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Data sheet 3RT2346-1NP30-4AA0

power contactor, AC-3, 95 A, 45 kW / 400 V, 4-pole, 175-280 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S3

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT23
General technical data	
size of contactor	S3
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	27.2 W
● at AC in hot operating state per pole	6.8 W
● without load current share typical	3.3 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 the auxiliary and control circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
● of main circuit rated value	8 kV
● of auxiliary circuit rated value	6 kV
shock resistance at rectangular impulse	
● at AC	6.7 g / 5 ms, 4.0 g / 10 ms
● at DC	6.7 g / 5 ms, 4 g / 10 ms
shock resistance with sine pulse	
● at AC	10.6 g / 5 ms, 6.3 g / 10 ms
● at DC	10.6 g / 5 ms, 6.3 g / 10 ms
mechanical service life (operating cycles)	
● of contactor typical	10 000 000
● of the contactor with added auxiliary switch block typical	10 000 000
reference code according to IEC 81346-2	Q
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	2.035 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
● during operation	-25 ... +60 °C

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● 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	4
type of voltage for main current circuit	AC
operational current	
● at AC-1 at 400 V at ambient temperature 40 °C rated value	110 A
● at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	110 A
— up to 690 V at ambient temperature 60 °C rated value	100 A
● at AC-3	
— at 400 V rated value	95 A
— at 690 V rated value	58 A
● at AC-4 at 400 V rated value	80 A
minimum cross-section in main circuit at maximum AC-1 rated value	35 mm²
operational current	
● at 1 current path at DC-1	
— at 24 V rated value	80 A
— at 60 V rated value	60 A
— at 110 V rated value	9 A
— at 220 V rated value	2 A
— at 440 V rated value	0.6 A
● with 2 current paths in series at DC-1	
— at 24 V rated value	80 A
— at 60 V rated value	80 A
— at 110 V rated value	80 A
— at 220 V rated value	10 A
— at 440 V rated value	1.8 A
● with 3 current paths in series at DC-1	
— at 24 V rated value	80 A
— at 60 V rated value	80 A
— at 110 V rated value	80 A
— at 220 V rated value	80 A
— at 440 V rated value	4.5 A
● at 1 current path at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 60 V rated value	6.5 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.15 A
● with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	80 A
— at 60 V rated value	80 A
— at 110 V rated value	80 A
— at 220 V rated value	7 A
— at 440 V rated value	0.42 A
● with 3 current paths in series at DC-3 at DC-5	
— at 24 V rated value	80 A
— at 60 V rated value	80 A
— at 110 V rated value	80 A
— at 220 V rated value	35 A
— at 440 V rated value	0.8 A
operating power	

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● at AC-3 at 400 V rated value	45 kW
● at AC-4 at 400 V rated value	45 kW
short-time withstand current in cold operating state up to 40 °C	
● limited to 1 s switching at zero current maximum	1 511 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 5 s switching at zero current maximum	1 511 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 10 s switching at zero current maximum	1 511 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 30 s switching at zero current maximum	610 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum	486 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
● at AC	1 000 1/h
● at DC	1 000 1/h
operating frequency	
● at AC-1 maximum	900 1/h
Control circuit/ Control	
type of voltage	AC/DC
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	65 A
duration of inrush current peak	5 µs
pickup current mean value	0.44 A
pickup current peak	1.2 A
duration of pickup current	150 ms
holding current mean value	10 mA
apparent pick-up power of magnet coil at AC	
● at 50 Hz	151 V·A
● at 60 Hz	151 V·A
apparent holding power of magnet coil at AC	
● at 50 Hz	3.5 V·A
● at 60 Hz	3.5 V·A
inductive power factor with the holding power of the coil	
● at 50 Hz	0.95
● at 60 Hz	0.95
closing power of magnet coil at DC	76 W
holding power of magnet coil at DC	2.7 W
closing delay	
● at AC	50 ... 70 ms
● at DC	50 ... 70 ms
opening delay	
● at AC	38 ... 57 ms
● at DC	38 ... 57 ms
arcing time	10 ... 20 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts	1
● attachable	2
● instantaneous contact	1
number of NO contacts for auxiliary contacts	1

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● attachable	2
● instantaneous contact	1
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 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	
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: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)
— with type of coordination 2 required	gG: 160 A (690 V, 100 kA), aM: 100 A (690 V, 100 kA), BS88: 125 A (415 V, 80 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 60715
height	140 mm
width	96 mm
depth	152 mm
required spacing	
● with side-by-side mounting	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
● for grounded parts	
— forwards	20 mm
— upwards	10 mm
— at the side	10 mm
— downwards	10 mm
● for live parts	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm

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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	
— stranded	2x (6 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²)
— solid or stranded	2x (2.5 ... 16 mm²), 2x (6 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²)
— finely stranded with core end processing	2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)
• for AWG cables for main contacts	2x (10 ... 1/0), 1x (10 ... 2/0)
connectable conductor cross-section for main contacts	
• solid	2.5 ... 16 mm²
• solid or stranded	4 ... 70 mm²
• stranded	6 ... 70 mm²
• finely stranded with core end processing	2.5 ... 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	
— 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 extended as coded connectable conductor cross section for main contacts	10 ... 2/0
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
Communication/ Protocol	
product function bus communication	No
Approvals Certificates	
Environmental Product Declaration	
• global warming potential [CO2 eq] / during manufacturing	11.3 kg
• global warming potential [CO2 eq] / during operation	329 kg
• global warming potential [CO2 eq] / after end of life	-1.8 kg
• global warming potential [CO2 eq] / total	339 kg

Environment	**General Product Approval**				
Environmental Confirmations	EPD	CCC	cULus	KC	EAC

General Product Approval		**EMV**	**Test Certificates**		**Maritime application**
CE EG-Konf.	UKCA	RCM	Special Test Certificate	Type Test Certificates/Test Report	ABS

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Maritime application	other	Railway
DNV LRS RINA	Confirmation 产品合格 QC PASS	Special Test Certific-ate

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=3RT2346-1NP30-4AA0
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT2346-1NP30-4AA0
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2346-1NP30-4AA0&lang=en
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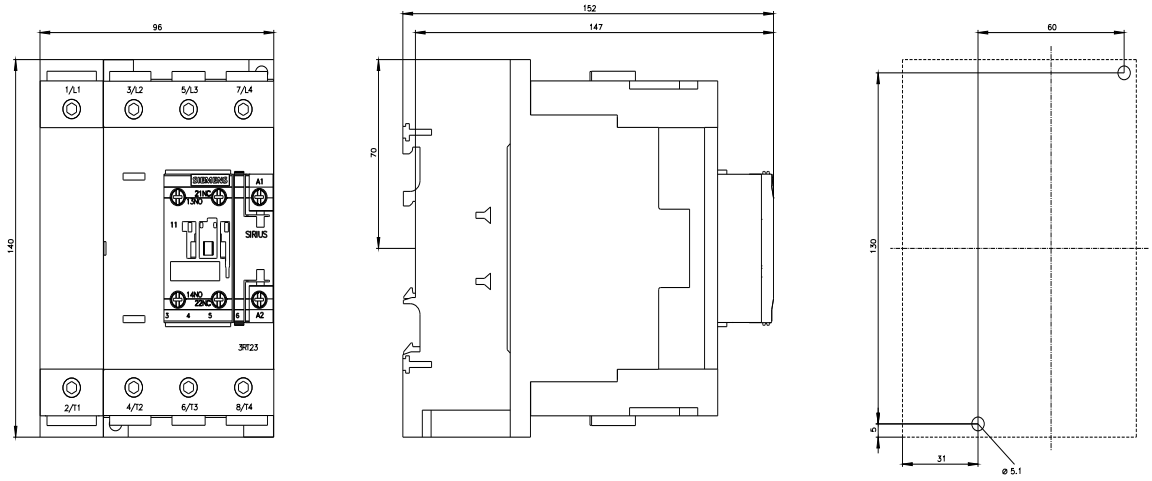

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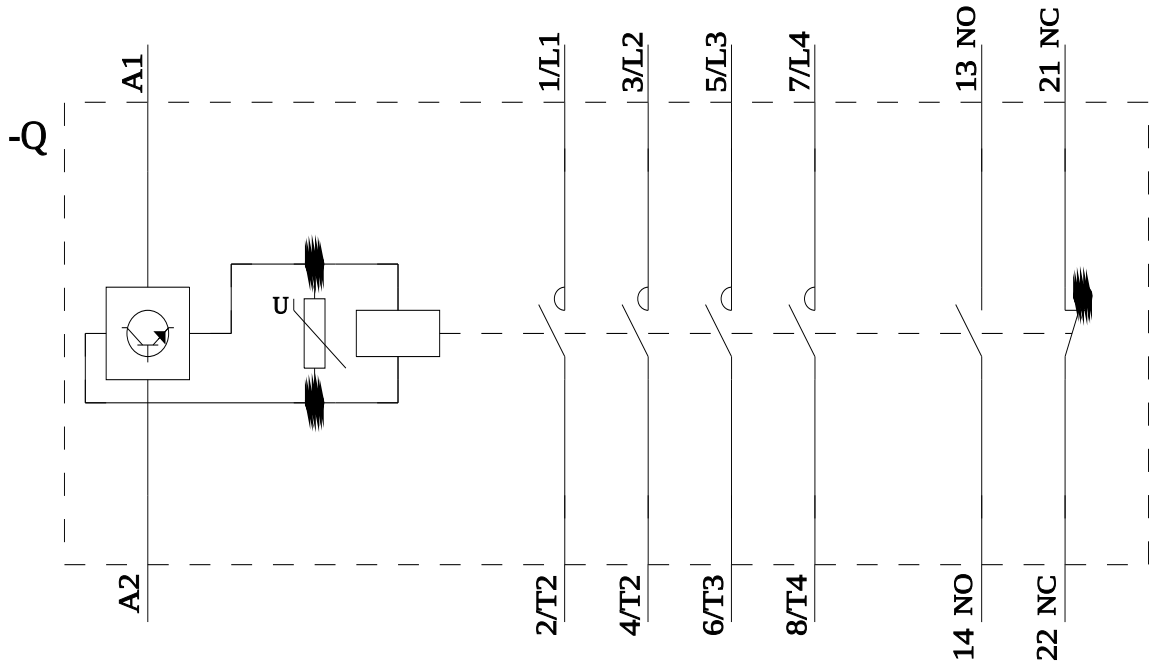

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