

Overload relay 12.5...50 A for motor protection Size S3, Class 5E...30E Stand-alone installation Main circuit: Straight-through transformer Auxiliary circuit: Spring-type terminal 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] total typical	0.2 W
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	
• 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
• in networks with grounded star point between main and auxiliary circuit	690 V
Protection class IP	

• on the front • of the terminal	IP20 IP20
Shock resistance	8g / 11 ms
• acc. to IEC 60068-2-27	15g / 11 ms; Signaling contact 97 / 98 in position "Tripped": 8g / 11 ms
Thermal current	50 A
Recovery time	
• after overload trip with automatic reset typical • after overload trip with remote-reset • after overload trip with manual reset	3 min 0 min 0 min
Type of protection	II (2) G [Ex e] [Ex d] [Ex px] II (2) D [Ex t] [Ex p]
Certificate of suitability relating to ATEX	PTB 09 ATEX 3001
Protection against electrical shock	finger-safe
Reference code acc. to DIN EN 81346-2	F

Ambient conditions

Installation altitude at height above sea level	
• maximum	2 000 m
Ambient temperature	
• during operation • during storage • during transport	-25 ... +60 °C -40 ... +80 °C -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	12.5 ... 50 A
Operating voltage	
• rated value • for remote-reset function at DC • at AC-3 rated value maximum	1 000 V 24 V 1 000 V
Operating frequency rated value	50 ... 60 Hz
Operating current rated value	50 A
Operating power	
• for three-phase motors at 400 V at 50 Hz • for AC motors at 500 V at 50 Hz • for AC motors at 690 V at 50 Hz	7.5 ... 22 kW 11 ... 30 kW 11 ... 45 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
• at 110 V	4 A
• at 120 V	4 A
• at 125 V	4 A
• at 230 V	3 A
Operating current of auxiliary contacts at DC-13	
• 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

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	$0.75 \times I_{\text{Motor}}$
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	$I_{\text{Motor}} > \text{lower current setting value}$
• maximum	$I_{\text{Motor}} < \text{upper current setting value} \times 3.5$

UL/CSA ratings	
Full-load current (FLA) for three-phase AC motor	
• at 480 V rated value	50 A
• at 600 V rated value	50 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: 200 A
— with type of assignment 2 required	gG: 200 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
Required spacing	
• 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	
Product function	
• removable terminal for auxiliary and control circuit	Yes
Type of electrical connection	
• for main current circuit • for auxiliary and control current circuit	straight-through transformers spring-loaded terminals
Arrangement of electrical connectors for main current circuit	Top and bottom
Type of connectable conductor cross-sections	
• for auxiliary contacts — solid 2x (0.25 ... 1.5 mm²) — single or multi-stranded 2x (0,25 ... 1,5 mm²) — finely stranded with core end processing 2x (0.25 ... 1.5 mm²) — finely stranded without core end processing 2x (0.25 ... 1.5 mm²) • at AWG conductors for auxiliary contacts 2x (24 ... 16)	
Design of screwdriver shaft	Diameter 5 to 6 mm
Size of the screwdriver tip	Pozidriv PZ 2

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
- 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



Declaration of Conformity

Test Certificates

Marine / Shipping



[Type Test Certificates/Test Report](#)



Marine / Shipping

other

[Confirmation](#)



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=3RB3143-4UX1>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB3143-4UX1>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3143-4UX1>

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

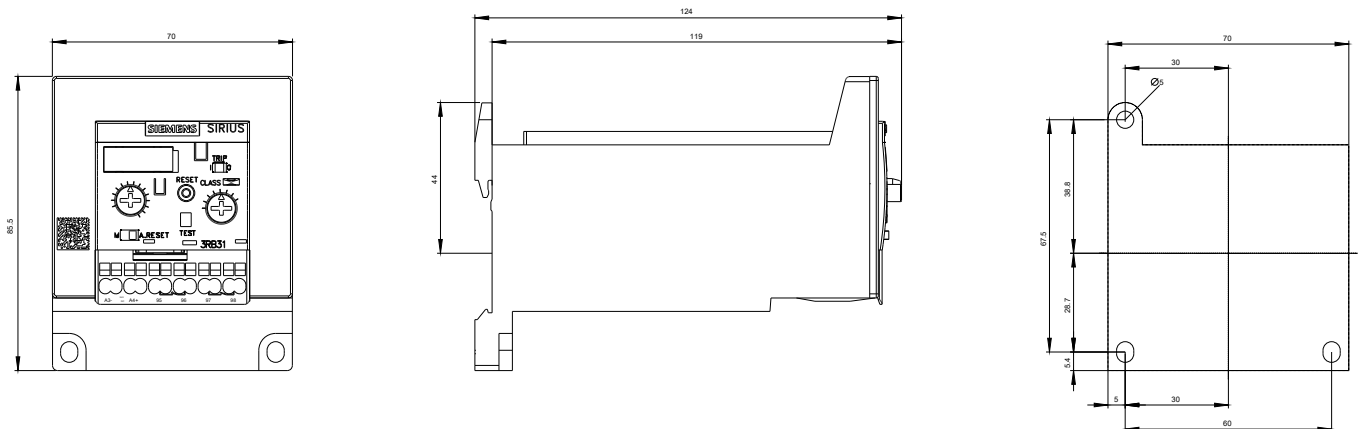
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB3143-4UX1&lang=en

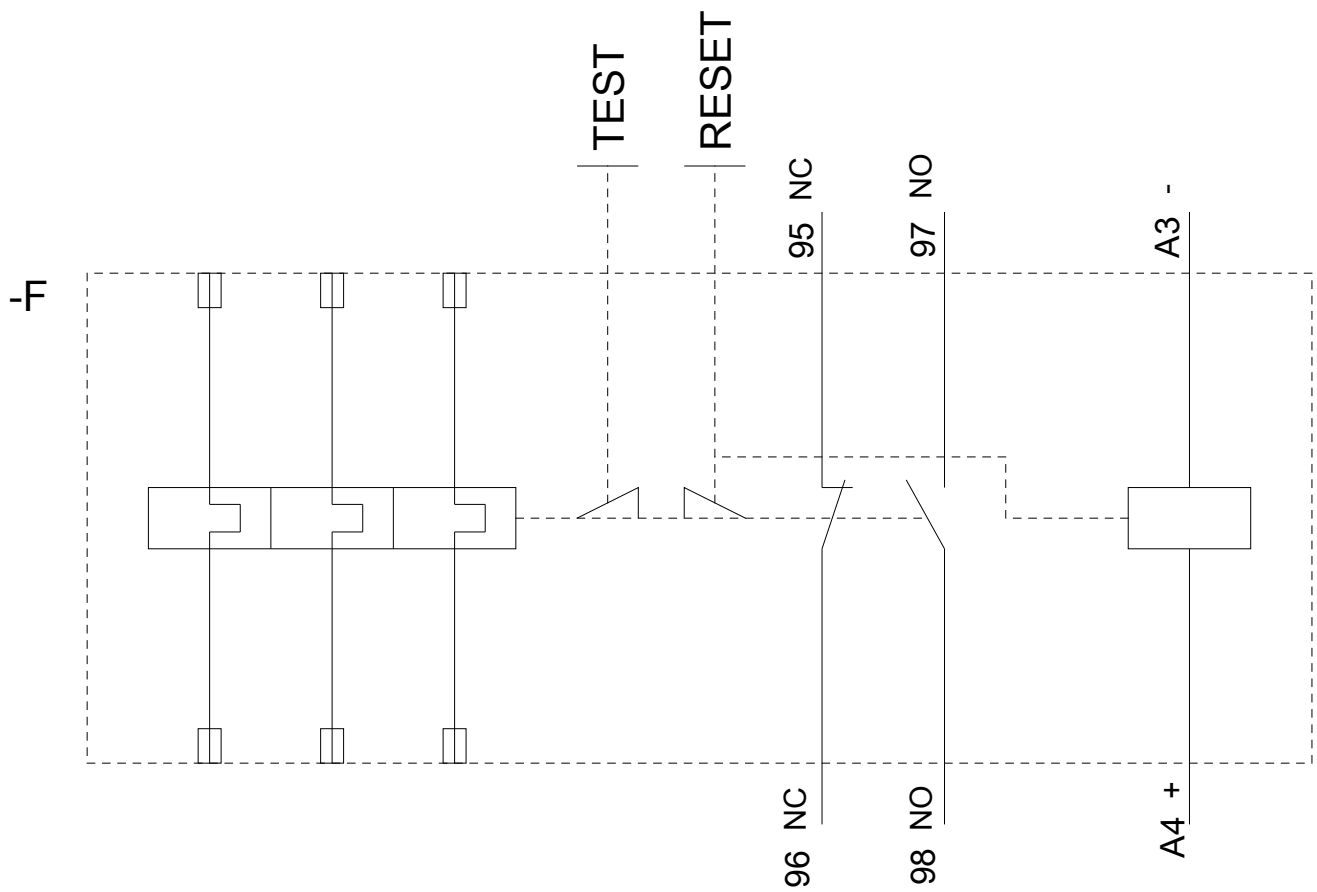
Characteristic: Tripping characteristics, I^2t , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3143-4UX1/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB3143-4UX1&objecttype=14&gridview=view1>





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