SIEMENS

Data sheet 3RT2025-2NB30



power contactor, AC-3e/AC-3, 17 A, 7.5 kW / 400 V, 3-pole, 21-28 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, spring-loaded terminal, size: S0

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S0
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 	1.8 W
 at AC in hot operating state per pole 	0.6 W
 without load current share typical 	2 W
insulation voltage	
 of main circuit with degree of pollution 3 rated value 	690 V
 of auxiliary circuit with degree of pollution 3 rated value 	690 V
surge voltage resistance	
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
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)	
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)	10/01/2009
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
during operation	-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
 up to 690 V at ambient temperature 40 °C rated value 	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 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
 — at 600 V rated value with 2 current paths in series at DC-1 	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
 at 440 V rated value 	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
 with 2 current paths in series at DC-3 at DC-5 	
— 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
 with 3 current paths in series at DC-3 at DC-5 	
— 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	
 up to 230 V for current peak value n=20 rated value 	4.5 kVA
 up to 400 V for current peak value n=20 rated value 	7.8 kVA
 up to 500 V for current peak value n=20 rated value 	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	
 limited to 1 s switching at zero current maximum 	225 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	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	21 28 V
at 60 Hz rated value at 60 Hz rated value	21 28 V
control supply voltage at DC	21 20 V
• rated value	21 28 V
operating range factor control supply voltage rated value of	Z 1 Z V
magnet coil at DC	
• initial value	0.7
• full-scale value	1.3
operating range factor control supply voltage rated value of	
magnet coil at AC	
● at 50 Hz	0.7 1.3
● at 60 Hz	0.7 1.3
design of the surge suppressor	with varistor
inrush current peak	3 A
duration of inrush current peak	30 μs
locked-rotor current mean value	0.3 A
locked-rotor current peak	0.52 A
duration of locked-rotor current	180 ms
holding current mean value	45 mA
apparent pick-up power of magnet coil at AC	
• at 50 Hz	6.6 VA
• at 60 Hz	6.7 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	1.9 VA
• at 60 Hz	2 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.86
• at 60 Hz	0.82
closing power of magnet coil at DC	5.9 W
holding power of magnet coil at DC	1.4 W
closing delay	
• at AC	50 80 ms
• at DC	50 80 ms
opening delay	
• 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	
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 at 690 V rated value	1A
operational current at DC-12	
• at 24 V rated value	10 A
at 24 V rated value at 48 V rated value	6 A
at 48 V rated value 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
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	readity switching per 100 million (17-V, 1 m/A)
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	Alle
— 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	
 for short-circuit protection of the main circuit 	
 — with type of coordination 1 required 	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)
 — with type of assignment 2 required 	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	102 mm
width	
	45 mm
depth	45 mm 107 mm
depth	
depth required spacing	
depth required spacing • with side-by-side mounting — forwards	107 mm
depth required spacing • with side-by-side mounting	107 mm
depth required spacing • with side-by-side mounting — forwards — upwards — downwards	107 mm 10 mm 10 mm
depth required spacing • with side-by-side mounting — forwards — upwards — downwards — at the side	107 mm 10 mm 10 mm 10 mm
depth required spacing • with side-by-side mounting — forwards — upwards — downwards — at the side • for grounded parts	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	107 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	107 mm 10 mm 10 mm 0 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 • at the side — forwards — at the side — at the side	107 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	107 mm 10 mm 10 mm 0 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	107 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	107 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 - downwards - at the side — forwards — upwards — at the side — downwards • for live parts — forwards — upwards — upwards	107 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 • of or grounded parts — forwards — upwards — at the side — downwards • for live parts — forwards — upwards — downwards • for lowards — downwards — downwards	107 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 • for live parts — forwards — upwards — downwards • for live parts — forwards — upwards — at the side — downwards • for live parts — forwards — upwards — downwards — at the side	107 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 — downwards • for live parts — forwards — upwards — downwards • for live parts — forwards — upwards — downwards — downwards	107 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 the side — downwards • for live parts — forwards — upwards — at the side — downwards — at the side — downwards — at the side — downwards — upwards — at the side Connections/ Terminals type of electrical connection	10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 10 mm 10 mm 10 mm 10 mm 6 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	107 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 • for live parts — forwards — upwards — at the side — downwards • for live parts — forwards — upwards — at the side Connections/ Terminals type of electrical connection	10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 10 mm 10 mm 10 mm 10 mm 6 mm 10 mm 10 mm 10 mm 10 mm 10 mm

of magnet coil	Spring-type terminals
type of connectable conductor cross-sections for main contacts	
• solid	2x (1 10 mm²)
solid or stranded	2x (1 10 mm²)
 finely stranded with core end processing 	2x (1 6 mm²)
finely stranded without core end processing	2x (1 6 mm²)
connectable conductor cross-section for main contacts	
• solid	1 10 mm²
• stranded	1 10 mm²
 finely stranded with core end processing 	1 6 mm²
 finely stranded without core end processing 	1 6 mm²
connectable conductor cross-section for auxiliary contacts	
 solid or stranded 	0.5 2.5 mm²
 finely stranded with core end processing 	0.5 1.5 mm²
finely stranded without core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	
• for auxiliary contacts	
— solid or stranded	2x (0.5 2.5 mm²)
 finely stranded with core end processing 	2x (0.5 1.5 mm²)
 finely stranded without core end processing 	2x (0.5 2.5 mm²)
 for AWG cables for auxiliary contacts 	2x (20 14)
AWG number as coded connectable conductor cross section	
• for main contacts	18 8
for auxiliary contacts	20 14
Safety related data	
product function	
mirror contact according to IEC 60947-4-1	Yes
B10 value with high demand rate according to SN 31920	450 000
proportion of dangerous failures	
 with low demand rate according to SN 31920 	40 %
with high demand rate according to SN 31920	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
	IP20
protection class IP on the front according to IEC 60529	11 20
protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
-	
touch protection on the front according to IEC 60529	

General Product Approval





Confirmation



<u>KC</u>



EMC

Functional Safety/Safety of Machinery

Declaration of Conformity

Test Certificates



Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

Test Certificates

Marine / Shipping











Marine / Shipping

other

Railway





Confirmation



Vibration and Shock Confirmation

Dangerous Good

Environment

Transport Information

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=3RT2025-2NB30

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-2NB30

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-2NB30

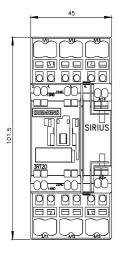
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

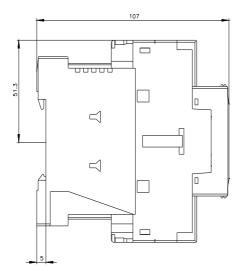
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2025-2NB30&lang=en

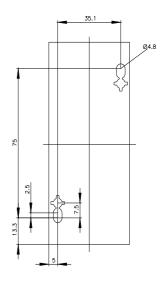
Characteristic: Tripping characteristics, I2t, Let-through current

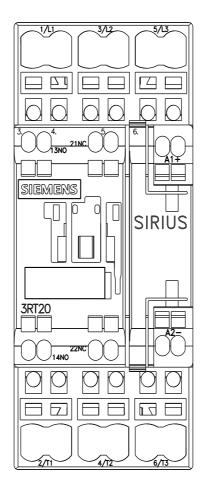
https://support.industry.siemens.com/cs/ww/en/ps/3RT20

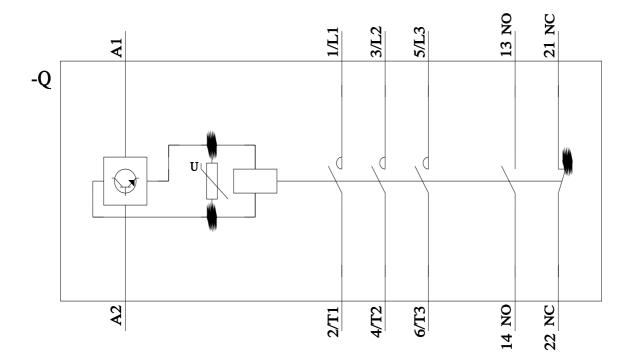
Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-2NB30&objecttype=14&gridview=view1











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