## **SIEMENS**

Data sheet 3RT2025-1NP30



power contactor, AC-3e/AC-3, 17 A, 7.5 kW / 400 V, 3-pole, 200-280 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S0
product extension	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	1.8 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	0.6 W
without load current share typical	4.3 W
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	690 V
of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	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	7,5g / 5 ms, 4,7g / 10 ms
• at DC	10g / 5 ms, 7,5g / 10 ms
shock resistance with sine pulse	
• at AC	11,8g / 5 ms, 7,4g / 10 ms
• at DC	15g / 5 ms, 10g / 10 ms
mechanical service life (operating cycles)	
<ul> <li>of contactor typical</li> </ul>	10 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	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)	10/01/2009
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
<ul> <li>during operation</li> </ul>	-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 %

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
at AC-3e rated value maximum	690 V
operational current	
at AC-1 at 400 V at ambient temperature 40 °C rated	40 A
value	
• at AC-1	40.4
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> </ul>	40 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	35 A
• at AC-3	
— at 400 V rated value	17 A
— at 500 V rated value	17 A
— at 690 V rated value	13 A
• at AC-3e	
— at 400 V rated value	17 A
— at 500 V rated value	17 A
— at 690 V rated value	13 A
• at AC-4 at 400 V rated value	15.5 A
• at AC-5a up to 690 V rated value	35.2 A
at AC-5b up to 400 V rated value	14.1 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	11.4 A
— up to 400 V for current peak value n=20 rated value	11.4 A
— up to 500 V for current peak value n=20 rated value	11.4 A
— up to 690 V for current peak value n=20 rated value	11.3 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	7.6 A
— up to 400 V for current peak value n=30 rated value	7.6 A
— up to 500 V for current peak value n=30 rated value	7.6 A
— up to 690 V for current peak value n=30 rated value	7.6 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 mm²
operational current for approx. 200000 operating cycles at	
AC-4  • at 400 V rated value	7.7 A
at 690 V rated value	7.7 A
	T.I A
operational current  • at 1 current path at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value  — at 60 V rated value	20 A
— at 110 V rated value  — at 110 V rated value	4.5 A
— at 110 V rated value  — at 220 V rated value	1.A
— at 440 V rated value  — at 440 V rated value	0.4 A
	0.4 A 0.25 A
<ul> <li>— at 600 V rated value</li> <li>with 2 current paths in series at DC-1</li> </ul>	0.20 A
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value  — at 110 V rated value	35 A
— at 110 V rated value  — 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	05 A
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	35 A
<ul> <li>at 440 V rated value</li> </ul>	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	20 A
— at 60 V rated value	5 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 A
— at 600 V rated value	0.06 A
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
operating power	
• at AC-3	
— at 230 V rated value	4 kW
— at 400 V rated value	7.5 kW
— at 500 V rated value	7.5 kW
— at 690 V rated value	11 kW
• at AC-3e	
— at 230 V rated value	4 kW
— at 400 V rated value	4.5 kW
— at 500 V rated value	7.5 kW
— at 690 V rated value	11 kW
operating power for approx. 200000 operating cycles at AC-	
4	
• at 400 V rated value	3.5 kW
at 690 V rated value	6 kW
operating apparent power at AC-6a	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	4.5 kVA
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	7.8 kVA
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	9.9 kVA
• up to 690 V for current peak value n=20 rated value	13.6 kVA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	3 kVA
• up to 400 V for current peak value n=30 rated value	5.2 kVA
• up to 500 V for current peak value n=30 rated value	6.6 kVA
• up to 690 V for current peak value n=30 rated value	9.1 kVA
short-time withstand current in cold operating state up to 40 °C	
<ul> <li>limited to 1 s switching at zero current maximum</li> </ul>	225 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	225 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	189 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	140 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	115 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	1 500 1/h
• at DC	1 500 1/h
operating frequency	
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	1 000 1/h
• at AC-3 maximum	1 000 1/h

at AC-3e maximum	1 000 1/h
• at AC-3e maximum	300 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	200 280 V
at 60 Hz rated value     at 60 Hz rated value	200 280 V
control supply voltage at DC	200 200 V
• rated value	200 280 V
operating range factor control supply voltage rated value of	200 200 V
magnet coil at DC	
• initial value	0.7
• full-scale value	1.1
operating range factor control supply voltage rated value of	
magnet coil at AC	
● at 50 Hz	0.7 1.1
● at 60 Hz	0.7 1.1
design of the surge suppressor	with varistor
inrush current peak	25 A
duration of inrush current peak	30 μs
locked-rotor current mean value	0.1 A
locked-rotor current peak	0.13 A
duration of locked-rotor current	180 ms
holding current mean value	17 mA
apparent pick-up power of magnet coil at AC	
• at 50 Hz	12.7 VA
• at 60 Hz	14.7 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.98
• at 60 Hz	0.98
apparent holding power of magnet coil at AC	
• at 50 Hz	3.9 VA
• at 60 Hz	4.3 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.51
• at 60 Hz	0.56
closing power of magnet coil at DC	14.3 W
holding power of magnet coil at DC	1.9 W
closing delay	
• at AC	50 80 ms
• at DC	50 75 ms
opening delay	3
• at AC	30 50 ms
• at DC	30 50 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	Otanidalid AT - AZ
	1
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
operational current at AC-15	
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	1A
operational current at DC-12	
• at 24 V rated value	10 A
• at 48 V rated value	6 A
at 60 V rated value	6 A
at 100 V rated value     at 110 V rated value	3 A
■ at 110 v rateu value	VA

• at 125 V rated value	2 A
at 220 V rated value	1 A
at 600 V rated value	0.15 A
operational current at DC-13	
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
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings	r laulty switching per 100 million (17 V, 1 mA)
full-load current (FLA) for 3-phase AC motor	
at 480 V rated value	14 A
• at 600 V rated value	17 A
yielded mechanical performance [hp]	
• for single-phase AC motor	Ale
— at 110/120 V rated value	1 hp
— at 230 V rated value	3 hp
• for 3-phase AC motor	
— at 200/208 V rated value	3 hp
— at 220/230 V rated value	5 hp
— at 460/480 V rated value	10 hp
— at 575/600 V rated value	15 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the fuse link	
<ul> <li>for short-circuit protection of the main circuit</li> </ul>	
<ul> <li>— with type of coordination 1 required</li> </ul>	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)
<ul> <li>— with type of assignment 2 required</li> </ul>	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
side-by-side mounting	Yes
height	
	85 mm
width	85 mm 45 mm
width depth	45 mm
depth	
depth required spacing	45 mm
depth required spacing  • with side-by-side mounting	45 mm 107 mm
depth required spacing  • with side-by-side mounting — forwards	45 mm 107 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards	45 mm 107 mm 10 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards	45 mm 107 mm 10 mm 10 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side	45 mm 107 mm 10 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts	45 mm 107 mm 10 mm 10 mm 10 mm 0 mm
depth required spacing  • with side-by-side mounting — forwards — upwards — downwards — at the side  • for grounded parts — forwards	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm 10 mm
depth required spacing  • with side-by-side mounting — forwards — upwards — downwards — at the side  • for grounded parts — forwards — upwards — at the side • at the side — forwards — at the side — at the side	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  • downwards  — downwards	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  - downwards  — at forwards  — in the side  — downwards  • for live parts	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm  10 mm 10 mm 10 mm 10 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  • downwards  — downwards	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  - downwards  — at forwards  — in the side  — downwards  • for live parts	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm  10 mm 10 mm 10 mm 10 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards  — upwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  — downwards  • for live parts  — forwards	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm  10 mm 10 mm 10 mm 10 mm 10 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  — downwards  • for live parts  — forwards  — upwards	45 mm 107 mm  10 mm 10 mm 0 mm 0 mm  10 mm 10 mm 10 mm 10 mm 10 mm 10 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  • downwards  — at pwards  — at the side  — downwards  • for live parts  — forwards  — upwards  — downwards  • for wards  — downwards  — downwards	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm  10 mm 10 mm 10 mm 10 mm 10 mm 10 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  • downwards  — at the side  — downwards  • for live parts  — forwards  — upwards  — at the side  — downwards  • for live parts  — forwards  — upwards  — at the side	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm  10 mm 10 mm 10 mm 10 mm 10 mm 10 mm 10 mm
depth required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  — downwards  • for live parts  — forwards  — upwards  — at the side  — downwards  • for live parts  — forwards  — upwards  — at the side  — downwards  — at the side  — downwards  — at the side	45 mm 107 mm  10 mm 10 mm 10 mm 0 mm  10 mm 10 mm 10 mm 10 mm 10 mm 10 mm 10 mm
depth  required spacing  • with side-by-side mounting  — forwards  — upwards  — downwards  — at the side  • for grounded parts  — forwards  — upwards  — at the side  — downwards  • at the side  — downwards  • for live parts  — forwards  — upwards  — at the side  — downwards  — at the side  — downwards  — at the side  Connections/ Terminals  type of electrical connection	45 mm 107 mm  10 mm 10 mm 0 mm 0 mm 10 mm 10 mm 10 mm 10 mm 10 mm 10 mm 6 mm 10 mm 10 mm 10 mm

of magnet coil	Screw-type terminals
type of connectable conductor cross-sections for main contacts	
• solid	2x (1 2.5 mm²), 2x (2.5 10 mm²)
<ul> <li>solid or stranded</li> </ul>	2x (1 2.5 mm²), 2x (2.5 10 mm²)
finely stranded with core end processing	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
connectable conductor cross-section for main contacts	
• solid	1 10 mm²
• stranded	1 10 mm²
finely stranded with core end processing	1 10 mm²
connectable conductor cross-section for auxiliary contacts	
<ul> <li>solid or stranded</li> </ul>	0.5 2.5 mm²
<ul> <li>finely stranded with core end processing</li> </ul>	0.5 2.5 mm²
type of connectable conductor cross-sections	
<ul> <li>for auxiliary contacts</li> </ul>	
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
<ul> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (20 16), 2x (18 14)
AWG number as coded connectable conductor cross section	
• for main contacts	16 8
• for auxiliary contacts	20 14
Safety related data	
product function	
<ul> <li>mirror contact according to IEC 60947-4-1</li> </ul>	Yes
B10 value with high demand rate according to SN 31920	450 000
proportion of dangerous failures	
<ul> <li>with low demand rate according to SN 31920</li> </ul>	40 %
<ul> <li>with high demand rate according to SN 31920</li> </ul>	73 %
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
T1 value for proof test interval or service life according to IEC 61508	20 a
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
suitability for use	
<ul> <li>safety-related switching OFF</li> </ul>	Yes
Certificates/ approvals	

## **General Product Approval**



Confirmation





<u>KC</u>



Functional
EMC Safety/Safety of Machinery Declaration of Conformity Test Certificates



Type Examination Certificate





Type Test Certificates/Test Report

Special Test Certificate

Test Certificates Marine / Shipping

Miscellaneous











Marine / Shipping other Railway Dangerous Good



Confirmation



Confirmation

Vibration and Shock

**Transport Information** 

## **Environment**

Environmental Confirmations

## **Further information**

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3RT2025-1NP30

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-1NP30

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1NP30

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

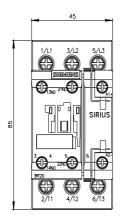
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2025-1NP30&lang=en

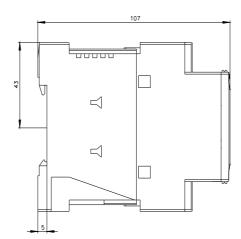
Characteristic: Tripping characteristics, I2t, Let-through current

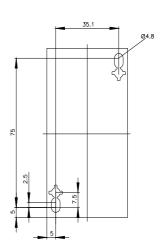
https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1NP30/char

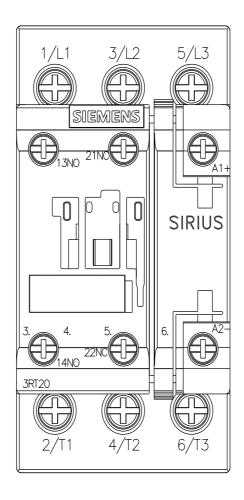
Further characteristics (e.g. electrical endurance, switching frequency)

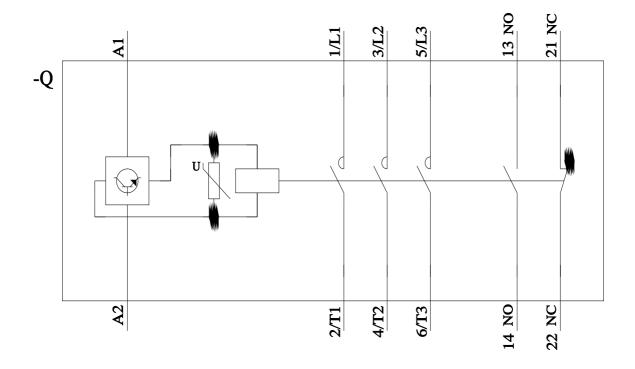
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-1NP30&objecttype=14&gridview=view1











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