



power contactor AC-1 275 A / 690 V / 40 °C 3-pole, U<sub>c</sub>: 21-27.3 V AC(50-60 Hz) / DC PLC input 24 V DC drive: electronic auxiliary contacts 2 NO + 2 NC main circuit: busbar control and auxiliary circuit: screw terminal

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Contacteur
<b>product type designation</b>	3RT14
<b>General technical data</b>	
<b>size of contactor</b>	S6
<b>product extension</b>	
• function module for communication	No
• auxiliary switch	Yes
<b>power loss [W] for rated value of the current</b>	
• at AC in hot operating state	86.4 W
• at AC in hot operating state per pole	28.8 W
• without load current share typical	2.8 W
<b>type of calculation of power loss depending on pole</b>	quadratic
<b>insulation voltage</b>	
• of main circuit with degree of pollution 3 rated value	1 000 V
• of auxiliary circuit with degree of pollution 3 rated value	500 V
<b>surge voltage resistance</b>	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
<b>shock resistance at rectangular impulse</b>	
• at AC	8,5g / 5 ms, 4,2g / 10 ms
• at DC	8,5g / 5 ms, 4,2g / 10 ms
<b>shock resistance with sine pulse</b>	
• at AC	13,4g / 5 ms, 6,5g / 10 ms
• at DC	13,4g / 5 ms, 6,5g / 10 ms
<b>mechanical service life (operating cycles)</b>	
• 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
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (Date)</b>	05/01/2012
<b>SVHC substance name</b>	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
<b>Weight</b>	3.402 kg
<b>Ambient conditions</b>	
<b>installation altitude at height above sea level maximum</b>	2 000 m
<b>ambient temperature</b>	
• during operation	-25 ... +55 °C
• during storage	-55 ... +80 °C
<b>relative humidity minimum</b>	10 %

relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
<b>Main circuit</b>	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
number of NC contacts for main contacts	0
type of voltage for main current circuit	AC
<b>operational current</b>	
<ul style="list-style-type: none"> <li>● at AC-1 <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 40 °C rated value</li> <li>— up to 690 V at ambient temperature 55 °C rated value</li> <li>— up to 690 V at ambient temperature 60 °C rated value</li> </ul> </li> <li>● at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul>	275 A 250 A 250 A 97 A 97 A
minimum cross-section in main circuit at maximum AC-1 rated value	140 mm <sup>2</sup>
<b>operational current</b>	
<ul style="list-style-type: none"> <li>● at 1 current path at DC-1 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>● with 2 current paths in series at DC-1 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>● with 3 current paths in series at DC-1 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>● at 1 current path at DC-3 at DC-5 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>● with 2 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>● with 3 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 60 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> </ul> </li> </ul>	250 A 250 A 18 A 3.4 A 0.8 A 0.5 A 250 A 250 A 250 A 20 A 3.2 A 1.6 A 250 A 250 A 250 A 250 A 11.5 A 4 A 250 A 7.5 A 2.5 A 0.6 A 0.17 A 0.12 A 250 A 250 A 250 A 2.5 A 0.65 A 0.37 A 250 A 250 A 250 A 250 A 1.4 A

— at 600 V rated value	0.75 A
<b>no-load switching frequency</b>	
• at AC	1 000 1/h
• at DC	1 000 1/h
operating frequency at AC-1 maximum	600 1/h
<b>Control circuit/ Control</b>	
<b>type of voltage</b>	AC/DC
<b>type of voltage of the control supply voltage</b>	AC/DC
<b>control supply voltage at AC</b>	
• at 50 Hz rated value	21 ... 27.3 V
• at 60 Hz rated value	21 ... 27.3 V
<b>control supply voltage at DC rated value</b>	21 ... 27.3 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value	0.8
• full-scale value	1.1
<b>operating range factor control supply voltage rated value of magnet coil at AC</b>	
• at 50 Hz	0.8 ... 1.1
• at 60 Hz	0.8 ... 1.1
<b>type of PLC-control input according to IEC 60947-1</b>	Type 2
<b>consumed current at PLC-control input according to IEC 60947-1 maximum</b>	20 mA
<b>design of the surge suppressor</b>	with varistor
<b>apparent pick-up power</b>	
• at minimum rated control supply voltage at AC	
— at 50 Hz	190 VA
— at 60 Hz	190 VA
• at maximum rated control supply voltage at AC	
— at 60 Hz	280 VA
— at 50 Hz	280 VA
<b>apparent pick-up power of magnet coil at AC</b>	
• at 50 Hz	280 VA
<b>inductive power factor with closing power of the coil</b>	
• at 50 Hz	0.8
<b>apparent holding power</b>	
• at minimum rated control supply voltage at DC	2.1 VA
• at maximum rated control supply voltage at DC	2.8 VA
<b>apparent holding power</b>	
• at minimum rated control supply voltage at AC	
— at 50 Hz	4.3 VA
— at 60 Hz	4.3 VA
• at maximum rated control supply voltage at AC	
— at 50 Hz	5.2 VA
— at 60 Hz	5.2 VA
<b>apparent holding power of magnet coil at AC</b>	
• at 50 Hz	4.4 VA
<b>inductive power factor with the holding power of the coil</b>	
• at 50 Hz	0.5
<b>closing power of magnet coil at DC</b>	320 W
<b>holding power of magnet coil at DC</b>	2.8 W
<b>closing delay</b>	
• at AC	35 ... 75 ms
• at DC	35 ... 75 ms
<b>opening delay</b>	
• at AC	80 ... 90 ms
• at DC	80 ... 90 ms
<b>arcing time</b>	10 ... 15 ms
<b>control version of the switch operating mechanism</b>	PLC-IN or Standard A1 - A2 (adjustable)
<b>Auxiliary circuit</b>	
<b>number of NC contacts for auxiliary contacts</b>	2

<ul style="list-style-type: none"> <li>• attachable</li> </ul>	4
<ul style="list-style-type: none"> <li>• instantaneous contact</li> </ul>	2
<b>number of NO contacts for auxiliary contacts</b>	2
<ul style="list-style-type: none"> <li>• attachable</li> </ul>	4
<ul style="list-style-type: none"> <li>• instantaneous contact</li> </ul>	2
operational current at AC-12 maximum	10 A
<b>operational current at AC-15</b>	
<ul style="list-style-type: none"> <li>• at 230 V rated value</li> </ul>	6 A
<ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>	3 A
<ul style="list-style-type: none"> <li>• at 500 V rated value</li> </ul>	2 A
<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	1 A
<b>operational current at DC-13</b>	
<ul style="list-style-type: none"> <li>• at 24 V rated value</li> </ul>	10 A
<ul style="list-style-type: none"> <li>• at 48 V rated value</li> </ul>	2 A
<ul style="list-style-type: none"> <li>• at 60 V rated value</li> </ul>	2 A
<ul style="list-style-type: none"> <li>• at 110 V rated value</li> </ul>	1 A
<ul style="list-style-type: none"> <li>• at 125 V rated value</li> </ul>	0.9 A
<ul style="list-style-type: none"> <li>• at 220 V rated value</li> </ul>	0.3 A
<ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>	0.1 A
<b>contact reliability of auxiliary contacts</b>	1 faulty switching per 100 million (17 V, 1 mA)
<b>Short-circuit protection</b>	
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
<b>design of the fuse link</b>	
<ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> <li>— with type of coordination 2 required</li> </ul> </li> </ul>	gG: 355 A (690 V, 100 kA) gR: 350 A (690 V, 100 kA)
<ul style="list-style-type: none"> <li>• for short-circuit protection of the auxiliary switch required</li> </ul>	gG: 10 A (500 V, 1 kA)
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
fastening method side-by-side mounting	Yes
<b>fastening method</b>	screw fixing
<b>height</b>	172 mm
<b>width</b>	120 mm
<b>depth</b>	170 mm
<b>required spacing</b>	
<ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul>	20 mm 10 mm 10 mm 0 mm
<ul style="list-style-type: none"> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> </ul>	20 mm 10 mm 10 mm 10 mm
<ul style="list-style-type: none"> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul>	20 mm 10 mm 10 mm 10 mm
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> </ul>	Connection bar
<ul style="list-style-type: none"> <li>• for auxiliary and control circuit</li> </ul>	screw-type terminals
<ul style="list-style-type: none"> <li>• at contactor for auxiliary contacts</li> </ul>	Screw-type terminals
<ul style="list-style-type: none"> <li>• of magnet coil</li> </ul>	Screw-type terminals
<b>width of connection bar</b>	17 mm
<b>thickness of connection bar</b>	3 mm
<b>diameter of holes</b>	9 mm

<b>number of holes</b>	1
<b>type of connectable conductor cross-sections</b> • for AWG cables for main contacts	4 ... 250 kcmil
<b>connectable conductor cross-section for main contacts</b> • solid or stranded • stranded	25 ... 120 mm <sup>2</sup> 25 ... 120 mm <sup>2</sup>
<b>connectable conductor cross-section for auxiliary contacts</b> • solid or stranded • finely stranded with core end processing	0.5 ... 4 mm <sup>2</sup> 0.5 ... 2.5 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b> • for auxiliary contacts — solid — solid or stranded — finely stranded with core end processing • for AWG cables for auxiliary contacts	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), max. 2x (0.75 ... 4 mm <sup>2</sup> ) 2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> ), max. 2x (0,75 ... 4 mm <sup>2</sup> ) 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) 2x (20 ... 16), 2x (18 ... 14), 1x 12
<b>AWG number as coded connectable conductor cross section for auxiliary contacts</b>	18 ... 14

#### Safety related data

<b>product function</b> • mirror contact according to IEC 60947-4-1 • positively driven operation according to IEC 60947-5-1	Yes No
suitability for use safety-related switching OFF	No
<b>service life maximum</b>	20 a

#### Electrical Safety

<b>protection class IP on the front according to IEC 60529</b>	IP00; IP20 with box terminal/cover
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front with box terminal/cover

#### Approvals Certificates

##### General Product Approval



KC



EMV	Functional Safety	Test Certificates	Maritime application
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[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Maritime application	other
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[Confirmation](#)

[Confirmation](#)

other	Railway	Environment
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[Miscellaneous](#)

[Special Test Certificate](#)

[Environmental Conformations](#)

#### 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,...)  
<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT1456-6NB36>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1456-6NB36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6NB36>

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

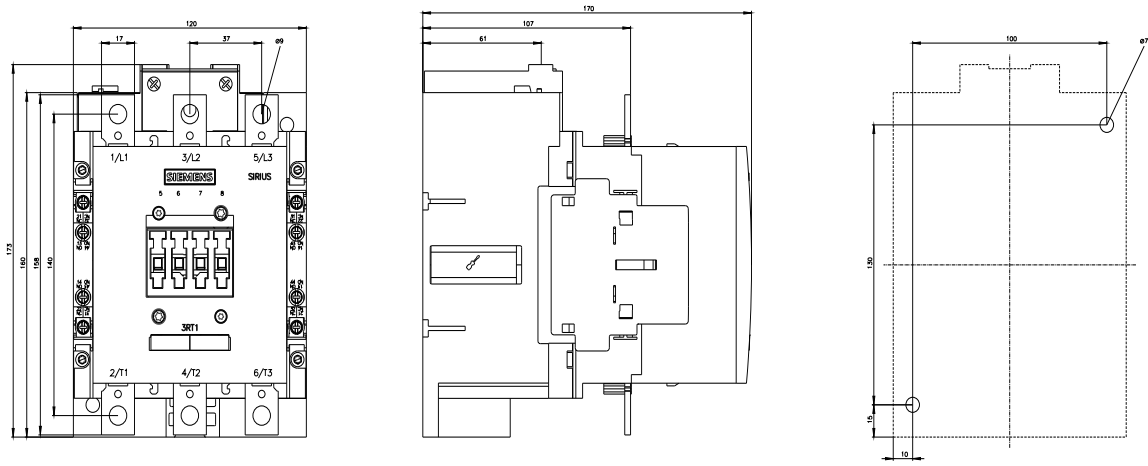
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1456-6NB36&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1456-6NB36&lang=en)

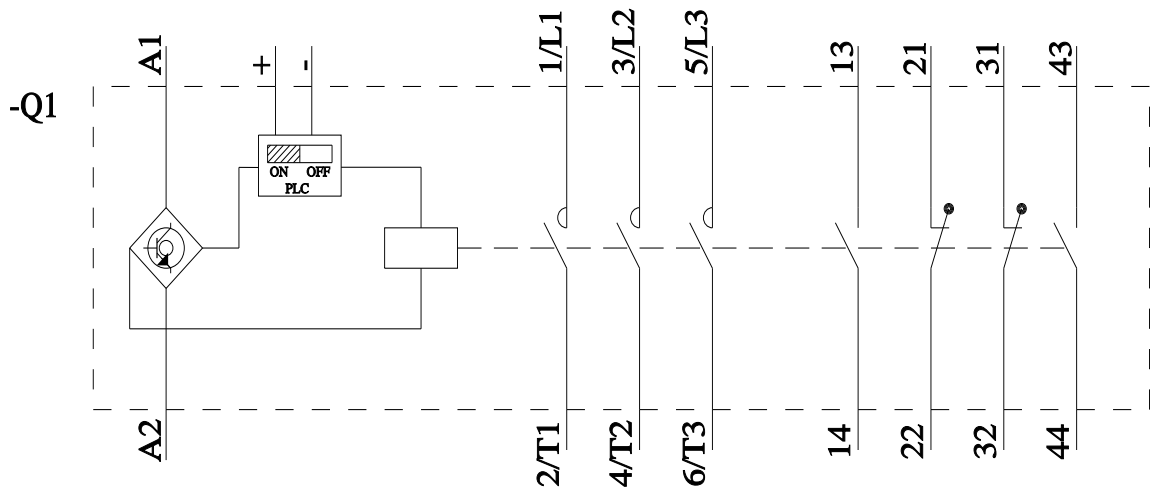
Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6NB36/char>

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

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1456-6NB36&objecttype=14&gridview=view1>





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