



contactor AC-1, 140 A, 400 V / 40 °C, 4-pole, 175-280 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S3

product brand name	SIRIUS
product designation	Contactor
product type designation	3RT23
General technical data	
size of contactor	S3
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	47.2 W
• at AC in hot operating state per pole	11.8 W
• without load current share typical	3.3 W
type of calculation of power loss current-dependent	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	8 kV
• of auxiliary circuit rated value	6 kV
shock resistance at rectangular impulse	
• at AC	6.7 g / 5 ms, 4.0 g / 10 ms
• at DC	6.7 g / 5 ms, 4 g / 10 ms
shock resistance with sine pulse	
• at AC	10.6 g / 5 ms, 6.3 g / 10 ms
• at DC	10.6 g / 5 ms, 6.3 g / 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 Prohibitance (day/month/year)	09/01/2017
SVHC substance name	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1
Net Weight	2.023 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	

<ul style="list-style-type: none"> during operation 	-25 ... +60 °C
<ul style="list-style-type: none"> during storage 	-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	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 	140 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 	140 A
<ul style="list-style-type: none"> up to 690 V at ambient temperature 60 °C rated value 	130 A
minimum cross-section in main circuit at maximum AC-1 rated value	50 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 	80 A
<ul style="list-style-type: none"> at 60 V rated value 	60 A
<ul style="list-style-type: none"> at 110 V rated value 	9 A
<ul style="list-style-type: none"> at 220 V rated value 	2 A
<ul style="list-style-type: none"> at 440 V rated value 	0.6 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 	80 A
<ul style="list-style-type: none"> at 60 V rated value 	80 A
<ul style="list-style-type: none"> at 110 V rated value 	80 A
<ul style="list-style-type: none"> at 220 V rated value 	10 A
<ul style="list-style-type: none"> at 440 V rated value 	1.8 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 	80 A
<ul style="list-style-type: none"> at 60 V rated value 	80 A
<ul style="list-style-type: none"> at 110 V rated value 	80 A
<ul style="list-style-type: none"> at 220 V rated value 	80 A
<ul style="list-style-type: none"> at 440 V rated value 	4.5 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 	20 A
<ul style="list-style-type: none"> at 60 V rated value 	6.5 A
<ul style="list-style-type: none"> at 110 V rated value 	2.5 A
<ul style="list-style-type: none"> at 220 V rated value 	1 A
<ul style="list-style-type: none"> at 440 V rated value 	0.15 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 	80 A
<ul style="list-style-type: none"> at 60 V rated value 	80 A
<ul style="list-style-type: none"> at 110 V rated value 	80 A
<ul style="list-style-type: none"> at 220 V rated value 	7 A
<ul style="list-style-type: none"> at 440 V rated value 	0.42 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 	80 A
<ul style="list-style-type: none"> at 60 V rated value 	80 A
<ul style="list-style-type: none"> at 110 V rated value 	80 A
<ul style="list-style-type: none"> at 220 V rated value 	35 A
<ul style="list-style-type: none"> at 440 V rated value 	0.8 A
no-load switching frequency	
<ul style="list-style-type: none"> at AC 	1 000 1/h
<ul style="list-style-type: none"> at DC 	1 000 1/h
operating frequency	

● at AC-1 maximum	650 1/h
Control circuit/ Control	
type of voltage	AC/DC
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	
● at 50 Hz rated value	175 ... 280 V
● at 60 Hz rated value	175 ... 280 V
control supply voltage at DC rated value	175 ... 280 V
operating range factor control supply voltage rated value of magnet coil at DC	
● initial value	0.8
● full-scale value	1.1
operating range factor control supply voltage rated value of magnet coil at AC	
● at 50 Hz	0.8 ... 1.1
● at 60 Hz	0.8 ... 1.1
design of the surge suppressor	with varistor
inrush current peak	65 A
duration of inrush current peak	5 µs
pickup current mean value	0.44 A
pickup current peak	1.2 A
duration of pickup current	150 ms
holding current mean value	10 mA
apparent pick-up power of magnet coil at AC	
● at 50 Hz	151 V·A
● at 60 Hz	151 V·A
apparent holding power of magnet coil at AC	
● at 50 Hz	3.5 V·A
● at 60 Hz	3.5 V·A
inductive power factor with the holding power of the coil	
● at 50 Hz	0.95
● at 60 Hz	0.95
closing power of magnet coil at DC	76 W
holding power of magnet coil at DC	2.7 W
closing delay	
● at AC	50 ... 70 ms
● at DC	50 ... 70 ms
opening delay	
● at AC	38 ... 57 ms
● at DC	38 ... 57 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
● attachable	2
● instantaneous contact	1
number of NO contacts for auxiliary contacts	1
● attachable	2
● instantaneous contact	1
operational current at AC-12 maximum	10 A
operational current at AC-15	
● at 230 V rated value	6 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

<ul style="list-style-type: none"> • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value 	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 <ul style="list-style-type: none"> — with type of coordination 1 required — with type of coordination 2 required • for short-circuit protection of the auxiliary switch required 	gG: 250 A (690 V, 100 kA) gR: 250 A (690 V, 100 kA) 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	140 mm
width	96 mm
depth	152 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 	20 mm 10 mm 10 mm 0 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 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 	screw-type terminals screw-type terminals Screw-type terminals screw terminal
type of connectable conductor cross-sections <ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — stranded — solid or stranded — finely stranded with core end processing • for AWG cables for main contacts 	2x (6 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²) 2x (2.5 ... 16 mm²), 2x (6 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²) 2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²) 2x (10 ... 1/0), 1x (10 ... 2/0)
connectable conductor cross-section for main contacts	

<ul style="list-style-type: none"> • solid 	2.5 ... 16 mm ²
<ul style="list-style-type: none"> • solid or stranded 	4 ... 70 mm ²
<ul style="list-style-type: none"> • stranded 	6 ... 70 mm ²
<ul style="list-style-type: none"> • finely stranded with core end processing 	2.5 ... 50 mm ²
connectable conductor cross-section for auxiliary contacts	
<ul style="list-style-type: none"> • solid or stranded 	0.5 ... 2.5 mm ²
<ul style="list-style-type: none"> • finely stranded with core end processing 	0.5 ... 2.5 mm ²
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid 	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²)
<ul style="list-style-type: none"> — solid or stranded 	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²)
<ul style="list-style-type: none"> — finely stranded with core end processing 	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²)
<ul style="list-style-type: none"> • for AWG cables for auxiliary contacts 	2x (20 ... 16), 2x (18 ... 14)
AWG number extended as coded connectable conductor cross section for main contacts	10 ... 2/0
AWG number as coded connectable conductor cross section for auxiliary contacts	20 ... 14

Safety related data

product function	
<ul style="list-style-type: none"> • mirror contact according to IEC 60947-4-1 	Yes
<ul style="list-style-type: none"> • 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
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Approvals Certificates

Environmental Product Declaration	
<ul style="list-style-type: none"> • global warming potential [CO₂ eq] / during manufacturing 	11.3 kg
<ul style="list-style-type: none"> • global warming potential [CO₂ eq] / during operation 	329 kg
<ul style="list-style-type: none"> • global warming potential [CO₂ eq] / after end of life 	-1.8 kg
<ul style="list-style-type: none"> • global warming potential [CO₂ eq] / total 	339 kg

Environment General Product Approval

[Environmental Confirmations](#)



General Product Approval EMV Test Certificates Maritime application



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



Maritime application other



[Confirmation](#)



Railway

[Special Test Certificate](#)

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=3RT2346-1NP30>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2346-1NP30>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2346-1NP30&lang=en

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2346-1NP30>

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<https://curves.simaris.siemens.com/curves/3RT2346-1NP30>



