SIEMENS

Data sheet 3RB3016-2SB0

Overload relay 3...12 A for motor protection Size S00, Class 20E Contactor mounting Main circuit: Screw 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	S00
Size of contactor can be combined company-specific	S00
Power loss [W] total typical	0.6 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 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	

• of the terminal IP20 Shock resistance • acc. to IEC 60068-2-27 15g / 11 ms; Signaling contact 97 / 98 in position "Tripped": 9g / 11 ms; Signaling contact 97 / 19 ms; Signaling contact 97 / 11 ms; Signaling contact 97 / 11 ms; Signaling contact	• on the front	IP20
Shock resistance • acc. to IEC 60068-2-27 Thermal current 12 A Recovery time • after overload trip with automatic reset typical • after overload trip with remote-reset • after overload trip with manual reset • after overload trip with manual reset • after overload trip with remote-reset • after overload trip with automatic reset typical • after overload trip with remote-reset by a final properties • after overload trip with remote-reset by a final properties • after overload release Operating voltage • after overload release • after overload release Operating frequency rated value • for AC motors at 500 V at 50 Hz • for AC motors at 500 V at 50 Hz • for AC motors at 690 V at 50 Hz • for AC motors at 690 V at 50 Hz • for AC motors at 690 V at 50 Hz • for Contacts for auxiliary switch Number of NC contacts for auxiliary contacts • Note for contacts of countacts for auxiliary contacts • Note Number of NO contacts for auxiliary contacts • Note		
* acc. to IEC 60068-2-27 15g / 11 ms: Signaling contact 97 / 98 in position "Tripped": 9g / 11 ms Thermal current Recovery time • after overload trip with automatic reset typical • after overload trip with manual reset • after overload trip with manual reset • after overload trip with manual reset 0 min Type of protection Certificate of suitability relating to ATEX PTB 09 ATEX 3001 Frotection against electrical shock Reference code acc. to DIN EN 81348-2 F Ambient conditions Installation affutue at height above sea level • during operation • during operation • during storage • during transport • during storage • during transport Publication and current circuit Number of poles for main current circuit Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum 690 V Operating power • for three-phase motors at 400 V at 50 Hz • for AC motors at 690 V at 50 Hz • for AC motors at 690 V at 50 Hz • Note Number of NC contacts for auxiliary contacts Number of NC contacts for auxiliary contacts • Note Number of NC contacts for auxiliary contacts 1 1		
Thermal current 12 A Recovery time		
Recovery time after overload trip with automatic reset typical after overload trip with remote-reset of min Type of protection Uffection against electrical shock Reference code acc. to DIN EN 81346-2 Frotection against electrical shock finger-safe Reference code acc. to DIN EN 81346-2 Frotection against electrical shock Reference code acc. to DIN EN 81346-2 Frotection against electrical shock Reference code acc. to DIN EN 81346-2 Frotection against electrical shock Reference code acc. to DIN EN 81346-2 Frotection against electrical shock Reference code acc. to DIN EN 81346-2 Frotection against electrical shock Reference code acc. to DIN EN 81346-2 Frotection against electrical shock Reference code acc. to DIN EN 81346-2 Frotection against electrical shock Reference code acc. to DIN EN 81346-2 Frotection against electrical shock Reference code acc. to DIN EN 81346-2 Frotection against electrical shock Reference code acc. to DIN EN 81346-2 Frotection against electrical shock Installation altitude at height above sea level Ambient conditions Installation altitude at height above sea level a during operation -25 +60 °C -40 +80 °C -40 +80 °C -40 +80 °C Authority electrical shock Reference code acc. to DIN EN 81346-2 Frote of C Relative humidity during operation -25 +60 °C -40 +80 °C -40 +80 °C -40 +80 °C -40 +80 °C -40 +80 °	4 acc. to 12 0 00000-2-27	
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after overload trip with remote-reset after overload trip with manual reset after overload trip with manual reset o min Type of protection II (2) G [Ex e] [Ex d] [Ex px] II (2) D [Ex t] [Ex p] Protection against electrical shock 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 storage during transport -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 12 A dependent overload release Operating voltage at AC-3 rated value maximum Operating frequency rated value 12 A Operating gurrent rated value 12 A Operating gurrent rated value 12 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 for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for Contacts for auxiliary contacts fintegrated Number of NC contacts for auxiliary contacts fintegrated Number of NC contacts for auxiliary contacts fintegrated Number of NC contacts for auxiliary contacts fintegrated	Recovery time	
after overload trip with manual reset Type of protection II (2) G [Ex e] [Ex d] [Ex px] II (2) D [Ex t] [Ex p] Protection against electrical shock 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 storage during transport Temperature compensation 2-25 +60 °C during transport 40 +80 °C during transport Temperature compensation 2-25 +60 °C Relative humidity during operation 3 12 A degree for elease Operating voltage at AC-3 rated value current of the current-dependent overload release Operating current rated value at AC-3 rated value maximum 690 V Operating current rated value 12 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 for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for AC motors at 690 V at 50 Hz for Contacts for auxiliary contacts Number of NC contacts for auxiliary contacts 1 for contactor disconnection	 after overload trip with automatic reset typical 	3 min
Type of protection III (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 81348-2 F Ambient conditions Installation altitude at height above sea level • maximum 2000 m Ambient temperature • during operation -25 +60 °C • during storage -40 +80 °C • during transport -40 +80 °C Relative humidity during operation -25 +60 °C Relative humidity during operation -25 +60 °C Main circuit Number of poles for main current circuit 3 12 A digustable pick-up value current of the current-dependent overload release Operating voltage • rated value 690 V Operating frequency rated value maximum 690 V Operating frequency rated value 50 60 Hz Operating requency rated value 12 A Operating power • for three-phase motors at 400 V at 50 Hz 1.5 5.5 kW • for AC motors at 690 V at 50 Hz 2.2 7.5 kW Auxiliary circuit Design of the auxiliary switch integrated Number of NO contacts for auxiliary contacts 1 • Note for contactor for auxiliary contacts 1	 after overload trip with remote-reset 	0 min
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Protection against electrical shock Reference code acc. to DIN EN 81348-2 F Ambient conditions Installation altitude at height above sea level • maximum Ambient temperature • during operation • during storage • during transport Temperature compensation Relative humidity during operation 10 95 % Main circuit Number of poles for main current circuit Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum Operating frequency rated value Operating current rated value 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 • rot AC motors at 690 V at 50 Hz • for AC motors at 690 V at 50 Hz • for AC motors at 690 V at 50 Hz • Note Number of NC contacts for auxiliary contacts • Note	Type of protection	II (2) G [Ex e] [Ex d] [Ex px] II (2) D [Ex t] [Ex p]
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Installation altitude at height above sea level • maximum Ambient temperature • during operation • during storage • during transport -40 +80 °C • during transport -40 +80 °C • during transport -40 +80 °C Relative humidity during operation -25 +60 °C -25 .	Reference code acc. to DIN EN 81346-2	F
Installation altitude at height above sea level • maximum Ambient temperature • during operation • during storage • during transport -40 +80 °C • during transport -40 +80 °C • during transport -40 +80 °C Relative humidity during operation -25 +60 °C -25 .	Ambient conditions	
Ambient temperature • during operation • during storage • during transport -40 +80 °C • 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 Operating voltage • rated value • at AC-3 rated value maximum Operating frequency rated value 12 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 Posign of the auxiliary switch Number of NC contacts for auxiliary contacts • Note Number of NO contacts for auxiliary contacts • Note Number of NO contacts for auxiliary contacts 1		
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 during storage during transport 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 Adjustable pick-up value current of the current-dependent overload release Operating voltage rated value at AC-3 rated value maximum Operating frequency rated value 50 60 Hz 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 for AC motors at 690 V at 50 Hz solution integrated Auxillary circuit Design of the auxillary switch Number of NC contacts for auxillary contacts Note Number of NO contacts for auxillary contacts for contactor disconnection 	Ambient temperature	
during transport during transport during transport	during operation	-25 +60 °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 Operating voltage • rated value 690 V • at AC-3 rated value maximum 690 V Operating frequency rated value 50 60 Hz Operating current rated value 12 A Operating power • for three-phase motors at 400 V at 50 Hz 1.5 5.5 kW • for AC motors at 500 V at 50 Hz 1.5 5.5 kW • for AC motors at 690 V at 50 Hz 2.2 7.5 kW Auxiliary circuit Design of the auxiliary switch integrated Number of NC contacts for auxiliary contacts 1 • Note for contactor disconnection	during storage	-40 +80 °C
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Number of poles for main current circuit Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum 690 V Operating frequency rated value 50 60 Hz Operating current rated value 12 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 1.5 5.5 kW Auxiliary circuit Design of the auxiliary switch Number of NC contacts for auxiliary contacts • Note Number of NO contacts for auxiliary contacts 1	Relative humidity during operation	10 95 %
Number of poles for main current circuit Adjustable pick-up value current of the current-dependent overload release Operating voltage • rated value • at AC-3 rated value maximum 690 V Operating frequency rated value 50 60 Hz Operating current rated value 12 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 1.5 5.5 kW Auxiliary circuit Design of the auxiliary switch Number of NC contacts for auxiliary contacts • Note Number of NO contacts for auxiliary contacts 1	Main circuit	
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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	• for AC motors at 690 V at 50 Hz	2.2 7.5 kW
Number of NC contacts for auxiliary contacts • Note Number of NO contacts for auxiliary contacts 1 1 1 1 1 1 1 1 1 1 1 1 1	Auxiliary circuit	
● Note for contactor disconnection Number of NO contacts for auxiliary contacts 1		integrated
Number of NO contacts for auxiliary contacts 1	Number of NC contacts for auxiliary contacts	
		for contactor disconnection
Note for message "tripped"	Number of NO contacts for auxiliary contacts	
	• 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

Trip class	CLASS 20E
Design of the overload release	electronic
III /CSA ratings	

Full-load current (FLA) for three-phase AC motor	
• at 480 V rated value	12 A
• at 600 V rated value	12 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— with type of assignment 2 required

• for short-circuit protection of the auxiliary switch required

gG: 50 A, RK5: 45 A

gG: 50 A, J: 45 A

fuse gG: 6 A

Installation/ mounting/ dimensions	
Mounting position	any
Mounting type	Mounting contactor
Height	79 mm
Width	45 mm
Depth	73 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

— at the side	6 mm
Connections/Terminals	
Product function	
 removable terminal for auxiliary and control 	Yes
circuit	
Type of electrical connection	
for main current circuit	screw-type terminals
 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 main contacts	
— solid	1x (0.5 4 mm²), 2x (0.5 1.5 mm²), 2x (0.75 4 mm²)
— single or multi-stranded	1x (0,5 4 mm²), 2x (0,5 1,5 mm²), 2x (0,75 4 mm²)
 finely stranded with core end processing 	1x (0.5 2.5 mm²), 2x (0.5 2.5 mm²)
 at AWG conductors for main contacts 	1x (20 12), 2x (20 12)
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 	1x (20 14), 2x (20 14)
Tightening torque	
 for main contacts with screw-type terminals 	0.8 1.2 N·m
 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	
• for main contacts	M3
 of the auxiliary and control contacts 	M3

Communication/ Protocol Type of voltage supply via input/output link master No Electromagnetic compatibility Conducted interference 2 kV (power ports), 1 kV (signal ports) corresponds to degree of • due to burst acc. to IEC 61000-4-4 severity 3 2 kV (line to earth) corresponds to degree of severity 3 • due to conductor-earth surge acc. to IEC 61000-4-5 1 kV (line to line) corresponds to degree of severity 3 • due to conductor-conductor surge acc. to IEC 61000-4-5 10 V in frequency range 0.15 to 80 MHz, modulation 80 % AM • due to high-frequency radiation acc. to IEC 61000-4-6 with 1 kHz Field-bound parasitic coupling acc. to IEC 61000-4-3 10 V/m 6 kV contact discharge / 8 kV air discharge Electrostatic discharge acc. to IEC 61000-4-2

Display			
Display version			
 for switching status 	Slide switch		

Certificates/appro	ovals			
General Prod	uct Approval		EMC	For use in haz- ardous loca- tions
(m)	(R	гпг	A	

Declaration of Conformity	Test Certificates	Marine / Shinning	



Miscellaneous

Special Test Certificate

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=3RB3016-2SB0

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB3016-2SB0

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

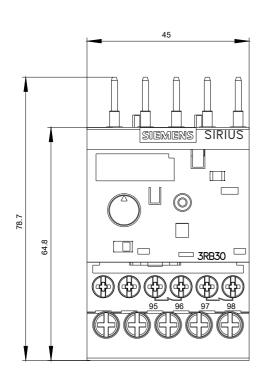
https://support.industry.siemens.com/cs/ww/en/ps/3RB3016-2SB0

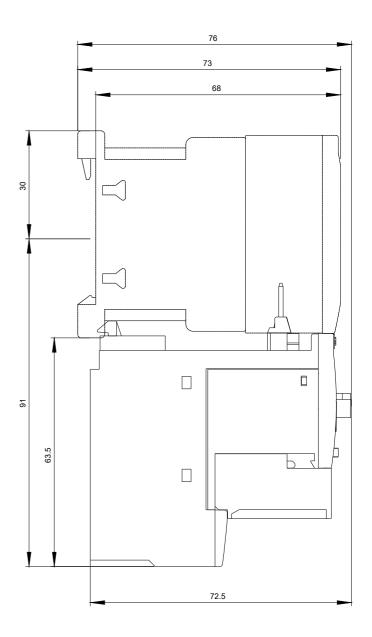
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB3016-2SB0&lang=en

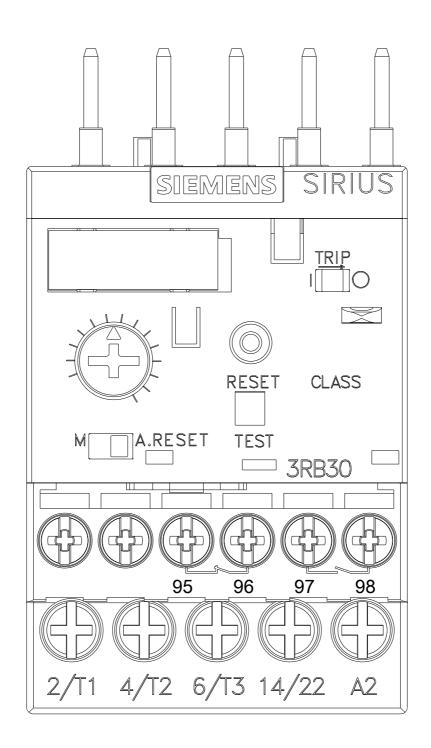
Characteristic: Tripping characteristics, I2t, Let-through current

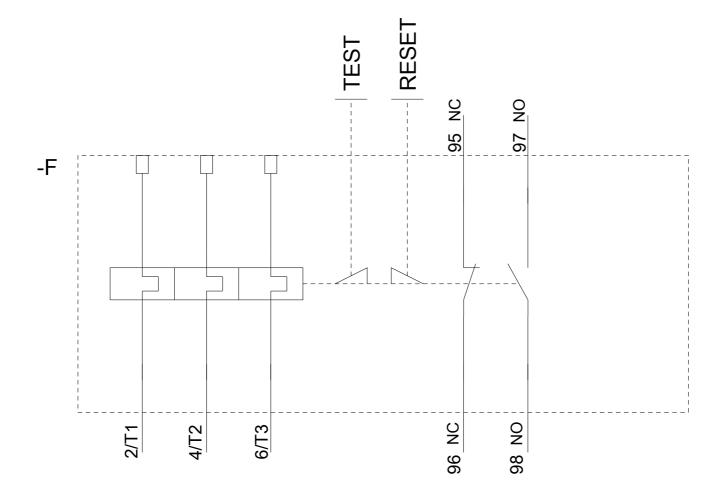
https://support.industry.siemens.com/cs/ww/en/ps/3RB3016-2SB0/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB3016-2SB0&objecttype=14&gridview=view1









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