

Power contactor, AC-3 115 A, 55 kW / 400 V Coil AC 50/60 Hz and DC 96-127 V x (0.8-1.1) F-PLC input 24 V DC 3-pole size S6
 Auxiliary contacts 2 NO + 2 NC Main circuit: Busbar Control and auxiliary circuit: screw terminal



product brand name	SIRIUS
Product designation	Power contactor
Product type designation	3RT1
General technical data	
Size of contactor	S6
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	21 W
• at AC in hot operating state per pole	7 W
Power loss [W] for rated value of the current without load current share typical	2.8 W
Surge voltage resistance	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation	
• between coil and main contacts acc. to EN 60947-1	690 V

<ul style="list-style-type: none"> • protection class IP on the front • Protection class IP of the terminal 	IP00; IP20 on the front with cover / box terminal IP00
Shock resistance at rectangular impulse <ul style="list-style-type: none"> • at AC • at DC 	8,5g / 5 ms, 4,2g / 10 ms 8,5g / 5 ms, 4,2g / 10 ms
Shock resistance with sine pulse <ul style="list-style-type: none"> • at AC • at DC 	13,4g / 5 ms, 6,5g / 10 ms 13,4g / 5 ms, 6,5g / 10 ms
Mechanical service life (switching cycles) <ul style="list-style-type: none"> • of contactor typical • of the contactor with added electronics-compatible auxiliary switch block typical • of the contactor with added auxiliary switch block typical 	10 000 000 5 000 000 10 000 000
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 • during storage 	-25 ... +60 °C -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 • 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 • at AC-2 at 400 V rated value • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value 	160 A 160 A 140 A 80 A 80 A 115 A 115 A 115 A

— at 690 V rated value	115 A
— at 1000 V rated value	53 A
• at AC-4 at 400 V rated value	97 A
• at AC-5a up to 690 V rated value	140 A
• at AC-5b up to 400 V rated value	95 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	115 A
— up to 400 V for current peak value n=20 rated value	115 A
— up to 500 V for current peak value n=20 rated value	115 A
— up to 690 V for current peak value n=20 rated value	115 A
— up to 1000 V for current peak value n=20 rated value	53 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	98 A
— up to 400 V for current peak value n=30 rated value	98 A
— up to 500 V for current peak value n=30 rated value	98 A
— up to 690 V for current peak value n=30 rated value	98 A
— up to 1000 V for current peak value n=30 rated value	53 A
Minimum cross-section in main circuit	
• at maximum AC-1 rated value	70 mm ²
Operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	54 A
• at 690 V rated value	48 A
Operating current	
• at 1 current path at DC-1	
— at 24 V rated value	160 A
— at 110 V rated value	18 A
— at 220 V rated value	3.4 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.5 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	160 A
— at 110 V rated value	160 A

— at 220 V rated value	20 A
— at 440 V rated value	3.2 A
— at 600 V rated value	1.6 A
• with 3 current paths in series at DC-1	
— at 24 V rated value	160 A
— at 110 V rated value	160 A
— at 220 V rated value	160 A
— at 440 V rated value	11.5 A
— at 600 V rated value	4 A
Operating current	
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	160 A
— at 110 V rated value	2.5 A
— at 220 V rated value	0.6 A
— at 440 V rated value	0.17 A
— at 600 V rated value	0.12 A
• with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	160 A
— at 110 V rated value	160 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	160 A
— at 110 V rated value	160 A
— at 220 V rated value	160 A
— at 440 V rated value	1.4 A
— at 600 V rated value	0.75 A
Operating power	
• at AC-2 at 400 V rated value	55 kW
• at AC-3	
— at 230 V rated value	37 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	110 kW
— at 1000 V rated value	75 kW
Operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	29 kW
• at 690 V rated value	48 kW
Operating apparent output at AC-6a	

<ul style="list-style-type: none"> • up to 230 V for current peak value n=20 rated value 	40 000 kV·A
<ul style="list-style-type: none"> • up to 400 V for current peak value n=20 rated value 	80 000 V·A
<ul style="list-style-type: none"> • up to 500 V for current peak value n=20 rated value 	100 000 V·A
<ul style="list-style-type: none"> • up to 690 V for current peak value n=20 rated value 	130 000 V·A
<ul style="list-style-type: none"> • up to 1000 V for current peak value n=20 rated value 	90 000 V·A
Operating apparent output at AC-6a	
<ul style="list-style-type: none"> • up to 230 V for current peak value n=30 rated value 	30 000 V·A
<ul style="list-style-type: none"> • up to 400 V for current peak value n=30 rated value 	60 000 V·A
<ul style="list-style-type: none"> • up to 500 V for current peak value n=30 rated value 	80 000 V·A
<ul style="list-style-type: none"> • up to 690 V for current peak value n=30 rated value 	110 000 V·A
<ul style="list-style-type: none"> • up to 1000 V for current peak value n=30 rated value 	90 000 V·A
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 	2 565 A; Use minimum cross-section acc. to AC-1 rated value
<ul style="list-style-type: none"> • limited to 5 s switching at zero current maximum 	1 654 A; Use minimum cross-section acc. to AC-1 rated value
<ul style="list-style-type: none"> • limited to 10 s switching at zero current maximum 	1 170 A; Use minimum cross-section acc. to AC-1 rated value
<ul style="list-style-type: none"> • limited to 30 s switching at zero current maximum 	729 A; Use minimum cross-section acc. to AC-1 rated value
<ul style="list-style-type: none"> • limited to 60 s switching at zero current maximum 	572 A; Use minimum cross-section acc. to AC-1 rated value
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	
<ul style="list-style-type: none"> • at AC-1 maximum 	800 1/h
<ul style="list-style-type: none"> • at AC-2 maximum 	400 1/h
<ul style="list-style-type: none"> • at AC-3 maximum 	1 000 1/h
<ul style="list-style-type: none"> • at AC-4 maximum 	130 1/h
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 	96 ... 127 V 96 ... 127 V
Control supply voltage at DC	
<ul style="list-style-type: none"> • rated value 	96 ... 127 V
Type of PLC-control input acc. to IEC 60947-1	Type 1
Consumed current at PLC-control input acc. to IEC 60947-1 maximum	14 mA
Voltage at PLC-control input rated value	24 V
Operating range factor of the voltage at PLC-control input	0.8 ... 1.1
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
Apparent pick-up power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz 	280 V·A
Inductive power factor with closing power of the coil	
<ul style="list-style-type: none"> • at 50 Hz 	0.8
Apparent holding power of magnet coil at AC	
<ul style="list-style-type: none"> • at 50 Hz 	4.4 V·A
Inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> • at 50 Hz 	0.5
Closing power of magnet coil at DC	320 W
Holding power of magnet coil at DC	2.8 W
Closing delay	
<ul style="list-style-type: none"> • at AC • at DC 	60 ... 75 ms 60 ... 75 ms
Opening delay	
<ul style="list-style-type: none"> • at AC • at DC 	115 ... 130 ms 115 ... 130 ms
Recovery time after power failure typical	2 s
Arcing time	10 ... 15 ms
Control version of the switch operating mechanism	Fail-safe PLC input (F-PLC-IN)
Auxiliary circuit	
Number of NC contacts for auxiliary contacts	
<ul style="list-style-type: none"> • 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	124 A
• at 600 V rated value	125 A
Yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 230 V rated value	25 hp
• for three-phase AC motor	
— at 200/208 V rated value	40 hp
— at 220/230 V rated value	50 hp
— at 460/480 V rated value	100 hp
— at 575/600 V rated value	125 hp
Contact rating of auxiliary contacts according to UL	A600 / P600

Short-circuit protection

Design of the fuse link	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 355 A (690 V, 100 kA)

— with type of assignment 2 required

- for short-circuit protection of the auxiliary switch required

gG: 250 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 250 A (415 V, 50 kA)
gG: 10 A (500 V, 1 kA)

Installation/ mounting/ dimensions

<ul style="list-style-type: none"> • mounting position 	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
Mounting type <ul style="list-style-type: none"> • Side-by-side mounting 	screw fixing Yes
Height	172 mm
Width	120 mm
Depth	170 mm
Required spacing <ul style="list-style-type: none"> • with side-by-side mounting <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — downwards 10 mm — at the side 0 mm • for grounded parts <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — at the side 10 mm — downwards 10 mm • for live parts <ul style="list-style-type: none"> — forwards 20 mm — upwards 10 mm — downwards 10 mm — at the side 10 mm 	

Connections/ Terminals

Width of connection bar	17 mm
Thickness of connection bar	3 mm
Diameter of holes	9 mm
Number of holes <ul style="list-style-type: none"> • Type of electrical connection for main current circuit Connection bar • Type of electrical connection for auxiliary and control current circuit screw-type terminals • Type of electrical connection at contactor for auxiliary contacts Screw-type terminals • Type of electrical connection of magnet coil Screw-type terminals 	
Type of connectable conductor cross-sections <ul style="list-style-type: none"> • at AWG conductors for main contacts 2x 1/0 	

Connectable conductor cross-section for main contacts	
<ul style="list-style-type: none"> • stranded 	25 ... 120 mm ²
Connectable conductor cross-section for auxiliary contacts	
<ul style="list-style-type: none"> • single or multi-stranded 	0.5 ... 4 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 — single or multi-stranded — finely stranded with core end processing • at AWG conductors for auxiliary contacts 	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), max. 2x (0.75 ... 4 mm ²) 2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²), max. 2x (0,75 ... 4 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14), 1x 12
AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> • for auxiliary contacts 	18 ... 14

Safety related data

Safety device type acc. to IEC 61508-2	Type B
B10 value	
<ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 	1 000 000
Safety Integrity Level (SIL) acc. to IEC 61508	2
SIL Claim Limit (subsystem) acc. to EN 62061	2
Performance level (PL) acc. to EN ISO 13849-1	c
category acc. to EN ISO 13849-1	2
Stop category acc. to DIN EN 60204-1	0
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
PFHD with high demand rate acc. to EN 62061	0.00000045 1/h
PFDAvg with low demand rate acc. to IEC 61508	0.007
MTBF	75 y
Hardware fault tolerance acc. to IEC 61508	0
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
Suitability for use safety-related switching OFF	Yes

Certificates/ approvals

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

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

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Confirmation](#)

[Miscellaneous](#)

Railway

[Special Test Certificate](#)

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=3RT1054-6SF36>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-6SF36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-6SF36>

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

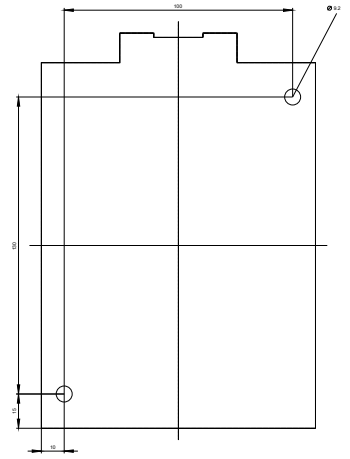
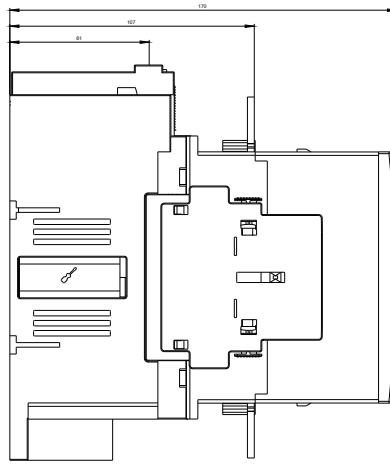
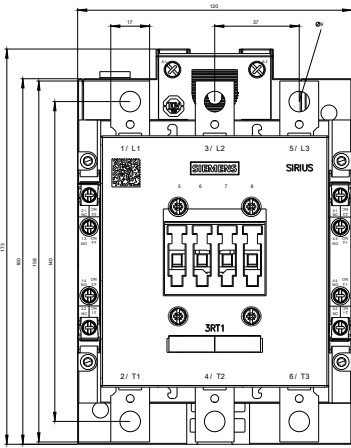
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-6SF36&lang=en

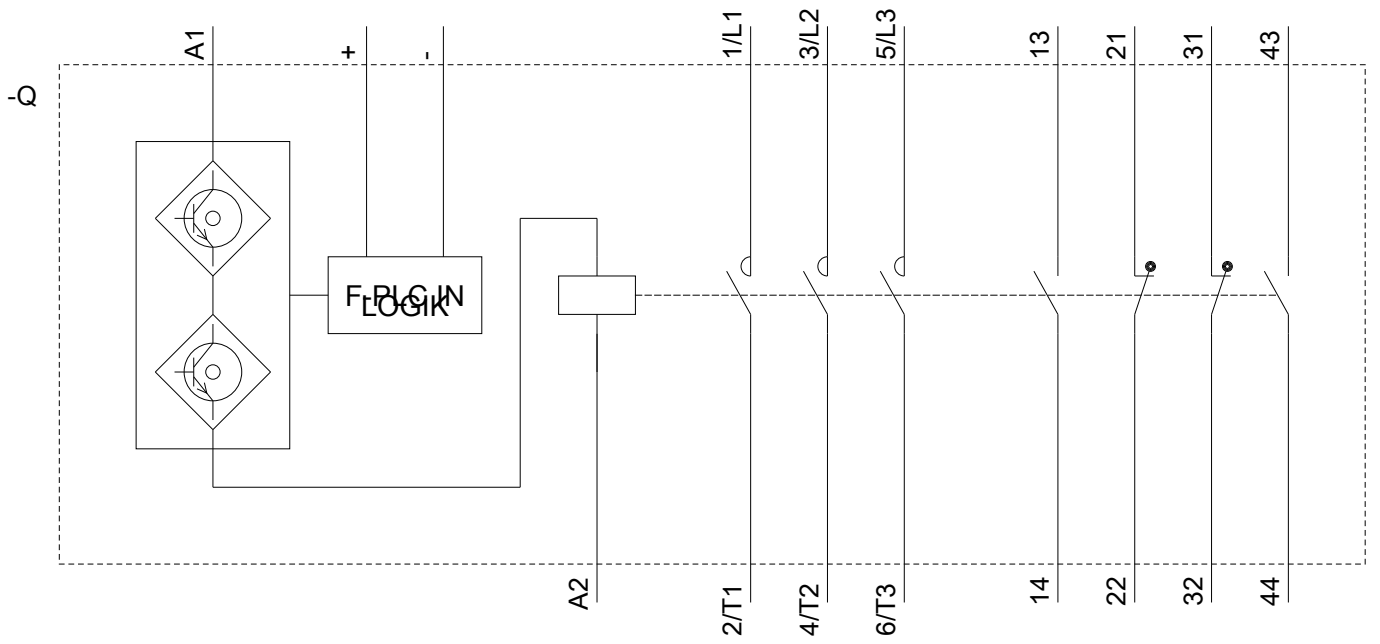
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-6SF36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-6SF36&objecttype=14&gridview=view1>





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