



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 contactor
product type designation	3RT2
General technical data	
size of contactor	S00
product extension	
<ul style="list-style-type: none"> function module for communication auxiliary switch 	No No
power loss [W] for rated value of the current	
<ul style="list-style-type: none"> at AC in hot operating state at AC in hot operating state per pole without load current share typical 	1.5 W 0.5 W 2.8 W
insulation voltage	
<ul style="list-style-type: none"> of main circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value 	690 V 690 V
surge voltage resistance	
<ul style="list-style-type: none"> of main circuit rated value of auxiliary circuit rated value 	6 kV 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	
<ul style="list-style-type: none"> at DC 	7.3g / 5 ms, 4.7g / 10 ms
shock resistance with sine pulse	
<ul style="list-style-type: none"> at DC 	11,4g / 5 ms, 7,3g / 10 ms
mechanical service life (switching cycles)	
<ul style="list-style-type: none"> of contactor typical of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added auxiliary switch block typical 	30 000 000 5 000 000 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	
<ul style="list-style-type: none"> during operation during storage 	-25 ... +60 °C -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	
• 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 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-3e	
— 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
● at 1 current path at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 110 V rated value	0.1 A
● with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 110 V rated value	0.35 A
● with 3 current paths in series at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	1.5 A
— at 440 V rated value	0.2 A
— at 600 V rated value	0.2 A
operating power	
● at AC-2 at 400 V rated value	5.5 kW
● at AC-3	
— at 230 V rated value	3 kW
— at 400 V rated value	5.5 kW
— at 500 V rated value	5.5 kW
— at 690 V rated value	5.5 kW
● at AC-3e	
— at 230 V rated value	3 kW
— at 400 V rated value	5.5 kW
— at 500 V rated value	5.5 kW
— at 690 V rated value	5.5 kW
operating power for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	2 kW
● at 690 V rated value	2.5 kW
operating apparent power at AC-6a	
● up to 230 V for current peak value n=20 rated value	2.8 kVA
● up to 400 V for current peak value n=20 rated value	4.9 kVA
● up to 500 V for current peak value n=20 rated value	6.2 kVA
● up to 690 V for current peak value n=20 rated value	8 kVA
operating apparent power at AC-6a	
● up to 230 V for current peak value n=30 rated value	1.9 kVA
● up to 400 V for current peak value n=30 rated value	3.3 kVA
● up to 500 V for current peak value n=30 rated value	4.1 kVA
● up to 690 V for current peak value n=30 rated value	5.7 kVA
short-time withstand current in cold operating state up to 40 °C	
● limited to 1 s switching at zero current maximum	200 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 5 s switching at zero current maximum	123 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 10 s switching at zero current maximum	96 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 30 s switching at zero current maximum	74 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum	61 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
● at DC	10 000 1/h
operating frequency	
● at AC-1 maximum	1 000 1/h
● at AC-2 maximum	750 1/h
● at AC-3 maximum	750 1/h
● at AC-3e maximum	750 1/h
● at AC-4 maximum	250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	DC

control supply voltage at DC	
• rated value	12 V
operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.7
• full-scale value	1.25
design of the surge suppressor	suppressor diode
closing power of magnet coil at DC	2.8 W
holding power of magnet coil at DC	2.8 W
closing delay	
• at DC	25 ... 130 ms
opening delay	
• at DC	7 ... 20 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	gG: 50A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)
— with type of assignment 2 required	gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,

<ul style="list-style-type: none"> for short-circuit protection of the auxiliary switch required 	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
<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 10 mm upwards 10 mm downwards 10 mm at the side 0 mm for grounded parts <ul style="list-style-type: none"> forwards 10 mm upwards 10 mm at the side 6 mm downwards 10 mm for live parts <ul style="list-style-type: none"> forwards 10 mm upwards 10 mm downwards 10 mm at the side 6 mm 	
Connections/ Terminals	
type of electrical connection	
<ul style="list-style-type: none"> for main current circuit for auxiliary and control 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 2x (0.5 ... 4 mm²) solid or stranded 2x (0,5 ... 4 mm²) finely stranded with core end processing 2x (0.5 ... 2.5 mm²) finely stranded without core end processing 2x (0.5 ... 2.5 mm²) at AWG cables for main contacts 2x (20 ... 12) 	
connectable conductor cross-section for main contacts	
<ul style="list-style-type: none"> solid 0.5 ... 4 mm² stranded 0.5 ... 4 mm² finely stranded with core end processing 0.5 ... 2.5 mm² finely stranded without core end processing 0.5 ... 2.5 mm² 	
connectable conductor cross-section for auxiliary contacts	
<ul style="list-style-type: none"> solid or stranded 0.5 ... 4 mm² finely stranded with core end processing 0.5 ... 2.5 mm² finely stranded without core end processing 0.5 ... 2.5 mm² 	
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> for auxiliary contacts <ul style="list-style-type: none"> solid or stranded 2x (0,5 ... 4 mm²) finely stranded with core end processing 2x (0.5 ... 2.5 mm²) finely stranded without core end processing 2x (0.5 ... 2.5 mm²) at AWG cables 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 	

- for auxiliary contacts

20 ... 12

Safety related data

product function	
<ul style="list-style-type: none"> • mirror contact according to IEC 60947-4-1 	Yes
B10 value with high demand rate according to SN 31920	1 000 000
proportion of dangerous failures	
<ul style="list-style-type: none"> • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 	40 % 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 y
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
suitability for use	
<ul style="list-style-type: none"> • safety-related switching OFF 	Yes

Certificates/ approvals

General Product Approval



[Confirmation](#)



[KC](#)



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



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

Marine / Shipping



Marine / Shipping	other	Dangerous Good
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[Confirmation](#)



[Transport Information](#)

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/WWW/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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