

Power contactor, AC-3 32 A, 15 kW / 400 V 2 NO + 2 NC, 230 V AC 50/60 Hz, 3-pole Size S0, screw terminals Perm. mounted auxiliary switch for SUVA applications

Product brand name	SIRIUS
Product designation	Power contactor
Product type designation	3RT2

General technical data

Size of contactor	S0
Product extension	
<ul style="list-style-type: none"> • function module for communication • Auxiliary switch 	<p>No</p> <p>Yes</p>
Surge voltage resistance	
<ul style="list-style-type: none"> • of main circuit rated value • of auxiliary circuit rated value 	<p>6 kV</p> <p>6 kV</p>
maximum permissible voltage for safe isolation	
<ul style="list-style-type: none"> • between coil and main contacts acc. to EN 60947-1 	400 V
Protection class IP	
<ul style="list-style-type: none"> • on the front • of the terminal 	<p>IP20</p> <p>IP20</p>
Shock resistance at rectangular impulse	
<ul style="list-style-type: none"> • at AC 	8,3g / 5 ms, 5,3g / 10 ms
Shock resistance with sine pulse	
<ul style="list-style-type: none"> • at AC 	13,5g / 5 ms, 8,3g / 10 ms
Mechanical service life (switching cycles)	
<ul style="list-style-type: none"> • of contactor typical • of the contactor with added electronics-compatible auxiliary switch block typical • of the contactor with added auxiliary switch block typical 	<p>10 000 000</p> <p>5 000 000</p> <p>10 000 000</p>
Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	K
Reference code acc. to DIN EN 81346-2	Q

Ambient conditions

Installation altitude at height above sea level	
<ul style="list-style-type: none"> • maximum 	2 000 m
Ambient temperature	
<ul style="list-style-type: none"> • during operation 	-25 ... +60 °C

- during storage

-55 ... +80 °C

Main circuit

Number of poles for main current circuit	3
Number of NO contacts for main contacts	3
Operating voltage	
<ul style="list-style-type: none"> • at AC-3 rated value maximum 	690 V
Operating current	
<ul style="list-style-type: none"> • at AC-1 at 400 V <ul style="list-style-type: none"> — at ambient temperature 40 °C rated value • at AC-1 <ul style="list-style-type: none"> — up to 690 V at ambient temperature 40 °C rated value — up to 690 V at ambient temperature 60 °C rated value • at AC-2 at 400 V rated value • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value • at AC-4 at 400 V rated value 	50 A 50 A 42 A 32 A 32 A 32 A 21 A 22 A
Connectable conductor cross-section in main circuit at AC-1	
<ul style="list-style-type: none"> • at 60 °C minimum permissible • at 40 °C minimum permissible 	10 mm ² 10 mm ²
Operating current for approx. 200000 operating cycles at AC-4	
<ul style="list-style-type: none"> • at 400 V rated value • at 690 V rated value 	12 A 12 A
Operating current	
<ul style="list-style-type: none"> • at 1 current path at DC-1 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 2 current paths in series at DC-1 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 3 current paths in series at DC-1 	35 A 4.5 A 1 A 0.4 A 0.25 A 35 A 35 A 5 A 1 A 0.8 A

— at 24 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	35 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
Operating current	
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 A
— at 600 V rated value	0.06 A
• with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
• with 3 current paths in series at DC-3 at DC-5	
— at 24 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
Operating power	
• at AC-1	
— at 230 V rated value	16 kW
— at 230 V at 60 °C rated value	15.5 kW
— at 400 V rated value	28 kW
— at 400 V at 60 °C rated value	27.5 kW
— at 690 V rated value	48 kW
— at 690 V at 60 °C rated value	47.5 kW
• at AC-2 at 400 V rated value	15 kW
• at AC-3	
— at 230 V rated value	7.5 kW
— at 400 V rated value	15 kW
— at 500 V rated value	15 kW
— at 690 V rated value	18.5 kW
Operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	6 kW

<ul style="list-style-type: none"> • at 690 V rated value 	10.3 kW
Thermal short-time current limited to 10 s	260 A
Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor	2.7 W
No-load switching frequency	
<ul style="list-style-type: none"> • at AC 	5 000 1/h
Operating frequency	
<ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum 	1 000 1/h 750 1/h 750 1/h 250 1/h

Control circuit/ Control	
Type of voltage of the control supply voltage	AC
Control supply voltage at AC	
<ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value 	230 V 230 V
Operating range factor control supply voltage rated value of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	0.8 ... 1.1 0.85 ... 1.1
Apparent pick-up power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	81 V·A 79 V·A
Inductive power factor with closing power of the coil	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	0.72 0.74
Apparent holding power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	10.5 V·A 8.5 V·A
Inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	0.25 0.28
Closing delay	
<ul style="list-style-type: none"> • at AC 	8 ... 40 ms
Opening delay	
<ul style="list-style-type: none"> • at AC 	4 ... 16 ms
Arcing time	10 ... 10 ms
Control version of the switch operating mechanism	Standard A1 - A2

Auxiliary circuit	
Number of NC contacts for auxiliary contacts	
<ul style="list-style-type: none"> • instantaneous contact 	1

Number of NO contacts for auxiliary contacts	
• instantaneous contact	1
Operating current at AC-12 maximum	10 A
Operating current at AC-15	
• at 230 V rated value	10 A
• at 400 V rated value	3 A
• at 500 V rated value	2 A
• at 690 V rated value	1 A
Operating 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
Operating 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

Full-load current (FLA) for three-phase AC motor	
• at 480 V rated value	27 A
• at 600 V rated value	27 A
Yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	2 hp
— at 230 V rated value	5 hp
• for three-phase AC motor	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	10 hp
— at 460/480 V rated value	20 hp
— at 575/600 V rated value	25 hp
Contact rating of auxiliary contacts according to UL	A600 / Q600

Short-circuit protection

Design of the fuse link	
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- for short-circuit protection of the main circuit
 - with type of coordination 1 required
 - with type of assignment 2 required
- for short-circuit protection of the auxiliary switch required

gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)

gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (415V, 80kA)

fuse gG: 10 A

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
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
<ul style="list-style-type: none"> • Side-by-side mounting 	Yes
Height	85 mm
Width	45 mm
Depth	97 mm
Required spacing	
<ul style="list-style-type: none"> • with side-by-side mounting <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side • for grounded parts <ul style="list-style-type: none"> — forwards — upwards — at the side — downwards • for live parts <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side 	10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm 10 mm 10 mm 10 mm 10 mm 6 mm

Connections/Terminals

Type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit • for auxiliary and control current circuit 	screw-type terminals screw-type terminals
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid — single or multi-stranded — finely stranded with core end processing 	2x (1 ... 2.5 mm ²), 2x (2.5 ... 10 mm ²) 2x (1 ... 2,5 mm ²), 2x (2,5 ... 10 mm ²) 2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ²

<ul style="list-style-type: none"> • at AWG conductors for main contacts 	2x (16 ... 12), 2x (14 ... 8)
Connectable conductor cross-section for main contacts <ul style="list-style-type: none"> • solid • stranded • finely stranded with core end processing 	1 ... 10 mm ² 1 ... 10 mm ² 1 ... 10 mm ²
Connectable conductor cross-section for auxiliary contacts <ul style="list-style-type: none"> • single or multi-stranded • finely stranded with core end processing 	0.5 ... 2.5 mm ² 0.5 ... 2.5 mm ²
Type of connectable conductor cross-sections <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — single or multi-stranded — finely stranded with core end processing • at AWG conductors for auxiliary contacts 	2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14)
AWG number as coded connectable conductor cross section <ul style="list-style-type: none"> • for main contacts • for auxiliary contacts 	16 ... 8 20 ... 14

Safety related data	
B10 value <ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 	1 000 000
Proportion of dangerous failures <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 	40 % 73 %
Failure rate [FIT] <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 	100 FIT
Product function <ul style="list-style-type: none"> • Mirror contact acc. to IEC 60947-4-1 	Yes
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Protection against electrical shock	finger-safe

Certificates/approvals

General Product Approval	EMC
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[KC](#)



Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	Marine / Shipping
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[Type Examination Certificate](#)



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Marine / Shipping	other
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[Confirmation](#)

other



Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2027-1AL20>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2027-1AL20>

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1AL20>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2027-1AL20&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1AL20/char>

Further characteristics (e.g. electrical endurance, switching frequency)

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-1AL20&objecttype=14&gridview=view1>

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