

Contactor, AC-1, 140 A/400 V/40 °C, S3, 4-pole, 230 V AC, 50/60 Hz, 1 NO+1 NC, screw terminal



product brand name	SIRIUS
product designation	Contactor
product type designation	3RT23

General technical data

Size of contactor	S3
<ul style="list-style-type: none"> • Product extension function module for communication • product extension auxiliary switch 	No Yes
Surge voltage resistance	
<ul style="list-style-type: none"> • of main circuit rated value • of auxiliary circuit rated value 	8 kV 6 kV
<ul style="list-style-type: none"> • protection class IP on the front • protection class IP of the terminal 	IP20 IP00
Shock resistance at rectangular impulse	
<ul style="list-style-type: none"> • at AC • at DC 	6.7 g / 5 ms, 4.0 g / 10 ms 6.7 g / 5 ms, 4.0 g / 10 ms
Shock resistance with sine pulse	
<ul style="list-style-type: none"> • at AC • at DC 	10.6 g / 5 ms, 6.3 g / 10 ms 10.6 g / 5 ms, 6.3 g / 10 ms

Mechanical service life (switching cycles)	
<ul style="list-style-type: none"> • of contactor typical • of the contactor with added auxiliary switch block typical 	<p>10 000 000</p> <p>100 000 000</p>
reference code acc. to DIN EN 81346-2	Q
Ambient conditions	
<ul style="list-style-type: none"> • installation altitude at height above sea level maximum 	2 000 m
<ul style="list-style-type: none"> • ambient temperature during operation • ambient temperature during storage 	<p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p>
relative humidity	
<ul style="list-style-type: none"> • during operation 	95 %
Main circuit	
number of poles for main current circuit	4
Number of NO contacts for main contacts	4
<ul style="list-style-type: none"> • <ul style="list-style-type: none"> — operating voltage at AC at 50 Hz rated value — operating voltage at AC at 60 Hz rated value 	<p>690 V</p> <p>690 V</p>
<ul style="list-style-type: none"> • Operating current at AC-1 at 400 V <ul style="list-style-type: none"> — at ambient temperature 40 °C rated value • Operating current at AC-1 <ul style="list-style-type: none"> — up to 690 V at ambient temperature 40 °C rated value — up to 690 V at ambient temperature 60 °C rated value 	<p>140 A</p> <p>140 A</p> <p>130 A</p>
Minimum cross-section in main circuit	
<ul style="list-style-type: none"> • at maximum AC-1 rated value 	50 mm ²
Short-time withstand current in cold operating state up to 40 °C	
<ul style="list-style-type: none"> • limited to 1 s switching at zero current maximum • limited to 5 s switching at zero current maximum • limited to 10 s switching at zero current maximum • limited to 30 s switching at zero current maximum • limited to 60 s switching at zero current maximum 	<p>Use minimum cross-section acc. to AC-1 rated value</p> <p>Use minimum cross-section acc. to AC-1 rated value</p> <p>Use minimum cross-section acc. to AC-1 rated value</p> <p>Use minimum cross-section acc. to AC-1 rated value</p> <p>Use minimum cross-section acc. to AC-1 rated value</p>
No-load switching frequency	
<ul style="list-style-type: none"> • at AC 	5 000 1/h

- Operating frequency at AC-1 maximum

1 000 1/s

Control circuit/ Control

type of voltage	AC
Type of voltage of the control supply voltage	AC
<ul style="list-style-type: none"> • Control supply voltage at AC at 50 Hz rated value 	230 V
<ul style="list-style-type: none"> • Control supply voltage at AC at 60 Hz rated value 	230 V
Operating range factor control supply voltage rated value of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz 	0.8 ... 1.1
<ul style="list-style-type: none"> • at 60 Hz 	0.85 ... 1.1
Apparent pick-up power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz 	348 V·A
<ul style="list-style-type: none"> • at 60 Hz 	296 V·A
Inductive power factor with closing power of the coil	
<ul style="list-style-type: none"> • at 50 Hz 	0.62
<ul style="list-style-type: none"> • at 60 Hz 	0.55
Apparent holding power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz 	25 V·A
<ul style="list-style-type: none"> • at 60 Hz 	18 V·A
Inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> • at 50 Hz 	0.35
<ul style="list-style-type: none"> • at 60 Hz 	0.41
Closing delay	
<ul style="list-style-type: none"> • at AC 	13 ... 50 ms
Opening delay	
<ul style="list-style-type: none"> • at AC 	10 ... 21 ms
Arcing time	10 ... 20 ms
Control version of the switch operating mechanism	Standard A1 - A2

Auxiliary circuit

<ul style="list-style-type: none"> • number of NC contacts for auxiliary contacts 	1
<ul style="list-style-type: none"> • Number of NC contacts for auxiliary contacts attachable 	2
<ul style="list-style-type: none"> • Number of NC contacts for auxiliary contacts instantaneous contact 	1
<ul style="list-style-type: none"> • number of NO contacts for auxiliary contacts 	1
<ul style="list-style-type: none"> • Number of NO contacts for auxiliary contacts attachable 	2
<ul style="list-style-type: none"> • Number of NO contacts for auxiliary contacts instantaneous contact 	1

• Operating current at AC-12 maximum	10 A
• Operating current at AC-15 at 230 V rated value	6 A
• Operating current at AC-15 at 400 V rated value	3 A
• Operating current at AC-15 at 500 V rated value	2 A
• Operating current at AC-15 at 690 V rated value	1 A
• Operating current at DC-12 at 24 V rated value	10 A
• operating current at DC-12 at 48 V rated value	6 A
• Operating current at DC-12 at 60 V rated value	6 A
• operating current at DC-12 at 110 V rated value	3 A
• Operating current at DC-12 at 125 V rated value	2 A
• Operating current at DC-12 at 220 V rated value	1 A
• Operating current at DC-12 at 600 V rated value	0.15 A
• Operating current at DC-13 at 24 V rated value	10 A
• operating current at DC-13 at 48 V rated value	2 A
• operating current at DC-13 at 110 V rated value	1 A
• Operating current at DC-13 at 125 V rated value	0.9 A
• Operating current at DC-13 at 220 V rated value	0.3 A
• Operating current at DC-13 at 600 V rated value	0.1 A
Design of the miniature circuit breaker	
• for short-circuit protection of the auxiliary switch required	gG: 10 A (230 V, 400 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	
product function short circuit protection	No
• Design of the fuse link for short-circuit protection of the main circuit with type of coordination 1 required	gG: 250 A (690 V, 100 kA)
• Design of the fuse link for short-circuit protection of the main circuit with type of assignment 2 required	gR: 250 A (690 V, 100 kA)
• design of the fuse link for short-circuit protection of the auxiliary switch required	gG: 10 A (690 V, 1 kA)

Installation/ mounting/ dimensions

<ul style="list-style-type: none"> • mounting position 	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
<ul style="list-style-type: none"> • mounting type 	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
<ul style="list-style-type: none"> • mounting type side-by-side mounting 	Yes
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

<ul style="list-style-type: none"> • type of electrical connection for main current circuit 	screw-type terminals
<ul style="list-style-type: none"> • type of electrical connection for auxiliary and control current circuit 	screw-type terminals
<ul style="list-style-type: none"> • Type of connectable conductor cross-sections for main contacts stranded 	2x (6 ... 16 mm ²), 2x (10 ... 50 mm ²), 1x (10 ... 70 mm ²)
<ul style="list-style-type: none"> • type of connectable conductor cross-sections for main contacts single or multi-stranded 	2x (2.5 ... 16 mm ²), 2x (6 ... 16 mm ²), 2x (10 ... 50 mm ²), 1x (10 ... 70 mm ²)
<ul style="list-style-type: none"> • type of connectable conductor cross-sections for main contacts finely stranded with core end processing 	2x (2.5 ... 35 mm ²), 1x (2.5 ... 50 mm ²)
<ul style="list-style-type: none"> • type of connectable conductor cross-sections at AWG conductors for main contacts 	2x (10 ... 1/0), 1x (10 ... 2)
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"> • single or multi-stranded • stranded • finely stranded with core end processing 	<p>4 ... 70 mm²</p> <p>6 ... 70 mm²</p> <p>2.5 ... 50 mm²</p>
connectable conductor cross-section for auxiliary contacts	
<ul style="list-style-type: none"> • single or multi-stranded • finely stranded with core end processing 	<p>0.5 ... 2.5 mm²</p> <p>0.5 ... 2.5 mm²</p>
<ul style="list-style-type: none"> • type of connectable conductor cross-sections for auxiliary contacts solid • type of connectable conductor cross-sections for auxiliary contacts single or multi-stranded • type of connectable conductor cross-sections for auxiliary contacts finely stranded with core end processing • type of connectable conductor cross-sections at AWG conductors for auxiliary contacts 	<p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²)</p> <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (20 ... 16), 2x (18 ... 14)</p>
AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> • for main contacts • for auxiliary contacts 	<p>10 ... 2</p> <p>20 ... 14</p>

Safety related data

Product function	
<ul style="list-style-type: none"> • Mirror contact acc. to IEC 60947-4-1 • positively driven operation acc. to IEC 60947-5-1 	<p>Yes</p> <p>No</p>
T1 value for proof test interval or service life acc. to IEC 61508	20 y
protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529

Communication/ Protocol

product function bus communication	No
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Certificates/ approvals

General Product Approval	EMC
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[KC](#)



Declaration of Conformity	Test Certificates	Marine / Shipping
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[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping	other
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[Confirmation](#)

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=3RT2346-1AL20>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2346-1AL20>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2346-1AL20>

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

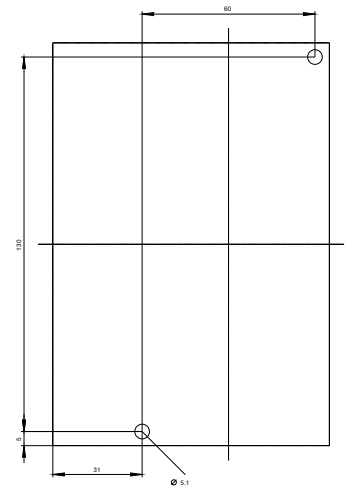
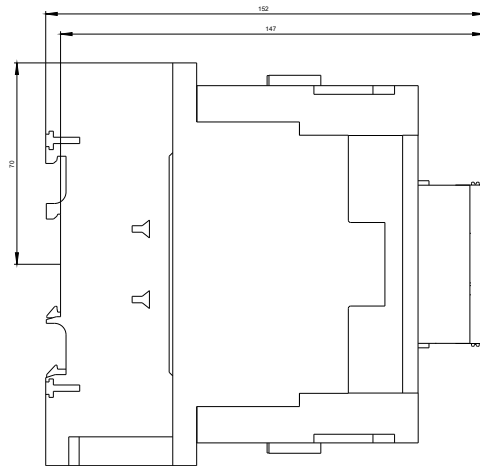
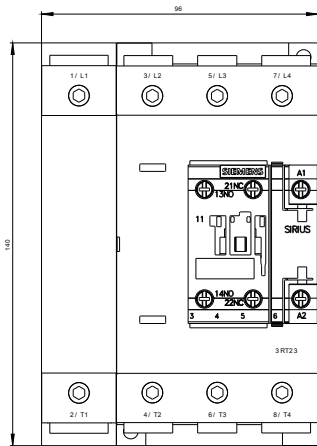
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2346-1AL20&lang=en

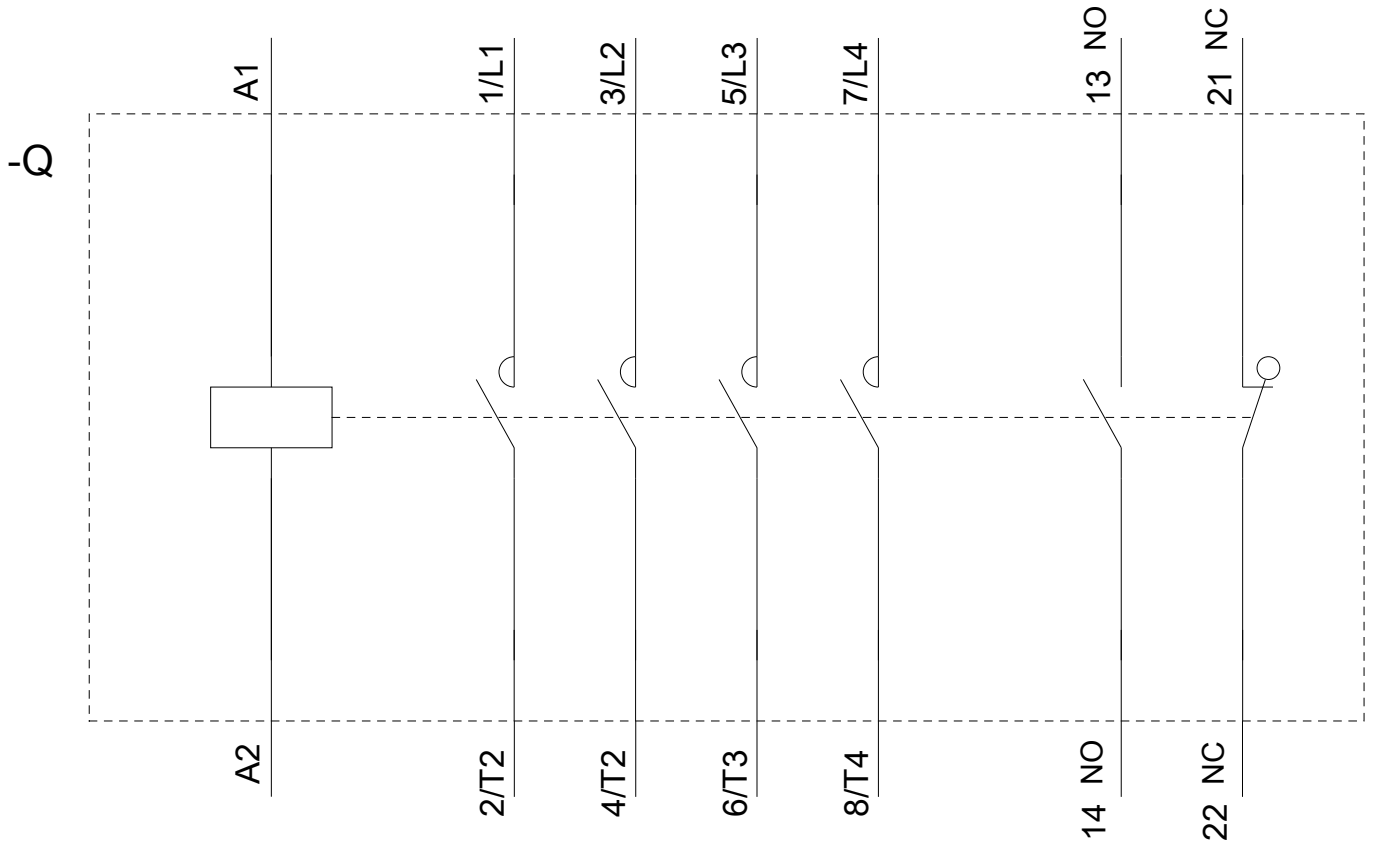
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2346-1AL20/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2346-1AL20&objecttype=14&gridview=view1>





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