



power contactor, AC-3e/AC-3 115 A, 55 kW / 400 V, AC (50-60 Hz) / DC  
Uc: 575-600 V 3-pole, auxiliary contacts 2 NO + 2 NC drive: conventional  
main circuit: busbar control and auxiliary circuit: screw terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT1
<b>General technical data</b>	
size of contactor	S6
product extension	
• function module for communication	No
• auxiliary switch	Yes
power loss [W] for rated value of the current	
• at AC in hot operating state	21 W
• at AC in hot operating state per pole	7 W
• without load current share typical	5.2 W
insulation voltage	
• 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
surge voltage resistance	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1	690 V
shock resistance at rectangular impulse	
• at AC	8,5g / 5 ms, 4,2g / 10 ms
• at DC	8,5g / 5 ms, 4,2g / 10 ms
shock resistance with sine pulse	
• at AC	13,4g / 5 ms, 6,5g / 10 ms
• at DC	13,4g / 5 ms, 6,5g / 10 ms
mechanical service life (operating cycles)	
• 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
reference code according to IEC 81346-2	Q
Substance Prohibition (Date)	05/01/2012
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %

<b>Main circuit</b>	
<b>number of poles for main current circuit</b>	3
<b>number of NO contacts for main contacts</b>	3
<b>operating voltage</b>	
• at AC-3 rated value maximum	1 000 V
• at AC-3e rated value maximum	1 000 V
<b>operational current</b>	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	160 A
— up to 690 V at ambient temperature 40 °C rated value	160 A
— up to 690 V at ambient temperature 60 °C rated value	140 A
— up to 1000 V at ambient temperature 40 °C rated value	80 A
— up to 1000 V at ambient temperature 60 °C rated value	80 A
• at AC-3	
— at 400 V rated value	115 A
— at 500 V rated value	115 A
— at 690 V rated value	115 A
— at 1000 V rated value	53 A
• at AC-3e	
— at 400 V rated value	115 A
— at 500 V rated value	115 A
— at 690 V rated value	115 A
— at 1000 V rated value	53 A
• at AC-4 at 400 V rated value	97 A
• at AC-5a up to 690 V rated value	140 A
• at AC-5b up to 400 V rated value	95 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	115 A
— up to 400 V for current peak value n=20 rated value	115 A
— up to 500 V for current peak value n=20 rated value	115 A
— up to 690 V for current peak value n=20 rated value	115 A
— up to 1000 V for current peak value n=20 rated value	53 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	98 A
— up to 400 V for current peak value n=30 rated value	98 A
— up to 500 V for current peak value n=30 rated value	98 A
— up to 690 V for current peak value n=30 rated value	98 A
— up to 1000 V for current peak value n=30 rated value	53 A
minimum cross-section in main circuit at maximum AC-1 rated value	70 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	54 A
• at 690 V rated value	48 A
<b>operational current</b>	
• <b>at 1 current path at DC-1</b>	
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	18 A
— at 220 V rated value	3.4 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.5 A

• with 2 current paths in series at DC-1	— at 24 V rated value	160 A
	— at 60 V rated value	160 A
	— at 110 V rated value	160 A
	— at 220 V rated value	20 A
	— at 440 V rated value	3.2 A
	— at 600 V rated value	1.6 A
• with 3 current paths in series at DC-1	— at 24 V rated value	160 A
	— at 60 V rated value	160 A
	— at 110 V rated value	160 A
	— at 220 V rated value	160 A
	— at 440 V rated value	11.5 A
	— at 600 V rated value	4 A
• at 1 current path at DC-3 at DC-5	— at 24 V rated value	160 A
	— at 60 V rated value	7.5 A
	— at 220 V rated value	0.6 A
	— at 440 V rated value	0.17 A
	— at 600 V rated value	0.12 A
• with 2 current paths in series at DC-3 at DC-5	— at 24 V rated value	160 A
	— at 60 V rated value	160 A
	— at 110 V rated value	160 A
	— at 220 V rated value	2.5 A
	— at 440 V rated value	0.65 A
	— at 600 V rated value	0.37 A
• with 3 current paths in series at DC-3 at DC-5	— at 24 V rated value	160 A
	— at 60 V rated value	160 A
	— at 110 V rated value	160 A
	— at 220 V rated value	160 A
	— at 440 V rated value	1.4 A
	— at 600 V rated value	0.75 A
<b>operating power</b>		
• at AC-3	— at 230 V rated value	37 kW
	— at 400 V rated value	55 kW
	— at 500 V rated value	75 kW
	— at 690 V rated value	110 kW
	— at 1000 V rated value	75 kW
• at AC-3e	— at 230 V rated value	37 kW
	— at 400 V rated value	55 kW
	— at 500 V rated value	75 kW
	— at 690 V rated value	110 kW
	— at 1000 V rated value	75 kW
<b>operating power for approx. 200000 operating cycles at AC-4</b>		
• at 400 V rated value		29 kW
• at 690 V rated value		48 kW
<b>operating apparent power at AC-6a</b>		
• up to 230 V for current peak value n=20 rated value		40 000 kVA
• up to 400 V for current peak value n=20 rated value		80 000 VA
• up to 500 V for current peak value n=20 rated value		100 000 VA
• up to 690 V for current peak value n=20 rated value		130 000 VA
• up to 1000 V for current peak value n=20 rated value		90 000 VA
<b>operating apparent power at AC-6a</b>		
• up to 230 V for current peak value n=30 rated value		30 000 VA
• up to 400 V for current peak value n=30 rated value		60 000 VA
• up to 500 V for current peak value n=30 rated value		80 000 VA
• up to 690 V for current peak value n=30 rated value		110 000 VA
• up to 1000 V for current peak value n=30 rated value		90 000 VA

**short-time withstand current in cold operating state up to 40 °C**

- limited to 1 s switching at zero current maximum
- limited to 5 s switching at zero current maximum
- limited to 10 s switching at zero current maximum
- limited to 30 s switching at zero current maximum
- limited to 60 s switching at zero current maximum

**no-load switching frequency**

- at AC
- at DC

**operating frequency**

- at AC-1 maximum
- at AC-2 maximum
- at AC-3 maximum
- at AC-3e maximum
- at AC-4 maximum

2 565 A; Use minimum cross-section acc. to AC-1 rated value  
 1 654 A; Use minimum cross-section acc. to AC-1 rated value  
 1 170 A; Use minimum cross-section acc. to AC-1 rated value  
 729 A; Use minimum cross-section acc. to AC-1 rated value  
 572 A; Use minimum cross-section acc. to AC-1 rated value

2 000 1/h  
 2 000 1/h

800 1/h  
 400 1/h  
 1 000 1/h  
 1 000 1/h  
 130 1/h

**Control circuit/ Control**

**type of voltage of the control supply voltage**

AC/DC

**control supply voltage at AC**

- at 50 Hz rated value
- at 60 Hz rated value

575 ... 600 V  
 575 ... 600 V

**control supply voltage at DC**

- rated value

575 ... 600 V

**operating range factor control supply voltage rated value of magnet coil at DC**

- initial value
- full-scale value

0.8

1.1

**operating range factor control supply voltage rated value of magnet coil at AC**

- at 50 Hz
- at 60 Hz

0.8 ... 1.1  
 0.8 ... 1.1

**design of the surge suppressor**

**apparent pick-up power of magnet coil at AC**

- at 50 Hz
- at 60 Hz

300 VA  
 300 VA

**inductive power factor with closing power of the coil**

- at 50 Hz
- at 60 Hz

0.9

0.9

**apparent holding power of magnet coil at AC**

- at 50 Hz
- at 60 Hz

5.8 VA  
 5.8 VA

**inductive power factor with the holding power of the coil**

- at 50 Hz
- at 60 Hz

0.8

0.8

**closing power of magnet coil at DC**

360 W

**holding power of magnet coil at DC**

5.2 W

**closing delay**

- at AC
- at DC

20 ... 95 ms  
 20 ... 95 ms

**opening delay**

- at AC
- at DC

40 ... 60 ms  
 40 ... 60 ms

**arcning time**

10 ... 15 ms

**control version of the switch operating mechanism**

Standard A1 - A2

**Auxiliary circuit**

**number of NC contacts for auxiliary contacts instantaneous contact**

2

**number of NO contacts for auxiliary contacts instantaneous contact**

2

**operational current at AC-12 maximum**

10 A

**operational current at AC-15**

- at 230 V rated value
- at 400 V rated value
- at 500 V rated value

6 A

3 A

2 A

• at 690 V rated value	1 A
<b>operational current at DC-12</b>	
• 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
<b>operational current at DC-13</b>	
• 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
<b>contact reliability of auxiliary contacts</b>	
	1 faulty switching per 100 million (17 V, 1 mA)

#### UL/CSA ratings

<b>full-load current (FLA) for 3-phase AC motor</b>	
• at 480 V rated value	124 A
• at 600 V rated value	125 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 230 V rated value	25 hp
• for 3-phase AC motor	
— at 200/208 V rated value	40 hp
— at 220/230 V rated value	50 hp
— at 460/480 V rated value	100 hp
— at 575/600 V rated value	125 hp
<b>contact rating of auxiliary contacts according to UL</b>	A600 / Q600

#### Short-circuit protection

<b>design of the fuse link</b>	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 355 A (690 V, 100 kA)
— with type of assignment 2 required	gG: 250 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 250 A (415 V, 50 kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)

#### Installation/ mounting/ dimensions

<b>mounting position</b>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
<b>fastening method</b>	screw fixing
• side-by-side mounting	Yes
<b>height</b>	172 mm
<b>width</b>	120 mm
<b>depth</b>	170 mm
<b>required spacing</b>	
• 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

<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> <li>• at contactor for auxiliary contacts</li> <li>• of magnet coil</li> </ul>	Connection bar screw-type terminals Screw-type terminals 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>connectable conductor cross-section for main contacts</b>	25 ... 120 mm <sup>2</sup>
<b>connectable conductor cross-section for auxiliary contacts</b>	0.5 ... 4 mm <sup>2</sup> 0.5 ... 2.5 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for auxiliary contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG cables for auxiliary contacts</li> </ul>	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</b>	18 ... 14

<b>Safety related data</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>• mirror contact according to IEC 60947-4-1</li> <li>• positively driven operation according to IEC 60947-5-1</li> </ul>	Yes No
B10 value with high demand rate according to SN 31920	1 000 000
T1 value for proof test interval or service life according to IEC 61508	20 a
<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
<b>suitability for use</b>	
<ul style="list-style-type: none"> <li>• safety-related switching OFF</li> </ul>	Yes

<b>Certificates/ approvals</b>	
General Product Approval	



[Confirmation](#)



[KC](#)



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



EG-Konf.



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

Marine / Shipping	other
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other

## Railway

## Miscellaneous

## Confirmation

## Miscellaneous

## Special Test Certificate

## Vibration and Shock

## Further information

## Information on the packaging

[Information on the packaging](https://support.industry.siemens.com/cs/ww/en/view/109813875)

[Information- and Downloadcenter \(Catalogs, Brochures, ...\)](https://support.industry.siemens.com/cs/www/en/view/100010073)

<https://www.siemens.com>

<https://www.siemens.com/cto>  
**Industry Mall (Online ordering system)**

Industry Mall (Online)  
<https://mall.industry.sie>

<https://mms.mitsubishi-electric.com/mms/mitsubishi-catalog/product.html?MID=0011001000000000>

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en>

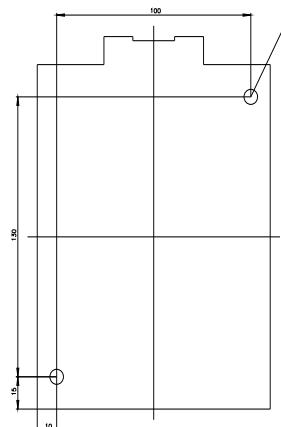
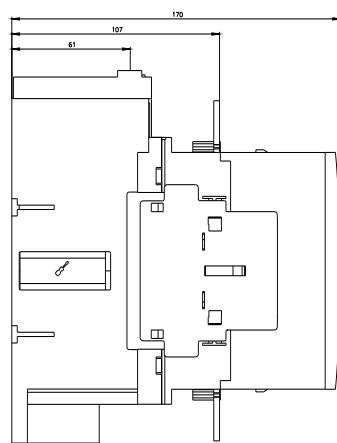
Service&Support (Manuals, Certificates, Characteristics, FAQs....)

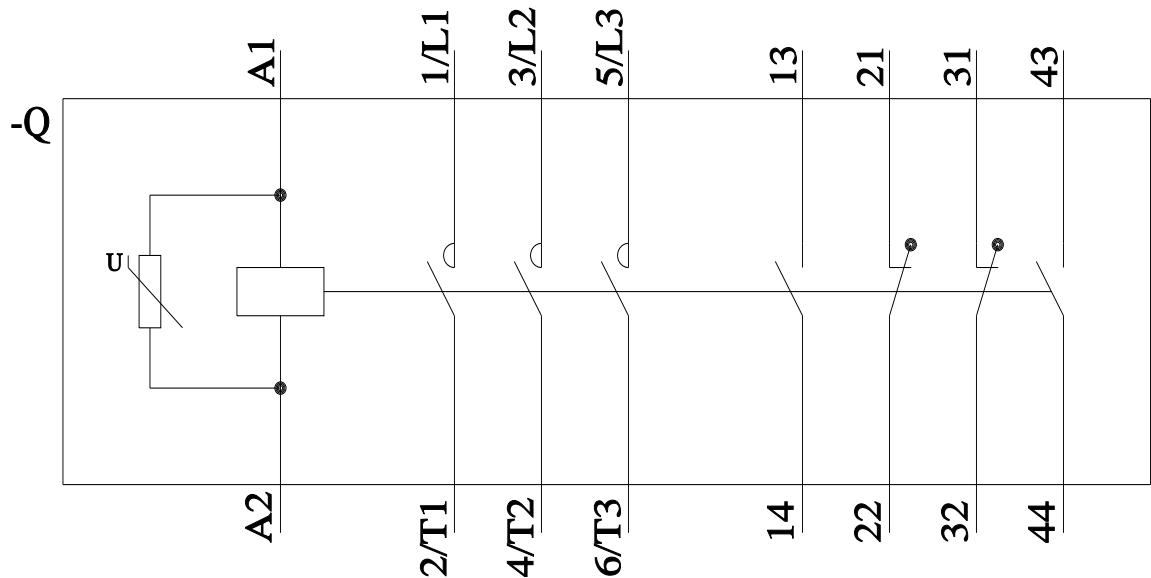
<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-6AT36>

<https://support.industry.silicones.com/ccc/www.cmp.sil.com/ccc>

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT)

<http://www.electronics-tutorials.ws/characteristics/let-through-current.html>





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