



power contactor, AC-3e/AC-3, 51 A, 22 kW / 400 V, 3-pole, 24 V DC, 0.8-1.2\* Us, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S2, suitable for PLC outputs

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Coupling contactor
<b>product type designation</b>	3RT2
<b>General technical data</b>	
<b>size of contactor</b>	S2
<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	12 W
• at AC in hot operating state per pole	4 W
• without load current share typical	1 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	690 V
• of auxiliary circuit with degree of pollution 3 rated value	690 V
<b>surge voltage resistance</b>	
• 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
<b>shock resistance at rectangular impulse</b>	
• at DC	7.7g / 5 ms, 4.5g / 10 ms
<b>shock resistance with sine pulse</b>	
• at DC	12g / 5 ms, 7g / 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>	10/01/2014
<b>SVHC substance name</b>	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
<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</b>	95 %

<b>maximum</b>	
<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
• <b>with 2 current paths in series at DC-1</b>	
— 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
● <b>with 3 current paths in series at DC-1</b>	
— 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
● <b>at 1 current path at DC-3 at DC-5</b>	
— 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
● <b>with 2 current paths in series at DC-3 at DC-5</b>	
— 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
● <b>with 3 current paths in series at DC-3 at DC-5</b>	
— 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 40 °C</b>	
● limited to 1 s switching at zero current maximum	937 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 5 s switching at zero current maximum	697 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 10 s switching at zero current maximum	468 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 30 s switching at zero current maximum	282 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum	229 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	1 000 1/h
• at AC-2 maximum	600 1/h
• at AC-3 maximum	800 1/h
• at AC-3e maximum	800 1/h
• at AC-4 maximum	250 1/h
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage at DC rated value</b>	
•	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	35 ... 80 ms
<b>opening delay</b>	
• at DC	30 ... 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	1
number of NO contacts for auxiliary contacts instantaneous contact	1
operational current at AC-12 maximum	10 A
<b>operational current at AC-15</b>	
• at 230 V rated value	10 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	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)
<b>UL/CSA ratings</b>	
<b>full-load current (FLA) for 3-phase AC motor</b>	

<ul style="list-style-type: none"> <li>• at 480 V rated value</li> <li>• at 600 V rated value</li> </ul>	52 A 52 A
<b>yielded mechanical performance [hp]</b> <ul style="list-style-type: none"> <li>• for single-phase AC motor <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul> </li> <li>• for 3-phase AC motor <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul>	3 hp 10 hp  15 hp 15 hp 40 hp 50 hp
<b>contact rating of auxiliary contacts according to UL</b>	A600 / P600
<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 DIN rail according to DIN EN 60715
<b>height</b>	114 mm
<b>width</b>	55 mm
<b>depth</b>	130 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> <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> <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>	10 mm 10 mm 10 mm 0 mm  10 mm 10 mm 6 mm 10 mm  10 mm 10 mm 10 mm 6 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>	screw-type terminals screw-type terminals Screw-type terminals Screw-type terminals
<b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• for AWG cables for main contacts</li> </ul>	2x (1 ... 35 mm <sup>2</sup> ), 1x (1 ... 50 mm <sup>2</sup> ) 2x (1 ... 25 mm <sup>2</sup> ), 1x (1 ... 35 mm <sup>2</sup> ) 2x (18 ... 2), 1x (18 ... 1)
<b>connectable conductor cross-section for main contacts</b> <ul style="list-style-type: none"> <li>• finely stranded with core end processing</li> </ul>	1 ... 35 mm <sup>2</sup>
<b>connectable conductor cross-section for auxiliary contacts</b> <ul style="list-style-type: none"> <li>• solid or stranded</li> <li>• finely stranded with core end processing</li> </ul>	0.5 ... 2.5 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 or stranded</li> </ul> </li> </ul>	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> )
• for AWG cables for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14)
<b>AWG number as coded connectable conductor cross section</b>	
• for main contacts	18 ... 1
• for auxiliary contacts	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
suitability for use safety-related switching OFF	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
<b>overdimensioning according to ISO 13849-2 necessary</b>	Yes
<b>IEC 61508</b>	
<b>safety device type according to IEC 61508-2</b>	Type A
<b>T1 value</b>	
• for proof test interval or service life according to IEC 61508	20 a
<b>Electrical Safety</b>	
<b>protection class IP on the front according to IEC 60529</b>	IP20
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front

### Approvals Certificates

#### General Product Approval



[Confirmation](#)



[KC](#)

General Product Approval	EMV	Functional Safety	Test Certificates	Marine / Shipping
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[Type Examination Certificate](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping	other
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[Confirmation](#)

Railway	Environment
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[Special Test Certificate](#)



[Environmental Confirmations](#)

## Further information

### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

### 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=3RT2036-1KB40>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-1KB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1KB40>

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

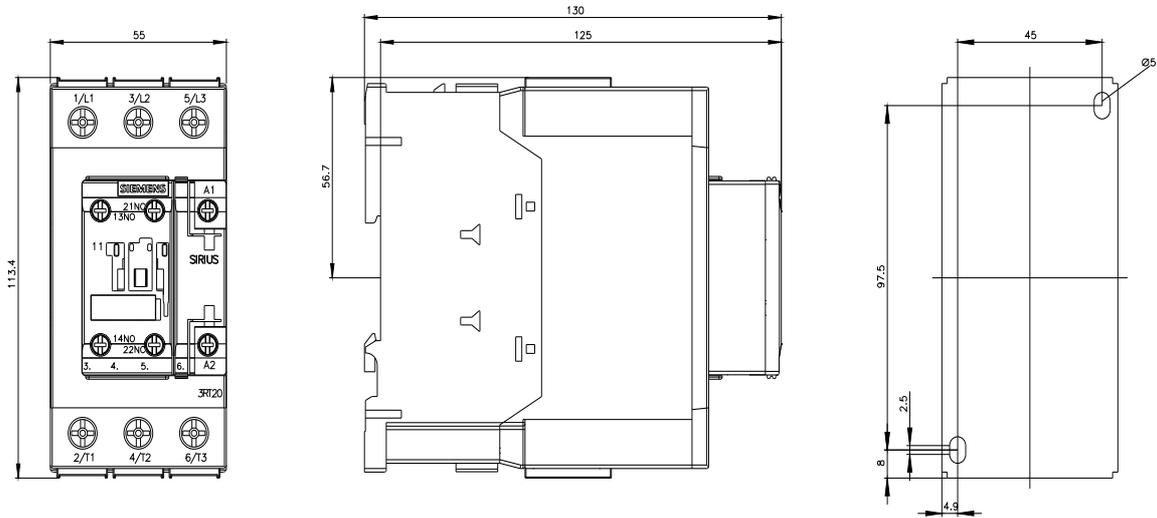
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2036-1KB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-1KB40&lang=en)

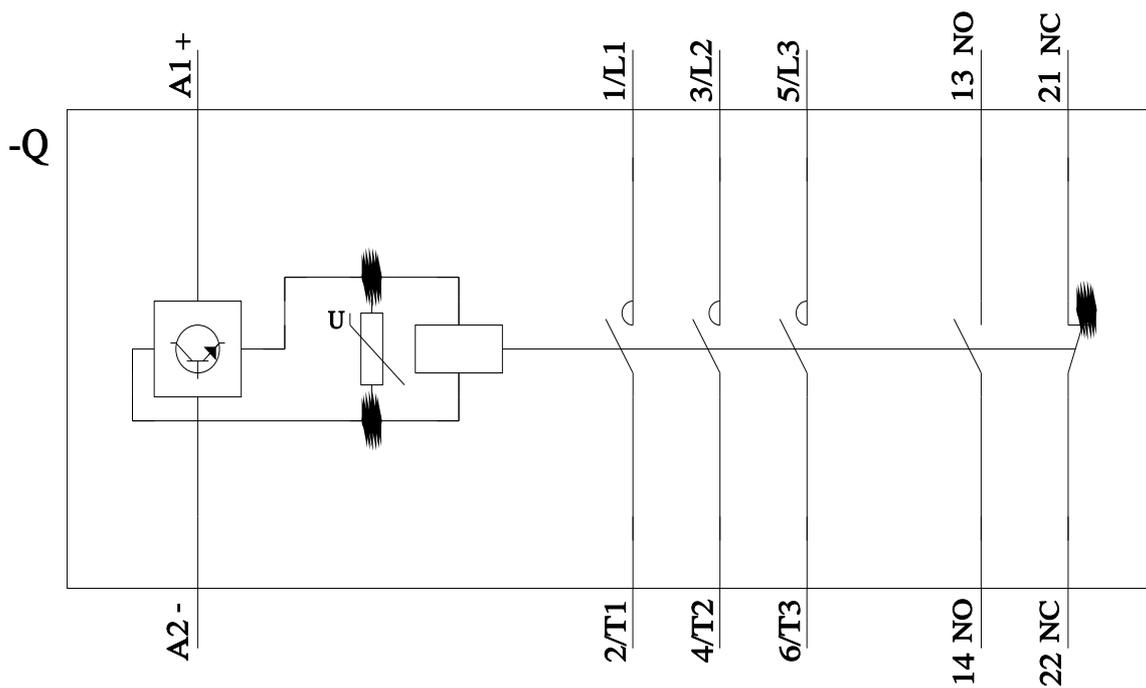
### Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1KB40/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2036-1KB40&objecttype=14&gridview=view1>





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