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Data sheet 3RV2142-4MA10

Siemens EcoTech

circuit breaker size S3 for motor protection Class 10 with overload relay function thermal release 80...100 A short-circuit 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	
Product equipment of circuit breaker for motor protection complete unit with protection device	Yes
size of the circuit-breaker	S3
size of contactor can be combined company-specific	S3
product function disconnector functionality	Yes
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
type of calculation of power loss current-dependent	quadratic
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 protective separation	
● in networks with ungrounded star point between main and auxiliary circuit	400 V
● in networks with grounded star point between main and auxiliary circuit	400 V
protection class IP	
● on the front according to IEC 60529	IP20
● on the front	IP20
● of the terminal	IP00
shock resistance according to IEC 60068-2-27	25 g / 11 ms Sinus
mechanical service life (operating cycles)	
● of the main contacts typical	25 000
● of auxiliary contacts typical	25 000
electrical endurance (operating cycles) typical	25 000
reference code according to IEC 81346-2	Q
continuous current rated value	100 A
Substance Prohibitance (day/month/year)	03/01/2017
SVHC substance name	Lead CAS-No. 7439-92-1
Net Weight	2.259 kg
Ambient conditions	

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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 current response value current of the current-dependent overload release	80 ... 100 A
type of voltage for main current circuit	AC
operating voltage	
● rated value	690 V
● rated value	20 ... 690 V
● at AC-3 rated value maximum	690 V
● at AC-3e rated value maximum	690 V
operating frequency rated value	50 ... 60 Hz
operational current rated value	100 A
operational current	
● at AC-3 at 400 V rated value	100 A
● at AC-3e at 400 V rated value	100 A
operating power	
● at AC-3	
— at 230 V rated value	30 kW
— at 400 V rated value	45 kW
— at 500 V rated value	55 kW
— at 690 V rated value	90 kW
● at AC-3e	
— at 230 V rated value	30 kW
— at 400 V rated value	45 kW
— at 500 V rated value	55 kW
— at 690 V rated value	90 kW
operating frequency	
● at AC-3 maximum	15 1/h
● at AC-3e maximum	15 1/h
Auxiliary circuit	
design of the auxiliary switch	laterally
type of voltage for auxiliary and control circuit	AC/DC
number of NC contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	0
number of CO contacts for auxiliary contacts	0
Protective and monitoring functions	
product function	
● ground fault detection	No
● phase failure detection	Yes
trip class	CLASS 10
design of the overload release	thermal
protection function thermal overload protection (ANSI 49)	Yes
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
operating short-circuit current breaking capacity (Ics) at AC	
● at 240 V rated value	100 kA
● at 400 V rated value	50 kA
● at 500 V rated value	5 kA
● at 690 V rated value	3 kA

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response value current of instantaneous short-circuit trip unit	1 300 A
UL/CSA ratings	
full-load current (FLA) for 3-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 3-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
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
Mounting method of circuit breaker for Transformer protection, Generator protection and system protection optional standard bar mounting	Yes
height	165 mm
width	90 mm
depth	176 mm
required spacing	
● with side-by-side mounting	
— forwards	0 mm
— backwards	0 mm
— upwards	150 mm
— downwards	150 mm
— at the side	0 mm
● for grounded parts	
— forwards	0 mm
— backwards	0 mm
— upwards	150 mm
— at the side	30 mm
— downwards	150 mm
● for live parts	
— forwards	0 mm
— backwards	0 mm
— upwards	150 mm
— downwards	150 mm
— at the side	30 mm
● for grounded parts at 400 V	
— downwards	70 mm
— upwards	70 mm
— at the side	10 mm
● for live parts at 400 V	
— downwards	70 mm
— upwards	70 mm
— at the side	10 mm
● for grounded parts at 500 V	
— downwards	110 mm
— upwards	110 mm
— at the side	10 mm
● for live parts at 500 V	
— downwards	110 mm

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— upwards	110 mm
— at the side	10 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
— forwards	0 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	No
type of electrical connection	
● for main current circuit	screw-type terminals
● for auxiliary and control 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)
— solid or 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)
connectable conductor cross-section for main contacts	
● finely stranded with core end processing	2.5 ... 50 mm²
● finely stranded without core end processing	10 ... 50 mm²
connectable conductor cross-section for auxiliary contacts	
● solid or stranded	0.5 ... 2.5 mm²
● finely stranded with core end processing	0.5 ... 2.5 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)
● for AWG cables for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14)
AWG number as coded connectable conductor cross section for main contacts	10 ... 2
AWG number as coded connectable conductor cross section for auxiliary contacts	20 ... 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	
product function suitable for safety function	Yes
suitability for use	
● safety-related switching on	No
● safety-related switching OFF	Yes
service life maximum	10 a
test wear-related service life necessary	Yes
proportion of dangerous failures	
● with low demand rate according to SN 31920	40 %
● with high demand rate according to SN 31920	50 %

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B10 value with high demand rate according to SN 31920	5 000
failure rate [FIT] with low demand rate according to SN 31920	50 FIT
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
safety device type according to IEC 61508-2	Type A
T1 value	
● **for proof test interval or service life according to IEC 61508**	10 a
Electrical Safety	
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
Display	
display version for switching status	Handle
Approvals Certificates	
Environmental Product Declaration	
● global warming potential [CO2 eq] / during manufacturing	18.5 kg
● global warming potential [CO2 eq] / during sales	1.24 kg
● global warming potential [CO2 eq] / during operation	265 kg
● global warming potential [CO2 eq] / after end of life	-1.5 kg
● global warming potential [CO2 eq] / total	283.24 kg

Environment

Environmental Confirmations

General Product Approval

General Product Approval

Test Certificates

Special Test Certificate

Type Test Certificates/Test Report

Maritime application

other

Miscellaneous

Confirmation

Miscellaneous

Railway

Confirmation

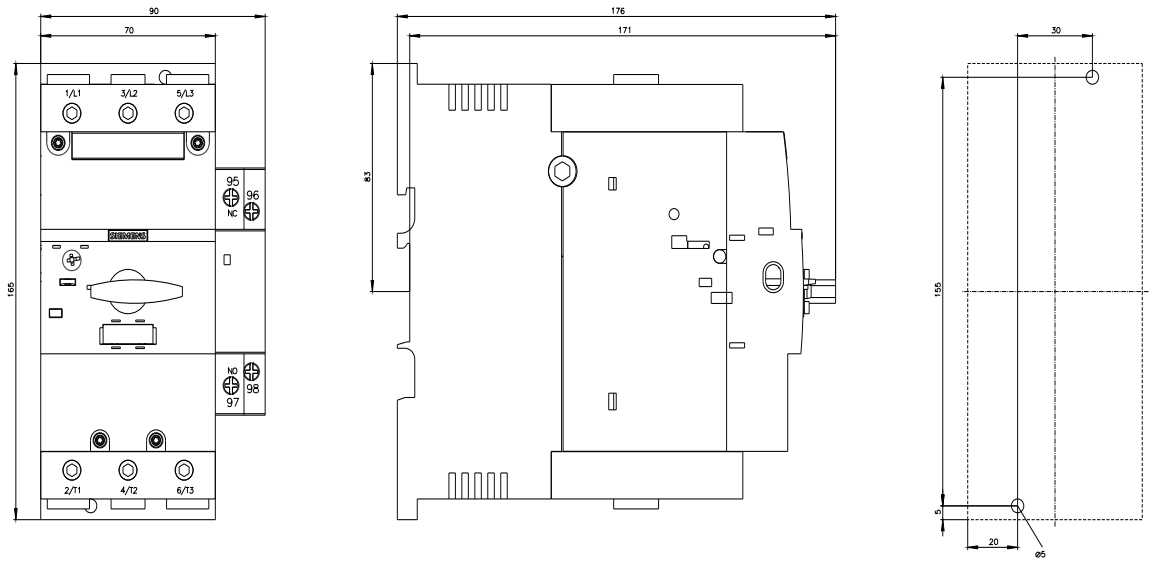
Special Test Certificate

Further information

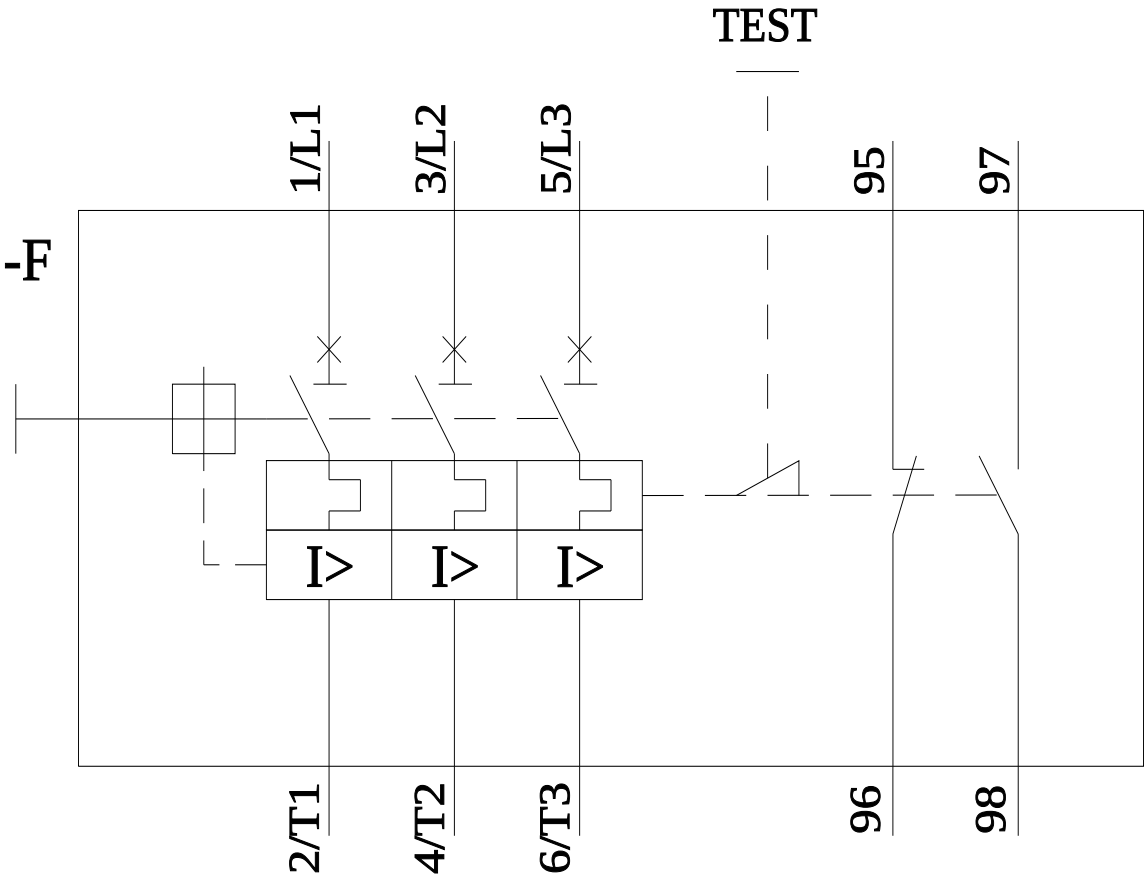
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