

Power contactor, AC-3 12 A, 5.5 kW / 400 V 1 NC, 110 V AC, 50 / 60 Hz 3-pole, Size S00 screw terminal



product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2

General technical data	
size of contactor	S00
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	3.6 W
at AC in hot operating state per pole	1.2 W
power loss [W] for rated value of the current without load current share typical	5.7 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

protection class IP	
• on the front	IP20
• of the terminal	IP20
shock resistance at rectangular impulse	
• at AC	7,3g / 5 ms, 4,7g / 10 ms
shock resistance with sine pulse	
• at AC	11,4g / 5 ms, 7,3g / 10 ms
mechanical service life (switching cycles)	
• of contactor typical	30 000 000
• 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

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

Main circuit	
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
operational current	
• at AC-1 at 400 V — at ambient temperature 40 °C rated value	22 A
• at AC-1 — up to 690 V at ambient temperature 40 °C rated value	22 A
— up to 690 V at ambient temperature 60 °C rated value	20 A
• at AC-3 — at 400 V rated value	12 A
— at 500 V rated value	9.2 A
— at 690 V rated value	6.7 A
• at AC-4 at 400 V rated value	8.5 A
• at AC-5a up to 690 V rated value	19.4 A
• at AC-5b up to 400 V rated value	9.9 A
• at AC-6a	

— up to 230 V for current peak value n=20 rated value	7.2 A
— up to 400 V for current peak value n=20 rated value	7.2 A
— up to 500 V for current peak value n=20 rated value	7.2 A
— up to 690 V for current peak value n=20 rated value	6.7 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	4.8 A
— up to 400 V for current peak value n=30 rated value	4.8 A
— up to 500 V for current peak value n=30 rated value	4.8 A
— up to 690 V for current peak value n=30 rated value	4.8 A
minimum cross-section in main circuit	
• at maximum AC-1 rated value	4 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	4.1 A
• at 690 V rated value	3.3 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	20 A
— at 110 V rated value	2.1 A
— at 220 V rated value	0.8 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	20 A
— at 110 V rated value	12 A
— at 220 V rated value	1.6 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.7 A
• with 3 current paths in series at DC-1	
— at 24 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	20 A
— at 440 V rated value	1.3 A
— at 600 V rated value	1 A
operational current	

• at 1 current path at DC-3 at DC-5 — at 24 V rated value — at 110 V rated value • with 2 current paths in series at DC-3 at DC-5 — at 24 V rated value — at 110 V rated value • with 3 current paths in series at DC-3 at DC-5 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value	20 A 0.1 A 20 A 0.35 A 20 A 20 A 1.5 A 0.2 A 0.2 A
operating power • at AC-3 — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value	3 kW 5.5 kW 5.5 kW 5.5 kW
operating power for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value	2 kW 2.5 kW
operating apparent power at AC-6a • up to 230 V for current peak value n=20 rated value • up to 400 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 690 V for current peak value n=20 rated value	2.8 kV·A 4.9 kV·A 6.2 kV·A 8 kV·A
operating apparent power at AC-6a • 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	1.9 kV·A 3.3 kV·A 4.1 kV·A 5.7 kV·A
short-time withstand current in cold operating state up to 40 °C	

• 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	200 A; Use minimum cross-section acc. to AC-1 rated value 123 A; Use minimum cross-section acc. to AC-1 rated value 96 A; Use minimum cross-section acc. to AC-1 rated value 74 A; Use minimum cross-section acc. to AC-1 rated value 61 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	10 000 1/h
operating frequency	
• at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum	1 000 1/h 750 1/h 750 1/h 250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
• at 50 Hz rated value • at 60 Hz rated value	110 V 110 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz • at 60 Hz	0.8 ... 1.1 0.85 ... 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz • at 60 Hz	37 V·A 33 V·A
inductive power factor with closing power of the coil	
• at 50 Hz • at 60 Hz	0.8 0.75
apparent holding power of magnet coil at AC	
• at 50 Hz • at 60 Hz	5.7 V·A 4.4 V·A
inductive power factor with the holding power of the coil	
• at 50 Hz • at 60 Hz	0.25 0.25
closing delay	
• at AC	8 ... 33 ms
opening delay	
• at AC	4 ... 15 ms

arcing time	10 ... 15 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC 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	1 A
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 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	
full-load current (FLA) for 3-phase AC motor	
• at 480 V rated value	11 A
• at 600 V rated value	11 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	0.5 hp
— at 230 V rated value	2 hp
• for 3-phase AC motor	
— at 200/208 V rated value	3 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	7.5 hp
— at 575/600 V rated value	10 hp

contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link	
- for short-circuit protection of the main circuit — with type of coordination 1 required — with type of assignment 2 required - for short-circuit protection of the auxiliary switch required	gG: 50A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA) gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA) 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 standard mounting rail according to DIN EN 60715
side-by-side mounting	Yes
height	58 mm
width	45 mm
depth	73 mm
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 — at the side	10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm 10 mm 10 mm 10 mm 6 mm
Connections/ Terminals	
type of electrical connection	
- for main current circuit - for auxiliary and control circuit - at contactor for auxiliary contacts - of magnet coil	screw-type terminals screw-type terminals Screw-type terminals Screw-type terminals

type of connectable conductor cross-sections • for main contacts — solid — solid or stranded — finely stranded with core end processing • at AWG cables for main contacts	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), 2x 4 mm ² 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²), 2x 4 mm ² 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14), 2x 12
connectable conductor cross-section for main contacts • solid • stranded • finely stranded with core end processing	0.5 ... 4 mm ² 0.5 ... 4 mm ² 0.5 ... 2.5 mm ²
connectable conductor cross-section for auxiliary contacts • solid or stranded • finely stranded with core end processing	0.5 ... 4 mm ² 0.5 ... 2.5 mm ²
type of connectable conductor cross-sections for auxiliary contacts — solid or stranded — finely stranded with core end processing	2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²), 2x 4 mm ² 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²)
type of connectable conductor cross-sections at AWG cables for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14), 2x 12
AWG number as coded connectable conductor cross section • for main contacts • for auxiliary contacts	20 ... 12 20 ... 12

Safety related data

B10 value • with high demand rate acc. to SN 31920	1 000 000
proportion of dangerous failures • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920	40 % 73 %
failure rate [FIT] • with low demand rate acc. to SN 31920	100 FIT
product function • mirror contact acc. to IEC 60947-4-1	Yes
T1 value for proof test interval or service life acc. to IEC 61508	20 y
touch protection against electrical shock	finger-safe
suitability for use safety-related switching OFF	Yes

Certificates/ approvals

General Product Approval	EMC
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[KC](#)



Declaration of Conformity	Test Certificates	Marine / Shipping
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[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Marine / Shipping	other
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[Confirmation](#)

other



Further information

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=3RT2017-1AF02>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2017-1AF02>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1AF02>

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

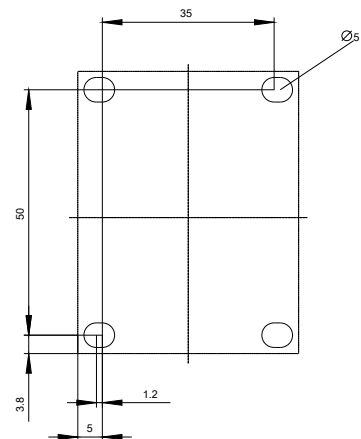
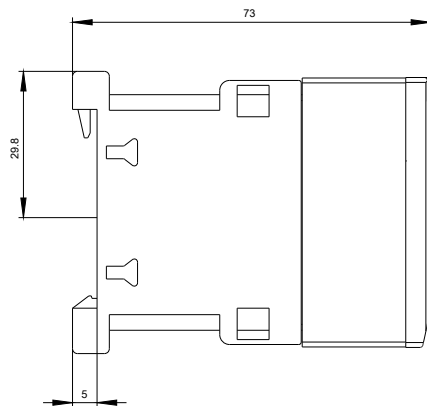
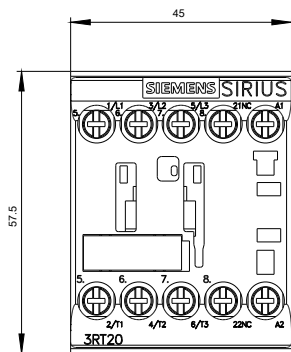
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2017-1AF02&lang=en

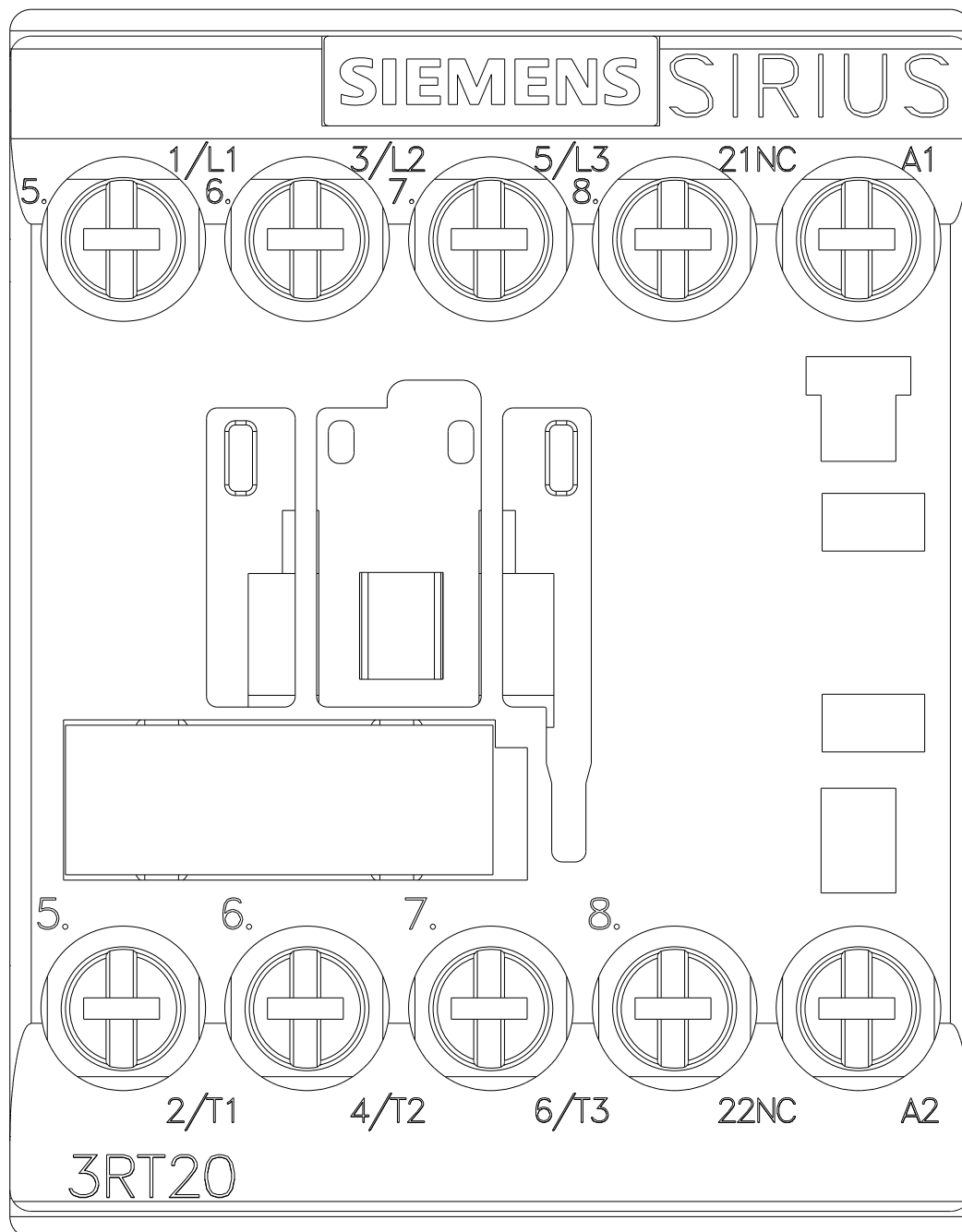
Characteristic: Tripping characteristics, I²t, Let-through current

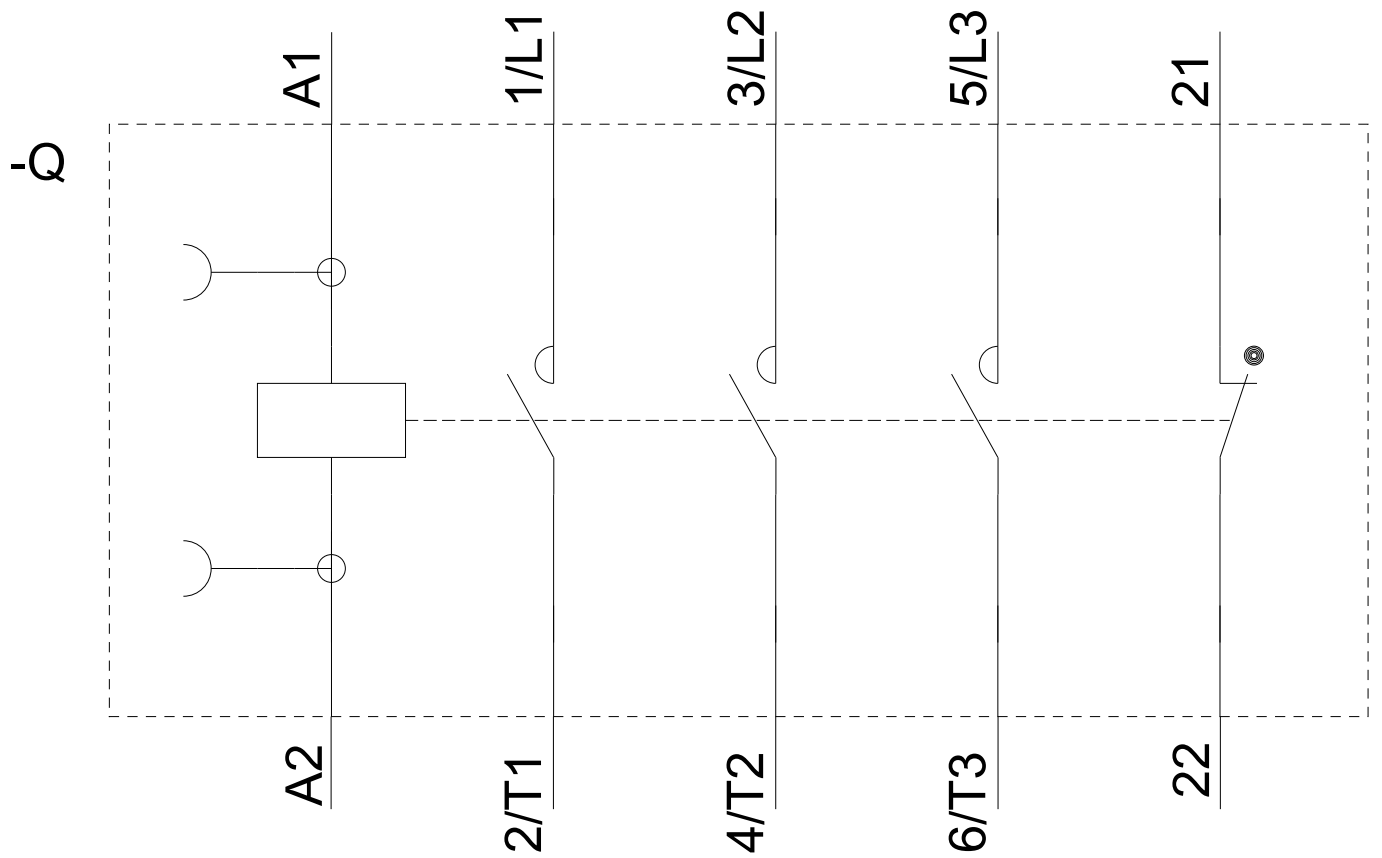
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1AF02/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2017-1AF02&objecttype=14&gridview=view1>







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