

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



Figure similar

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	0.6 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	
<ul style="list-style-type: none"> in networks with grounded star point between auxiliary and auxiliary circuit 	300 V
<ul style="list-style-type: none"> in networks with grounded star point between auxiliary and auxiliary circuit 	300 V
<ul style="list-style-type: none"> 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
Protection class IP	
<ul style="list-style-type: none"> on the front 	IP20
<ul style="list-style-type: none"> of the terminal 	IP20
Shock resistance	8g / 11 ms
<ul style="list-style-type: none"> acc. to IEC 60068-2-27 	15g / 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	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	
<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
• 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 x I _{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 _{Motor} > lower current setting value
• maximum	I _{Motor} < 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
Required spacing	
<ul style="list-style-type: none"> • with side-by-side mounting <ul style="list-style-type: none"> — forwards 0 mm — Backwards 0 mm — upwards 0 mm — downwards 0 mm — at the side 0 mm • for grounded parts <ul style="list-style-type: none"> — forwards 0 mm — Backwards 0 mm — upwards 0 mm — at the side 6 mm — downwards 0 mm • for live parts <ul style="list-style-type: none"> — forwards 0 mm — Backwards 0 mm — upwards 0 mm — downwards 0 mm — at the side 6 mm 	

Connections/Terminals

Product function	
<ul style="list-style-type: none"> • removable terminal for auxiliary and control circuit 	Yes
Type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit • for auxiliary and control current circuit 	straight-through transformers screw-type terminals
Arrangement of electrical connectors for main current circuit	Top and bottom
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — 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) 	

<ul style="list-style-type: none"> at AWG conductors for auxiliary contacts 	2x (20 ... 14)
Tightening torque	
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> of the auxiliary and control contacts 	M3

Communication/ Protocol

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







Electromagnetic compatibility

Conducted interference	
<ul style="list-style-type: none"> due to burst acc. to IEC 61000-4-4 	2 kV (power ports), 1 kV (signal ports) corresponds to degree of severity 3
<ul style="list-style-type: none"> due to conductor-earth surge acc. to IEC 61000-4-5 	2 kV (line to earth) corresponds to degree of severity 3
<ul style="list-style-type: none"> due to conductor-conductor surge acc. to IEC 61000-4-5 	1 kV (line to line) corresponds to degree of severity 3
<ul style="list-style-type: none"> due to high-frequency radiation acc. to IEC 61000-4-6 	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	
<ul style="list-style-type: none"> for switching status 	Slide switch

Certificates/approvals

General Product Approval	EMC	For use in hazardous locations	Declaration of Conformity
 CSA	 UL		 C-Tick
		 ATEX	 EG-Konf.

Test Certificates	Marine / Shipping	other
Type Test Certificates/Test Report	 ABS  PRS  RINA  DNV-GL DNVGL.COM/AF	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=3RB3143-4XW1>

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, ...)

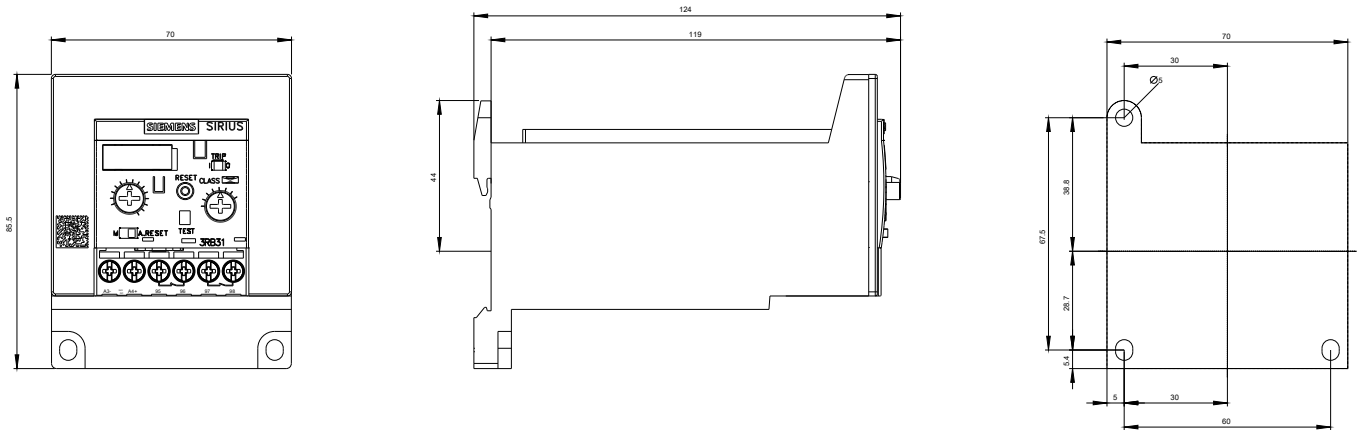
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB3143-4XW1&lang=en

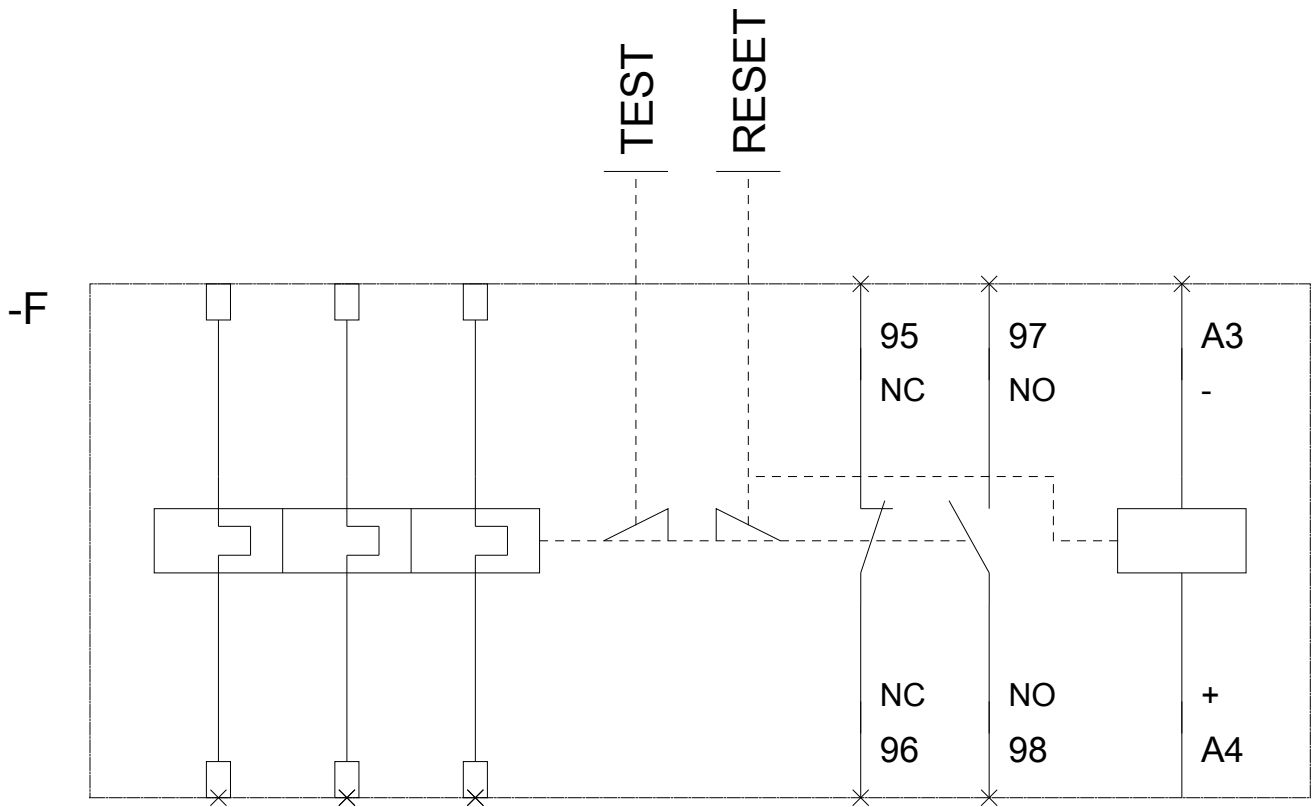
Characteristic: Tripping characteristics, I²t, Let-through current

<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>





last modified:

07/20/2018