

Circuit breaker size S2 for motor protection, Class 20 A-release  
49...59 A N-release 845 A screw terminal Standard switching  
capacity



Figure similar

Product brand name	SIRIUS
Product designation	Circuit breaker
Design of the product	For motor protection
Product type designation	3RV2

General technical data	
Size of the circuit-breaker	S2
Size of contactor can be combined company-specific	S2
Product extension	
• Auxiliary switch	Yes
Power loss [W] total typical	19 W
Insulation voltage with degree of pollution 3 rated value	690 V
Surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
• in networks with grounded star point between main and auxiliary circuit	400 V
• in networks with grounded star point between main and auxiliary circuit	400 V

<b>Protection class IP</b>	
• on the front	IP20
• of the terminal	IP00
<b>Shock resistance</b>	
• acc. to IEC 60068-2-27	25g / 11 ms Sinus
<b>Mechanical service life (switching cycles)</b>	
• of the main contacts typical	20 000
• of auxiliary contacts typical	20 000
<b>Electrical endurance (switching cycles)</b>	
• typical	20 000
Certificate of suitability ATEX	Yes
<b>Protection against electrical shock</b>	finger-safe when touched vertically from front acc. to IEC 60529
Reference code acc. to IEC 81346-2:2009	Q

### Ambient conditions

<b>Installation altitude at height above sea level</b>	
• maximum	2 000 m
<b>Ambient temperature</b>	
• during operation	-20 ... +60 °C
• during storage	-50 ... +80 °C
• during transport	-50 ... +80 °C
<b>Temperature compensation</b>	-20 ... +60 °C
Relative humidity during operation	10 ... 95 %

### Main circuit

<b>Number of poles for main current circuit</b>	3
<b>Adjustable pick-up value current of the current-dependent overload release</b>	49 ... 59 A
<b>Operating voltage</b>	
• rated value	690 V
• at AC-3 rated value maximum	690 V
<b>Operating frequency rated value</b>	50 ... 60 Hz
<b>Operating current rated value</b>	59 A
<b>Operating current</b>	
• at AC-3	
— at 400 V rated value	59 A
<b>Operating power</b>	
• at AC-3	
— at 230 V rated value	15 000 W
— at 400 V rated value	30 000 W
— at 500 V rated value	37 000 W
— at 690 V rated value	55 000 W
<b>Operating frequency</b>	
• at AC-3 maximum	15 1/h

## Protective and monitoring functions

<b>Product function</b>	
<ul style="list-style-type: none"> <li>• Ground fault detection</li> <li>• Phase failure detection</li> </ul>	<p>No</p> <p>Yes</p>
<b>Trip class</b>	Class 20
<b>Design of the overload release</b>	thermal
<b>Operational short-circuit current breaking capacity (Ics) at AC</b>	
<ul style="list-style-type: none"> <li>• at 240 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>	<p>100 kA</p> <p>30 kA</p> <p>4 kA</p> <p>2 kA</p>
<b>Maximum short-circuit current breaking capacity (Icu)</b>	
<ul style="list-style-type: none"> <li>• at AC at 240 V rated value</li> <li>• at AC at 400 V rated value</li> <li>• at AC at 500 V rated value</li> <li>• at AC at 690 V rated value</li> <li>• at 480 AC Y/277 V acc. to UL 489 rated value</li> </ul>	<p>65 kA</p> <p>65 kA</p> <p>8 kA</p> <p>4 kA</p> <p>30 A</p>
<b>Response value current</b>	
<ul style="list-style-type: none"> <li>• of instantaneous short-circuit trip unit</li> </ul>	845 A

## 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> <li>• at 600 V rated value</li> </ul>	<p>59 A</p> <p>59 A</p>
<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 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>	<p>5 hp</p> <p>10 hp</p> <p>20 hp</p> <p>40 hp</p> <p>50 hp</p>

## Short-circuit protection

<b>Product function Short circuit protection</b>	Yes
<b>Design of the short-circuit trip</b>	magnetic
<b>Design of the fuse link for IT network for short-circuit protection of the main circuit</b>	
<ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 400 V</li> <li>• at 500 V</li> <li>• at 690 V</li> </ul>	<p>none required</p> <p>160</p> <p>125</p> <p>100</p>

Installation/ mounting/ dimensions	
<b>Mounting position</b>	any
<b>Mounting type</b>	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
<b>Height</b>	140 mm
<b>Width</b>	55 mm
<b>Depth</b>	149 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 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 50 mm</li> <li>— downwards 50 mm</li> <li>— at the side 0 mm</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 50 mm</li> <li>— at the side 10 mm</li> <li>— downwards 50 mm</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 50 mm</li> <li>— downwards 50 mm</li> <li>— at the side 10 mm</li> </ul> </li> </ul>	

Connections/Terminals	
<b>Product function</b>	
<ul style="list-style-type: none"> <li>• removable terminal for auxiliary and control circuit</li> </ul>	No
<b>Type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> </ul>	screw-type terminals
<b>Arrangement of electrical connectors for main current circuit</b>	Top and bottom
<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>— single or multi-stranded 2x (1 ... 35 mm<sup>2</sup>), 1x (1 ... 50 mm<sup>2</sup>)</li> <li>— finely stranded with core end processing 2x (1 ... 25 mm<sup>2</sup>), 1x (1 ... 35 mm<sup>2</sup>)</li> </ul> </li> <li>• at AWG conductors for main contacts 2x (18 ... 2), 1x (18 ... 1)</li> </ul>	
<b>Tightening torque</b>	
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> </ul>	3 ... 4.5 N·m
<b>Design of screwdriver shaft</b>	Diameter 5 to 6 mm

Size of the screwdriver tip	Pozidriv 2
Design of the thread of the connection screw	M6
<ul style="list-style-type: none"> <li>for main contacts</li> </ul>	

**Safety related data**

<b>B10 value</b>	5 000
<ul style="list-style-type: none"> <li>with high demand rate acc. to SN 31920</li> </ul>	
<b>Proportion of dangerous failures</b>	50 %
<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>	50 %
<b>Failure rate [FIT]</b>	50 FIT
<ul style="list-style-type: none"> <li>with low demand rate acc. to SN 31920</li> </ul>	
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	10 y
<b>Display version</b>	Handle
<ul style="list-style-type: none"> <li>for switching status</li> </ul>	

**Certificates/approvals**

<b>General Product Approval</b>	<b>Declaration of Conformity</b>
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[KC](#)



<b>Test Certificates</b>	<b>Marine / Shipping</b>
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[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



<b>Marine / Shipping</b>	<b>other</b>
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[Confirmation](#)



[Miscellaneous](#)

**Railway**

[Vibration and Shock](#)

## 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=3RV2031-4XB10>

### **Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2031-4XB10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4XB10>

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

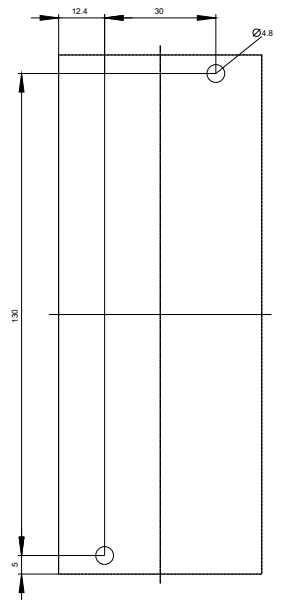
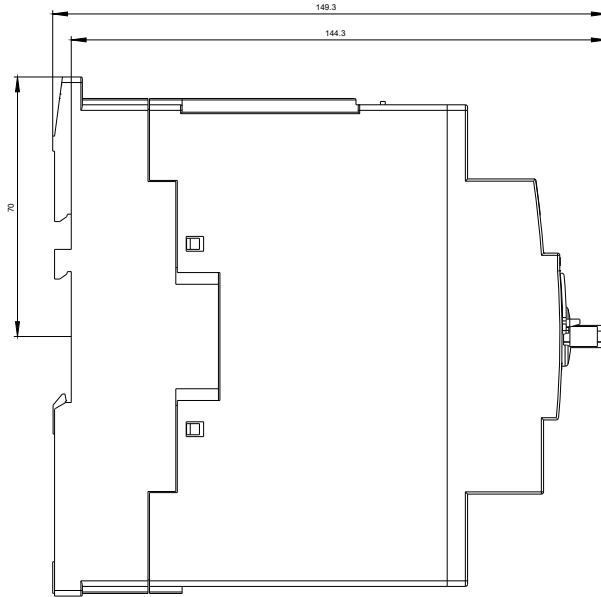
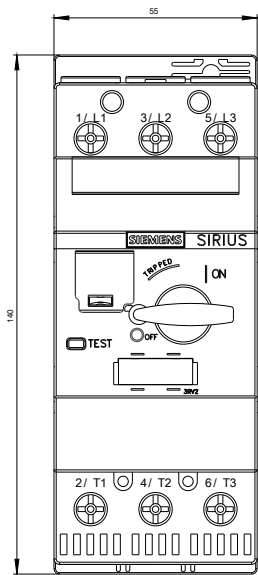
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2031-4XB10&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2031-4XB10&lang=en)

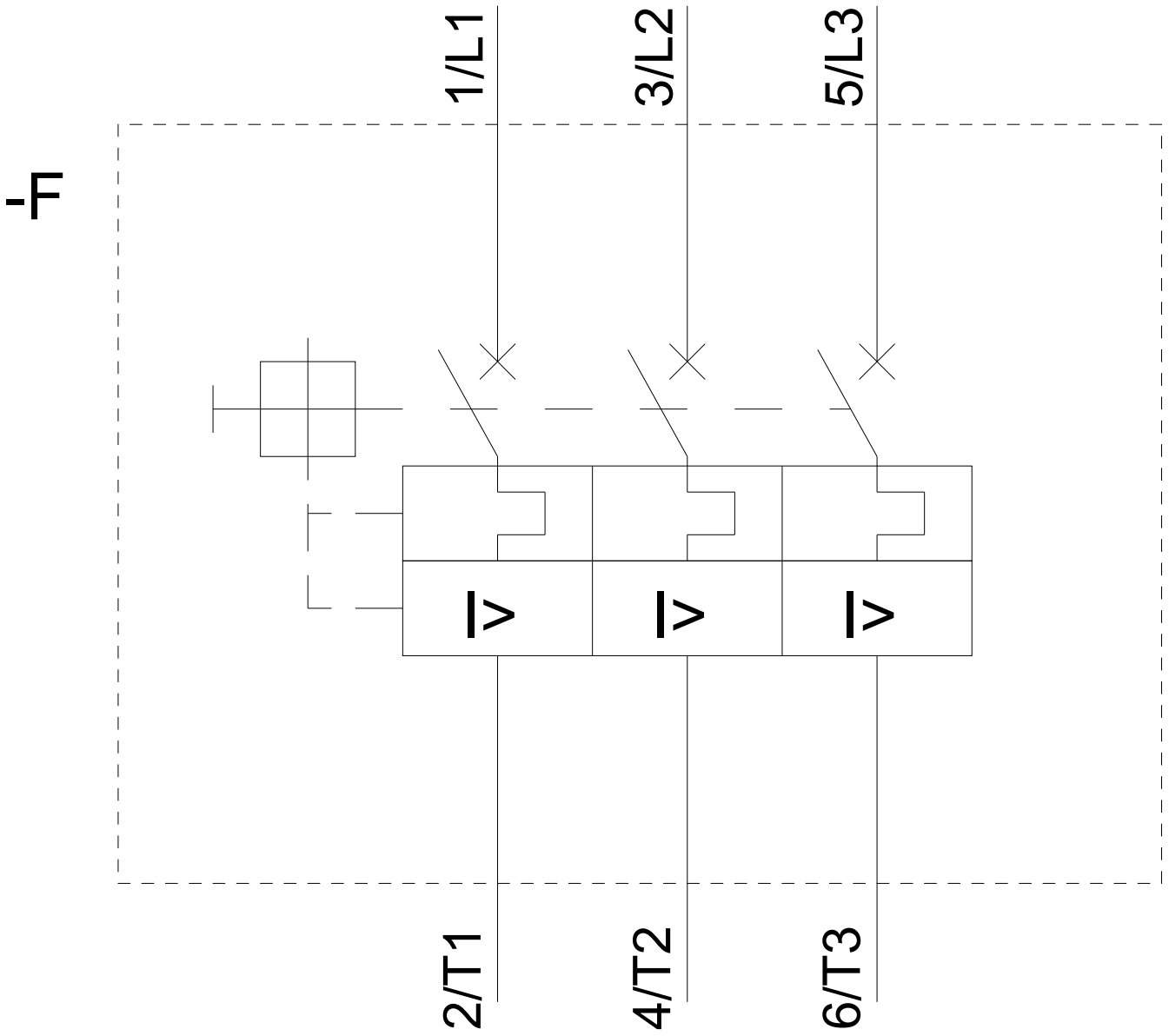
### **Characteristic: Tripping characteristics, I<sup>t</sup>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4XB10/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2031-4XB10&objecttype=14&gridview=view1>





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