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Data sheet 3RT2535-1NP30

power contactor, AC-3, 35 A, 18.5 kW / 400 V, 4-pole, 175-280 V AC/DC, 50/60 Hz, with integrated varistor, main contacts: 2 NO + 2 NC, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S2

product brand name	SIRIUS
product designation	contactor
product type designation	3RT25
General technical data	
size of contactor	S2
product extension	
● function module for communication	No
● auxiliary switch	Yes
power loss [W] for rated value of the current	
● at AC in hot operating state per pole	2.2 W
● without load current share typical	2.4 W
type of calculation of power loss current-dependent	quadratic
insulation voltage	
● of main circuit with degree of pollution 3 rated value	690 V
● of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
● of main circuit rated value	6 kV
● of auxiliary circuit rated value	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
● at AC	7.7 g / 5 ms, 4.5 g / 10 ms
● at DC	7.7 g / 5 ms, 4.5 g / 10 ms
shock resistance with sine pulse	
● at AC	12 g / 5 ms, 7 g / 10 ms
● at DC	12 g / 5 ms, 7 g / 10 ms
mechanical service life (operating cycles)	
● of contactor typical	10 000 000
● of the contactor with added electronically optimized auxiliary switch block typical	5 000 000
● of the contactor with added auxiliary switch block typical	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (day/month/year)	10/01/2014
SVHC substance name	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1
Net Weight	1.145 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m

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ambient temperature	
● during operation	-40 ... +70 °C
● during storage	-55 ... +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Main circuit	
number of poles for main current circuit	4
number of NO contacts for main contacts	2
number of NC contacts for main contacts	2
operational current	
● at AC-1 up to 690 V	
— at ambient temperature 40 °C rated value	60 A
— at ambient temperature 60 °C rated value	55 A
● at AC-2 at AC-3 at 400 V	
— per NO contact rated value	35 A
— per NC contact rated value	35 A
minimum cross-section in main circuit at maximum AC-1 rated value	16 mm²
operational current	
● at 1 current path at DC-1	
— at 24 V rated value	55 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
● with 2 current paths in series at DC-1	
— at 24 V rated value	55 A
— at 110 V rated value	45 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
● at 1 current path at DC-3 at DC-5	
— at 24 V per NC contact rated value	35 A
— at 24 V per NO contact rated value	35 A
— at 110 V per NC contact rated value	1.25 A
— at 110 V per NO contact rated value	2.5 A
— at 220 V per NC contact rated value	0.5 A
— at 220 V per NO contact rated value	1 A
— at 440 V per NC contact rated value	0.045 A
— at 440 V per NO contact rated value	0.1 A
● with 2 current paths in series at DC-3 at DC-5	
— at 24 V per NC contact rated value	55 A
— at 24 V per NO contact rated value	55 A
— at 110 V per NC contact rated value	12.5 A
— at 110 V per NO contact rated value	25 A
— at 220 V per NC contact rated value	2.5 A
— at 220 V per NO contact rated value	5 A
— at 440 V per NC contact rated value	0.135 A
— at 440 V per NO contact rated value	0.27 A
operating power at AC-2 at AC-3	
● at 230 V per NC contact rated value	11 kW
● at 230 V per NO contact rated value	11 kW
● at 400 V per NC contact rated value	18.5 kW
● at 400 V per NO contact rated value	18.5 kW
short-time withstand current in cold operating state up to 40 °C	
● limited to 1 s switching at zero current maximum	546 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 5 s switching at zero current maximum	443 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 10 s switching at zero current maximum	334 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 30 s switching at zero current maximum	241 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum	196 A; Use minimum cross-section acc. to AC-1 rated value

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power loss [W] at AC-3 at 400 V for rated value of the operational current per conductor	2.2 W
power loss [W] at AC-3e at 400 V for rated value of the operational current per conductor	2.2 W
no-load switching frequency	
● at AC	500 1/h
● at DC	500 1/h
operating frequency	
● at AC-1 maximum	350 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	
● at 50 Hz rated value	175 ... 280 V
● at 60 Hz rated value	175 ... 280 V
control supply voltage at DC rated value	175 ... 280 V
operating range factor control supply voltage rated value of magnet coil at DC	
● initial value	0.8
● full-scale value	1.1
operating range factor control supply voltage rated value of magnet coil at AC	
● at 50 Hz	0.8 ... 1.1
● at 60 Hz	0.8 ... 1.1
design of the surge suppressor	with varistor
inrush current peak	25 A
duration of inrush current peak	10 µs
pickup current mean value	0.58 A
pickup current peak	1.5 A
duration of pickup current	230 ms
holding current mean value	10 mA
apparent pick-up power of magnet coil at AC	110 V·A
● at 50 Hz	110 V·A
● at 60 Hz	110 V·A
inductive power factor with closing power of the coil	0.95
● at 50 Hz	0.95
● at 60 Hz	0.95
apparent holding power of magnet coil at AC	2.5 V·A
● at 50 Hz	2.5 V·A
● at 60 Hz	2.5 V·A
inductive power factor with the holding power of the coil	0.95
● at 50 Hz	0.95
● at 60 Hz	0.95
closing power of magnet coil at DC	70 W
holding power of magnet coil at DC	1.5 W
closing delay	
● at AC	30 ... 110 ms
● at DC	30 ... 110 ms
opening delay	
● at AC	30 ... 55 ms
● at DC	30 ... 55 ms
arcing time	10 ... 20 ms
control version of the switch operating mechanism	UC
residual current of the electronics for control with signal <0>	
● at AC at 230 V maximum permissible	20 A
● at DC at 24 V maximum permissible	20 A
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts instantaneous contact	1

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operational current at AC-12 maximum	10 A
operational current at AC-15	
● at 230 V rated value	6 A
● at 400 V rated value	3 A
● at 500 V rated value	2 A
● at 690 V rated value	1 A
operational current at DC-12	
● at 24 V rated value	10 A
● at 48 V rated value	6 A
● at 60 V rated value	6 A
● at 110 V rated value	3 A
● at 125 V rated value	2 A
● at 220 V rated value	1 A
● at 600 V rated value	0.15 A
operational current at DC-13	
● at 24 V rated value	10 A
● at 48 V rated value	2 A
● at 60 V rated value	2 A
● at 110 V rated value	1 A
● at 125 V rated value	0.9 A
● at 220 V rated value	0.3 A
● at 600 V rated value	0.1 A
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings	
yielded mechanical performance [hp]	
● for 3-phase AC motor at 460/480 V rated value	20 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA
design of the fuse link	
● for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 125 A (690 V, 100 kA)
— with type of coordination 2 required	gG: 63 A (690 V,100 kA)
● for short-circuit protection of the auxiliary switch required	gG: 10 A (690 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
fastening method side-by-side mounting	Yes
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 50022
height	114 mm
width	75 mm
depth	130 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	50 mm
— at the side	10 mm
— downwards	50 mm
● for live parts	
— forwards	0 mm
— backwards	0 mm

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— upwards	50 mm
— downwards	50 mm
— at the side	10 mm
Connections/ Terminals	
type of electrical connection	
• for main current circuit	screw-type terminals
• for auxiliary and control circuit	screw-type terminals
• at contactor for auxiliary contacts	Screw-type terminals
• of magnet coil	screw terminal
type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (1 ... 35 mm²), 1x (1 ... 50 mm²)
— solid or stranded	2x (1 ... 35 mm²), 1x (1 ... 50 mm²)
— finely stranded with core end processing	2x (1 ... 25 mm²), 1x (1 ... 35 mm²)
• for AWG cables for main contacts	2x (18 ... 2), 1x (18 ... 1)
type of connectable conductor cross-sections	
• for auxiliary contacts	
— solid	2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)
— solid or stranded	2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)
— 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	18 ... 1
AWG number as coded connectable conductor cross section for auxiliary contacts	20 ... 14
Safety related data	
product function	
• **mirror contact according to IEC 60947-4-1**	Yes
• **positively driven operation according to IEC 60947-5-1**	No
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

Approvals Certificates

Environment	General Product Approval				
Environmental Confirmations	CCC	cULus	KC	EAC	CE EG-Konf.

General Product Approval	EMV	Test Certificates		Maritime application	
UKCA	RCM	Special Test Certificate	Type Test Certificates/Test Report	ABS	BUREAU VERITAS

Maritime application				other	
DNV	LRS	PRS	RINA	Confirmation	产品合格 QC PASS

Railway
Special Test Certificate

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Further information

Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875
Information for data generation and storage
https://support.industry.siemens.com/cs/ww/en/view/109995012
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=3RT2535-1NP30
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT2535-1NP30
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2535-1NP30&lang=en
Cax online generator
https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2535-1NP30
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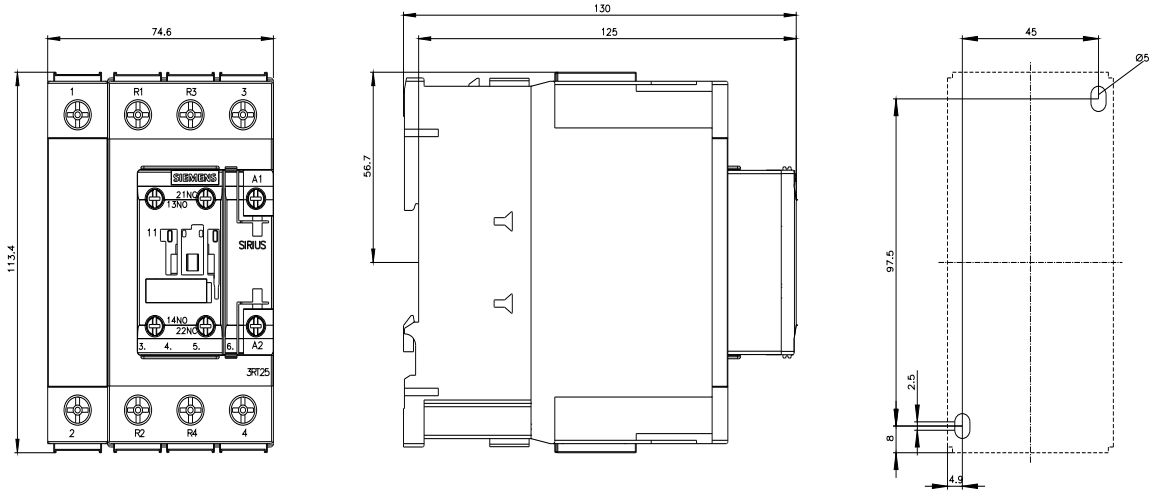

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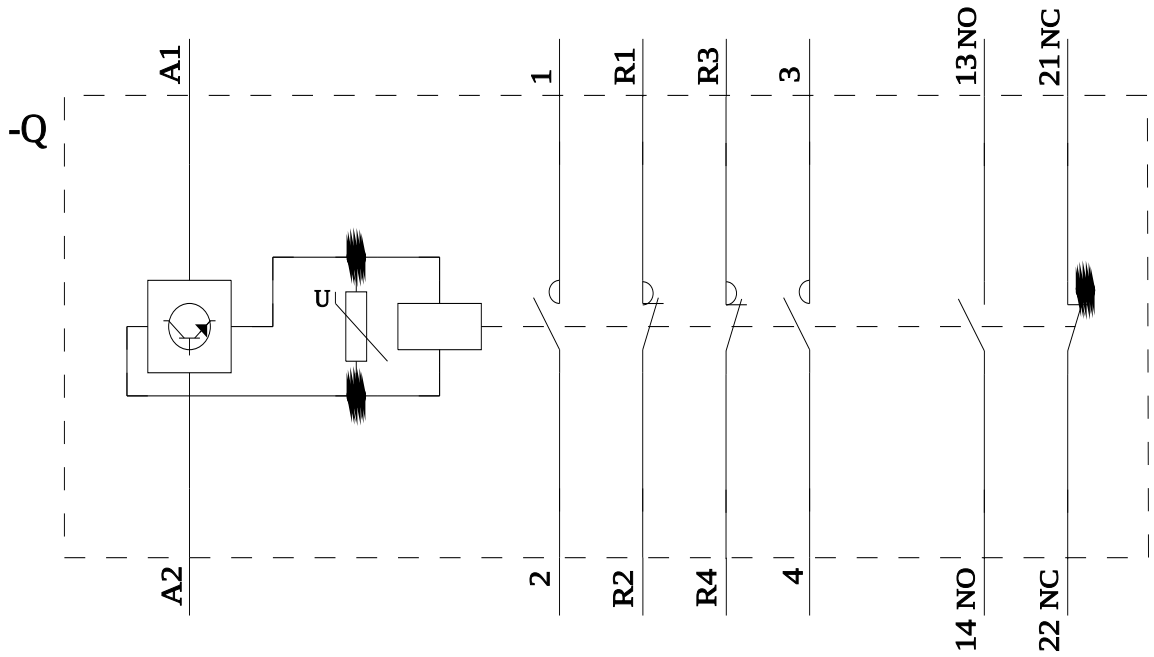

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