



power contactor, AC-3e/AC-3, 51 A, 22 kW / 400 V, 3-pole, 24 V DC, 0.8-1.2* Us, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, screw terminal, suitable for PLC outputs

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

General technical data

size of contactor	S2
product extension	
- function module for communication - auxiliary switch	No Yes
power loss [W] for rated value of the current	
- at AC in hot operating state - at AC in hot operating state per pole - without load current share typical	12 W 4 W 1 W
insulation voltage	
- 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	
- 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	
at DC	7.7g / 5 ms, 4.5g / 10 ms
shock resistance with sine pulse	
at DC	12g / 5 ms, 7g / 10 ms
mechanical service life (operating cycles)	
- of contactor typical - of the contactor with added electronically optimized auxiliary switch block typical - of the contactor with added auxiliary switch block typical	10 000 000 5 000 000 10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2014

Ambient conditions

installation altitude at height above sea level maximum	2 000 m
ambient temperature	
- 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	70 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	70 A
— up to 690 V at ambient temperature 60 °C rated value	60 A
• at AC-3	
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
• at AC-3e	
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
• at AC-4 at 400 V rated value	41 A
• at AC-5a up to 690 V rated value	61.6 A
• at AC-5b up to 400 V rated value	41.5 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	43.2 A
— up to 400 V for current peak value n=20 rated value	43.2 A
— up to 500 V for current peak value n=20 rated value	43.2 A
— up to 690 V for current peak value n=20 rated value	24 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	28.8 A
— up to 400 V for current peak value n=30 rated value	28.8 A
— up to 500 V for current peak value n=30 rated value	28.8 A
— up to 690 V for current peak value n=30 rated value	24 A
minimum cross-section in main circuit at maximum AC-1 rated value	25 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	24 A
• at 690 V rated value	20 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	23 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	45 A
— at 110 V rated value	45 A
— 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	
— at 24 V rated value	55 A
— at 60 V rated value	55 A

— at 110 V rated value	55 A
— at 220 V rated value	45 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	35 A
— at 60 V rated value	6 A
— at 220 V rated value	1 A
— at 440 V rated value	0.1 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	55 A
— at 60 V rated value	45 A
— at 110 V rated value	25 A
— at 220 V rated value	5 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	55 A
— at 60 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	25 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.35 A
operating power	
● at AC-2 at 400 V rated value	22 kW
● at AC-3	
— at 230 V rated value	15 kW
— at 400 V rated value	22 kW
— at 500 V rated value	30 kW
— at 690 V rated value	22 kW
● at AC-3e	
— at 400 V rated value	22 kW
— at 500 V rated value	30 kW
— at 690 V rated value	22 kW
operating power for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	12.6 kW
● at 690 V rated value	18.2 kW
operating apparent power at AC-6a	
● up to 230 V for current peak value n=20 rated value	17.2 kVA
● up to 400 V for current peak value n=20 rated value	29.9 kVA
● up to 500 V for current peak value n=20 rated value	37.4 kVA
● up to 690 V for current peak value n=20 rated value	28.6 kVA
operating apparent power at AC-6a	
● up to 230 V for current peak value n=30 rated value	11.4 kVA
● up to 400 V for current peak value n=30 rated value	19.9 kVA
● up to 500 V for current peak value n=30 rated value	24.9 kVA
● up to 690 V for current peak value n=30 rated value	28.6 kVA
short-time withstand current in cold operating state up to 40 °C	
● limited to 1 s switching at zero current maximum	937 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 5 s switching at zero current maximum	697 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 10 s switching at zero current maximum	468 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 30 s switching at zero current maximum	282 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum	229 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
● at DC	1 500 1/h
operating frequency	
● at AC-1 maximum	1 000 1/h
● at AC-2 maximum	600 1/h
● at AC-3 maximum	800 1/h
● at AC-3e maximum	800 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	24 V
operating range factor control supply voltage rated value of magnet coil at DC • initial value • full-scale value	0.8 1.2
design of the surge suppressor	with varistor
inrush current peak	2.6 A
duration of inrush current peak	50 µs
locked-rotor current mean value	0.9 A
locked-rotor current peak	2.1 A
duration of locked-rotor current	230 ms
holding current mean value	40 mA
closing power of magnet coil at DC	21.5 W
holding power of magnet coil at DC	1 W
closing delay • at DC	35 ... 80 ms
opening delay • at DC	30 ... 55 ms
arcing time	10 ... 20 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 • at 400 V rated value • at 500 V rated value • at 690 V rated value	10 A 3 A 2 A 1 A
operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	10 A 6 A 6 A 3 A 2 A 1 A 0.15 A
operational current at DC-13 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	10 A 2 A 2 A 1 A 0.9 A 0.3 A 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 • at 600 V rated value	52 A 52 A
yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value — at 230 V rated value • for 3-phase AC motor — 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 10 hp 15 hp 15 hp 40 hp 50 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 - with type of assignment 2 required - for short-circuit protection of the auxiliary switch required		gG: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA) gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (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 DIN rail according to DIN EN 60715
side-by-side mounting		Yes
height		114 mm
width		55 mm
depth		130 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 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 or stranded - finely stranded with core end processing		2x (1 ... 35 mm²), 1x (1 ... 50 mm²) 2x (1 ... 25 mm²), 1x (1 ... 35 mm²)
connectable conductor cross-section for main contacts		
finely stranded with core end processing		1 ... 35 mm²
connectable conductor cross-section for auxiliary contacts		
- solid or stranded - finely stranded with core end processing		0.5 ... 2.5 mm² 0.5 ... 2.5 mm²
type of connectable conductor cross-sections		
- for auxiliary contacts - solid or stranded - finely stranded with core end processing - at AWG cables for auxiliary contacts		2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) 2x (20 ... 16), 2x (18 ... 14)
AWG number as coded connectable conductor cross section		
- for main contacts - for auxiliary contacts		18 ... 1 20 ... 14
Safety related data		
product function		
- mirror contact according to IEC 60947-4-1 - positively driven operation according to IEC 60947-5-1		Yes No

B10 value with high demand rate according to SN 31920

proportion of dangerous failures

- with low demand rate according to SN 31920
- with high demand rate according to SN 31920

failure rate [FIT] with low demand rate according to SN 31920

T1 value for proof test interval or service life according to IEC 61508

protection class IP on the front according to IEC 60529

touch protection on the front according to IEC 60529

suitability for use

- safety-related switching OFF

1 000 000

40 %

73 %

100 FIT

20 a

IP20

finger-safe, for vertical contact from the front

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](#)



EG-Konf.



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

Marine / Shipping



Marine / Shipping	other	Railway
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[Confirmation](#)

[Vibration and Shock](#)

Further information

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=3RT2036-1KB40>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-1KB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1KB40>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-1KB40&lang=en

Characteristic: Tripping characteristics, I_tt, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1KB40/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2036-1KB40&objecttype=14&gridview=view1>



