



power contactor, AC-3e/AC-3, 110 A, 55 kW / 400 V, 3-pole, 175-280 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, main circuit: screw terminal, control and auxiliary circuit: spring-loaded terminal, size: S3

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
<b>General technical data</b>	
size of contactor	S3
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	23.7 W
• at AC in hot operating state per pole	7.9 W
• without load current share typical	1.8 W
type of calculation of power loss depending on pole	quadratic
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	690 V
surge voltage resistance	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	690 V
shock resistance at rectangular impulse	
• at AC	10.3g / 5 ms, 6..g / 10 ms
• at DC	6.7 g / 5 ms, 4g / 10 ms
shock resistance with sine pulse	
• at AC	16.3g / 5 ms, 10..g / 10 ms
• at DC	10.6 g / 5 ms, 6.3 g / 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)	03/01/2017
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
Net Weight	1.818 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	267 kg
global warming potential [CO2 eq] during manufacturing	9.35 kg
global warming potential [CO2 eq] during operation	259 kg
global warming potential [CO2 eq] after end of life	-1.55 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>number of NC contacts for main contacts</b>	0
<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	130 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	130 A
— up to 690 V at ambient temperature 60 °C rated value	110 A
• at AC-3	
— at 400 V rated value	110 A
— at 500 V rated value	110 A
— at 690 V rated value	98 A
— at 1000 V rated value	30 A
• at AC-3e	
— at 400 V rated value	110 A
— at 500 V rated value	110 A
— at 690 V rated value	98 A
— at 1000 V rated value	30 A
• at AC-4 at 400 V rated value	97 A
• at AC-5a up to 690 V rated value	120 A
• at AC-5b up to 400 V rated value	110 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	98 A
— up to 400 V for current peak value n=20 rated value	98 A
— up to 500 V for current peak value n=20 rated value	98 A
— up to 690 V for current peak value n=20 rated value	98 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	65.3 A
— up to 400 V for current peak value n=30 rated value	65.3 A
— up to 500 V for current peak value n=30 rated value	65.3 A
— up to 690 V for current peak value n=30 rated value	65.3 A
minimum cross-section in main circuit at maximum AC-1 rated value	50 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	46 A
• at 690 V rated value	36 A
<b>operational current</b>	
• at 1 current path at DC-1	
— at 24 V rated value	100 A
— at 60 V rated value	60 A
— at 110 V rated value	9 A

— at 220 V rated value	2 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.4 A
<b>• with 2 current paths in series at DC-1</b>	
— at 24 V rated value	100 A
— at 60 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	10 A
— at 440 V rated value	1.8 A
— at 600 V rated value	1 A
<b>• with 3 current paths in series at DC-1</b>	
— at 24 V rated value	100 A
— at 60 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	80 A
— at 440 V rated value	4.5 A
— at 600 V rated value	2.6 A
<b>• at 1 current path at DC-3 at DC-5</b>	
— at 24 V rated value	40 A
— at 60 V rated value	6 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.15 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	100 A
— at 60 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	7 A
— at 440 V rated value	0.42 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	100 A
— at 60 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	35 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.35 A
<b>operating power</b>	
<b>• at AC-2 at 400 V rated value</b>	
— at AC-3	55 kW
— at 230 V rated value	30 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	90 kW
— at 1000 V rated value	37 kW
<b>• at AC-3e</b>	
— at 230 V rated value	30 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	90 kW
— at 1000 V rated value	37 kW
<b>operating power for approx. 200000 operating cycles at AC-4</b>	
<b>• at 400 V rated value</b>	
— at 690 V rated value	24.3 kW
<b>• at 690 V rated value</b>	
<b>operating apparent power at AC-6a</b>	
<b>• up to 230 V for current peak value n=20 rated value</b>	
— up to 400 V for current peak value n=20 rated value	39 kVA
<b>• up to 400 V for current peak value n=20 rated value</b>	
— up to 600 V for current peak value n=20 rated value	67 kVA

• up to 500 V for current peak value n=20 rated value • up to 690 V for current peak value n=20 rated value	84 kVA 117 kVA
<b>operating apparent power at AC-6a</b>	
• up to 230 V for current peak value n=30 rated value • up to 400 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value	26 kVA 45.2 kVA 56.5 kVA 78 kVA
<b>short-time withstand current in cold operating state up to 40 °C</b>	
• 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	1 960 A; Use minimum cross-section acc. to AC-1 rated value 1 502 A; Use minimum cross-section acc. to AC-1 rated value 1 095 A; Use minimum cross-section acc. to AC-1 rated value 707 A; Use minimum cross-section acc. to AC-1 rated value 562 A; Use minimum cross-section acc. to AC-1 rated value
<b>no-load switching frequency</b>	
• at AC • at DC	1 000 1/h 1 000 1/h
<b>operating frequency</b>	
• at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-3e — maximum • at AC-4 maximum	900 1/h 350 1/h 850 1/h 850 1/h 200 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>	
• at 50 Hz rated value • at 60 Hz rated value	175 ... 280 V 175 ... 280 V
<b>control supply voltage at DC rated value</b>	175 ... 280 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value • full-scale value	0.8 1.1
<b>operating range factor control supply voltage rated value of magnet coil at AC</b>	
• at 50 Hz • at 60 Hz	0.8 ... 1.1 0.8 ... 1.1
<b>design of the surge suppressor</b>	with varistor
<b>inrush current peak</b>	65 A
<b>duration of inrush current peak</b>	5 µs
<b>pickup current mean value</b>	0.44 A
<b>pickup current peak</b>	1.2 A
<b>duration of pickup current</b>	150 ms
<b>holding current mean value</b>	10 mA
<b>apparent pick-up power of magnet coil at AC</b>	
• at 50 Hz • at 60 Hz	151 VA 151 VA
<b>apparent holding power</b>	
• at minimum rated control supply voltage at DC • at maximum rated control supply voltage at DC	1.8 VA 1.8 VA
<b>apparent holding power</b>	
• at minimum rated control supply voltage at AC — at 50 Hz — at 60 Hz • at maximum rated control supply voltage at AC — at 50 Hz — at 60 Hz	3.1 VA 3.1 VA 3.1 VA 3.1 VA
<b>apparent holding power of magnet coil at AC</b>	
• at 50 Hz	3.1 VA

• at 60 Hz	3.1 VA
<b>inductive power factor with the holding power of the coil</b>	
• at 50 Hz	0.95
• at 60 Hz	0.95
<b>closing power of magnet coil at DC</b>	76 W
<b>holding power of magnet coil at DC</b>	1.8 W
<b>closing delay</b>	
• at AC	50 ... 70 ms
• at DC	50 ... 70 ms
<b>opening delay</b>	
• at AC	38 ... 57 ms
• at DC	38 ... 57 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	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	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>	
• at 480 V rated value	96 A
• at 600 V rated value	99 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 110/120 V rated value	10 hp
— at 230 V rated value	20 hp
• for 3-phase AC motor	
— at 200/208 V rated value	30 hp
— at 220/230 V rated value	40 hp
— at 460/480 V rated value	75 hp
— at 575/600 V rated value	100 hp
<b>contact rating of auxiliary contacts according to UL</b>	A600 / P600
<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> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA) gG: 200 A (690 V, 100 kA), aM: 100 A (690 V, 100 kA), BS88: 160 A (415 V, 80 kA) gG: 10 A (500 V, 1 kA)
---	--

#### Installation/ mounting/ dimensions

<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 side-by-side mounting</b>	Yes
<b>fastening method</b>	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
<b>height</b>	140 mm
<b>width</b>	70 mm
<b>depth</b>	198 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

#### 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	
— finely stranded with core end processing	2x (2.5 ... 35 mm <sup>2</sup> ), 1x (2.5 ... 50 mm <sup>2</sup> )
• for AWG cables for main contacts	2x (10 ... 1/0), 1x (10 ... 2/0)
<b>connectable conductor cross-section for main contacts</b>	
• solid	2.5 ... 16 mm <sup>2</sup>
• stranded	6 ... 70 mm <sup>2</sup>
• finely stranded with core end processing	2.5 ... 50 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>
• finely stranded without 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 ... 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 ... 16)
<b>AWG number extended as coded connectable conductor cross section for main contacts</b>	10 ... 2/0
<b>AWG number as coded connectable conductor cross section for auxiliary contacts</b>	20 ... 14
<b>Safety related data</b>	
<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
ISO 13849	
<b>device type according to ISO 13849-1</b>	3
<b>overdimensioning according to ISO 13849-2 necessary</b>	Yes
IEC 61508	
<b>safety device type according to IEC 61508-2</b>	Type A
Electrical Safety	
<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



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

Maritime application	other	Railway
  	 <a href="#">Confirmation</a>	<a href="#">Special Test Certificate</a>

Environment
 <a href="#">Environmental Confirmations</a>

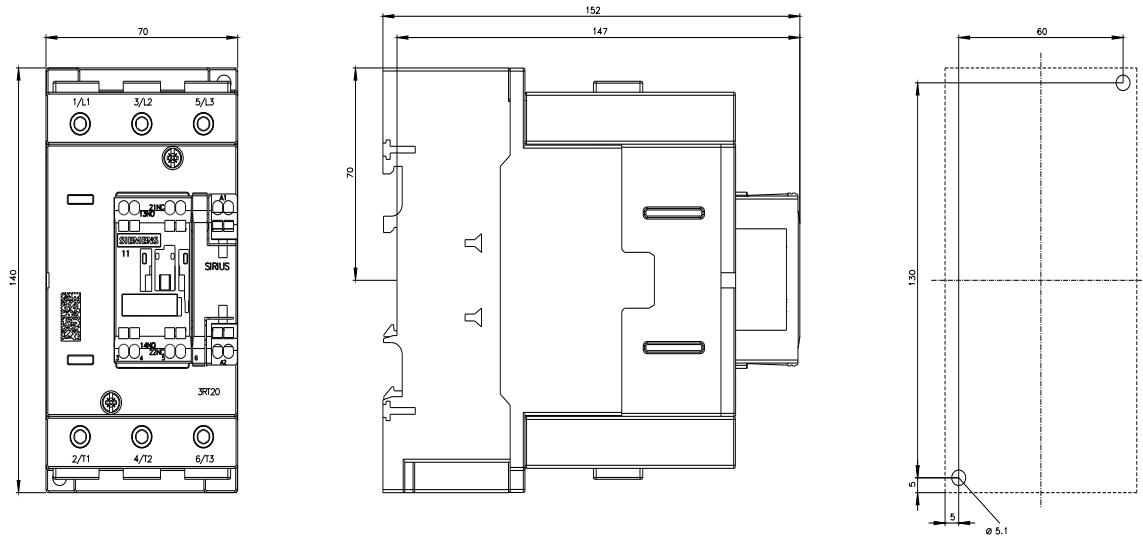
Further information
Information on the packaging <a href="https://support.industry.siemens.com/cs/ww/en/view/109813875">https://support.industry.siemens.com/cs/ww/en/view/109813875</a>
Information for data generation and storage <a href="https://support.industry.siemens.com/cs/ww/en/view/109995012">https://support.industry.siemens.com/cs/ww/en/view/109995012</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=3RT2047-3NP30">https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2047-3NP30</a>
Service&Support (Manuals, Certificates, Characteristics, FAQs,...) <a href="https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-3NP30">https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-3NP30</a>
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) <a href="https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2047-3NP30&amp;lang=en">https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2047-3NP30&amp;lang=en</a>

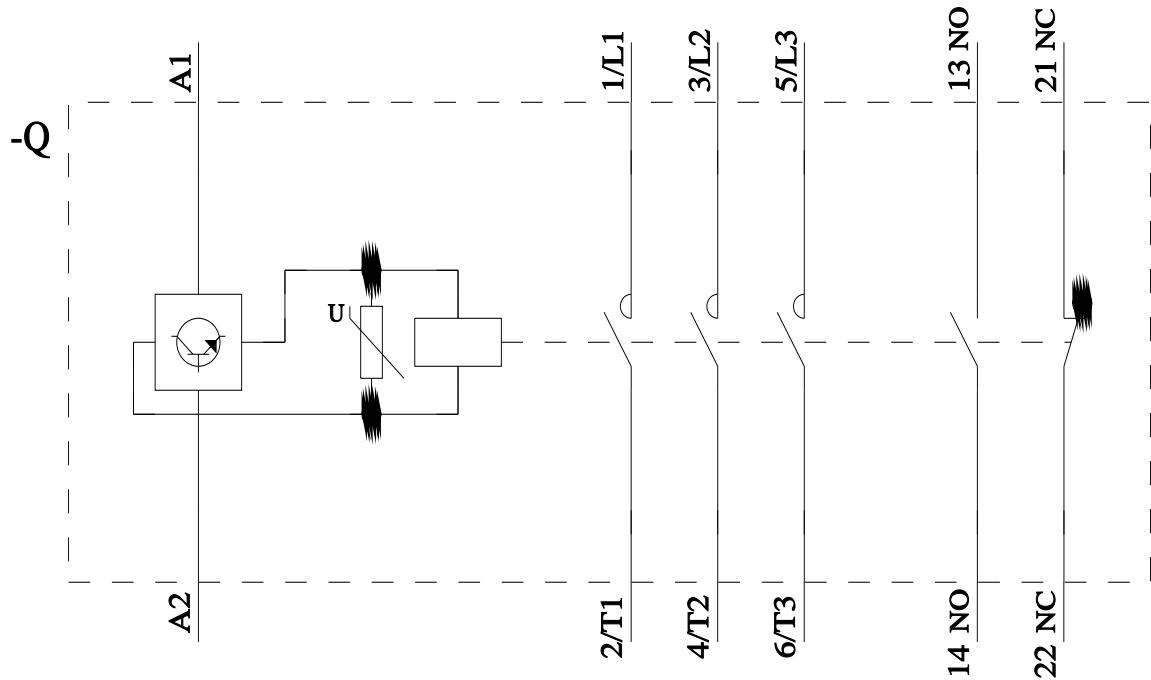
Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3RT2047-3NP30>

Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)





---

last modified:

11/27/2025