

power contactor, AC-3 12 A, 5.5 kW / 400 V 1 NC, 24 V DC 0.7-1.25*US with integrated suppressor diode 3-pole, size S00 spring-type terminal suitable for PLC outputs not expandable with auxiliary switch



product brand name	SIRIUS
product designation	Coupling relay
product type designation	3RT2
General technical data	
size of contactor	S00
product extension	
• function module for communication	No
• auxiliary switch	No
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	2.8 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 DC	7.3g / 5 ms, 4.7g / 10 ms
shock resistance with sine pulse	
• at DC	11,4g / 5 ms, 7,3g / 10 ms
mechanical service life (switching cycles)	
• of contactor typical	30 000 000
• of the contactor with added electronics-compatible auxiliary switch block typical	5 000 000
• of the contactor with added auxiliary switch block typical	10 000 000
reference code acc. to DIN EN 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
operating 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
operating 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
operating 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
operating current	

<ul style="list-style-type: none"> • at 1 current path at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value • with 2 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value • with 3 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — 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 <ul style="list-style-type: none"> • at AC-2 at 400 V rated value • at AC-3 <ul style="list-style-type: none"> — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value 	5.5 kW 3 kW 5.5 kW 5.5 kW 5.5 kW
operating power for approx. 200000 operating cycles at AC-4 <ul style="list-style-type: none"> • at 400 V rated value • at 690 V rated value 	2 kW 2.5 kW
operating apparent output at AC-6a <ul style="list-style-type: none"> • 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 output at AC-6a <ul style="list-style-type: none"> • 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	

<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • at DC 	10 000 1/h
operating frequency	
<ul style="list-style-type: none"> • 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	DC
control supply voltage at DC	
<ul style="list-style-type: none"> • rated value 	12 V
operating range factor control supply voltage rated value of magnet coil at DC	
<ul style="list-style-type: none"> • initial value • full-scale value 	0.7 1.25
design of the surge suppressor	with suppressor diode
closing power of magnet coil at DC	2.8 W
holding power of magnet coil at DC	2.8 W
closing delay	
<ul style="list-style-type: none"> • at DC 	30 ... 100 ms
opening delay	
<ul style="list-style-type: none"> • at DC 	7 ... 13 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	
<ul style="list-style-type: none"> • instantaneous contact 	1
operating current at AC-12 maximum	10 A
operating current at AC-15	
<ul style="list-style-type: none"> • at 230 V rated value • at 400 V rated value • at 500 V rated value 	10 A 3 A 2 A

<ul style="list-style-type: none"> • at 690 V rated value 	1 A
operating current at DC-12	
<ul style="list-style-type: none"> • at 24 V rated value 	10 A
<ul style="list-style-type: none"> • at 48 V rated value 	6 A
<ul style="list-style-type: none"> • at 60 V rated value 	6 A
<ul style="list-style-type: none"> • at 110 V rated value 	3 A
<ul style="list-style-type: none"> • at 125 V rated value 	2 A
<ul style="list-style-type: none"> • at 220 V rated value 	1 A
<ul style="list-style-type: none"> • at 600 V rated value 	0.15 A
operating current at DC-13	
<ul style="list-style-type: none"> • at 24 V rated value 	10 A
<ul style="list-style-type: none"> • at 48 V rated value 	2 A
<ul style="list-style-type: none"> • at 60 V rated value 	2 A
<ul style="list-style-type: none"> • at 110 V rated value 	1 A
<ul style="list-style-type: none"> • at 125 V rated value 	0.9 A
<ul style="list-style-type: none"> • at 220 V rated value 	0.3 A
<ul style="list-style-type: none"> • 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 three-phase AC motor	
<ul style="list-style-type: none"> • at 480 V rated value 	11 A
<ul style="list-style-type: none"> • at 600 V rated value 	11 A
yielded mechanical performance [hp]	
<ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value — at 230 V rated value 	0.5 hp 2 hp
<ul style="list-style-type: none"> • for three-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 	3 hp 3 hp 7.5 hp 10 hp
contact rating of auxiliary contacts according to UL	A600 / Q600

Short-circuit protection

design of the fuse link	
<ul style="list-style-type: none"> • for short-circuit protection of the main circuit <ul style="list-style-type: none"> — with type of coordination 1 required — with type of assignment 2 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)
<ul style="list-style-type: none"> • 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
mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
<ul style="list-style-type: none"> side-by-side mounting 	Yes
height	70 mm
width	45 mm
depth	73 mm
required spacing	
<ul style="list-style-type: none"> with side-by-side mounting <ul style="list-style-type: none"> forwards upwards downwards at the side for grounded parts <ul style="list-style-type: none"> forwards upwards at the side downwards for live parts <ul style="list-style-type: none"> 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 10 mm 6 mm

Connections/ Terminals

type of electrical connection	
<ul style="list-style-type: none"> for main current circuit for auxiliary and control current circuit at contactor for auxiliary contacts of magnet coil 	spring-loaded terminals spring-loaded terminals Spring-type terminals Spring-type terminals
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> for main contacts <ul style="list-style-type: none"> solid single or multi-stranded finely stranded with core end processing finely stranded without core end processing at AWG conductors for main contacts 	2x (0.5 ... 4 mm ²) 2x (0,5 ... 4 mm ²) 2x (0.5 ... 2.5 mm ²) 2x (0.5 ... 2.5 mm ²) 2x (20 ... 12)
connectable conductor cross-section for main contacts	

<ul style="list-style-type: none"> • solid 	0.5 ... 4 mm ²
<ul style="list-style-type: none"> • stranded 	0.5 ... 4 mm ²
<ul style="list-style-type: none"> • finely stranded with core end processing 	0.5 ... 2.5 mm ²
<ul style="list-style-type: none"> • finely stranded without core end processing 	0.5 ... 2.5 mm ²
connectable conductor cross-section for auxiliary contacts	
<ul style="list-style-type: none"> • single or multi-stranded 	0.5 ... 4 mm ²
<ul style="list-style-type: none"> • finely stranded with core end processing 	0.5 ... 2.5 mm ²
<ul style="list-style-type: none"> • finely stranded without core end processing 	0.5 ... 2.5 mm ²
<ul style="list-style-type: none"> • type of connectable conductor cross-sections for auxiliary contacts <ul style="list-style-type: none"> — single or multi-stranded — finely stranded with core end processing — finely stranded without core end processing 	2x (0,5 ... 4 mm ²) 2x (0.5 ... 2.5 mm ²) 2x (0.5 ... 2.5 mm ²)
<ul style="list-style-type: none"> • type of connectable conductor cross-sections at AWG conductors for auxiliary contacts 	2x (20 ... 12)
AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> • for main contacts 	20 ... 12
<ul style="list-style-type: none"> • for auxiliary contacts 	20 ... 12

Safety related data

B10 value	
<ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 	1 000 000
proportion of dangerous failures	
<ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 	40 %
<ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 	73 %
failure rate [FIT]	
<ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 	100 FIT
product function	
<ul style="list-style-type: none"> • mirror contact acc. to IEC 60947-4-1 	Yes
T1 value for proof test interval or service life acc. to IEC 61508	20 y
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](#)



Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	Marine / Shipping
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[Type Examination Certificate](#)



[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Marine / Shipping



other

[Confirmation](#)



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=3RT2017-2KA42>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2017-2KA42>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-2KA42>

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

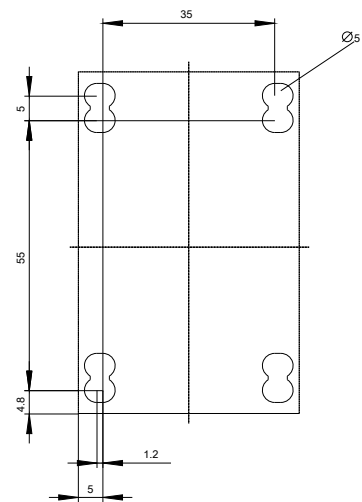
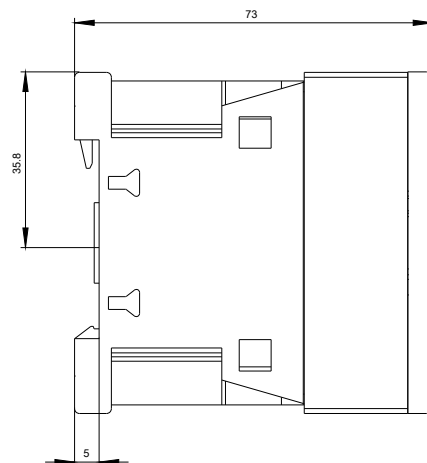
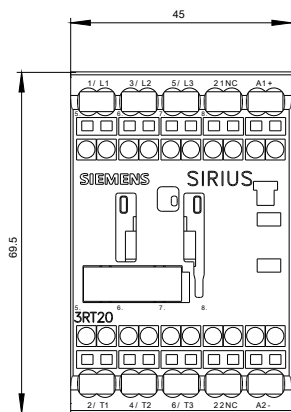
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2017-2KA42&lang=en

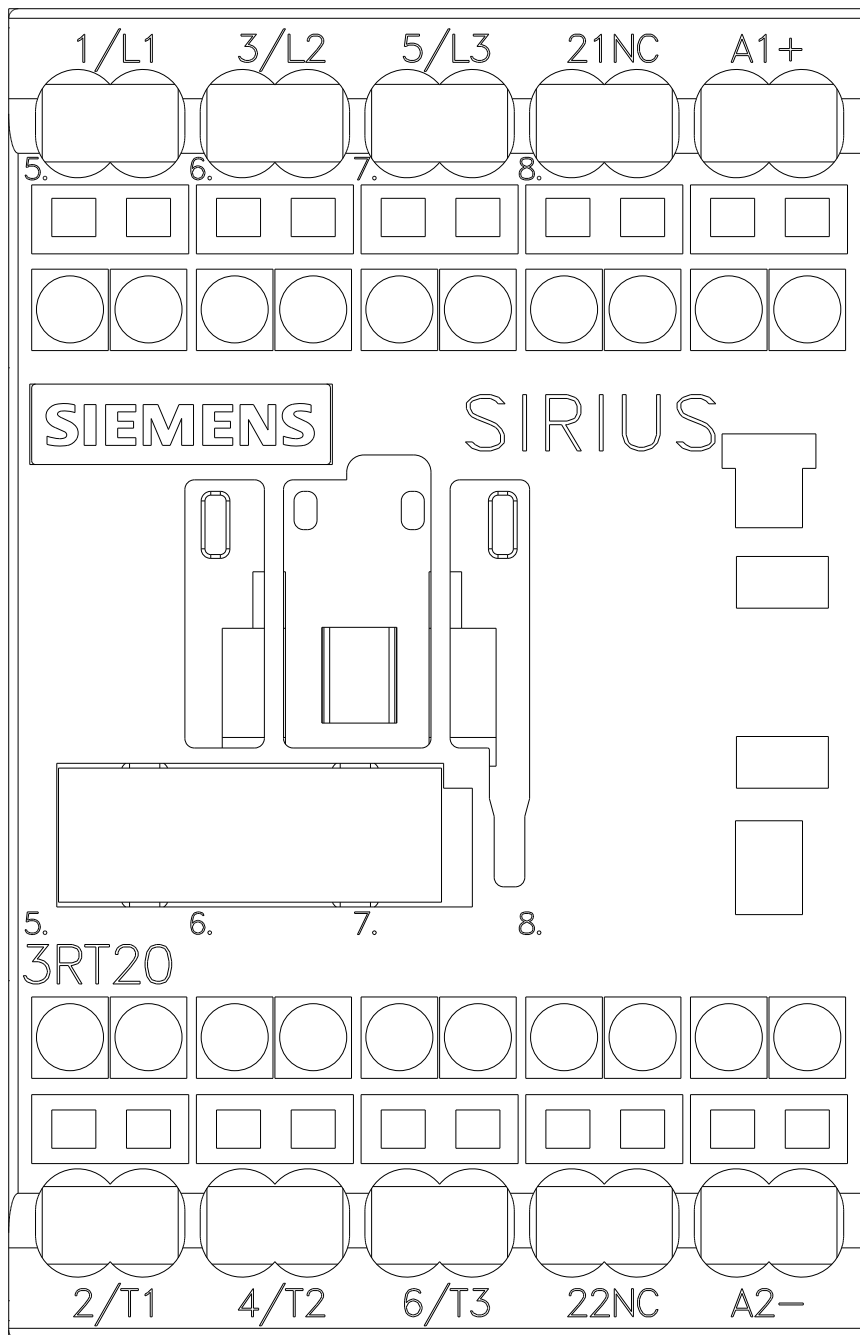
Characteristic: Tripping characteristics, I_t, Let-through current

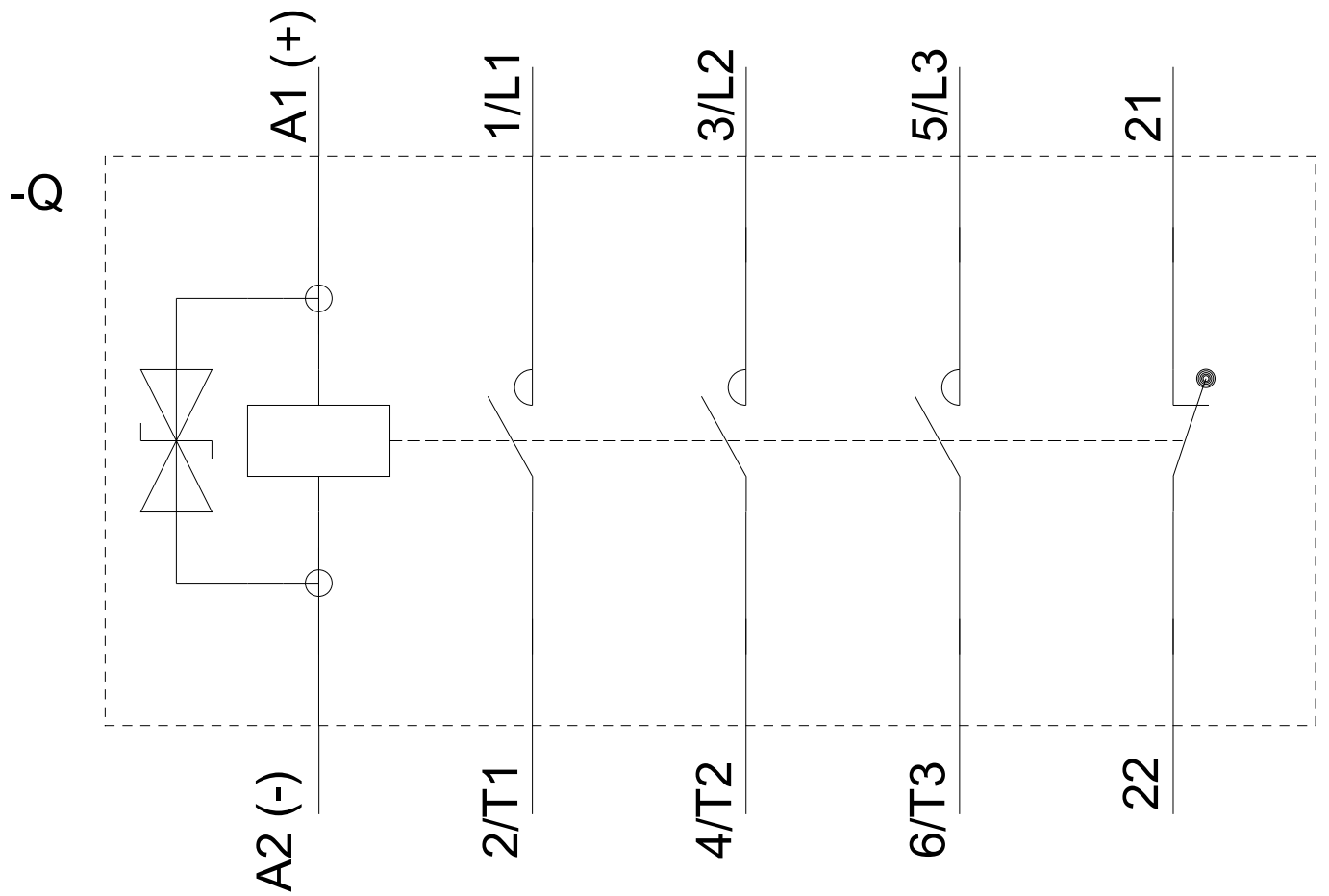
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-2KA42/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2017-2KA42&objecttype=14&gridview=view1>







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