

Power contactor, AC-3 500 A, 250 kW / 400 V AC (50-60 Hz) / DC
 380-420 V UC Auxiliary contacts 2 NO + 2 NC 3-pole, size S12
 Busbar connections Operating mechanism: conventional Spring-type
 terminals



Product brand name	SIRIUS
Product designation	Power contactor
Product type designation	3RT1

General technical data	
Size of contactor	S12
Product extension	
<ul style="list-style-type: none"> function module for communication 	No
<ul style="list-style-type: none"> Auxiliary switch 	Yes
Surge voltage resistance	
<ul style="list-style-type: none"> of main circuit rated value 	8 kV
<ul style="list-style-type: none"> of auxiliary circuit rated value 	6 kV
maximum permissible voltage for safe isolation	
<ul style="list-style-type: none"> between coil and main contacts acc. to EN 60947-1 	690 V
Protection class IP	
<ul style="list-style-type: none"> on the front 	IP00; IP20 on the front with cover / box terminal
<ul style="list-style-type: none"> of the terminal 	IP00
Shock resistance at rectangular impulse	
<ul style="list-style-type: none"> at AC 	8,5g / 5 ms, 4,2g / 10 ms

<ul style="list-style-type: none"> • at DC 	8,5g / 5 ms, 4,2g / 10 ms
Shock resistance with sine pulse	
<ul style="list-style-type: none"> • at AC 	13,4g / 5 ms, 6,5g / 10 ms
<ul style="list-style-type: none"> • at DC 	13,4g / 5 ms, 6,5g / 10 ms
Mechanical service life (switching cycles)	
<ul style="list-style-type: none"> • of contactor typical 	10 000 000
<ul style="list-style-type: none"> • of the contactor with added electronics-compatible auxiliary switch block typical 	5 000 000
<ul style="list-style-type: none"> • of the contactor with added auxiliary switch block typical 	10 000 000
Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	K
Reference code acc. to DIN EN 81346-2	Q

Ambient conditions

Installation altitude at height above sea level	
<ul style="list-style-type: none"> • 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

Main circuit

Number of poles for main current circuit	3
Number of NO contacts for main contacts	3
Operating voltage	
<ul style="list-style-type: none"> • at AC-3 rated value maximum 	1 000 V
Operating current	
<ul style="list-style-type: none"> • at AC-1 at 400 V <ul style="list-style-type: none"> — at ambient temperature 40 °C rated value 	610 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 — up to 690 V at ambient temperature 60 °C rated value — up to 1000 V at ambient temperature 40 °C rated value — up to 1000 V at ambient temperature 60 °C rated value 	610 A 550 A 200 A 200 A
<ul style="list-style-type: none"> • at AC-2 at 400 V rated value 	500 A
<ul style="list-style-type: none"> • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 1000 V rated value 	500 A 500 A 450 A 180 A

• at AC-4 at 400 V rated value	430 A
• at AC-5a up to 690 V rated value	536 A
• at AC-5b up to 400 V rated value	415 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	404 A
— up to 400 V for current peak value n=20 rated value	404 A
— up to 500 V for current peak value n=20 rated value	404 A
— up to 690 V for current peak value n=20 rated value	404 A
— up to 1000 V for current peak value n=20 rated value	180 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	270 A
— up to 400 V for current peak value n=30 rated value	270 A
— up to 500 V for current peak value n=30 rated value	270 A
— up to 690 V for current peak value n=30 rated value	270 A
— up to 1000 V for current peak value n=30 rated value	180 A
Minimum cross-section in main circuit	
• at maximum AC-1 rated value	370 mm ²
Operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	175 A
• at 690 V rated value	150 A
Operating current	
• at 1 current path at DC-1	
— at 24 V rated value	400 A
— at 110 V rated value	33 A
— at 220 V rated value	3.8 A
— at 440 V rated value	0.9 A
— at 600 V rated value	0.6 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 A
— at 440 V rated value	4 A

— at 600 V rated value	2 A
• with 3 current paths in series at DC-1	
— at 24 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 A
— at 440 V rated value	11 A
— at 600 V rated value	5.2 A
Operating current	
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	400 A
— at 110 V rated value	3 A
— at 220 V rated value	0.6 A
— at 440 V rated value	0.18 A
— at 600 V rated value	0.125 A
• with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	2.5 A
— at 440 V rated value	0.65 A
— at 600 V rated value	0.37 A
• with 3 current paths in series at DC-3 at DC-5	
— at 24 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 A
— at 440 V rated value	1.4 A
— at 600 V rated value	0.75 A
Operating power	
• at AC-1	
— at 230 V at 60 °C rated value	208 kW
— at 400 V rated value	362 kW
— at 400 V at 60 °C rated value	362 kW
— at 690 V rated value	624 kW
— at 690 V at 60 °C rated value	624 kW
— at 1000 V at 60 °C rated value	329 kW
• at AC-2 at 400 V rated value	250 kW
• at AC-3	
— at 230 V rated value	160 kW
— at 400 V rated value	250 kW
— at 500 V rated value	315 kW
— at 690 V rated value	400 kW
— at 1000 V rated value	250 kW

Operating power for approx. 200000 operating cycles at AC-4	
<ul style="list-style-type: none"> • at 400 V rated value • at 690 V rated value 	<p>98 kW</p> <p>148 kW</p>
Thermal short-time current limited to 10 s	4 000 A
No-load switching frequency	
<ul style="list-style-type: none"> • at AC • at DC 	<p>2 000 1/h</p> <p>2 000 1/h</p>
Operating frequency	
<ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum 	<p>500 1/h</p> <p>170 1/h</p> <p>420 1/h</p> <p>130 1/h</p>

Control circuit/ Control	
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 	<p>380 ... 420 V</p> <p>380 ... 420 V</p>
Control supply voltage at DC	
<ul style="list-style-type: none"> • rated value 	380 ... 420 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 	<p>0.8</p> <p>1.1</p>
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 	<p>0.8 ... 1.1</p> <p>0.8 ... 1.1</p>
Design of the surge suppressor	with varistor
Apparent pick-up power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz 	830 V·A
Inductive power factor with closing power of the coil	
<ul style="list-style-type: none"> • at 50 Hz 	0.9
Apparent holding power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz 	9.2 V·A
Inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> • at 50 Hz 	0.9
Closing power of magnet coil at DC	920 W
Holding power of magnet coil at DC	10 W
Closing delay	
<ul style="list-style-type: none"> • at AC 	45 ... 100 ms

• at DC	45 ... 100 ms
Opening delay	
• at AC	60 ... 100 ms
• at DC	60 ... 100 ms
Arcing time	10 ... 15 ms
Control version of the switch operating mechanism	Standard A1 - A2

Auxiliary circuit

Number of NC contacts for auxiliary contacts	
• instantaneous contact	2
Number of NO contacts for auxiliary contacts	
• instantaneous contact	2
Operating current at AC-12 maximum	10 A
Operating 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
Operating 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
• at 110 V rated value	3 A
• at 125 V rated value	2 A
• at 220 V rated value	1 A
• at 600 V rated value	0.15 A
Operating current at DC-13	
• at 24 V rated value	10 A
• at 48 V rated value	2 A
• at 60 V rated value	2 A
• at 110 V rated value	1 A
• at 125 V rated value	0.9 A
• at 220 V rated value	0.3 A
• at 600 V rated value	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 three-phase AC motor	
• at 480 V rated value	477 A
• at 600 V rated value	472 A
Yielded mechanical performance [hp]	
• for three-phase AC motor	
— at 200/208 V rated value	150 hp

— at 220/230 V rated value	200 hp
— at 460/480 V rated value	400 hp
— at 575/600 V rated value	500 hp
Contact rating of auxiliary contacts according to UL	A600 / Q600

Short-circuit protection

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 assignment 2 required • for short-circuit protection of the auxiliary switch required 	gG: 630 A (690 V, 100 kA) gG: 500 A (690 V, 100 kA), aM: 500 A (690 V, 50 kA), BS88: 500 A (415 V, 50 kA) gG: 10 A (500 V, 1 kA)

Installation/ mounting/ dimensions

Mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
Mounting type	screw fixing
<ul style="list-style-type: none"> • Side-by-side mounting 	Yes
Height	214 mm
Width	160 mm
Depth	225 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 current circuit • at contactor for auxiliary contacts 	Connection bar spring-loaded terminals Spring-type terminals

<ul style="list-style-type: none"> • of magnet coil 	Spring-type terminals
Type of connectable conductor cross-sections <ul style="list-style-type: none"> • at AWG conductors for main contacts 	2/0 ... 500 kcmil
Connectable conductor cross-section for main contacts <ul style="list-style-type: none"> • stranded 	70 ... 240 mm ²
Connectable conductor cross-section for auxiliary contacts <ul style="list-style-type: none"> • single or multi-stranded • finely stranded with core end processing • finely stranded without core end processing 	0.25 ... 2.5 mm ² 0.25 ... 1.5 mm ² 0.25 ... 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 — single or multi-stranded — finely stranded with core end processing — finely stranded without core end processing • at AWG conductors for auxiliary contacts 	2x (0.25 ... 2.5 mm ²) 2x (0,25 ... 2,5 mm ²) 2x (0.25 ... 1.5 mm ²) 2x (0.25 ... 2.5 mm ²) 2x (24 ... 14)
AWG number as coded connectable conductor cross section <ul style="list-style-type: none"> • for auxiliary contacts 	24 ... 14
Safety related data	
B10 value <ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 	1 000 000
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 	Yes No
Protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529
Certificates/ approvals	

General Product Approval	EMC	Functional Safety/Safety of Machinery	Declaration of Conformity
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[Type Examination Certificate](#)



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

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



[Confirmation](#)

other	Railway
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[Miscellaneous](#)

[Special Test Certificate](#)

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

www.siemens.com/sirius/catalogs

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT1076-2AV36>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1076-2AV36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-2AV36>

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

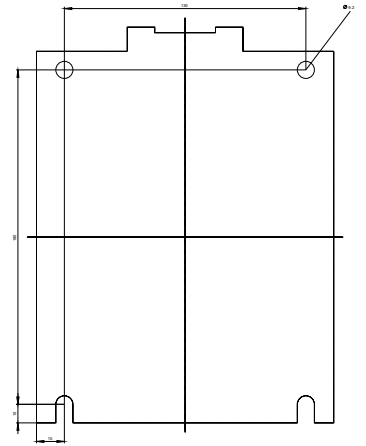
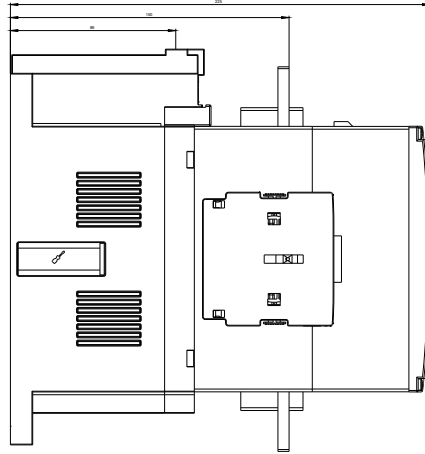
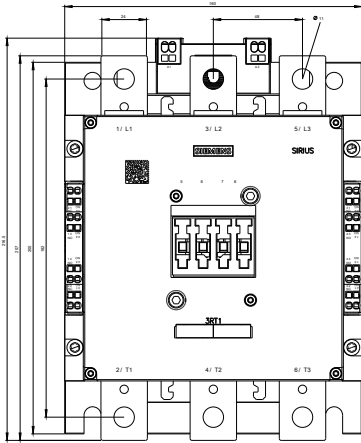
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1076-2AV36&lang=en

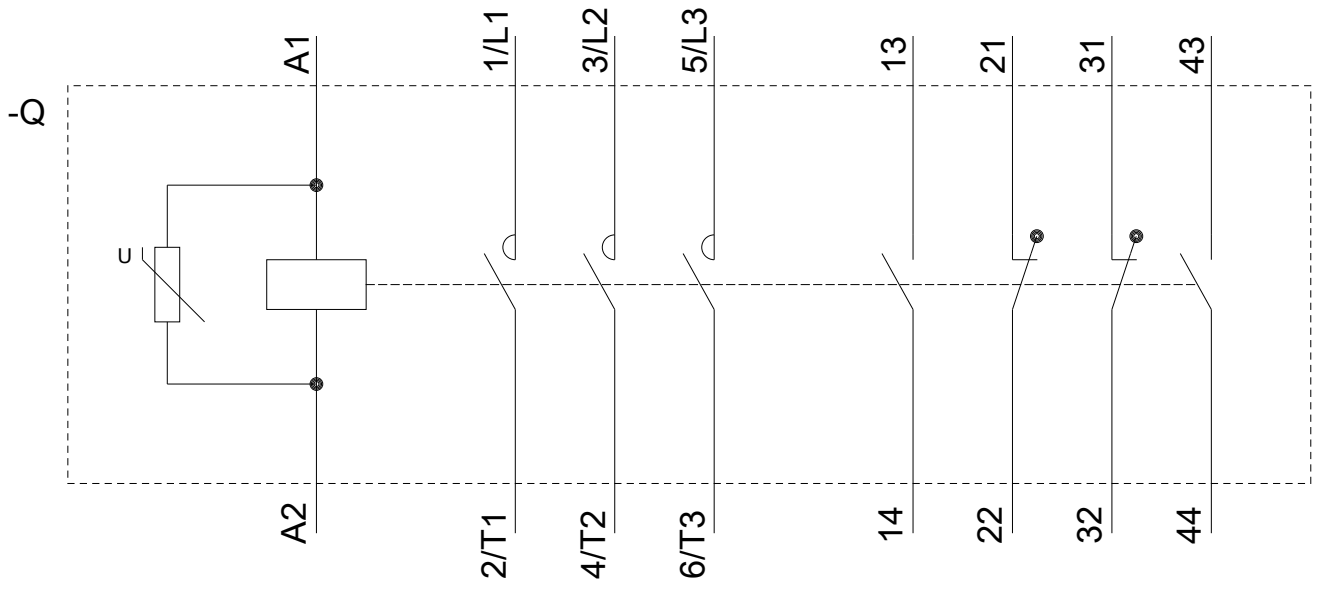
Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-2AV36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1076-2AV36&objecttype=14&gridview=view1>





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