

Contactor AC3: 250 kW / 400 V Coil DC 110 V x (0,7...1,25) PLC
input DC 24...110 V auxiliary contacts: 2 NO + 2 NC 3-pole Size S12
busbar connections coil terminals: screw type



Figure similar

Product brand name	SIRIUS
Product designation	Power contactor
Product type designation	3RT1
General technical data	
Size of contactor	S12
Product extension	
• Auxiliary switch	Yes
Surge voltage resistance rated value	8 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	IP00; IP20 on the front with cover / box terminal
• of the terminal	IP00
Shock resistance	
• for railway applications acc. to DIN EN 61373	Category 1, Class B
Shock resistance at rectangular impulse	

<ul style="list-style-type: none"> • at DC 	8,5g / 5 ms, 4,2g / 10 ms
Shock resistance with sine pulse	
<ul style="list-style-type: none"> • at DC 	13,4g / 5 ms, 6,5g / 10 ms
Mechanical service life (switching cycles)	
<ul style="list-style-type: none"> • of contactor typical 	10 000 000
<ul style="list-style-type: none"> • of the contactor with added electronics-compatible auxiliary switch block typical 	5 000 000
<ul style="list-style-type: none"> • of the contactor with added auxiliary switch block typical 	10 000 000

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 	-40 ... +70 °C
<ul style="list-style-type: none"> • during storage 	-55 ... +80 °C

Main circuit

Number of poles for main current circuit	3
Number of NO contacts for main contacts	3
Number of NC contacts for main contacts	0
Operating voltage	
<ul style="list-style-type: none"> • at AC-3 rated value maximum 	1 000 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 	610 A
<ul style="list-style-type: none"> • at AC-1 <ul style="list-style-type: none"> — up to 690 V at ambient temperature 40 °C rated value 	610 A
<ul style="list-style-type: none"> — up to 690 V at ambient temperature 60 °C rated value 	550 A
<ul style="list-style-type: none"> • at AC-2 at 400 V rated value 	500 A
<ul style="list-style-type: none"> • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value 	500 A
<ul style="list-style-type: none"> — at 500 V rated value 	500 A
<ul style="list-style-type: none"> — at 690 V rated value 	450 A
Connectable conductor cross-section in main circuit at AC-1	
<ul style="list-style-type: none"> • at 60 °C minimum permissible 	370 mm ²
<ul style="list-style-type: none"> • at 40 °C minimum permissible 	370 mm ²
Operating current for approx. 200000 operating cycles at AC-4	
<ul style="list-style-type: none"> • at 400 V rated value 	175 A
<ul style="list-style-type: none"> • at 690 V rated value 	150 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 	<p>400 A</p> <p>33 A</p> <p>3.8 A</p> <p>0.9 A</p> <p>0.6 A</p> <p>400 A</p> <p>400 A</p> <p>400 A</p> <p>4 A</p> <p>2 A</p> <p>400 A</p> <p>400 A</p> <p>400 A</p> <p>11 A</p> <p>5.2 A</p>
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 	<p>400 A</p> <p>3 A</p> <p>0.6 A</p> <p>0.18 A</p> <p>0.125 A</p> <p>400 A</p> <p>400 A</p> <p>2.5 A</p> <p>0.65 A</p> <p>0.37 A</p> <p>400 A</p> <p>400 A</p> <p>400 A</p> <p>1.4 A</p> <p>0.75 A</p>
Operating power	
<ul style="list-style-type: none"> • at AC-1 <ul style="list-style-type: none"> — at 230 V at 60 °C rated value 	<p>208 kW</p>

— at 400 V rated value	362 kW
— at 400 V at 60 °C rated value	362 kW
— at 690 V rated value	624 kW
— at 690 V at 60 °C rated value	624 kW
• at AC-2 at 400 V rated value	250 kW
• at AC-3	
— at 230 V rated value	164 kW
— at 400 V rated value	250 kW
— at 500 V rated value	315 kW
— at 690 V rated value	400 kW
Operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	98 kW
• at 690 V rated value	148 kW
Thermal short-time current limited to 10 s	4 kA
Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor	55 W
No-load switching frequency	
• at DC	500 1/h
Operating frequency	
• at AC-1 maximum	500 1/h
• at AC-2 maximum	170 1/h
• at AC-3 maximum	420 1/h
• at AC-4 maximum	130 1/h
Operating frequency	
• at DC-1 maximum	250 1/s
• at DC-3 maximum	200 1/s
• at DC-5 maximum	200 1/s

Ratings for railway applications

Thermal current (I_{th}) up to 690 V	
• up to 40 °C according to IEC 60077 rated value	610 A
• up to 70 °C according to IEC 60077 rated value	475 A

Control circuit/ Control

Type of voltage of the control supply voltage	DC
Control supply voltage at DC	
• rated value	110 V
Operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.7
• Full-scale value	1.25
Design of the surge suppressor	with varistor
Closing power of magnet coil at DC	800 W

Holding power of magnet coil at DC	3.6 W
Closing delay	
• at DC	60 ... 90 ms
Opening delay	
• at DC	80 ... 100 ms
Arcing time	10 ... 15 ms
Control version of the switch operating mechanism	PLC-IN or Standard A1 - A2 (adjustable)

Auxiliary circuit

Number of NC contacts	
• for auxiliary contacts	
— instantaneous contact	2
Number of NO contacts	
• for auxiliary contacts	
— instantaneous contact	2
Operating current at AC-12 maximum	10 A
Operating 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
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	6 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	477 A
• at 600 V rated value	472 A
Yielded mechanical performance [hp]	

- for three-phase AC motor
 - at 200/208 V rated value 150 hp
 - at 220/230 V rated value 200 hp
 - at 460/480 V rated value 400 hp
 - at 575/600 V rated value 500 hp

Contact rating of auxiliary contacts according to UL A600 / Q600

Short-circuit protection

Design of the fuse link

- for short-circuit protection of the main circuit
 - with type of coordination 1 required Fuse gG: 630 A
 - with type of assignment 2 required Fuse gG: 500 A
- for short-circuit protection of the auxiliary switch required fuse gG: 10 A

Installation/ mounting/ dimensions

Mounting position with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back

Mounting type screw fixing

- Side-by-side mounting Yes

Height 214 mm

Width 160 mm

Depth 225 mm

Required spacing

- with side-by-side mounting
 - forwards 20 mm
 - Backwards 0 mm
 - upwards 10 mm
 - downwards 10 mm
 - at the side 10 mm
- for grounded parts
 - forwards 20 mm
 - Backwards 0 mm
 - upwards 10 mm
 - at the side 10 mm
 - downwards 10 mm
- for live parts
 - forwards 10 mm
 - Backwards 0 mm
 - upwards 10 mm
 - downwards 10 mm
 - at the side 10 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"> — stranded — single or multi-stranded • at AWG conductors for main contacts 	2x (70 ... 240 mm ²) 2x (70 ... 240 mm ²) 2/0 ... 500 kcmil
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), max. 2x (0,75 ... 4 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14), 1x 12

Safety related data

Product function <ul style="list-style-type: none"> • Mirror contact acc. to IEC 60947-4-1 • positively driven operation acc. to IEC 60947-5-1 	Yes No
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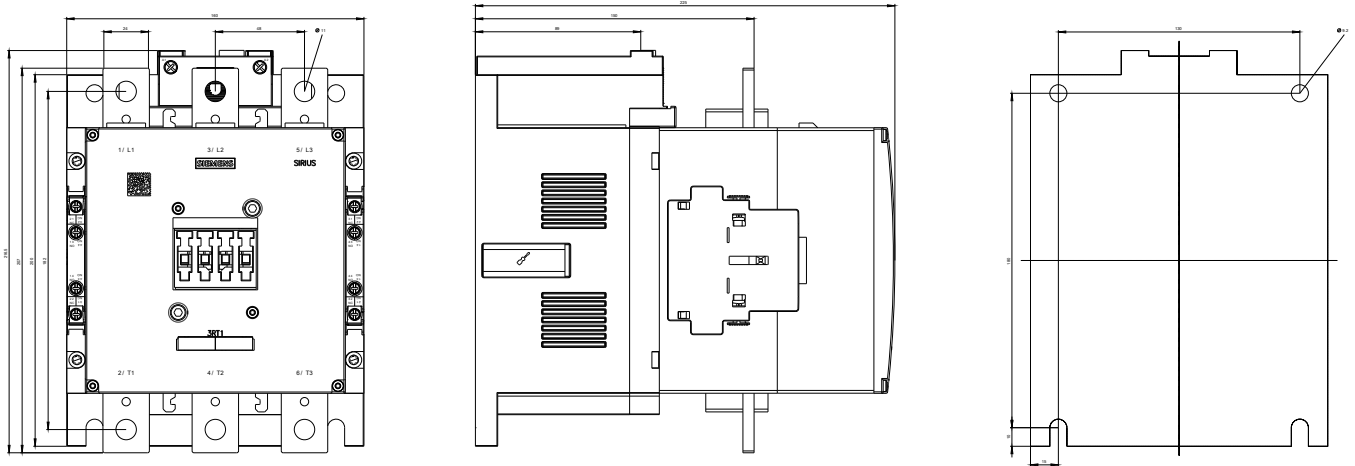
Certificates/approvals

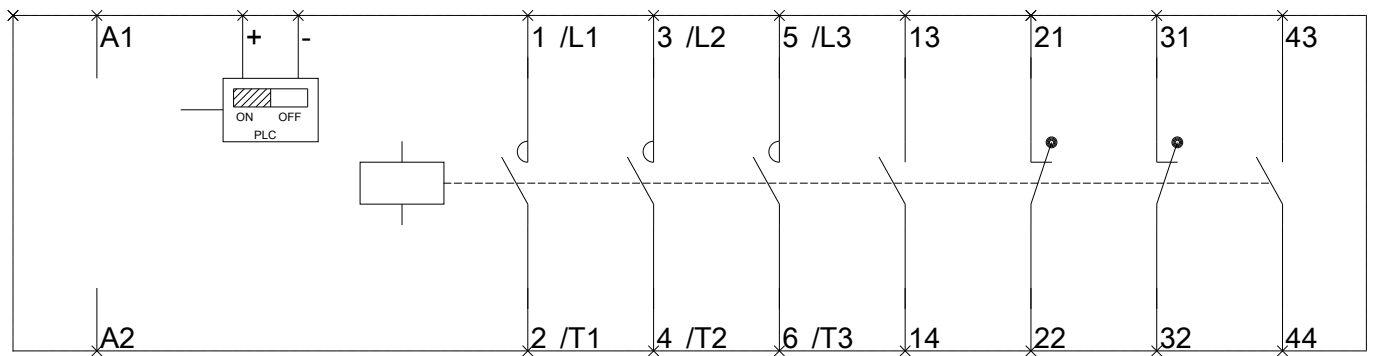
General Product Approval	Functional Safety/Safety of Machinery	Declaration of Conformity
 CCC  CSA  UL  EAC	Type Examination Certificate	 EG-Konf.

Test Certificates	Marine / Shipping	other	Railway
Special Test Certificate	 DNV-GL <small>DNVGL.COM/AF</small>	Confirmation	Confirmation
		Miscellaneous	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=3RT1076-6XF46-0LA2>
- Cax online generator**
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1076-6XF46-0LA2>
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<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-6XF46-0LA2>





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