



power contactor, AC-3e/AC-3, 51 A, 22 kW / 400 V, 3-pole, 20-33 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 2 NO + 2 NC, main circuit: screw terminal, control and auxiliary circuit: spring-loaded terminal, size: S2, captive auxiliary switch

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
<b>General technical data</b>	
size of contactor	S2
product extension	
• function module for communication	No
• auxiliary switch	No
power loss [W] for rated value of the current	
• at AC in hot operating state	12 W
• at AC in hot operating state per pole	4 W
• without load current share typical	1 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
• of main circuit with degree of pollution 3 rated value	690 V
• of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
• of main circuit rated value	6 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	6.1g / 5 ms, 3.7g / 10 ms
• at DC	6.1g / 5 ms, 3.7g / 10 ms
shock resistance with sine pulse	
• at AC	9.6g / 5 ms, 5.8g / 10 ms
• at DC	9.6g / 5 ms, 5.8g / 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 Prohibitance (Date)	10/01/2014
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 Melamine - 108-78-1 2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol (UV-329) - 3147-75-9
Weight	1.21 kg
<b>Ambient conditions</b>	

installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C
<b>relative humidity minimum</b>	10 %
<b>relative humidity at 55 °C according to IEC 60068-2-30 maximum</b>	95 %
<b>Environmental footprint</b>	
Environmental Product Declaration(EPD)	Yes
global warming potential [CO2 eq] total	107 kg
global warming potential [CO2 eq] during manufacturing	5.88 kg
global warming potential [CO2 eq] during operation	102 kg
global warming potential [CO2 eq] after end of life	-0.988 kg
<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	690 V
• at AC-3e rated value maximum	690 V
<b>operational current</b>	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	70 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	70 A
— up to 690 V at ambient temperature 60 °C rated value	60 A
• at AC-3	
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
• at AC-3e	
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
• at AC-4	
— at 400 V rated value	41 A
• at AC-5a up to 690 V rated value	61.6 A
• at AC-5b up to 400 V rated value	41.5 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	43.2 A
— up to 400 V for current peak value n=20 rated value	43.2 A
— up to 500 V for current peak value n=20 rated value	43.2 A
— up to 690 V for current peak value n=20 rated value	24 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	28.8 A
— up to 400 V for current peak value n=30 rated value	28.8 A
— up to 500 V for current peak value n=30 rated value	28.8 A
— up to 690 V for current peak value n=30 rated value	24 A
minimum cross-section in main circuit at maximum AC-1 rated value	25 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	24 A
• at 690 V rated value	20 A
<b>operational current</b>	
• <b>at 1 current path at DC-1</b>	
— at 24 V rated value	55 A
— at 60 V rated value	23 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A

• with 2 current paths in series at DC-1	— at 24 V rated value	55 A
	— at 60 V rated value	45 A
	— at 110 V rated value	45 A
	— at 220 V rated value	5 A
	— at 440 V rated value	1 A
	— at 600 V rated value	0.8 A
• with 3 current paths in series at DC-1	— at 24 V rated value	55 A
	— at 60 V rated value	55 A
	— at 110 V rated value	55 A
	— at 220 V rated value	45 A
	— at 440 V rated value	2.9 A
	— at 600 V rated value	1.4 A
• at 1 current path at DC-3 at DC-5	— at 24 V rated value	35 A
	— at 60 V rated value	6 A
	— at 220 V rated value	1 A
	— at 440 V rated value	0.1 A
	— at 600 V rated value	0.06 A
• with 2 current paths in series at DC-3 at DC-5	— at 24 V rated value	55 A
	— at 60 V rated value	45 A
	— at 110 V rated value	25 A
	— at 220 V rated value	5 A
	— at 440 V rated value	0.27 A
	— at 600 V rated value	0.16 A
• with 3 current paths in series at DC-3 at DC-5	— at 24 V rated value	55 A
	— at 60 V rated value	55 A
	— at 110 V rated value	55 A
	— at 220 V rated value	25 A
	— at 440 V rated value	0.6 A
	— at 600 V rated value	0.35 A
<b>operating power</b>		
• at AC-2 at 400 V rated value		22 kW
• at AC-3		
— at 230 V rated value		15 kW
— at 400 V rated value		22 kW
— at 500 V rated value		30 kW
— at 690 V rated value		22 kW
• at AC-3e		
— at 230 V rated value		15 kW
— at 400 V rated value		22 kW
— at 500 V rated value		30 kW
— at 690 V rated value		22 kW
<b>operating power for approx. 200000 operating cycles at AC-4</b>		
• at 400 V rated value		12.6 kW
• at 690 V rated value		18.2 kW
<b>operating apparent power at AC-6a</b>		
• up to 230 V for current peak value n=20 rated value		17.2 kVA
• up to 400 V for current peak value n=20 rated value		29.9 kVA
• up to 500 V for current peak value n=20 rated value		37.4 kVA
• up to 690 V for current peak value n=20 rated value		28.6 kVA
<b>operating apparent power at AC-6a</b>		
• up to 230 V for current peak value n=30 rated value		11.4 kVA
• up to 400 V for current peak value n=30 rated value		19.9 kVA
• up to 500 V for current peak value n=30 rated value		24.9 kVA
• up to 690 V for current peak value n=30 rated value		28.6 kVA
<b>short-time withstand current in cold operating state up to</b>		

<b>40 °C</b>	<ul style="list-style-type: none"> <li>• limited to 1 s switching at zero current maximum</li> <li>• limited to 5 s switching at zero current maximum</li> <li>• limited to 10 s switching at zero current maximum</li> <li>• limited to 30 s switching at zero current maximum</li> <li>• limited to 60 s switching at zero current maximum</li> </ul>	937 A; Use minimum cross-section acc. to AC-1 rated value 697 A; Use minimum cross-section acc. to AC-1 rated value 468 A; Use minimum cross-section acc. to AC-1 rated value 282 A; Use minimum cross-section acc. to AC-1 rated value 229 A; Use minimum cross-section acc. to AC-1 rated value
<b>no-load switching frequency</b>	<ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>	1 500 1/h 1 500 1/h
<b>operating frequency</b>	<ul style="list-style-type: none"> <li>• at AC-1 maximum</li> <li>• at AC-2 maximum</li> <li>• at AC-3 maximum</li> <li>• at AC-3e <ul style="list-style-type: none"> <li>— maximum</li> </ul> </li> <li>• at AC-4 maximum</li> </ul>	1 000 1/h 600 1/h 800 1/h 800 1/h 250 1/h
<b>Control circuit/ Control</b>		
<b>type of voltage of the control supply voltage</b>		AC/DC
<b>control supply voltage at AC</b>		
<ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>	20 ... 33 V 20 ... 33 V	
<b>control supply voltage at DC rated value</b>		20 ... 33 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>		
<ul style="list-style-type: none"> <li>• initial value</li> <li>• full-scale value</li> </ul>	0.8 1.1	
<b>operating range factor control supply voltage rated value of magnet coil at AC</b>		
<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	0.8 ... 1.1 0.8 ... 1.1	
<b>design of the surge suppressor</b>		with varistor
<b>inrush current peak</b>		3 A
<b>duration of inrush current peak</b>		50 µs
<b>locked-rotor current mean value</b>		1 A
<b>locked-rotor current peak</b>		2.6 A
<b>duration of locked-rotor current</b>		230 ms
<b>holding current mean value</b>		40 mA
<b>apparent pick-up power of magnet coil at AC</b>		
<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	40 VA 40 VA	
<b>apparent holding power</b>		
<ul style="list-style-type: none"> <li>• at minimum rated control supply voltage at DC</li> <li>• at maximum rated control supply voltage at DC</li> </ul>	2 VA 2 VA	
<b>apparent holding power</b>		
<ul style="list-style-type: none"> <li>• at minimum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> <li>• at maximum rated control supply voltage at AC <ul style="list-style-type: none"> <li>— at 50 Hz</li> <li>— at 60 Hz</li> </ul> </li> </ul>	2 VA 2 VA 2 VA 2 VA	
<b>apparent holding power of magnet coil at AC</b>		
<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	2 VA 2 VA	
<b>inductive power factor with the holding power of the coil</b>		
<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	0.95 0.95	
<b>closing power of magnet coil at DC</b>		23 W
<b>holding power of magnet coil at DC</b>		1 W
<b>closing delay</b>		
<ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>	35 ... 110 ms 35 ... 110 ms	

<b>opening delay</b>	30 ... 55 ms
• at AC	30 ... 55 ms
• at DC	
<b>arcing time</b>	10 ... 20 ms
<b>control version of the switch operating mechanism</b>	
<b>Auxiliary circuit</b>	
<b>design of the auxiliary switch</b>	on the front, non-detachable
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
<b>operational current at AC-15</b>	
• 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
<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	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
<b>contact reliability of auxiliary contacts</b>	
1 faulty switching per 100 million (17 V, 1 mA)	
<b>UL/CSA ratings</b>	
<b>full-load current (FLA) for 3-phase AC motor</b>	
• at 480 V rated value	52 A
• at 600 V rated value	52 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 110/120 V rated value	3 hp
— at 230 V rated value	10 hp
• for 3-phase AC motor	
— at 200/208 V rated value	15 hp
— at 220/230 V rated value	15 hp
— at 460/480 V rated value	40 hp
— at 575/600 V rated value	50 hp
<b>contact rating of auxiliary contacts according to UL</b>	
<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>	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)
— with type of coordination 2 required	gG: 80 A (690 V, 100 kA), aM: 50 A (690 V, 100 kA), BS88: 63 A (415 V, 80 kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
fastening method side-by-side mounting	Yes
<b>fastening method</b>	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715

<b>height</b>	114 mm
<b>width</b>	55 mm
<b>depth</b>	178 mm
<b>required spacing</b>	
• with side-by-side mounting	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
• for grounded parts	
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
• for live parts	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm

#### Connections/ Terminals

<b>type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for auxiliary and control circuit	spring-loaded terminals
• at contactor for auxiliary contacts	Spring-type terminals
• of magnet coil	Spring-type terminals
<b>type of connectable conductor cross-sections</b>	
• for main contacts	
— solid or stranded	2x (1 ... 35 mm <sup>2</sup> ), 1x (1 ... 50 mm <sup>2</sup> )
— finely stranded with core end processing	2x (1 ... 25 mm <sup>2</sup> ), 1x (1 ... 35 mm <sup>2</sup> )
• for AWG cables for main contacts	2x (18 ... 2), 1x (18 ... 1)
<b>connectable conductor cross-section for main contacts</b>	1 ... 35 mm <sup>2</sup>
• finely stranded with core end processing	
<b>connectable conductor cross-section for auxiliary contacts</b>	
• solid or stranded	0.5 ... 2.5 mm <sup>2</sup>
• finely stranded with core end processing	0.5 ... 1.5 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— solid or stranded	2x (0.5 ... 2.5 mm <sup>2</sup> )
— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> )
— finely stranded without core end processing	2x (0.5 ... 2.5 mm <sup>2</sup> )
• for AWG cables for auxiliary contacts	2x (20 ... 14)
<b>AWG number as coded connectable conductor cross section for main contacts</b>	18 ... 1
<b>AWG number as coded connectable conductor cross section for auxiliary contacts</b>	20 ... 14

#### Safety related data

<b>product function</b>	
• mirror contact according to IEC 60947-4-1	Yes
• positively driven operation according to IEC 60947-5-1	No
• suitable for safety function	Yes
<b>suitability for use safety-related switching OFF</b>	Yes
<b>service life maximum</b>	20 a
<b>test wear-related service life necessary</b>	Yes
<b>proportion of dangerous failures</b>	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	73 %
<b>B10 value with high demand rate according to SN 31920</b>	1 000 000
<b>failure rate [FIT] with low demand rate according to SN 31920</b>	100 FIT
<b>ISO 13849</b>	
<b>device type according to ISO 13849-1</b>	3

overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
safety device type according to IEC 61508-2	Type A
Electrical Safety	
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front

#### Approvals Certificates

##### General Product Approval



KC



EMV	Test Certificates	Maritime application
	<a href="#">Special Test Certificate</a> <a href="#">Type Test Certificates/Test Report</a>	  

Maritime application	other
 LRS	    <a href="#">Confirmation</a>

other	Railway	Environment
<a href="#">Confirmation</a>	<a href="#">Special Test Certificate</a>	 <a href="#">Environmental Confirmations</a>

Further information		
Information on the packaging		
<a href="https://support.industry.siemens.com/cs/ww/en/view/109813875">https://support.industry.siemens.com/cs/ww/en/view/109813875</a>		
Information for data generation and storage		
<a href="https://support.industry.siemens.com/cs/ww/en/view/109995012">https://support.industry.siemens.com/cs/ww/en/view/109995012</a>		
Information- and Downloadcenter (Catalogs, Brochures,...)		
<a href="https://www.siemens.com/ic10">https://www.siemens.com/ic10</a>		
Industry Mall (Online ordering system)		
<a href="https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2036-3NB34-3MA0">https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2036-3NB34-3MA0</a>		
Cax online generator		
<a href="http://support.automation.siemens.com/WW/CAxorder/default.aspx?lang=en&amp;mlfb=3RT2036-3NB34-3MA0">http://support.automation.siemens.com/WW/CAxorder/default.aspx?lang=en&amp;mlfb=3RT2036-3NB34-3MA0</a>		
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)		
<a href="https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3NB34-3MA0">https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3NB34-3MA0</a>		
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)		
<a href="http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-3NB34-3MA0&amp;lang=en">http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-3NB34-3MA0&amp;lang=en</a>		
Characteristic: Tripping characteristics, I <sup>t</sup> t, Let-through current		
<a href="https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3NB34-3MA0/char">https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3NB34-3MA0/char</a>		
Further characteristics (e.g. electrical endurance, switching frequency)		
<a href="http://www.automation.siemens.com/bilddb/index.aspx?view=Search&amp;mlfb=3RT2036-3NB34-3MA0&amp;objecttype=14&amp;gridview=view1">http://www.automation.siemens.com/bilddb/index.aspx?view=Search&amp;mlfb=3RT2036-3NB34-3MA0&amp;objecttype=14&amp;gridview=view1</a>		



