

Overload relay 32...115 A Electronic For motor protection Size S3,
Class 5E...30E Stand-alone installation Main circuit: Straight-through
transformer Auxiliary circuit: Screw Manual-Automatic-Reset



product brand name	SIRIUS
Product designation	solid-state overload relay
Product type designation	3RB3
General technical data	
Size of overload relay	S3
Size of contactor can be combined company-specific	S3
Power loss [W] for rated value of the current	
• at AC in hot operating state	0.6 W
• at AC in hot operating state per pole	0.2 W
Insulation voltage with degree of pollution 3 at AC rated value	1 000 V
Surge voltage resistance rated value	8 kV
maximum permissible voltage for safe isolation	
• in networks with grounded star point between auxiliary and auxiliary circuit	300 V
• in networks with grounded star point between auxiliary and auxiliary circuit	300 V
• in networks with grounded star point between main and auxiliary circuit	600 V

<ul style="list-style-type: none"> • in networks with grounded star point between main and auxiliary circuit 	690 V
<ul style="list-style-type: none"> • protection class IP on the front 	IP20
<ul style="list-style-type: none"> • Protection class IP of the terminal 	IP20
Shock resistance	8g / 11 ms
<ul style="list-style-type: none"> • acc. to IEC 60068-2-27 	15g / 11 ms; Signaling contact 97 / 98 in position "Tripped": 8g / 11 ms
Vibration resistance	1-6 Hz, 15 mm; 6-500 Hz, 20 m/s ² ; 10 cycles
thermal current	115 A
Recovery time	
<ul style="list-style-type: none"> • after overload trip with automatic reset typical 	3 min
<ul style="list-style-type: none"> • after overload trip with remote-reset 	0 min
<ul style="list-style-type: none"> • after overload trip with manual reset 	0 min
Type of protection according to ATEX directive 2014/34/EU	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 09 ATEX 3001
Reference code acc. to DIN EN 81346-2	F

Ambient conditions

Installation altitude at height above sea level	
<ul style="list-style-type: none"> • maximum 	2 000 m
Ambient temperature	
<ul style="list-style-type: none"> • during operation 	-25 ... +60 °C
<ul style="list-style-type: none"> • during storage 	-40 ... +80 °C
<ul style="list-style-type: none"> • during transport 	-40 ... +80 °C
Temperature compensation	-25 ... +60 °C
Relative humidity during operation	10 ... 95 %

Main circuit

Number of poles for main current circuit	3
adjustable pick-up value current of the current-dependent overload release	32 ... 115 A
Operating voltage	
<ul style="list-style-type: none"> • rated value 	1 000 V
<ul style="list-style-type: none"> • for remote-reset function at DC 	24 V
<ul style="list-style-type: none"> • at AC-3 rated value maximum 	1 000 V
Operating frequency rated value	50 ... 60 Hz
Operating current rated value	115 A
Operating power	
<ul style="list-style-type: none"> • for three-phase motors at 400 V at 50 Hz 	18.5 ... 55 kW
<ul style="list-style-type: none"> • for AC motors at 500 V at 50 Hz 	22 ... 75 kW
<ul style="list-style-type: none"> • for AC motors at 690 V at 50 Hz 	30 ... 90 kW

Auxiliary circuit

Design of the auxiliary switch	integrated
Number of NC contacts for auxiliary contacts	1
• Note	for contactor disconnection
Number of NO contacts for auxiliary contacts	1
• Note	for message "tripped"
Number of CO contacts	
• for auxiliary contacts	0
• operating current of auxiliary contacts at AC-15 at 24 V	4 A
• Operating current of auxiliary contacts at AC-15 at 110 V	4 A
• Operating current of auxiliary contacts at AC-15 at 120 V	4 A
• Operating current of auxiliary contacts at AC-15 at 125 V	4 A
• Operating current of auxiliary contacts at AC-15 at 230 V	3 A
• operating current of auxiliary contacts at DC-13 at 24 V	2 A
• Operating current of auxiliary contacts at DC-13 at 60 V	0.55 A
• Operating current of auxiliary contacts at DC-13 at 110 V	0.3 A
• operating current of auxiliary contacts at DC-13 at 125 V	0.3 A
• Operating current of auxiliary contacts at DC-13 at 220 V	0.11 A

Protective and monitoring functions	
Trip class	CLASS 5E, 10E, 20E and 30E adjustable
Design of the overload release	electronic
Response value current	
• of the ground fault protection minimum	0.75 x IMotor
Response time of the ground fault protection in settled state	1 000 ms
Operating range of the ground fault protection relating to current setting value	
• minimum	IMotor > lower current setting value
• maximum	IMotor < upper current setting value x 3.5

UL/CSA ratings	
Full-load current (FLA) for three-phase AC motor	
• at 480 V rated value	115 A
• at 600 V rated value	115 A
Contact rating of auxiliary contacts according to UL	B600 / R300

Short-circuit protection

Design of the fuse link

- for short-circuit protection of the main circuit
 - with type of coordination 1 required gG: 315 A
 - with type of assignment 2 required gG: 315 A
- for short-circuit protection of the auxiliary switch required fuse gG: 6 A

Installation/ mounting/ dimensions

- **mounting position** any
- Mounting type** stand-alone installation
- Height** 106 mm
- Width** 70 mm
- Depth** 124 mm

Connections/ Terminals

Product function

- removable terminal for auxiliary and control circuit Yes
- Type of electrical connection for main current circuit straight-through transformers
- Type of electrical connection for auxiliary and control current circuit screw-type terminals

Arrangement of electrical connectors for main current circuit

Top and bottom

Type of connectable conductor cross-sections

- for auxiliary contacts
 - solid 1x (0.5 ... 4 mm²), 2x (0.5 ... 2.5 mm²)
 - single or multi-stranded 1x (0,5 ... 4 mm²), 2x (0,5 ... 2,5 mm²)
 - finely stranded with core end processing 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
- at AWG conductors for auxiliary contacts 2x (20 ... 14)

Tightening torque

- for auxiliary contacts with screw-type terminals 0.8 ... 1.2 N·m

Design of screwdriver shaft

Diameter 5 to 6 mm

Size of the screwdriver tip

Pozidriv PZ 2

Design of the thread of the connection screw

- of the auxiliary and control contacts M3

Communication/ Protocol

- Type of voltage supply via input/output link master** No

Electromagnetic compatibility

Conducted interference

- due to burst acc. to IEC 61000-4-4 2 kV (power ports), 1 kV (signal ports) corresponds to degree of severity 3

- 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 (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	 EAC  RCM	 ATEX

Declaration of Conformity	Test Certificates	Marine / Shipping
 EG-Konf.	Miscellaneous Type Test Certificates/Test Report Special Test Certificate	 ABS  LRS

Marine / Shipping	other
 PRS  RINA  DNV-GL <small>DNVGL.COM/AF</small>	Confirmation

Further information

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

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RB3143-4XW1>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB3143-4XW1>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3143-4XW1>

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

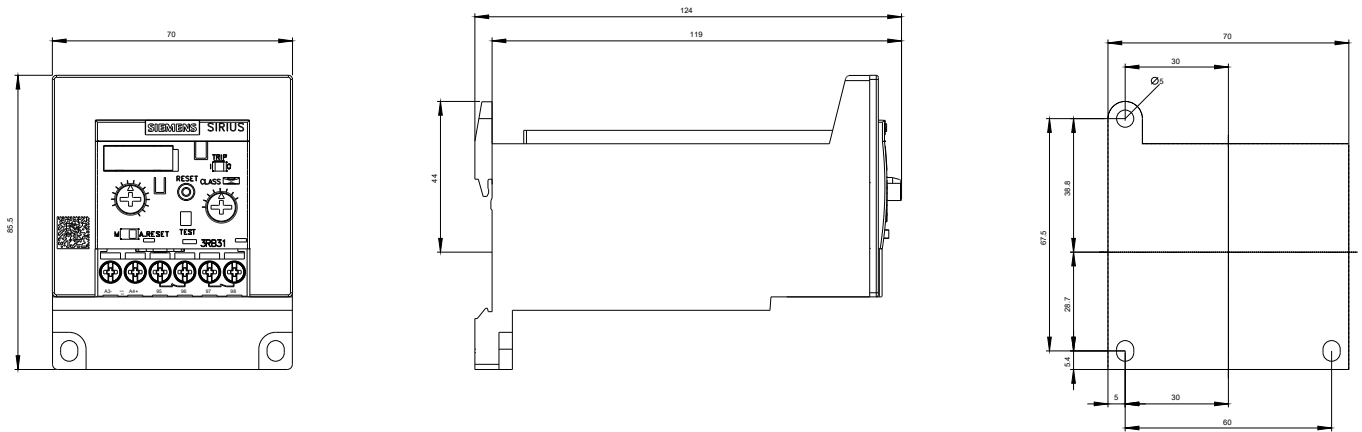
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB3143-4XW1&lang=en

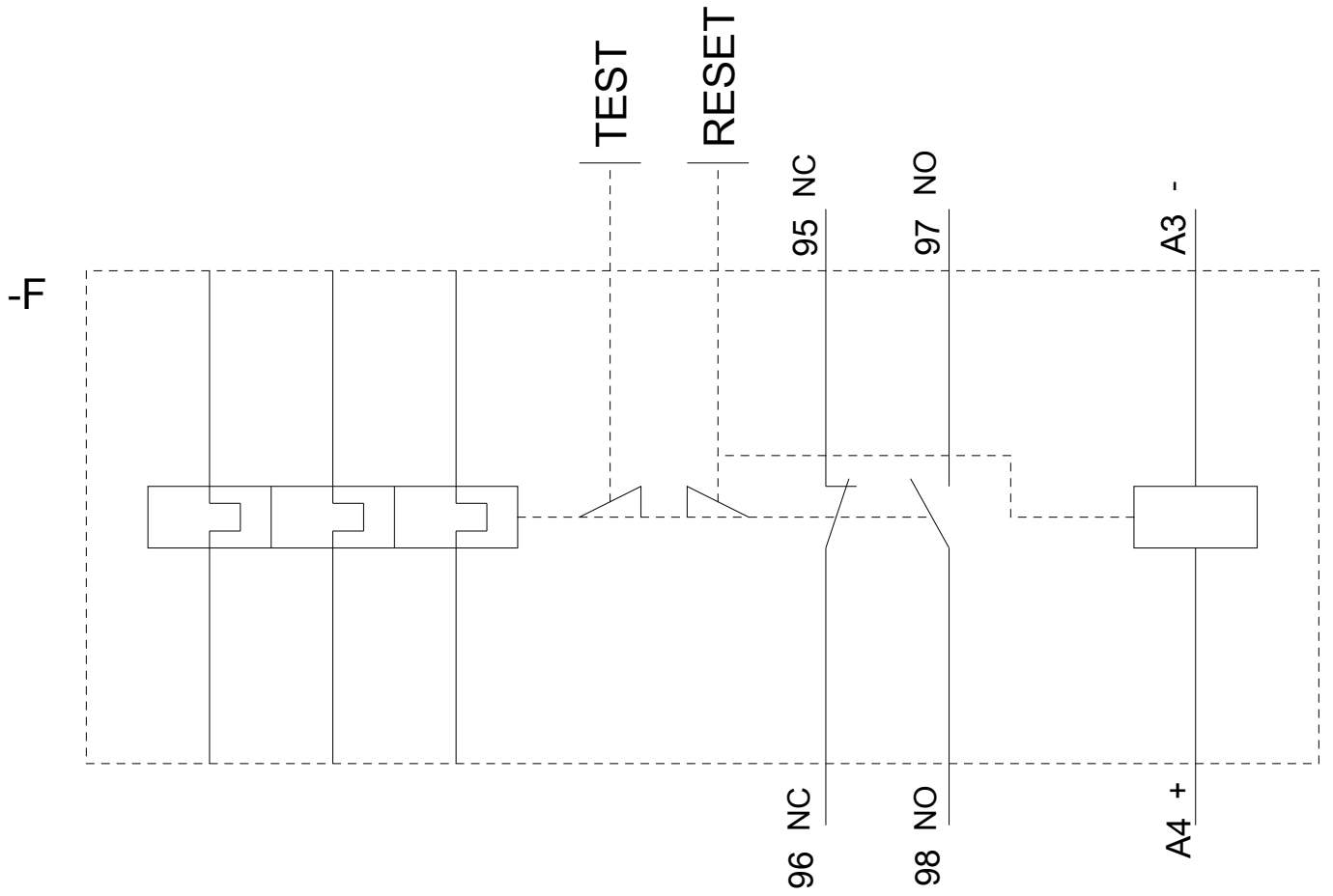
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3143-4XW1/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB3143-4XW1&objecttype=14&gridview=view1>





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