SIEMENS

Data sheet 3RT2025-1AP00



power contactor, AC-3 17 A, 7.5 kW / 400 V 1 NO + 1 NC, 230 V AC, 50 Hz, 3-pole, Size S0 screw terminal

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	2.7 W
• per pole	0.9 W
power loss [W] for rated value of the current without load current share typical	7.6 W
surge voltage resistance	
of main circuit rated value	6 kV
of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	7,5g / 5 ms, 4,7g / 10 ms
shock resistance with sine pulse	
• at AC	11,8g / 5 ms, 7,4g / 10 ms
mechanical service life (switching 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 acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	01.10.2009
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 acc. 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 at AC 2 reted value maximum	600 \/
operating voltage at AC-3 rated value maximum	690 V
operational current	40.4
 at AC-1 at 400 V at ambient temperature 40 °C rated value 	40 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C	40 A
rated value	
— up to 690 V at ambient temperature 60 °C	35 A
rated value	
• 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-5 up to 600 V rated value	15.5 A 35.2 A
at AC-5a up to 690 V rated value at AC-5b up to 400 V rated value	
 at AC-5b up to 400 V rated value at AC-6a 	14.1 A
	11.4 A
 up to 230 V for current peak value n=20 rated value 	11.7 /
— up to 400 V for current peak value n=20 rated	11.4 A
value	
— up to 500 V for current peak value n=20 rated	11.4 A
value	44.9.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	7.6 A
value	
— up to 400 V for current peak value n=30 rated	7.6 A
value	
 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	7.6 A
value	1.071
minimum cross-section in main circuit at maximum AC-1	10 mm²
rated value	
operational current for approx. 200000 operating	
e at 400 V rated value	7.7 Δ
at 690 V rated value at 690 V rated value	7.7 A 7.7 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
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 kV·A
• up to 400 V for current peak value n=20 rated value	7.8 kV·A
• up to 500 V for current peak value n=20 rated value	9.9 kV·A
• up to 690 V for current peak value n=20 rated value	13.6 kV·A
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	3 kV·A
• up to 400 V for current peak value n=30 rated value	5.2 kV·A
• up to 500 V for current peak value n=30 rated value	6.6 kV·A
• up to 690 V for current peak value n=30 rated value	9.1 kV·A
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
Ilimited to 7 s switching at zero current maximum Ilimited to 5 s switching at zero current maximum	225 A; Use minimum cross-section acc. to AC-1 rated value
• minica to 5 s switching at Zero current maximum	220 A, USE MINIMUM GUSS-SECTION ACC. TO AC-1 Tated Value

• Imided to 10 is switching at zero current maximum • Imided to 30 is switching at zero current		
• Imited to 80 a switching at zero current maximum 96 Ac Use minimum cross-section acc. to AC-1 rated value 1 AC 1 and AC	 limited to 10 s switching at zero current maximum 	180 A; Use minimum cross-section acc. to AC-1 rated value
an AC		115 A; Use minimum cross-section acc. to AC-1 rated value
■ at AC	limited to 60 s switching at zero current maximum	96 A; Use minimum cross-section acc. to AC-1 rated value
Operating frequency	no-load switching frequency	
	• at AC	5 000 1/h
eat AC-2 maximum	operating frequency	
	at AC-1 maximum	1 000 1/h
e at AC-4 maximum Control Jorchilf Control Sype of Voltage of the control supply voltage control supply voltage at AC at 50 Hz rated value apparent pick-up power of magnet coil at AC at 50 Hz apparent pick-up power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of the coil at 50 Hz closing delay at AC arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NC contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum poperational current at AC-15 at 200 V rated value at 40 V rated value at 50 V rated value at 50 V rated value at 50 V rated value a	at AC-2 maximum	1 000 1/h
e at AC-4 maximum Control Circuit/ Control Type of Voltage of the control supply voltage out of Star Ac-4 and Star Ac-4 e at 50 Hz and Star Ac-4 apparent pick-up power of magnet coil at AC e at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of magnet coil at AC at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 50 Hz apparent holding power of the coil at 60 V appar	at AC-3 maximum	1 000 1/h
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type of voltage of the control supply voltage control supply voltage at AC	Control circuit/ Control	
control supply voltage at AC at 50 Hz rated value operating range factor control supply voltage rated value of magnet coil at AC at 50 Hz apparent pick-up power of magnet coil at AC at 50 Hz inductive power factor with closing power of the coil at 50 Hz apparent holding power of magnet coil at AC at 50 Hz at 50 Hz outpart of AC at 50 Hz closing delay at AC operating delay at AC operating further of NC contacts for auxiliary contacts instantaneous contact number of NC contacts for auxiliary contacts instantaneous contact instantaneous contact operational current at AC-12 maximum operational current at AC-15 at 400 v rated value at 480 v rated value at 500 v rated value at 500 v rated value at 600 v rated value at		A.C.
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val 50 Hz 0.811 apparent pick-up power of magnet coil at AC at 50 Hz at 50 Hz 0.82 apparent bickling power of magnet coil at AC at 50 Hz at 50 Hz 0.82 apparent holding power of magnet coil at AC at 50 Hz at 50 Hz 7.6 V-A Inductive power factor with the holding power of the coil 0.25 closing delay at AC 8 40 ms opening delay at AC 4 16 ms arcing time 10 10 ms control version of the switch operating mechanism Standard A1 - A2 Auxiliary circuit 1		230 V
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apparent holding power of magnet coil at AC		
a st 50 Hz		0.82
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e at 50 Hz closing delay		
closing delay		
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opening delay	closing delay	
	• at AC	8 40 ms
arcing time	opening delay	
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 at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts 1 faulty switching per 100 million (17 V, 1 mA) 		
● at 600 V rated value Contact reliability of auxiliary contacts 0.1 A 1 faulty switching per 100 million (17 V, 1 mA)	 at 125 V rated value 	
contact reliability of auxiliary contacts 1 faulty switching per 100 million (17 V, 1 mA)	• at 220 V rated value	
	at 600 V rated value	0.1 A
UL/CSA ratings	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	
at 480 V rated value	14 A
at 600 V rated value	17 A
yielded mechanical performance [hp]	
 for single-phase AC motor 	
 — 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	gG: 10 A (500 V, 1 kA)
required	-
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 standard mounting rail
	according to DIN EN 60715
side-by-side mounting	Yes
height	85 mm
width	45 mm
depth	97 mm
required spacing	
with side-by-side mounting	
— forwards	10 mm
— upwards	10 mm
— downwards	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	
— solid	2x (1 2.5 mm²), 2x (2.5 10 mm²)
solid solid or stranded	2x (1 2.5 mm²), 2x (2.5 10 mm²) 2x (1 2.5 mm²), 2x (2.5 10 mm²)
	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
 finely stranded with core end processing at AWG cables for main contacts 	
at AVVG cables for main contacts connectable conductor cross-section for main contacts	2x (16 12), 2x (14 8)
• solid	1 10 mm²
stranded	1 10 mm²

finely stranded with core end processing	1 10 mm²
connectable conductor cross-section for auxiliary contacts	
 solid or stranded 	0.5 2.5 mm²
finely stranded with core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	
 for auxiliary contacts 	
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
 finely stranded with core end processing 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
 at AWG cables for auxiliary contacts 	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	
B10 value with high demand rate acc. to SN 31920	450 000
proportion of dangerous failures	
 with low demand rate acc. to SN 31920 	40 %
 with high demand rate acc. to SN 31920 	73 %
failure rate [FIT] with low demand rate acc. to SN 31920	100 FIT
T1 value for proof test interval or service life acc. to IEC 61508	20 y
protection class IP on the front acc. to IEC 60529	IP20
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front
suitability for use	
 safety-related switching OFF 	Yes

Certificates/ approvals

General Product Approval





Confirmation



<u>KC</u>



Functional
Safety/Safety of Machinery

EMC Declaration of Conformity Test Certificates



Type Examination Certificate



UK Declaration of Conformity

Special Test Certificate

Type Test Certificates/Test Report

Marine / Shipping













other

Confirmation



Confirmation

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=3RT2025-1AP00

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-1AP00

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1AP00

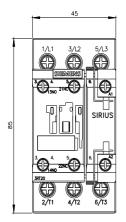
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax de.aspx?mlfb=3RT2025-1AP00&lang=en

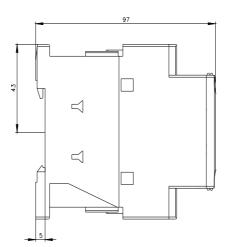
Characteristic: Tripping characteristics, I2t, Let-through current

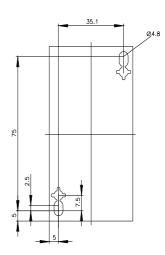
https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1AP00/char

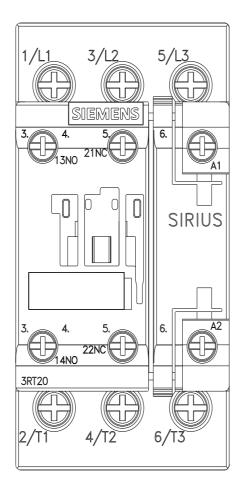
Further characteristics (e.g. electrical endurance, switching frequency)

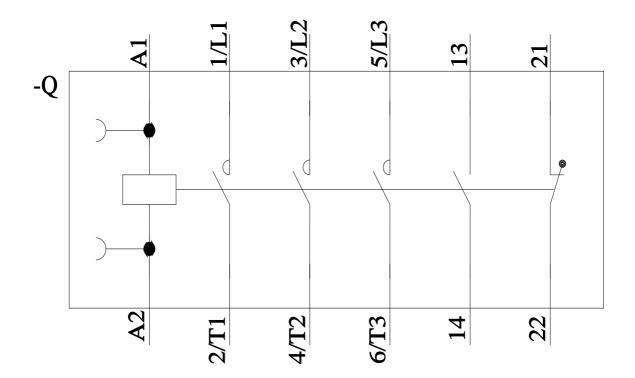
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-1AP00&objecttype=14&gridview=view1











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