list-style-type: none"> <li>• for short-circuit protection of the auxiliary switch required</li> </ul>	gG: 10 A (230 V, 400 A)
<b>Contact reliability of auxiliary contacts</b>	1 faulty switching per 100 million (17 V, 1 mA)

### Short-circuit protection

<b>Product function Short circuit protection</b>	No
<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>	<p>gG: 250 A (690 V, 100 kA)</p> <p>gR: 250 A (690 V, 100 kA)</p> <p>gG: 10 A (500 V, 1 kA)</p>

### 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> <ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul>	<p>screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715</p> <p>Yes</p>
<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>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul>	<p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>0 mm</p> <p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p>

### Connections/ Terminals

<b>Type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• at contactor for auxiliary contacts</li> <li>• of magnet coil</li> </ul>	box terminal Screw-type terminals Screw-type terminals
<b>Type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for main contacts               <ul style="list-style-type: none"> <li>— solid</li> <li>— stranded</li> <li>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG conductors for main contacts</li> </ul>	2x (2.5 ... 16 mm <sup>2</sup> ) 2x (2,5 ... 16 mm <sup>2</sup> ), 2x (10 ... 50 mm <sup>2</sup> ), 1x (10 ... 70 mm <sup>2</sup> ) 2x (2.5 ... 16 mm <sup>2</sup> ), 2x (10 ... 50 mm <sup>2</sup> ), 1x (10 ... 70 mm <sup>2</sup> ) 2x (2.5 ... 35 mm <sup>2</sup> ), 1x (2.5 ... 50 mm <sup>2</sup> ) 2x (10 ... 1/0), 1x (10 ... 2)
<b>Connectable conductor cross-section for main contacts</b> <ul style="list-style-type: none"> <li>• solid</li> <li>• single or multi-stranded</li> <li>• stranded</li> <li>• finely stranded with core end processing</li> </ul>	2.5 ... 16 mm <sup>2</sup> 4 ... 70 mm <sup>2</sup> 6 ... 70 mm <sup>2</sup> 2.5 ... 50 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> </ul>	0.5 ... 2.5 mm <sup>2</sup> 0.5 ... 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> </ul> </li> <li>• at AWG conductors for auxiliary contacts</li> </ul>	2x (0.5 ... 1,5mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) 2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 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)

#### Safety related data

<b>Proportion of dangerous failures</b> <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> <li>• with high demand rate acc. to SN 31920</li> </ul>	40 % 73 %
<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>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	EMC	Declaration of Conformity
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Declaration of Conformity	Test Certificates	Marine / Shipping
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[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Marine / Shipping	other	Railway
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[Confirmation](#)

[Vibration and Shock](#)

## Further information

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

[www.siemens.com/ic10](http://www.siemens.com/ic10)

### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2446-1AP60>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2446-1AP60>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2446-1AP60>

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

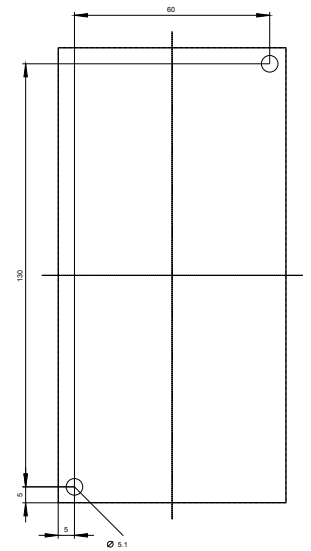
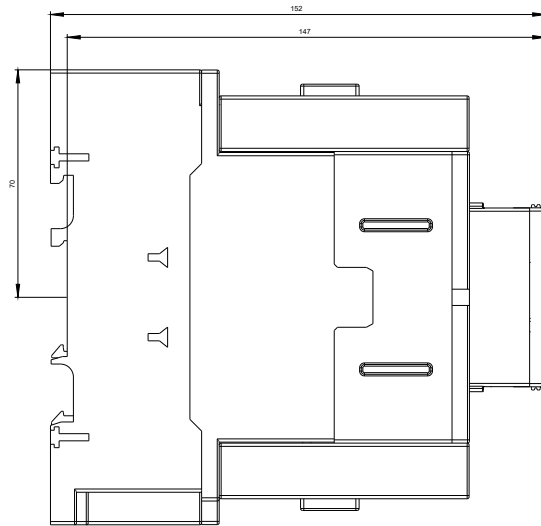
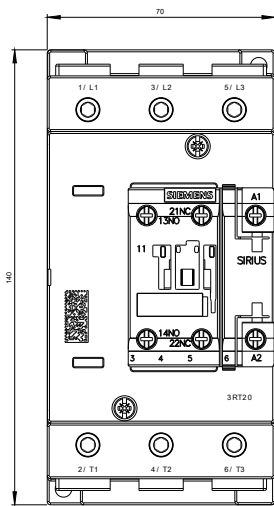
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2446-1AP60&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2446-1AP60&lang=en)

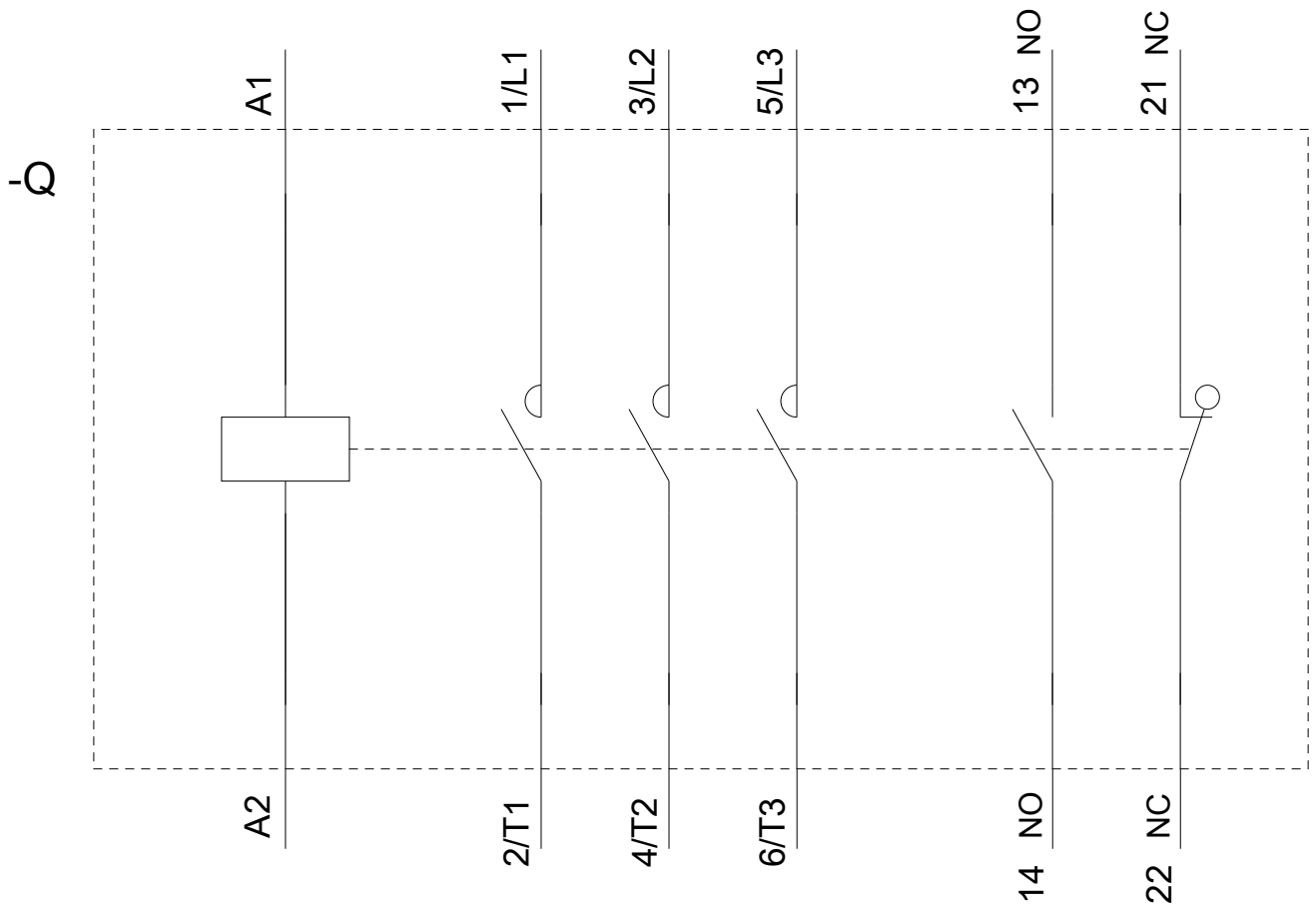
### Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2446-1AP60/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2446-1AP60&objecttype=14&gridview=view1>





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