# **SIEMENS**

### **Data sheet**

## 3RT2035-1NB30-0CC0



power contactor, AC-3e/AC-3, 41 A, 18.5 kW / 400 V, 3-pole, 20-33 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, screw terminal, communication-capable

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S2
product extension	
<ul> <li>function module for communication</li> </ul>	Yes
<ul> <li>auxiliary switch</li> </ul>	Yes
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	6.6 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	2.2 W
<ul> <li>without load current share typical</li> </ul>	2 W
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	690 V
<ul> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	690 V
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	6 kV
<ul> <li>of auxiliary circuit rated value</li> </ul>	6 kV
maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	7.7g / 5 ms, 4.5g / 10 ms
• at DC	7.7g / 5 ms, 4.5g / 10 ms
shock resistance with sine pulse	
• at AC	12g / 5 ms, 7g / 10 ms
• at DC	12g / 5 ms, 7g / 10 ms
mechanical service life (operating cycles)	
of contactor typical	10 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2014
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 %

Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
operating voltage	
<ul> <li>at AC-3 rated value maximum</li> </ul>	690 V
<ul> <li>at AC-3e rated value maximum</li> </ul>	690 V
operational current	00.4
at AC-1 at 400 V at ambient temperature 40 °C rated value	60 A
• at AC-1	CO A
— up to 690 V at ambient temperature 40 °C rated value	60 A 55 A
<ul> <li>up to 690 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> </ul>	55 A
— at 400 V rated value	41 A
— at 500 V rated value	41 A
— at 690 V rated value	24 A
• at AC-3e	
— 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
<ul> <li>at AC-5b up to 400 V rated value</li> </ul>	33.2 A
• at AC-6a	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	36.5 A
— up to 400 V for current peak value n=20 rated value	36.5 A
<ul> <li>up to 500 V for current peak value n=20 rated value</li> <li>up to 690 V for current peak value n=20 rated</li> </ul>	36.5 A 24 A
value  • at AC-6a	27 //
— 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 24.2 A
<ul> <li>up to 500 V for current peak value n=30 rated value</li> <li>up to 690 V for current peak value n=30 rated</li> </ul>	24.2 A
value minimum cross-section in main circuit at maximum AC-1	16 mm²
rated value operational current for approx. 200000 operating	
cycles at AC-4	
at 400 V rated value	22 A
at 690 V rated value	18.5 A
operational current	
• at 1 current path at DC-1	
— 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 24 V rated value      at 60 V rated value	55 A 45 A
	45 A
— at 110 V rated value	45 A 5 A
<ul><li>— at 220 V rated value</li><li>— at 440 V rated value</li></ul>	1 A
— at 440 V rated value  — at 600 V rated value	0.8 A
at 600 V rated value     with 3 current paths in series at DC-1	U.U A
— at 24 V rated value	55 A

at 60 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
<ul><li>— at 600 V rated value</li></ul>	1.4 A
<ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>	
— 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
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— 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
	0.10 A
with 3 current paths in series at DC-3 at DC-5     at 24 V reted value.	55 A
— 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
operating power	40.5114
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
• at AC-3e	
— 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
operating power for approx. 200000 operating cycles	
at AC-4	
<ul> <li>at 400 V rated value</li> </ul>	11.6 kW
<ul> <li>at 690 V rated value</li> </ul>	16.8 kW
operating apparent power at AC-6a	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	14.5 kVA
• up to 400 V for current peak value n=20 rated value	25.2 kVA
• up to 500 V for current peak value n=20 rated value	31.6 kVA
• up to 690 V for current peak value n=20 rated value	28.6 kVA
operating apparent power at AC-6a	
up to 230 V for current peak value n=30 rated value	9.6 kVA
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	16.8 kVA
up to 500 V for current peak value n=30 rated value	21 kVA
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	28.6 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>	843 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	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
no-load switching frequency	,
• at AC	1 500 1/h
• at DC	1 500 1/h
operating frequency	
• at AC-1 maximum	1 200 1/h
at AC-2 maximum	750 1/h
- acros = maximum	

• at AC-3 maximum	1 000 1/h
at AC-3 maximum     at AC-3e maximum	1 000 1/h
at AC-3 e maximum     at AC-4 maximum	300 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	7.0.50
at 50 Hz rated value	20 33 V
at 60 Hz rated value	20 33 V
control supply voltage at DC	
rated value	20 33 V
operating range factor control supply voltage rated	
value of magnet coil at DC	
initial value	0.8
full-scale value	1.1
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
• at 60 Hz	0.8 1.1
design of the surge suppressor	with varistor
inrush current peak	3 A
duration of inrush current peak	50 μs
locked-rotor current mean value	1 A
locked-rotor current peak	2.6 A
duration of locked-rotor current	230 ms
holding current mean value	40 mA
apparent pick-up power of magnet coil at AC  • at 50 Hz	40 VA
● at 50 Hz	40 VA 40 VA
apparent holding power of magnet coil at AC	40 VA
• at 50 Hz	2 VA
• at 60 Hz	2 VA
closing power of magnet coil at DC	23 W
holding power of magnet coil at DC	1 W
closing delay	
• at AC	35 110 ms
• at DC	35 110 ms
opening delay	
• at AC	30 55 ms
• at DC	30 55 ms
arcing time	10 20 ms
control version of the switch operating mechanism	Standard A1 - A2, optionally via function module
Auxiliary circuit	
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	
<ul> <li>at 230 V rated value</li> </ul>	10 A
<ul> <li>at 400 V rated value</li> </ul>	3 A
<ul> <li>at 500 V rated value</li> </ul>	2 A
at 690 V rated value	1 A
operational current at DC-12	40.4
at 24 V rated value	10 A
at 48 V rated value     at 60 V rated value	6 A
• at 60 V rated value	6 A
at 110 V rated value     at 135 V rated value	3 A
at 125 V rated value     at 230 V rated value	2 A
at 220 V rated value     at 600 V rated value	1 A
at 600 V rated value     operational current at DC-13	0.15 A
operational current at DC-13  • at 24 V rated value	10 A
at 24 V rated value     at 48 V rated value	2 A
at 40 V rated value     at 60 V rated value	2 A
- at oo v rated value	

• 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	
full-load current (FLA) for 3-phase AC motor	40 A
<ul><li>at 480 V rated value</li><li>at 600 V rated value</li></ul>	41 A
yielded mechanical performance [hp]	41 A
• 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
<ul> <li>at 460/480 V rated value</li> </ul>	30 hp
<ul> <li>at 575/600 V rated value</li> </ul>	40 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: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)
— with type of assignment 2 required	gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (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
<ul> <li>side-by-side mounting</li> </ul>	Yes
height	114 mm
width	55 mm
depth	130 mm
required spacing	
with side-by-side mounting	40
— forwards	10 mm
— upwards — downwards	10 mm 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	
type of electrical connection	
• 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
type of connectable conductor cross-sections for main contacts	0.4 (4 25 mags2) 4.4 (4 50 mags2)
solid or stranded     finally stranded with sore and processing.	2x (1 35 mm²), 1x (1 50 mm²)
<ul> <li>finely stranded with core end processing</li> <li>connectable conductor cross-section for main</li> </ul>	2x (1 25 mm²), 1x (1 35 mm²)
contacts	

finely stranded with core end processing
 connectable conductor cross-section for any

connectable conductor cross-section for auxiliary contacts

- solid or stranded
- finely stranded with core end processing

type of connectable conductor cross-sections

- for auxiliary contacts
  - solid or stranded
  - finely stranded with core end processing
- at AWG cables for auxiliary contacts

AWG number as coded connectable conductor cross section

- for main contacts
- for auxiliary contacts

1 ... 35 mm<sup>2</sup>

0.5 ... 2.5 mm<sup>2</sup> 0.5 ... 2.5 mm<sup>2</sup>

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)

2x (20 ... 16), 2x (18 ... 14)

18 ... 1

20 ... 14

Safety related data

#### product function

• mirror contact according to IEC 60947-4-1

• positively driven operation according to IEC 60947-

5-1

B10 value with high demand rate according to SN 31920 proportion of dangerous failures

• with low demand rate according to SN 31920

• with high demand rate according to SN 31920

failure rate [FIT] with low demand rate according to SN 31920

T1 value for proof test interval or service life according to IEC 61508

protection class IP on the front according to IEC 60529

touch protection on the front according to IEC 60529 suitability for use

• safety-related switching OFF

Yes

No

1 000 000

40 %

73 %

100 FIT

20 a

IP20

finger-safe, for vertical contact from the front

Yes

Certificates/ approvals

**General Product Approval** 





Confirmation



KC



**EMC** 

Functional Safety/Safety of Machinery

**Declaration of Conformity** 

**Test Certificates** 



Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

Marine / Shipping













Marine / Shipping

other

Railway

**Dangerous Good** 



#### 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=3RT2035-1NB30-0CC0

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2035-1NB30-0CC0

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-1NB30-0CC0

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

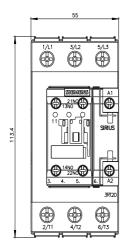
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2035-1NB30-0CC0&lang=en

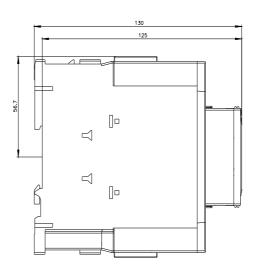
Characteristic: Tripping characteristics, I2t, Let-through current

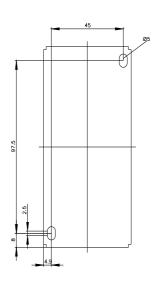
https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-1NB30-0CC0/char

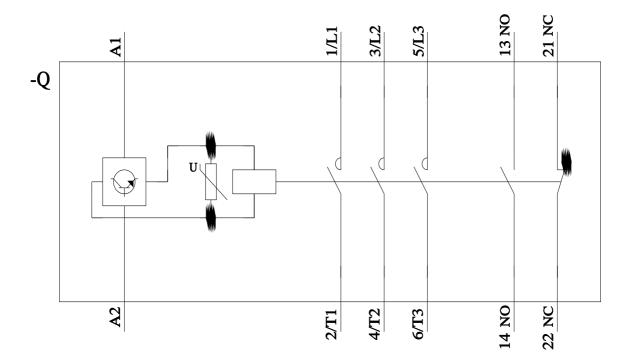
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2035-1NB30-0CC0&objecttype=14&gridview=view1









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