



contactor AC-1, 110 A, 400 V / 40 °C, 4-pole, 230 V AC, 50/60 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S2

product brand name	SIRIUS
product designation	Contactor
product type designation	3RT23
General technical data	
size of contactor	S2
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	38.8 W
• at AC in hot operating state per pole	9.7 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
• of main circuit with degree of pollution 3 rated value	690 V
• of the auxiliary and control circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
• of main circuit rated value	6 kV
• of auxiliary circuit rated value	6 kV
shock resistance at rectangular impulse	
• at AC	11.8g / 5 ms, 7.4g / 10 ms
shock resistance with sine pulse	
• at AC	18.5g / 5 ms, 11.6g / 10 ms
mechanical service life (operating cycles)	
• of contactor typical	10 000 000
• of the contactor with added auxiliary switch block typical	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibition (Date)	10/01/2014
Weight	1.14 kg
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 according to IEC 60068-2-30 maximum	95 %
Environmental footprint	
Environmental Product Declaration (EPD)	Yes
global warming potential [CO ₂ eq] total	302 kg
global warming potential [CO ₂ eq] during manufacturing	4.83 kg

global warming potential [CO2 eq] during operation	297 kg
global warming potential [CO2 eq] after end of life	-0.64 kg
Main circuit	
number of poles for main current circuit	4
number of NO contacts for main contacts	4
type of voltage for main current circuit	AC
operational current	
<ul style="list-style-type: none"> at AC-1 at 400 V at ambient temperature 40 °C rated value 	110 A
<ul style="list-style-type: none"> at AC-1 <ul style="list-style-type: none"> up to 690 V at ambient temperature 40 °C rated value 	110 A
<ul style="list-style-type: none"> <ul style="list-style-type: none"> up to 690 V at ambient temperature 60 °C rated value 	95 A
<ul style="list-style-type: none"> at AC-3 <ul style="list-style-type: none"> at 400 V rated value 	38 A
minimum cross-section in main circuit at maximum AC-1 rated value	35 mm ²
operational current	
<ul style="list-style-type: none"> at 1 current path at DC-1 <ul style="list-style-type: none"> at 24 V rated value at 60 V rated value at 110 V rated value at 220 V rated value at 440 V rated value 	55 A 23 A 4.5 A 1 A 0.4 A
<ul style="list-style-type: none"> with 2 current paths in series at DC-1 <ul style="list-style-type: none"> at 24 V rated value at 60 V rated value at 110 V rated value at 220 V rated value at 440 V rated value 	55 A 55 A 45 A 5 A 1 A
<ul style="list-style-type: none"> with 3 current paths in series at DC-1 <ul style="list-style-type: none"> at 24 V rated value at 60 V rated value at 110 V rated value at 220 V rated value at 440 V rated value 	55 A 55 A 55 A 45 A 2.9 A
<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 60 V rated value at 110 V rated value at 220 V rated value at 440 V rated value 	20 A 5 A 2.5 A 1 A 0.1 A
<ul style="list-style-type: none"> with 2 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> at 24 V rated value at 60 V rated value at 110 V rated value at 220 V rated value at 440 V rated value 	45 A 45 A 25 A 5 A 0.27 A
<ul style="list-style-type: none"> with 3 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> at 24 V rated value at 60 V rated value at 110 V rated value at 220 V rated value at 440 V rated value 	45 A 45 A 45 A 25 A 0.6 A
no-load switching frequency	
<ul style="list-style-type: none"> at AC 	5 000 1/h
operating frequency at AC-1 maximum	700 1/h
Control circuit/ Control	
type of voltage	AC
type of voltage of the control supply voltage	AC
control supply voltage at AC	

<ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value 	230 V 230 V
operating range factor control supply voltage rated value of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	0.8 ... 1.1 0.85 ... 1.1
apparent pick-up power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	210 VA 188 VA
inductive power factor with closing power of the coil	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	0.69 0.65
apparent holding power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	17.2 VA 16.5 VA
inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	0.36 0.39
closing delay	
<ul style="list-style-type: none"> • at AC 	10 ... 80 ms
opening delay	
<ul style="list-style-type: none"> • at AC 	10 ... 18 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	1
<ul style="list-style-type: none"> • attachable • instantaneous contact 	2 1
number of NO contacts for auxiliary contacts	1
<ul style="list-style-type: none"> • attachable • instantaneous contact 	2 1
operational current at AC-12 maximum	10 A
operational 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 • at 690 V rated value 	10 A 3 A 2 A 1 A
operational current at DC-12	
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • at 24 V rated value • at 48 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 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	
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA
design of the fuse link	
<ul style="list-style-type: none"> • for short-circuit protection of the main circuit — with type of coordination 1 required 	gG: 160 A (690 V, 100 kA)

— with type of coordination 2 required	gR: 80 A (690 V, 100 kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (690 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 side-by-side mounting	Yes
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
height	114 mm
width	75 mm
depth	130 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 or stranded	2x (1 ... 35 mm ²), 1x (1 ... 50 mm ²)
— finely stranded with core end processing	2x (1 ... 25 mm ²), 1x (1 ... 35 mm ²)
• for AWG cables for main contacts	2x (18 ... 2), 1x (18 ... 1)
connectable conductor cross-section for main contacts	
• solid or stranded	1 ... 50 mm ²
• finely stranded with core end processing	1 ... 35 mm ²
connectable conductor cross-section for auxiliary contacts	
• solid or stranded	0.5 ... 2.5 mm ²
• finely stranded with core end processing	0.5 ... 2.5 mm ²
• finely stranded without core end processing	0.5 ... 2.5 mm ²
type of connectable conductor cross-sections	
• for auxiliary contacts	
— solid	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²)
— solid or stranded	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²)
• for AWG cables for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14)
AWG number as coded connectable conductor cross section for main contacts	18 ... 1
AWG number as coded connectable conductor cross section for auxiliary contacts	20 ... 14
Safety related data	
product function	
• mirror contact according to IEC 60947-4-1	Yes
• positively driven operation according to IEC 60947-5-1	No
Electrical Safety	
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

Communication/ Protocol	
product function bus communication	No
Approvals Certificates	
General Product Approval	



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EMV	Test Certificates	Maritime application
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[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



Maritime application	other
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[Confirmation](#)

Railway	Dangerous goods	Environment
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[Special Test Certificate](#)

[Transport Information](#)



[Environmental Confirmations](#)

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3RT2337-1AL20>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2337-1AL20>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2337-1AL20>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2337-1AL20&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2337-1AL20/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2337-1AL20&objecttype=14&gridview=view1>



