

Overload relay 160...630 A for motor protection Size S10/S12, Class 10E Contactor mounting/stand-alone installation Main circuit: busbar connection Auxiliary circuit: Screw terminal Manual-Automatic-Reset



Product brand name	SIRIUS
Product designation	solid-state overload relay
Product type designation	3RB2

**General technical data**

Size of overload relay	S10, S12
Size of contactor can be combined company-specific	S10, S12
Insulation voltage with degree of pollution 3 rated value	1 000 V
Surge voltage resistance rated value	8 kV
maximum permissible voltage for safe isolation	
<ul style="list-style-type: none"> <li>in networks with grounded star point between auxiliary and auxiliary circuit</li> </ul>	300 V
<ul style="list-style-type: none"> <li>in networks with grounded star point between auxiliary and auxiliary circuit</li> </ul>	300 V
<ul style="list-style-type: none"> <li>in networks with grounded star point between main and auxiliary circuit</li> </ul>	600 V
<ul style="list-style-type: none"> <li>in networks with grounded star point between main and auxiliary circuit</li> </ul>	690 V
Protection class IP	
<ul style="list-style-type: none"> <li>on the front</li> </ul>	IP20

<ul style="list-style-type: none"> <li>• of the terminal</li> </ul>	IP00
<b>Shock resistance</b> <ul style="list-style-type: none"> <li>• acc. to IEC 60068-2-27</li> </ul>	15g / 11 ms 15g / 11 ms; Signaling contact 97 / 98 in position "Tripped": 8g / 11 ms
<b>Vibration resistance</b>	1-6 Hz, 15 mm; 6-500 Hz, 20 m/s <sup>2</sup> ; 10 cycles
<b>Thermal current</b>	630 A
<b>Recovery time</b> <ul style="list-style-type: none"> <li>• after overload trip with automatic reset typical</li> <li>• after overload trip with remote-reset</li> <li>• after overload trip with manual reset</li> </ul>	3 min 0 min 0 min
<b>Type of protection according to ATEX directive 2014/34/EU</b>	Ex II (2) G [Ex e] [Ex d] [Ex px] ; Ex II (2) D [Ex t] [Ex p]
Certificate of suitability according to ATEX directive 2014/34/EU	PTB 06 ATEX 3001
<b>Protection against electrical shock</b>	Finger-safe with terminal covers for vertical contact from the front
<b>Reference code acc. to DIN EN 81346-2</b>	F

Ambient conditions	
<b>Installation altitude at height above sea level</b> <ul style="list-style-type: none"> <li>• maximum</li> </ul>	2 000 m
<b>Ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> <li>• during transport</li> </ul>	-25 ... +60 °C -40 ... +80 °C -40 ... +80 °C
<b>Temperature compensation</b>	-25 ... +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>	160 ... 630 A
<b>Operating voltage</b> <ul style="list-style-type: none"> <li>• rated value</li> <li>• at AC-3 rated value maximum</li> </ul>	1 000 V 1 000 V
<b>Operating frequency rated value</b>	50 ... 60 Hz
<b>Operating current rated value</b>	630 A
<b>Operating power</b> <ul style="list-style-type: none"> <li>• for three-phase motors at 400 V at 50 Hz</li> <li>• for AC motors at 500 V at 50 Hz</li> <li>• for AC motors at 690 V at 50 Hz</li> </ul>	90 ... 355 kW 132 ... 400 kW 160 ... 560 kW

Auxiliary circuit	
<b>Design of the auxiliary switch</b>	integrated
<b>Number of NC contacts for auxiliary contacts</b> <ul style="list-style-type: none"> <li>• Note</li> </ul>	1 for contactor disconnection

<b>Number of NO contacts for auxiliary contacts</b>	1
• Note	for message "tripped"
<b>Number of CO contacts</b>	
• for auxiliary contacts	0
<b>Operating current of auxiliary contacts at AC-15</b>	
• at 24 V	4 A
• at 110 V	4 A
• at 120 V	4 A
• at 125 V	4 A
• at 230 V	3 A
<b>Operating current of auxiliary contacts at DC-13</b>	
• at 24 V	2 A
• at 60 V	0.55 A
• at 110 V	0.3 A
• at 125 V	0.3 A
• at 220 V	0.11 A

<b>Protective and monitoring functions</b>	
<b>Trip class</b>	CLASS 10E
<b>Design of the overload release</b>	electronic

<b>UL/CSA ratings</b>	
<b>Full-load current (FLA) for three-phase AC motor</b>	
• at 480 V rated value	630 A
• at 600 V rated value	630 A
<b>Contact rating of auxiliary contacts according to UL</b>	B600 / R300

<b>Short-circuit protection</b>	
<b>Design of the fuse link</b>	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 800 A, Class L: 1600 A
— with type of assignment 2 required	gG: 630 A
• for short-circuit protection of the auxiliary switch required	fuse gG: 6 A

<b>Installation/ mounting/ dimensions</b>	
<b>Mounting position</b>	any
<b>Mounting type</b>	Contacteur mounting/stand-alone installation
<b>Height</b>	119 mm
<b>Width</b>	120 mm
<b>Depth</b>	155 mm
<b>Required spacing</b>	
• with side-by-side mounting	
— forwards	0 mm
— Backwards	0 mm

— upwards	0 mm
— downwards	0 mm
— at the side	0 mm
• for grounded parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— at the side	6 mm
— downwards	0 mm
• for live parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	6 mm

## Connections/ Terminals

<b>Product function</b>	
• removable terminal for auxiliary and control circuit	Yes
<b>Type of electrical connection</b>	
• for main current circuit	busbar connection
• for auxiliary and control current circuit	screw-type terminals
<b>Arrangement of electrical connectors for main current circuit</b>	Top and bottom
<b>Type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— solid	1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
— single or multi-stranded	1x (0,5 ... 4 mm <sup>2</sup> ), 2x (0,5 ... 2,5 mm <sup>2</sup> )
— finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
• at AWG conductors for auxiliary contacts	2x (20 ... 14)
<b>Tightening torque</b>	
• for main contacts with screw-type terminals	20 ... 22 N·m
• for auxiliary contacts with screw-type terminals	0.8 ... 1.2 N·m
<b>Design of the thread of the connection screw</b>	
• for main contacts	M10
• of the auxiliary and control contacts	M3

## Communication/ Protocol

<b>Type of voltage supply via input/output link master</b>	No
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## Electromagnetic compatibility

<b>Conducted interference</b>	
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- due to burst acc. to IEC 61000-4-4
- due to conductor-earth surge acc. to IEC 61000-4-5
- due to conductor-conductor surge acc. to IEC 61000-4-5
- due to high-frequency radiation acc. to IEC 61000-4-6

2 kV (power ports), 1 kV (signal ports) corresponds to degree of severity 3

2 kV (line to earth) corresponds to degree of severity 3

1 kV (line to line) corresponds to degree of severity 3

10 V in frequency range 0.15 to 80 MHz, modulation 80 % AM with 1 kHz



Field-bound parasitic coupling acc. to IEC 61000-4-3	10 V/m
Electrostatic discharge acc. to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge




### Display

Display version	
• for switching status	Slide switch

### Certificates/ approvals

General Product Approval	EMC	For use in hazardous locations
 CCC	 CSA	 UL
		
 RCM		
 ATEX		

Declaration of Conformity	Test Certificates	Marine / Shipping
 EG-Konf.	<a href="#">Miscellaneous</a> <a href="#">Type Test Certificates/Test Report</a> <a href="#">Special Test Certificate</a>	<a href="#">Declaration of the Compliance with the order</a>  ABS

Marine / Shipping	other
 LRS	 RINA
 DNV-GL DNVGL.COM/AF	<a href="#">Miscellaneous</a> <a href="#">Confirmation</a>

### 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=3RB2066-1MC2>

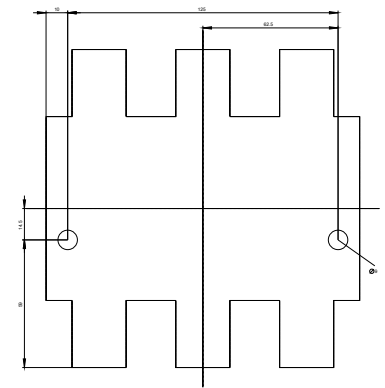
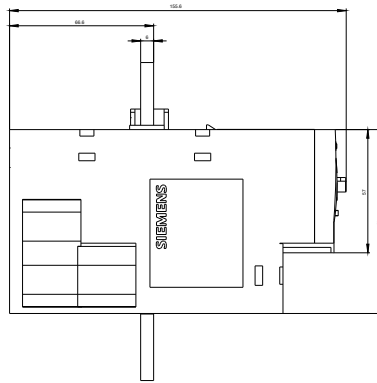
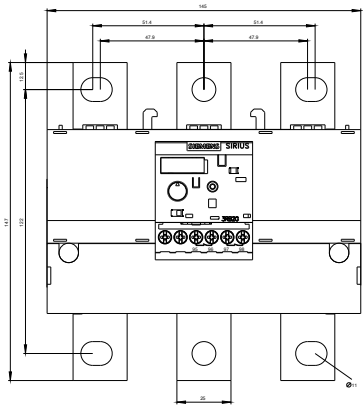
**Cax online generator**  
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB2066-1MC2>

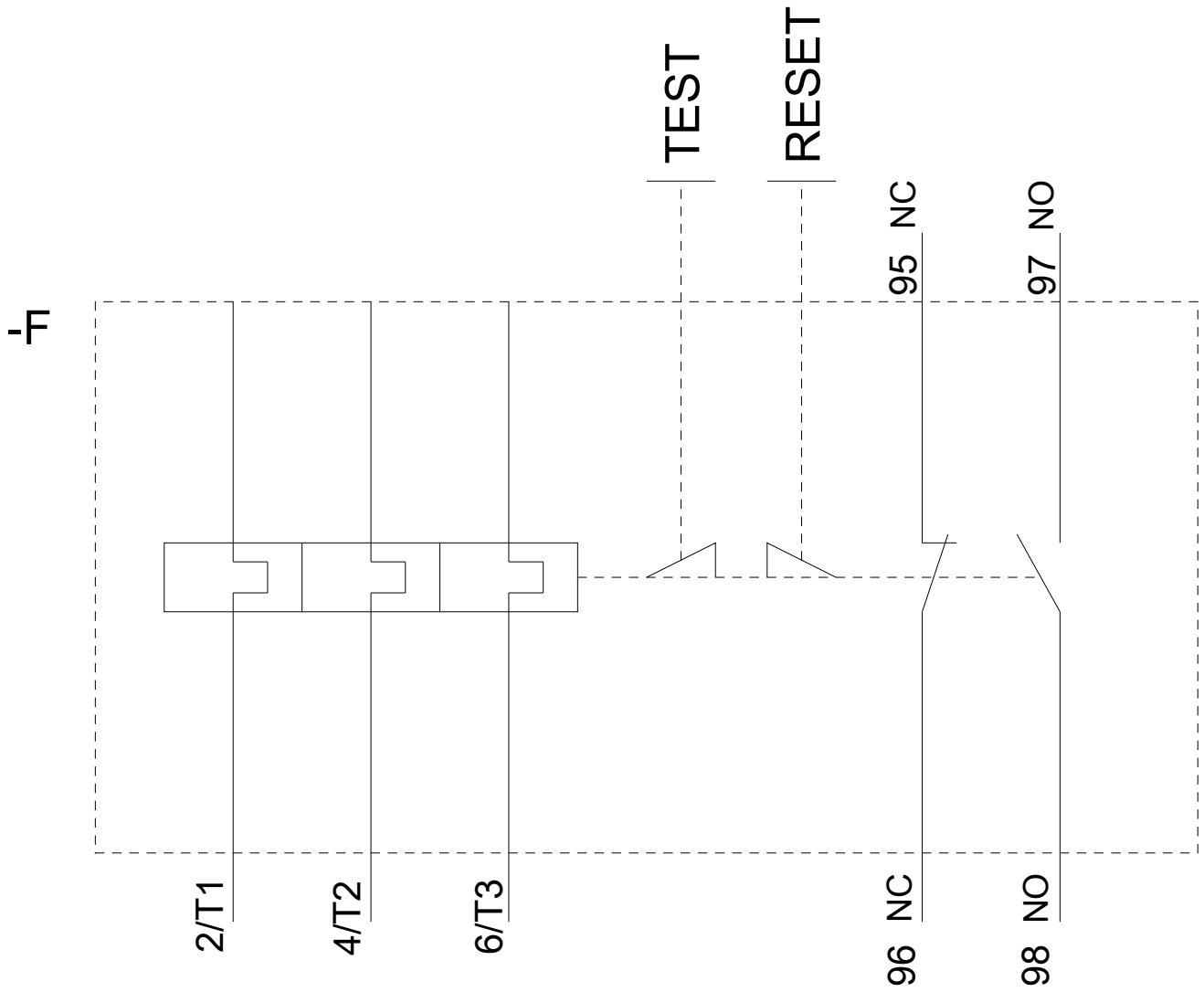
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**  
<https://support.industry.siemens.com/cs/ww/en/ps/3RB2066-1MC2>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)  
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RB2066-1MC2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB2066-1MC2&lang=en)

Characteristic: Tripping characteristics,  $I^2t$ , Let-through current  
<https://support.industry.siemens.com/cs/ww/en/ps/3RB2066-1MC2/char>

Further characteristics (e.g. electrical endurance, switching frequency)  
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB2066-1MC2&objecttype=14&gridview=view1>





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