



contactor AC-1, 140 A, 690 V / 40 °C, 3-pole, 83-155 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, main circuit: box terminal, control and auxiliary circuit: screw terminal size: S3

product brand name	SIRIUS
product designation	Contactor
product type designation	3RT24
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	29.4 W
• at AC in hot operating state per pole	9.8 W
• without load current share typical	1.8 W
type of calculation of power loss current-dependent	quadratic
insulation voltage	
• of main circuit with degree of pollution 3 rated value	1 000 V
• of auxiliary 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	10.3 g / 5 ms, 6.7 g / 10 ms
• at DC	6.7 g / 5 ms, 4 g / 10 ms
shock resistance with sine pulse	
• at AC	16.3 g / 5 ms, 10.5 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 electronically optimized auxiliary switch block typical	5 000 000
• 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)	04/28/2017
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	1.733 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 %
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
number of NC contacts for main contacts	0
type of voltage for main current circuit	AC
operational current	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	140 A
— up to 690 V at ambient temperature 55 °C rated value	130 A
— up to 690 V at ambient temperature 60 °C rated value	130 A
• at AC-3	
— at 400 V rated value	44 A
— at 690 V rated value	44 A
minimum cross-section in main circuit at maximum AC-1 rated value	50 mm ²
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	130 A
— at 60 V rated value	80 A
— at 110 V rated value	12 A
— at 220 V rated value	2.5 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.48 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	130 A
— at 60 V rated value	130 A
— at 110 V rated value	130 A
— at 220 V rated value	13 A
— at 440 V rated value	2.4 A
— at 600 V rated value	1.3 A
• with 3 current paths in series at DC-1	
— at 24 V rated value	130 A
— at 60 V rated value	130 A
— at 110 V rated value	130 A
— at 220 V rated value	130 A
— at 440 V rated value	6 A
— at 600 V rated value	3.4 A
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	6 A
— at 60 V rated value	3 A
— at 110 V rated value	1.25 A
— at 220 V rated value	0.35 A
— at 440 V rated value	0.15 A
— at 600 V rated value	0.1 A
• with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	130 A
— at 60 V rated value	130 A
— at 110 V rated value	130 A
— at 220 V rated value	1.75 A
— at 440 V rated value	0.42 A
— at 600 V rated value	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 — at 600 V rated value 	130 A 130 A 130 A 4 A 0.8 A 0.45 A
no-load switching frequency <ul style="list-style-type: none"> • at AC • at DC 	1 000 1/h 1 000 1/h
operating frequency <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value 	83 ... 155 V 83 ... 155 V
control supply voltage at DC rated value	83 ... 155 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 	0.8 1.1
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 0.8 ... 1.1
design of the surge suppressor	with varistor
inrush current peak	1.5 A
duration of inrush current peak	50 µs
pickup current mean value	1.1 A
pickup current peak	2.7 A
duration of pickup current	150 ms
holding current mean value	15 mA
apparent pick-up power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	202 V·A 202 V·A
apparent holding power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	3.5 V·A 3.5 V·A
closing power of magnet coil at DC	76 W
holding power of magnet coil at DC	1.8 W
closing delay <ul style="list-style-type: none"> • at AC • at DC 	50 ... 70 ms 50 ... 70 ms
opening delay <ul style="list-style-type: none"> • at AC • at DC 	38 ... 57 ms 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 <ul style="list-style-type: none"> • attachable • instantaneous contact 	1 2 1
number of NO contacts for auxiliary contacts <ul style="list-style-type: none"> • attachable • instantaneous contact 	1 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 	6 A 3 A 2 A 1 A
operational current at DC-13 <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 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)
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	70 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 	box terminal 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"> — solid — stranded — solid or stranded — finely stranded with core end processing • for AWG cables for main contacts 	2x (2.5 ... 16 mm²) 2x (2.5 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²) 2x (2.5 ... 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
service life maximum	20 a

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

Approvals Certificates

Environment	General Product Approval
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[Environmental Confirmations](#)



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

[Type Test Certificates/Test Report](#)



Maritime application	other	Railway
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[Confirmation](#)



[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=3RT2446-1NF30>

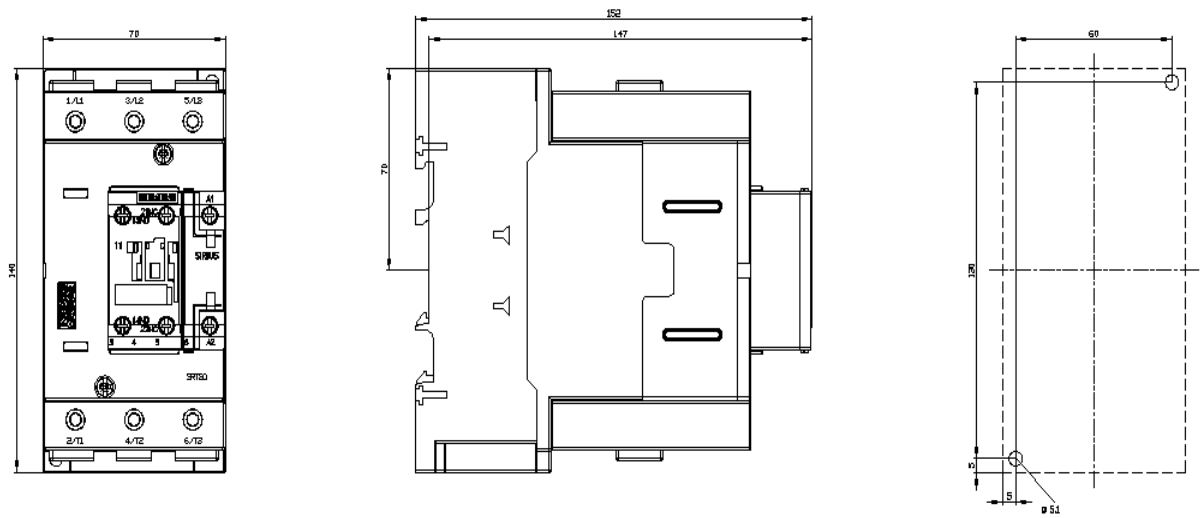
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

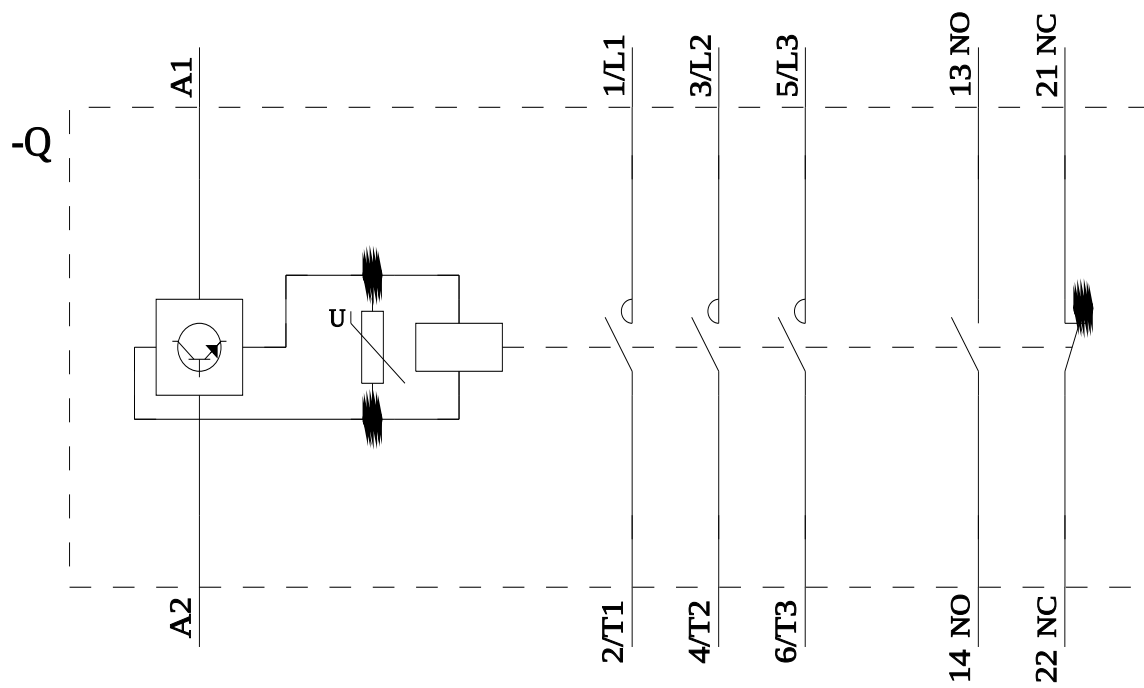
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2446-1NF30>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2446-1NF30&lang=en

Cax online generator





last modified:

7/18/2026