SIEMENS

Data sheet 3RV2142-4MA10

Circuit breaker size S3 for motor protection CLASS 10 with overload relay function A-release 80...100 A N-release 1300 A screw terminal Increased switching capacity 100 kA

Product brand name	SIRIUS
Product designation	Circuit breaker
Design of the product	For motor protection with overload relay function
Product type designation	3RV2

General technical data	
Size of the circuit-breaker	S3
Size of contactor can be combined company-specific	S3
Product extension	
• Auxiliary switch	Yes
Power loss [W] for rated value of the current	
• at AC in hot operating state	44 W
• at AC in hot operating state per pole	14.7 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 main and auxiliary circuit	400 V

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Protection class IP	
• on the front	IP20
• of the terminal	IP00
Shock resistance	
• acc. to IEC 60068-2-27	25g / 11 ms Sinus
Mechanical service life (switching cycles)	
• of the main contacts typical	25 000
• of auxiliary contacts typical	25 000
Electrical endurance (switching cycles)	
• typical	25 000
Reference code acc. to DIN EN 81346-2	Q

Ambient conditions

Installation altitude at height above sea level	
• maximum	2 000 m
Ambient temperature	
• during operation	-20 ... +60 °C
• during storage	-50 ... +80 °C
• during transport	-50 ... +80 °C
Temperature compensation	-20 ... +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	80 ... 100 A
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	100 A
Operating current	
• at AC-3	
— at 400 V rated value	100 A
Operating power	
• at AC-3	
— at 230 V rated value	30 000 W
— at 400 V rated value	45 000 W
— at 690 V rated value	90 000 W
Operating frequency	
• at AC-3 maximum	15 1/h

Auxiliary circuit	
Number of NC contacts for auxiliary contacts	
• Note	1
Number of NO contacts for auxiliary contacts	
• Note	1

Protective and monitoring functions	
Product function	
• Ground fault detection	No
• Phase failure detection	Yes
Trip class	CLASS 10
Design of the overload release	thermal
Operational short-circuit current breaking capacity (Ics) at AC	
• at 240 V rated value	100 000 A
• at 400 V rated value	50 000 A
• at 500 V rated value	5 000 A
• at 690 V rated value	3 000 A
Maximum short-circuit current breaking capacity (Icu)	
• at AC at 240 V rated value	100 kA
• at AC at 400 V rated value	100 kA
• at AC at 500 V rated value	10 kA
• at AC at 690 V rated value	6 kA
Response value current	
• of instantaneous short-circuit trip unit	1 300 A

UL/CSA ratings	
Full-load current (FLA) for three-phase AC motor	
• at 480 V rated value	100 A
• at 600 V rated value	100 A
Yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	7.5 hp
— at 230 V rated value	20 hp
• for three-phase AC motor	
— at 200/208 V rated value	30 hp
— at 220/230 V rated value	40 hp
— at 460/480 V rated value	75 hp
— at 575/600 V rated value	100 hp

Short-circuit protection	
Product function Short circuit protection	Yes
Design of the short-circuit trip	magnetic

Installation/ mounting/ dimensions	
Mounting position	any
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
Height	165 mm
Width	90 mm
Depth	176 mm
Required spacing	
• for grounded parts at 400 V	
— downwards	70 mm
— upwards	70 mm
— Backwards	0 mm
— at the side	10 mm
— forwards	0 mm
• for live parts at 400 V	
— downwards	70 mm
— upwards	70 mm
— Backwards	0 mm
— at the side	10 mm
— forwards	0 mm
• for grounded parts at 500 V	
— downwards	110 mm
— upwards	110 mm
— Backwards	0 mm
— at the side	10 mm
— forwards	0 mm
• for live parts at 500 V	
— downwards	110 mm
— upwards	110 mm
— Backwards	0 mm
— at the side	10 mm
— forwards	0 mm
• for grounded parts at 690 V	
— downwards	150 mm
— upwards	150 mm
— Backwards	0 mm
— at the side	30 mm
— forwards	0 mm
• for live parts at 690 V	
— downwards	150 mm
— upwards	150 mm

— Backwards	0 mm
— at the side	30 mm

Connections/ Terminals

Product function	
• removable terminal for auxiliary and control circuit	No
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	2x (2.5 ... 16 mm²)
— single or multi-stranded	2x (2,5 ... 50 mm²), 1x (10 ... 70 mm²)
— finely stranded with core end processing	2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)
— finely stranded without core end processing	2x (10 ... 35 mm²), 1x (10 ... 50 mm²)
Type of connectable conductor cross-sections	
• for auxiliary contacts	
— finely stranded with core end processing	2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)
• at AWG conductors for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14)
Tightening torque	
• for main contacts for ring cable lug	4.5 ... 6 N·m
Outer diameter of the usable ring cable lug maximum	19 mm
Tightening torque	
• for main contacts with screw-type terminals	4.5 ... 6 N·m
• for auxiliary contacts with screw-type terminals	0.8 ... 1.2 N·m
Design of the thread of the connection screw	
• of the auxiliary and control contacts	M3

Safety related data

B10 value	
• with high demand rate acc. to SN 31920	5 000
Proportion of dangerous failures	
• with low demand rate acc. to SN 31920	50 %
• with high demand rate acc. to SN 31920	50 %
T1 value for proof test interval or service life acc. to IEC 61508	10 y
Display version	
• for switching status	Handle

Certificates/ approvals

General Product Approval					Declaration of Conformity
CCC	CSA	UL	KC	EAC	EG-Konf.

Declaration of Conformity	Test Certificates		Marine / Shipping		
Miscellaneous	Special Test Certificate	Type Test Certificates/Test Report	ABS	LRS	PRS

Marine / Shipping			other		Railway
RINA	RMRS		Confirmation	VDE	Vibration and Shock

Railway
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=3RV2142-4MA10

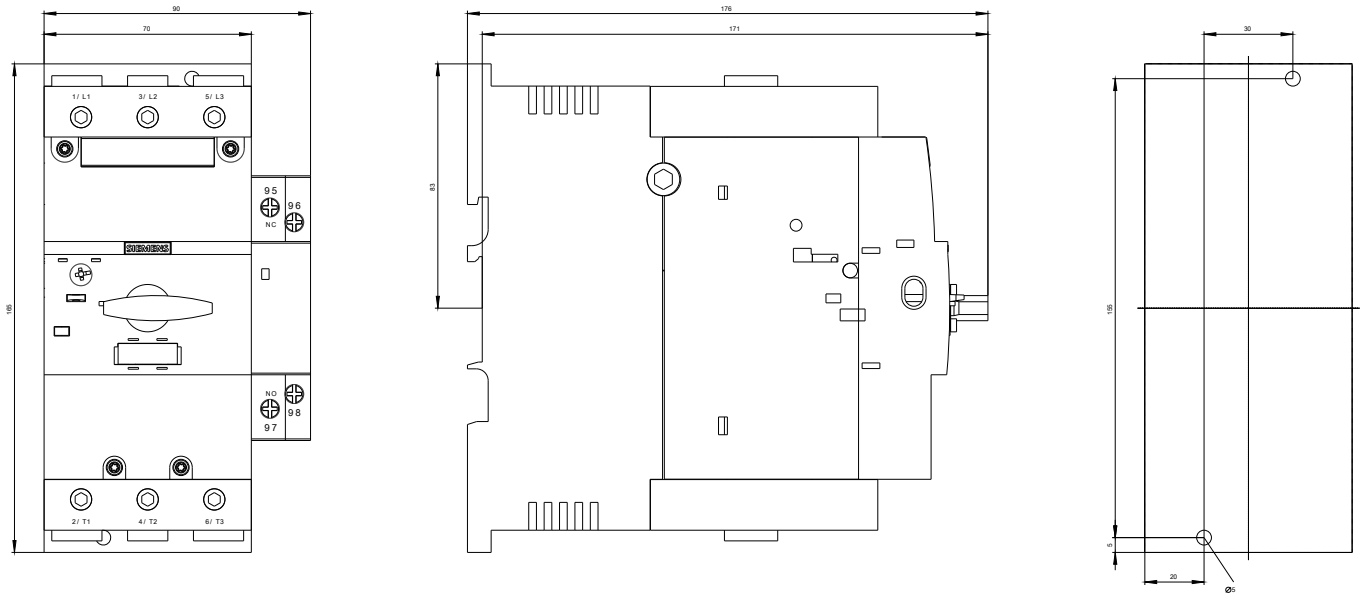
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2142-4MA10

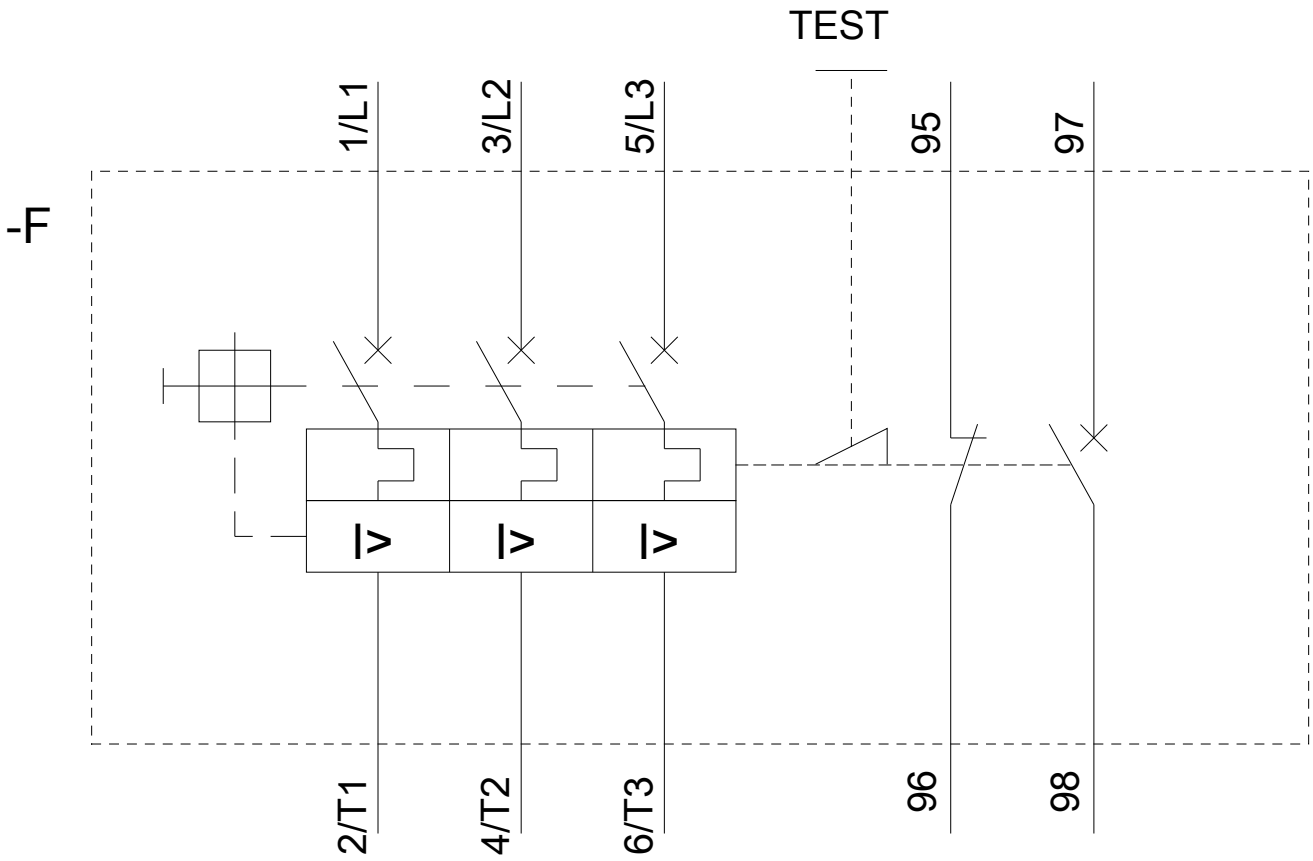
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RV2142-4MA10

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2142-4MA10&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RV2142-4MA10/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2142-4MA10&objecttype=14&gridview=view1





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