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Data sheet 3RT2545-1AK60



power contactor, AC-3, 80 A, 37 kW / 400 V, 4-pole, 110 V AC, 50 Hz / 120 V, 60 Hz, main contacts: 2 NO + 2 NC, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S3

product brand name	SIRIUS
product designation	contactor
product type designation	3RT25
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 per pole	5.3 W
● without load current share typical	8.4 W
type of calculation of power loss current-dependent	quadratic
insulation voltage	
● of main circuit with degree of pollution 3 rated value	1 000 V
● of auxiliary 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
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	690 V
shock resistance at rectangular impulse	
● at AC	6.7 g / 5 ms, 4.0 g / 10 ms
shock resistance with sine pulse	
● at AC	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 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)	09/01/2017
Net Weight	1.875 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
● during operation	-25 ... +60 °C
● during storage	-55 ... +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %

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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	125 A
— at ambient temperature 60 °C rated value	105 A
● at AC-2 at AC-3 at 400 V	
— per NO contact rated value	80 A
— per NC contact rated value	80 A
minimum cross-section in main circuit at maximum AC-1 rated value	50 mm²
operational current	
● at 1 current path at DC-1	
— at 24 V rated value	100 A
— at 110 V rated value	9 A
— at 220 V rated value	2 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.4 A
● with 2 current paths in series at DC-1	
— at 24 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	10 A
— at 440 V rated value	1.8 A
● at 1 current path at DC-3 at DC-5	
— at 24 V per NC contact rated value	40 A
— at 24 V per NO contact rated value	40 A
— at 110 V per NC contact rated value	2.5 A
— at 110 V per NO contact rated value	2.5 A
— at 220 V per NC contact rated value	1 A
— at 220 V per NO contact rated value	1 A
— at 440 V per NC contact rated value	0.15 A
— at 440 V per NO contact rated value	0.15 A
● with 2 current paths in series at DC-3 at DC-5	
— at 24 V per NC contact rated value	100 A
— at 24 V per NO contact rated value	100 A
— at 110 V per NC contact rated value	100 A
— at 110 V per NO contact rated value	100 A
— at 220 V per NC contact rated value	7 A
— at 220 V per NO contact rated value	7 A
— at 440 V per NC contact rated value	0.42 A
— at 440 V per NO contact rated value	0.42 A
operating power at AC-2 at AC-3	
● at 230 V per NC contact rated value	22 kW
● at 230 V per NO contact rated value	22 kW
● at 400 V per NC contact rated value	37 kW
● at 400 V per NO contact rated value	37 kW
short-time withstand current in cold operating state up to 40 °C	
● limited to 1 s switching at zero current maximum	1 080 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 5 s switching at zero current maximum	1 080 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 10 s switching at zero current maximum	851 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 30 s switching at zero current maximum	538 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum	423 A; Use minimum cross-section acc. to AC-1 rated value
power loss [W] at AC-3 at 400 V for rated value of the operational current per conductor	5.3 W
power loss [W] at AC-3e at 400 V for rated value of the operational current per conductor	5.3 W
no-load switching frequency	

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● at AC	5 000 1/h
operating frequency	
● at AC-1 maximum	900 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
● at 50 Hz rated value	110 V
● at 60 Hz rated value	120 V
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
apparent pick-up power of magnet coil at AC	326 V·A
● at 50 Hz	326 V·A
● at 60 Hz	326 V·A
inductive power factor with closing power of the coil	0.62
● at 50 Hz	22
● at 60 Hz	22
apparent holding power of magnet coil at AC	22 V·A
● at 50 Hz	0.62 V·A
● at 60 Hz	0.62 V·A
inductive power factor with the holding power of the coil	0.38
● at 50 Hz	0.38
● at 60 Hz	0.38
closing delay	
● at AC	13 ... 50 ms
opening delay	
● at AC	11 ... 21 ms
arcing time	10 ... 20 ms
control version of the switch operating mechanism	AC
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts 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 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]	

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● for 3-phase AC motor at 460/480 V rated value	30 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: 250 A (690 V, 100 kA)
— with type of coordination 2 required	gR: 250 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 60715
height	140 mm
width	70 mm
depth	152 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	10 mm
— at the side	10 mm
— downwards	10 mm
● for live parts	
— forwards	0 mm
— backwards	0 mm
— upwards	10 mm
— downwards	10 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 (2.5 ... 16 mm²)
— 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)
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

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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	DNV

Maritime application			other		Railway
Lloyd's Register LRS	PRS	RINA	Confirmation	产品合格 QC PASS	Special Test Certificate

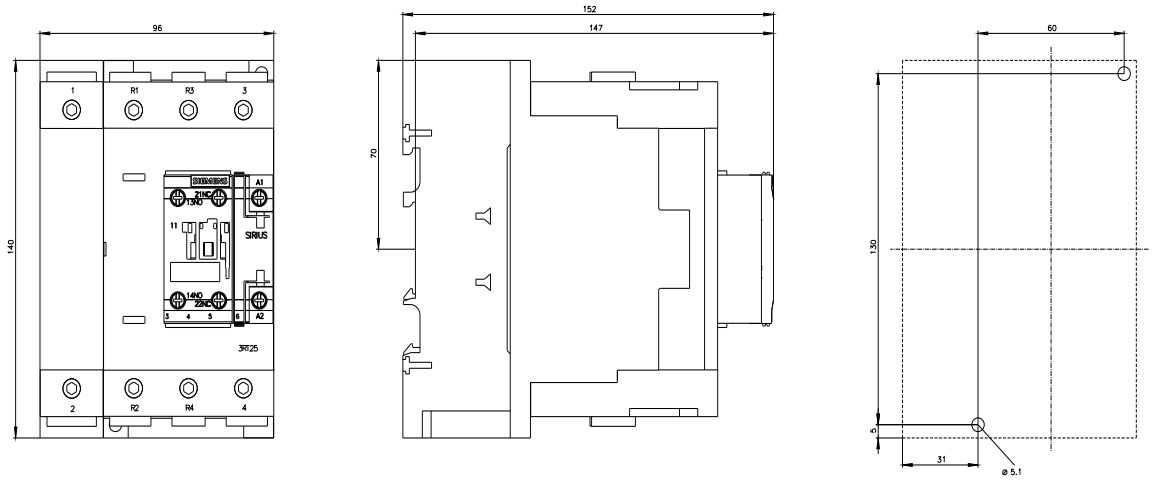
Dangerous goods

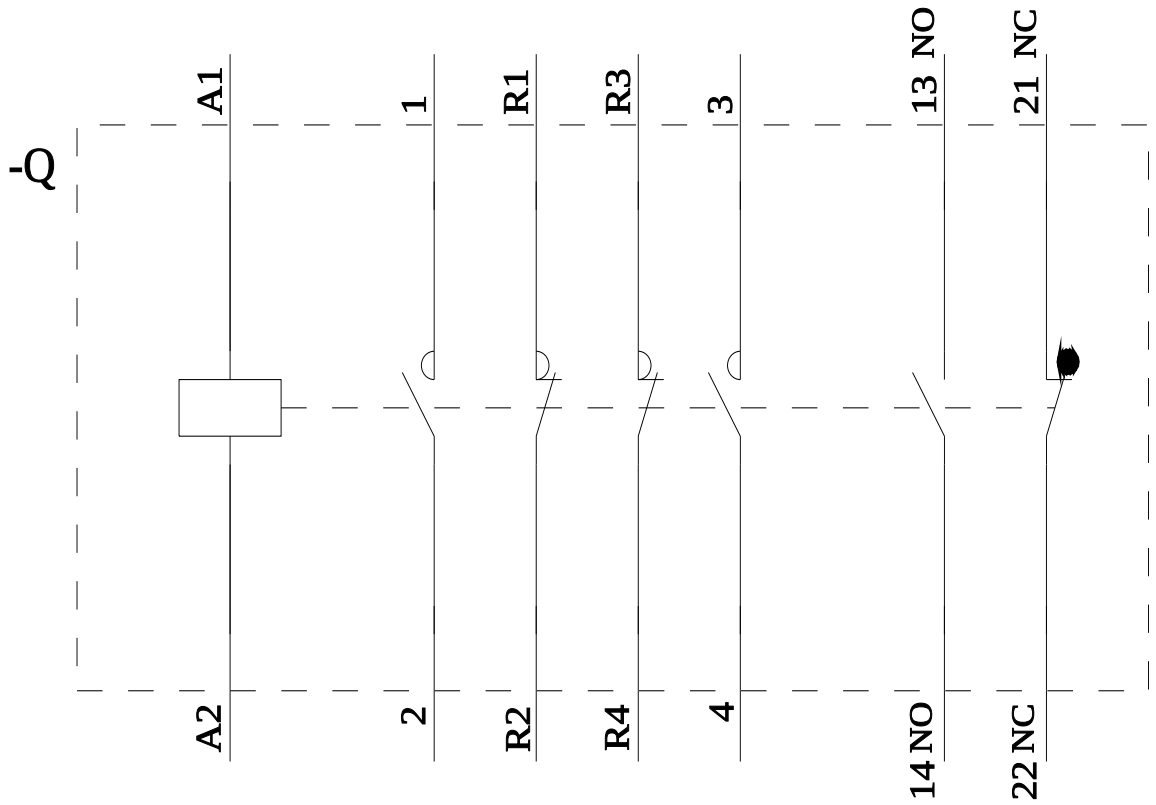
Transport Information

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,…)
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Industry Mall (Online ordering system)
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Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
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