

Contactor, AC-1, 690 A/690 V/40 °C, S12, 3-pole, 42-48 V AC/DC, with varistor, 2 NO+2 NC, Connection rail/ screw terminal



product brand name	SIRIUS
Product designation	Contactor
Product type designation	3RT14
General technical data	
Size of contactor	S12
Product extension	
<ul style="list-style-type: none"> • function module for communication 	No
<ul style="list-style-type: none"> • Auxiliary switch 	Yes
<ul style="list-style-type: none"> • Insulation voltage of main circuit with degree of pollution 3 rated value 	1 000 V
<ul style="list-style-type: none"> • Insulation voltage of auxiliary circuit with degree of pollution 3 rated value 	690 V
Surge voltage resistance	
<ul style="list-style-type: none"> • of main circuit rated value 	8 kV
<ul style="list-style-type: none"> • of auxiliary circuit rated value 	6 kV
<ul style="list-style-type: none"> • protection class IP on the front 	IP00; IP20 on the front with cover / box terminal
<ul style="list-style-type: none"> • Protection class IP of the terminal 	IP00
Shock resistance at rectangular impulse	
<ul style="list-style-type: none"> • at AC 	8,5g / 5 ms, 4,2g / 10 ms

<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 AC 	13,4g / 5 ms, 6,5g / 10 ms
<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
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
<ul style="list-style-type: none"> • during storage 	-55 ... +80 °C
Relative humidity during operation	0 ... 95 %

Main circuit

Number of poles for main current circuit	3
Number of NO contacts for main contacts	3
Type of voltage for main current circuit	AC
Operating voltage	
<ul style="list-style-type: none"> • at AC <ul style="list-style-type: none"> — at 50 Hz rated value — at 60 Hz rated value 	48 V 48 V
Operating current	
<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 — up to 690 V at ambient temperature 55 °C rated value — up to 690 V at ambient temperature 60 °C rated value • at AC-3 at 400 V rated value 	690 A 650 A 650 A 170 A
Minimum cross-section in main circuit	
<ul style="list-style-type: none"> • at maximum AC-1 rated value 	480 mm ²
No-load switching frequency	
<ul style="list-style-type: none"> • at AC • at DC 	2 000 1/h 2 000 1/h
Operating frequency	
<ul style="list-style-type: none"> • at AC-1 maximum 	600 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	42 ... 48 V
• at 60 Hz rated value	42 ... 48 V
Control supply voltage at DC	
• rated value	42 ... 48 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
Apparent pick-up power of magnet coil at AC	
• at 50 Hz	830 V·A
Inductive power factor with closing power of the coil	
• at 50 Hz	0.9
Apparent holding power of magnet coil at AC	
• at 50 Hz	9.2 V·A
Inductive power factor with the holding power of the coil	
• at 50 Hz	0.9
Closing power of magnet coil at DC	920 W
Holding power of magnet coil at DC	10 W
Closing delay	
• at AC	45 ... 100 ms
• at DC	45 ... 100 ms
Opening delay	
• at AC	60 ... 100 ms
• at DC	60 ... 100 ms
Arcing time	10 ... 15 ms
Control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
Number of NC contacts for auxiliary contacts	2
• attachable	4
• instantaneous contact	2
Number of NO contacts for auxiliary contacts	2
• attachable	4

• 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
• at 690 V rated value	1 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
Design of the miniature circuit breaker	
• for short-circuit protection of the auxiliary switch required	gG: 10 A (230 V, 400 A)
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)

Short-circuit protection

Product function Short circuit protection	No
Design of the fuse link	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 800 A (690 V, 50 kA)
— with type of assignment 2 required	gR: 710 A (690 V, 100 kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)

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
— 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

Connections/ Terminals




Width of connection bar	25 mm
Thickness of connection bar	6 mm
Diameter of holes	11 mm
Number of holes	1
<ul style="list-style-type: none"> • Type of electrical connection for main current circuit • Type of electrical connection for auxiliary and control current circuit • Type of electrical connection at contactor for auxiliary contacts • Type of electrical connection of magnet coil 	<p>Connection bar</p> <p>screw-type terminals</p> <p>Screw-type terminals</p> <p>Screw-type terminals</p>
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • at AWG conductors for main contacts 	2/0 ... 500 kcmil
Connectable conductor cross-section for main contacts	
<ul style="list-style-type: none"> • single or multi-stranded • stranded 	<p>70 ... 240 mm²</p> <p>70 ... 240 mm²</p>
Connectable conductor cross-section for auxiliary contacts	
<ul style="list-style-type: none"> • single or multi-stranded • finely stranded with core end processing 	<p>0.5 ... 4 mm²</p> <p>0.5 ... 2.5 mm²</p>
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid — single or multi-stranded — finely stranded with core end processing • at AWG conductors for auxiliary contacts 	<p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²)</p> <p>2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), max. 2x (0,75 ... 4 mm²)</p> <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (20 ... 16), 2x (18 ... 14), 1x 12</p>


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 	<p>Yes</p> <p>No</p>

Certificates/ approvals

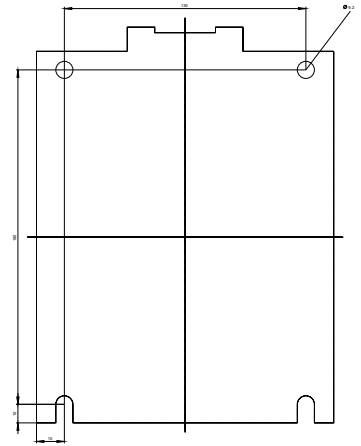
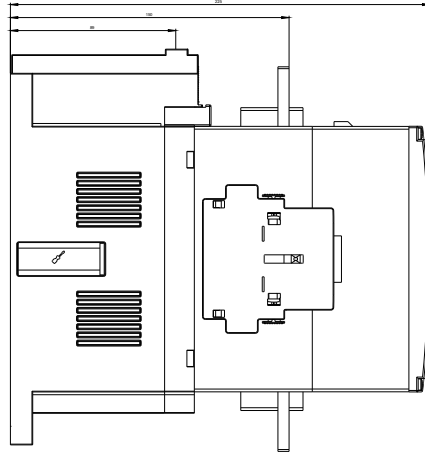
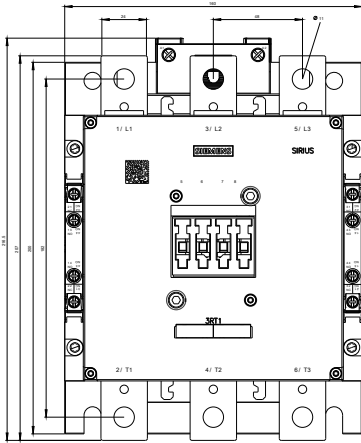
General Product Approval				EMC	Functional Safety/Safety of Machinery
					Type Examination Certificate
CCC	CSA	UL		RCM	

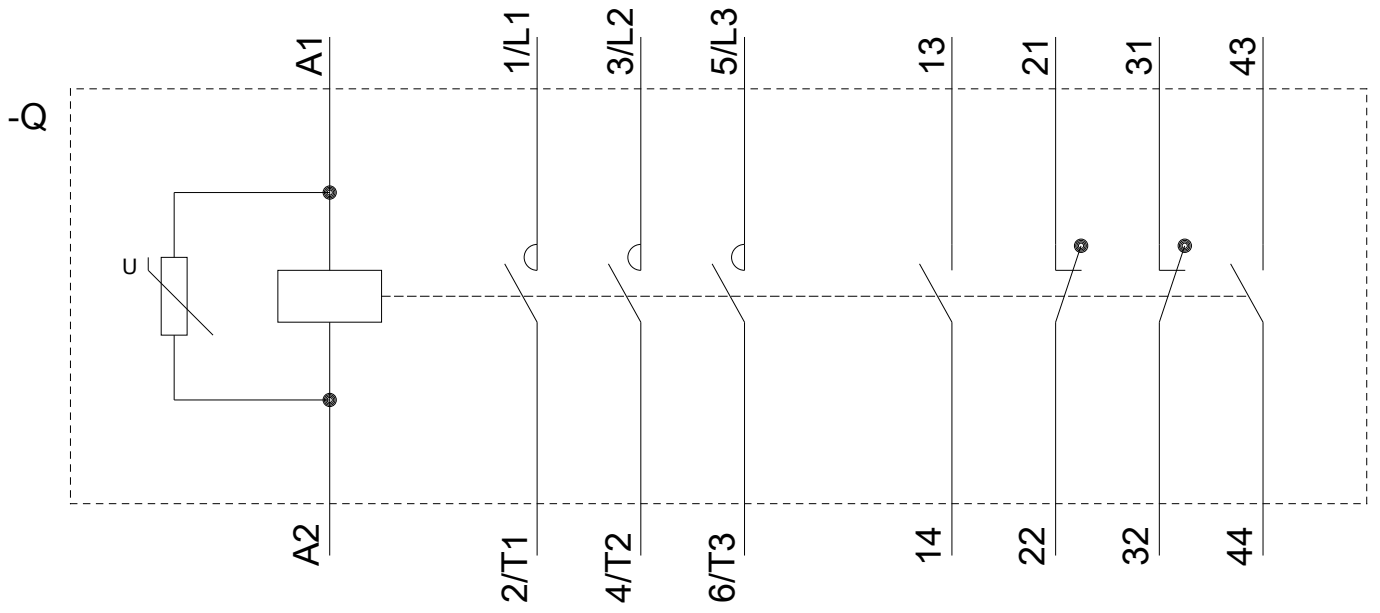
Declaration of Conformity	Test Certificates		Marine / Shipping		
	Miscellaneous	Special Test Certificate	Type Test Certificates/Test Report		
EG-Konf.				ABS	RMRS

Marine / Shipping	other	Railway	
	Confirmation	Miscellaneous	Special Test Certificate
DNV-GL DNVGL.COM/AF			

Further information

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last modified:

08/13/2020