



power contactor, AC-3 40 A, 18.5 kW / 400 V 2 NO + 2 NC, 24 V DC with varistor, 3-pole, Size S2, screw terminal Captive auxiliary switch Suitable for 2 A PLC outputs

product brand name	SIRIUS
product designation	Coupling relay
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	6.6 W
• per pole	2.2 W
power loss [W] for rated value of the current without load current share typical	1 W
surge voltage resistance	
• of main circuit rated value	6 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at DC	6.1g / 5 ms, 3.7g / 10 ms
shock resistance with sine pulse	
• at DC	9.6g / 5 ms, 5.8g / 10 ms
mechanical service life (switching 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 acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	01.10.2014 00:00:00
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
• ambient temperature during operation	-25 ... +60 °C
• ambient temperature during storage	-55 ... +80 °C
<b>Main circuit</b>	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
• operating voltage at AC-3 rated value maximum	690 V

<b>operational current</b>		
• at AC-1 at 400 V at ambient temperature 40 °C rated value	60 A	
• at AC-1		
— up to 690 V at ambient temperature 40 °C rated value	60 A	
— up to 690 V at ambient temperature 60 °C rated value	55 A	
• at AC-3		
— at 400 V rated value	41 A	
— at 500 V rated value	41 A	
— at 690 V rated value	24 A	
• at AC-4 at 400 V rated value	35 A	
• at AC-5a up to 690 V rated value	52.8 A	
• at AC-5b up to 400 V rated value	33.2 A	
• at AC-6a		
— up to 230 V for current peak value n=20 rated value	36.5 A	
— up to 400 V for current peak value n=20 rated value	36.5 A	
— up to 500 V for current peak value n=20 rated value	36.5 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	24.2 A	
— up to 400 V for current peak value n=30 rated value	24.2 A	
— up to 500 V for current peak value n=30 rated value	24.2 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	16 mm <sup>2</sup>	
<b>operational current for approx. 200000 operating cycles at AC-4</b>		
• at 400 V rated value	22 A	
• at 690 V rated value	18.5 A	
<b>operational current</b>		
• at 1 current path at DC-1		
— at 24 V rated value	55 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 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 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	
<b>operational current</b>		
• at 1 current path at DC-3 at DC-5		
— at 24 V rated value	35 A	

— at 110 V rated value	2.5 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 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 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	18.5 kW
• at AC-3	
— at 230 V rated value	11 kW
— at 400 V rated value	18.5 kW
— at 500 V rated value	22 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	11.6 kW
• at 690 V rated value	16.8 kW
<b>operating apparent power at AC-6a</b>	
• up to 230 V for current peak value n=20 rated value	14.5 kV·A
• up to 400 V for current peak value n=20 rated value	25.2 kV·A
• up to 500 V for current peak value n=20 rated value	31.6 kV·A
• up to 690 V for current peak value n=20 rated value	28.6 kV·A
<b>operating apparent power at AC-6a</b>	
• up to 230 V for current peak value n=30 rated value	9.6 kV·A
• up to 400 V for current peak value n=30 rated value	16.8 kV·A
• up to 500 V for current peak value n=30 rated value	21 kV·A
• up to 690 V for current peak value n=30 rated value	28.6 kV·A
<b>short-time withstand current in cold operating state up to 40 °C</b>	
• limited to 1 s switching at zero current maximum	843 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum	596 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	400 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	241 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	196 A; Use minimum cross-section acc. to AC-1 rated value
<b>no-load switching frequency</b>	
• at DC	1 500 1/h
<b>operating frequency</b>	
• at AC-1 maximum	1 200 1/h
• at AC-2 maximum	750 1/h
• at AC-3 maximum	1 000 1/h
• at AC-4 maximum	300 1/h
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage at DC</b>	
• rated value	24 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value	0.8
• full-scale value	1.2

<b>design of the surge suppressor</b>	with varistor
<b>inrush current peak</b>	2.6 A
<b>duration of inrush current peak</b>	50 µs
<b>locked-rotor current mean value</b>	0.9 A
<b>locked-rotor current peak</b>	2.1 A
<b>duration of locked-rotor current</b>	230 ms
<b>holding current mean value</b>	40 mA
<b>closing power of magnet coil at DC</b>	21.5 W
<b>holding power of magnet coil at DC</b>	1 W
<b>closing delay</b>	
• at DC	45 ... 60 ms
<b>opening delay</b>	
• at DC	35 ... 55 ms
<b>arcing time</b>	10 ... 20 ms
<b>control version of the switch operating mechanism</b>	Standard A1 - A2
<b>Auxiliary circuit</b>	
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	40 A
• at 600 V rated value	41 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	7.5 hp
• for 3-phase AC motor	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	15 hp
— at 460/480 V rated value	30 hp
— at 575/600 V rated value	40 hp
<b>contact rating of auxiliary contacts according to UL</b>	A600 / Q600
<b>Short-circuit protection</b>	

<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 assignment 2 required</li> </ul> </li> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	gG: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA) gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (415V,80kA) 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
<b>fastening method</b>		screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
• side-by-side mounting		Yes
<b>height</b>		114 mm
<b>width</b>		55 mm
<b>depth</b>		174 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
<b>Connections/ Terminals</b>		
<b>type of electrical connection</b>		
• for main current circuit		screw-type terminals
• for auxiliary and control circuit		screw-type terminals
• at contactor for auxiliary contacts		Screw-type terminals
• of magnet coil		Screw-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> )
• at AWG cables for main contacts		2x (18 ... 2), 1x (18 ... 1)
<b>connectable conductor cross-section for main contacts</b>		
• finely stranded with core end processing		1 ... 35 mm <sup>2</sup>
<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 ... 2.5 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>		
• for auxiliary contacts		
— solid or stranded		2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> )
— finely stranded with core end processing		2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> )
• at AWG cables for auxiliary contacts		2x (20 ... 16), 2x (18 ... 14)
• AWG number as coded connectable conductor cross section for main contacts		18 ... 1
• AWG number as coded connectable conductor cross section for auxiliary contacts		20 ... 14
<b>Safety related data</b>		

B10 value with high demand rate acc. to SN 31920	1 000 000
<b>proportion of dangerous failures</b>	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	73 %
failure rate [FIT] with low demand rate acc. to SN 31920	100 FIT
<b>product function</b>	
• mirror contact acc. to IEC 60947-4-1	Yes
• positively driven operation acc. to IEC 60947-5-1	No
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y
<b>protection class IP on the front acc. to IEC 60529</b>	IP20
<b>touch protection on the front acc. to IEC 60529</b>	finger-safe, for vertical contact from the front
suitability for use safety-related switching OFF	Yes

#### Certificates/ approvals

General Product Approval

EMC



KC



Declaration of Conformity	Test Certificates	Marine / Shipping
EG-Konf.	<a href="#">Miscellaneous</a> <a href="#">Special Test Certificate</a> <a href="#">Type Test Certificates/Test Report</a>	

Marine / Shipping	other
LRS  PRIS  RINA  RMRS  DNV GL	<a href="#">Confirmation</a>

#### Further information

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=3RT2035-1KB44-3MA0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2035-1KB44-3MA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-1KB44-3MA0>

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

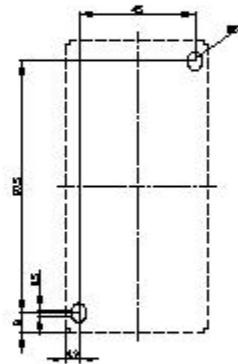
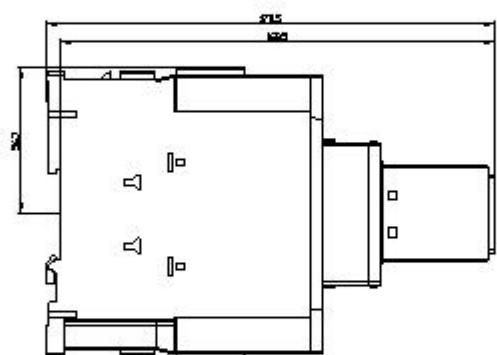
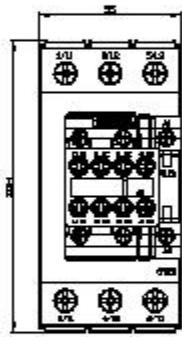
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2035-1KB44-3MA0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2035-1KB44-3MA0&lang=en)

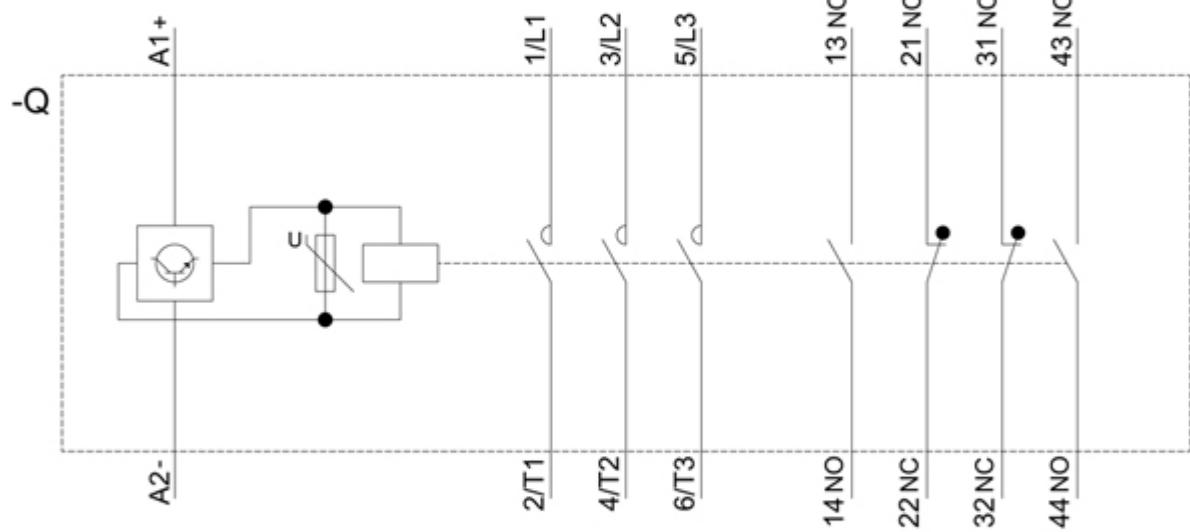
Characteristic: Tripping characteristics, I<sup>t</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-1KB44-3MA0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2035-1KB44-3MA0&objecttype=14&gridview=view1>





last modified:

12/21/2020