

CONTACTOR, AC3: 45KW/400V, 1NO+1NC, 230VAC 50/60HZ, 3-POLE, 3NO, SIZE: S3, SCREW TERMINALS



Figure similar

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

General technical data	
Size of contactor	S3
Product extension	
• function module for communication	No
• Auxiliary switch	Yes
Insulation voltage	
• rated value	1 000 V
Degree of pollution	3
Surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
• between coil and main contacts acc. to EN 60947-1	690 V
Protection class IP	
• on the front	IP20

• of the terminal	IP00
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 (switching cycles)	
• of contactor typical	10 000 000
• of the contactor with added electronics-compatible auxiliary switch block typical	5 000 000
• of the contactor with added auxiliary switch block typical	10 000 000

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

Main circuit

Number of poles for main current circuit	3
Number of NO contacts for main contacts	3
Operating voltage	
• at AC-3 rated value maximum	1 000 V
Operating current	
• at AC-1 at 400 V	
— at ambient temperature 40 °C rated value	130 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	130 A
— up to 690 V at ambient temperature 60 °C rated value	110 A
• at AC-2 at 400 V rated value	95 A
• at AC-3	
— at 400 V rated value	95 A
— at 500 V rated value	95 A
— at 690 V rated value	78 A
Connectable conductor cross-section in main circuit at AC-1	
• at 60 °C minimum permissible	35 mm ²
• at 40 °C minimum permissible	50 mm ²
Operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	42 A

<ul style="list-style-type: none"> • at 690 V rated value 	30 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 <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 	100 A 9 A 2 A 0.6 A 0.4 A 100 A 100 A 10 A 1.8 A 1 A 100 A 100 A 80 A 4.5 A 2.6 A
Operating current	
<ul style="list-style-type: none"> • at 1 current path at DC-3 at DC-5 <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-3 at DC-5 <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-3 at DC-5 <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 	40 A 2.5 A 1 A 0.15 A 0.06 A 100 A 100 A 7 A 0.42 A 0.16 A 100 A 100 A 35 A 0.8 A 0.35 A
Operating power	
<ul style="list-style-type: none"> • at AC-1 	

— at 230 V rated value	49 kW
— at 230 V at 60 °C rated value	42 kW
— at 400 V rated value	86 kW
— at 400 V at 60 °C rated value	72 kW
— at 690 V rated value	148 kW
— at 690 V at 60 °C rated value	125 kW
• at AC-2 at 400 V rated value	45 kW
• at AC-3	
— at 230 V rated value	22 kW
— at 400 V rated value	45 kW
— at 500 V rated value	55 kW
— at 690 V rated value	75 kW
Operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	22 kW
• at 690 V rated value	27.4 kW
Thermal short-time current limited to 10 s	760 A
Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor	6.6 W
No-load switching frequency	
• at AC	5 000 1/h
Operating frequency	
• at AC-1 maximum	900 1/h
• at AC-2 maximum	350 1/h
• at AC-3 maximum	850 1/h
• at AC-4 maximum	250 1/h
Control circuit/ Control	
Type of voltage of the control supply voltage	AC
Control supply voltage at AC	
• at 50 Hz rated value	230 V
• at 60 Hz rated value	230 V
Operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 ... 1.1
• at 60 Hz	0.85 ... 1.1
Apparent pick-up power of magnet coil at AC	
• at 50 Hz	348 V·A
• at 60 Hz	296 V·A
Inductive power factor with closing power of the coil	
• at 50 Hz	0.62
• at 60 Hz	0.55
Apparent holding power of magnet coil at AC	

<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	25 V·A 18 V·A
Inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	0.35 0.41
Closing delay	
<ul style="list-style-type: none"> • at AC 	13 ... 50 ms
Opening delay	
<ul style="list-style-type: none"> • at AC 	10 ... 21 ms
Arcing time	10 ... 20 ms
Auxiliary circuit	
Number of NC contacts	
<ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — instantaneous contact 	1
Number of NO contacts	
<ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — instantaneous contact 	1
Operating current at AC-12 maximum	10 A
Operating current at AC-15	
<ul style="list-style-type: none"> • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value 	6 A 3 A 2 A 1 A
Operating current at DC-12	
<ul style="list-style-type: none"> • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value 	10 A 6 A 6 A 3 A 2 A 1 A 0.15 A
Operating current at DC-13	
<ul style="list-style-type: none"> • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value 	10 A 2 A 2 A 1 A 0.9 A 0.3 A 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	
<ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value 	<p>96 A</p> <p>77 A</p>
Yielded mechanical performance [hp]	
<ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value — at 230 V rated value • for three-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 	<p>10 hp</p> <p>20 hp</p> <p>30 hp</p> <p>30 hp</p> <p>75 hp</p> <p>75 hp</p>
Contact rating of auxiliary contacts according to UL	A600 / P600

Short-circuit protection

Design of the fuse link	
<ul style="list-style-type: none"> • for short-circuit protection of the main circuit <ul style="list-style-type: none"> — with type of coordination 1 required — with type of assignment 2 required • for short-circuit protection of the auxiliary switch required 	<p>gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 250 A</p> <p>gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 160 A</p> <p>fuse gG: 10 A</p>

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	140 mm
Width	70 mm
Depth	152 mm
Required spacing	
<ul style="list-style-type: none"> • with side-by-side mounting <ul style="list-style-type: none"> — forwards — Backwards — upwards — downwards — at the side • for grounded parts <ul style="list-style-type: none"> — forwards — Backwards — upwards 	<p>0 mm</p> <p>0 mm</p> <p>0 mm</p> <p>0 mm</p> <p>0 mm</p> <p>0 mm</p> <p>0 mm</p> <p>0 mm</p> <p>10 mm</p>

— 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 current circuit	screw-type terminals
Type of connectable conductor cross-sections	
• for main contacts	
— finely stranded with core end processing	2x (2.5 ... 35 mm ²), 1x (2.5 ... 50 mm ²)
• at AWG conductors for main contacts	2x (10 ... 1/0), 1x (10 ... 2)
Type of connectable conductor cross-sections	
• for auxiliary contacts	
— single or multi-stranded	2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²)
• at AWG conductors for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14)


Safety related data

B10 value	
• with high demand rate acc. to SN 31920	1 000 000
Proportion of dangerous failures	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	73 %
Product function	
• Mirror contact acc. to IEC 60947-4-1	Yes
• positively driven operation acc. to IEC 60947-5-1	No
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529

Certificates/approvals

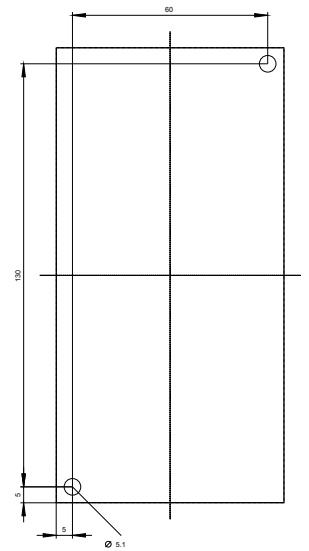
General Product Approval				Declaration of Conformity	Test Certificates
 CCC	 CSA	 UL		 EG-Konf.	Type Test Certificates/Test Report

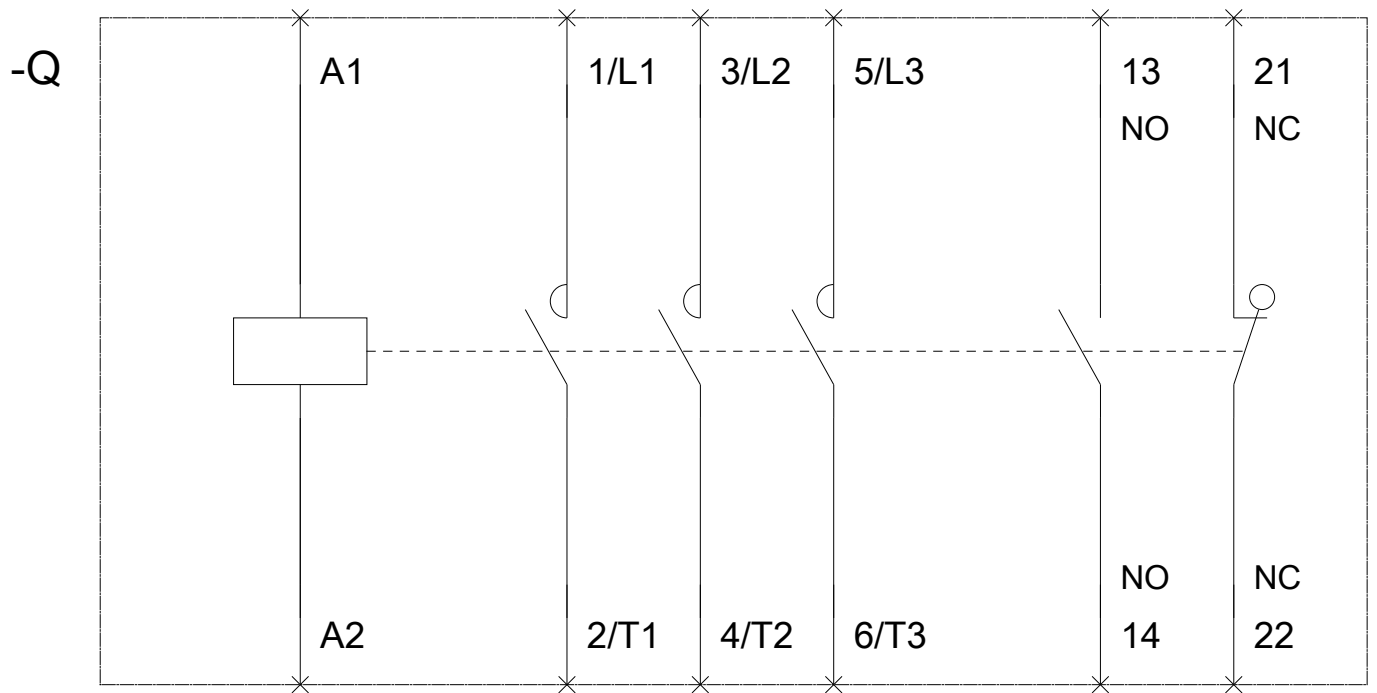
Test Certificates	Marine / Shipping				
Special Test Certificate	 ABS	 BUREAU VERITAS	 GL	 LRS	 RMRS

Marine / Shipping	other	Railway
 DNV-GL DNVGL.COM/AF	Confirmation	Vibration and Shock

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=3RT2046-1AL20>
- Cax online generator**
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2046-1AL20>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2046-1AL20>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2046-1AL20&lang=en





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