



contactor, AC-3, 50 A/400 V/60 °C S2, 3-pole, 21-33 V AC/DC, F-PLC-IN, with varistor, 1 NC, spring-loaded terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S2
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	12 W
• per pole	4 W
power loss [W] for rated value of the current without load current share typical	2 W
surge voltage resistance	
• of main circuit rated value	6 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	7.7g / 5 ms, 4.5g / 10 ms
• at DC	7.7g / 5 ms, 4.5g / 10 ms
shock resistance with sine pulse	
• at AC	12g / 5 ms, 7g / 10 ms
• at DC	12g / 5 ms, 7g / 10 ms
mechanical service life (switching cycles)	
• of contactor typical	5 000 000
• of the contactor with added electronically optimized auxiliary switch block typical	5 000 000
• of the contactor with added auxiliary switch block typical	5 000 000
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	29.01.2021 00:00:00
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
Main circuit	
number of poles for main current circuit	3

number of NO contacts for main contacts	3
operating voltage at AC-3 rated value maximum	690 V
operational current	
<ul style="list-style-type: none"> • at AC-1 at 400 V at ambient temperature 40 °C rated value 	70 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 	70 A
<ul style="list-style-type: none"> — up to 690 V at ambient temperature 60 °C rated value 	60 A
<ul style="list-style-type: none"> • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value 	51 A
<ul style="list-style-type: none"> — at 500 V rated value 	51 A
<ul style="list-style-type: none"> — at 690 V rated value 	24 A
<ul style="list-style-type: none"> • at AC-4 at 400 V rated value 	41 A
<ul style="list-style-type: none"> • at AC-5a up to 690 V rated value 	61.6 A
<ul style="list-style-type: none"> • at AC-5b up to 400 V rated value 	41.5 A
<ul style="list-style-type: none"> • at AC-6a <ul style="list-style-type: none"> — up to 230 V for current peak value n=20 rated value 	43.2 A
<ul style="list-style-type: none"> — up to 400 V for current peak value n=20 rated value 	43.2 A
<ul style="list-style-type: none"> — up to 500 V for current peak value n=20 rated value 	43.2 A
<ul style="list-style-type: none"> — up to 690 V for current peak value n=20 rated value 	24 A
<ul style="list-style-type: none"> • at AC-6a <ul style="list-style-type: none"> — up to 230 V for current peak value n=30 rated value 	28.8 A
<ul style="list-style-type: none"> — up to 400 V for current peak value n=30 rated value 	28.8 A
<ul style="list-style-type: none"> — up to 500 V for current peak value n=30 rated value 	28.8 A
<ul style="list-style-type: none"> — up to 690 V for current peak value n=30 rated value 	24 A
minimum cross-section in main circuit at maximum AC-1 rated value	25 mm ²
operational current for approx. 200000 operating cycles at AC-4	
<ul style="list-style-type: none"> • at 400 V rated value 	24 A
<ul style="list-style-type: none"> • at 690 V rated value 	20 A
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 	55 A
<ul style="list-style-type: none"> — at 110 V rated value 	4.5 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 	0.4 A
<ul style="list-style-type: none"> — at 600 V rated value 	0.25 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 	55 A
<ul style="list-style-type: none"> — at 110 V rated value 	45 A
<ul style="list-style-type: none"> — at 220 V rated value 	5 A
<ul style="list-style-type: none"> — at 440 V rated value 	1 A
<ul style="list-style-type: none"> — at 600 V rated value 	0.8 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 	55 A
<ul style="list-style-type: none"> — at 110 V rated value 	55 A
<ul style="list-style-type: none"> — at 220 V rated value 	45 A
<ul style="list-style-type: none"> — at 440 V rated value 	2.9 A
<ul style="list-style-type: none"> — at 600 V rated value 	1.4 A
operational current	

<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 — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 2 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 3 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value 	35 A 2.5 A 1 A 0.1 A 0.06 A 55 A 25 A 5 A 0.27 A 0.16 A 55 A 55 A 25 A 0.6 A 0.35 A
operating power	
<ul style="list-style-type: none"> • at AC-2 at 400 V rated value • at AC-3 <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 	22 kW 15 kW 22 kW 30 kW 22 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 	12.6 kW 18.2 kW
operating apparent power at AC-6a	
<ul style="list-style-type: none"> • up to 400 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 690 V for current peak value n=20 rated value 	29 900 V·A 37 400 V·A 28 600 V·A
operating apparent power at AC-6a	
<ul style="list-style-type: none"> • up to 230 V for current peak value n=30 rated value • up to 400 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value 	11 400 V·A 19 900 V·A 24 900 V·A 28 600 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 • 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 	937 A; Use minimum cross-section acc. to AC-1 rated value 697 A; Use minimum cross-section acc. to AC-1 rated value 468 A; Use minimum cross-section acc. to AC-1 rated value 282 A; Use minimum cross-section acc. to AC-1 rated value 229 A; Use minimum cross-section acc. to AC-1 rated value
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 • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum 	1 000 1/h 600 1/h 800 1/h 250 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 	21 ... 33 V 21 ... 33 V
control supply voltage at DC	

• rated value	21 ... 33 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	11 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	
• 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	2.2 A
duration of inrush current peak	100 µs
locked-rotor current mean value	1.6 A
locked-rotor current peak	2.6 A
duration of locked-rotor current	230 ms
holding current mean value	0.075 A
apparent pick-up power of magnet coil at AC	
• at 50 Hz	40 V·A
• at 60 Hz	40 V·A
apparent holding power of magnet coil at AC	
• at 50 Hz	2 V·A
• at 60 Hz	2 V·A
closing power of magnet coil at DC	40 W
holding power of magnet coil at DC	1.6 W
closing delay	
• at AC	45 ... 70 ms
• at DC	45 ... 60 ms
opening delay	
• at AC	35 ... 55 ms
• at DC	35 ... 55 ms
recovery time after power failure typical	2.1 s
arcing time	10 ... 20 ms
control version of the switch operating mechanism	Fail-safe PLC input (F-PLC-IN)
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts instantaneous contact	0
operational current at AC-12 maximum	10 A
operational current at AC-15	
• at 230 V rated value	10 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
• 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
operational current at DC-13	
• at 24 V rated value	10 A

<ul style="list-style-type: none"> • 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 	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)
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
<ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value 	52 A 52 A
yielded mechanical performance [hp]	
<ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value — at 230 V rated value • for 3-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 	3 hp 10 hp 15 hp 15 hp 40 hp 50 hp
contact rating of auxiliary contacts according to UL	A600 / P600
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: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA) gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (415V,80kA) gG: 10 A (500 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	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
<ul style="list-style-type: none"> • side-by-side mounting 	Yes
height	114 mm
width	55 mm
depth	130 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 	10 mm 10 mm 10 mm 0 mm 10 mm 10 mm 6 mm 10 mm 10 mm 10 mm 10 mm 6 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 	screw-type terminals 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"> • for main contacts <ul style="list-style-type: none"> — solid or stranded — finely stranded with core end processing • at AWG cables for main contacts 	2x (1 ... 35 mm ²), 1x (1 ... 50 mm ²) 2x (1 ... 25 mm ²), 1x (1 ... 35 mm ²) 2x (18 ... 2), 1x (18 ... 1)
connectable conductor cross-section for main contacts <ul style="list-style-type: none"> • finely stranded with core end processing 	1 ... 35 mm ²
connectable conductor cross-section for auxiliary contacts <ul style="list-style-type: none"> • solid or stranded • finely stranded with core end processing • finely stranded without core end processing 	0.5 ... 2.5 mm ² 0.5 ... 1.5 mm ² 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 or stranded — finely stranded with core end processing — finely stranded without core end processing • at AWG cables for auxiliary contacts 	2x (0.5 ... 2.5 mm ²) 2x (0.5 ... 1.5 mm ²) 2x (0.5 ... 2.5 mm ²) 2x (20 ... 14)
AWG number as coded connectable conductor cross section <ul style="list-style-type: none"> • for main contacts • for auxiliary contacts 	18 ... 1 20 ... 14
Safety related data	
product function mirror contact acc. to IEC 60947-4-1	Yes
safety device type acc. to IEC 61508-2	Type B
B10 value 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
diagnostics test interval by internal test function maximum	28 800 s
proportion of dangerous failures <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 	40 % 73 %
failure rate [FIT] with low demand rate acc. to SN 31920	100 FIT
product function positively driven operation acc. to IEC 60947-5-1	No
PFHD with high demand rate acc. to EN 62061	0.000000077 1/h
PFDavg with low demand rate acc. to IEC 61508	0.0067
MTBF	52 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 class IP on the front acc. to IEC 60529	IP20
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front
suitability for use <ul style="list-style-type: none"> • safety-related switching on • safety-related switching OFF 	No Yes
Certificates/ approvals	
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=3RT2036-3SB30 Cax online generator http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-3SB30 Service&Support (Manuals, Certificates, Characteristics, FAQs,...)	

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3SB30>

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

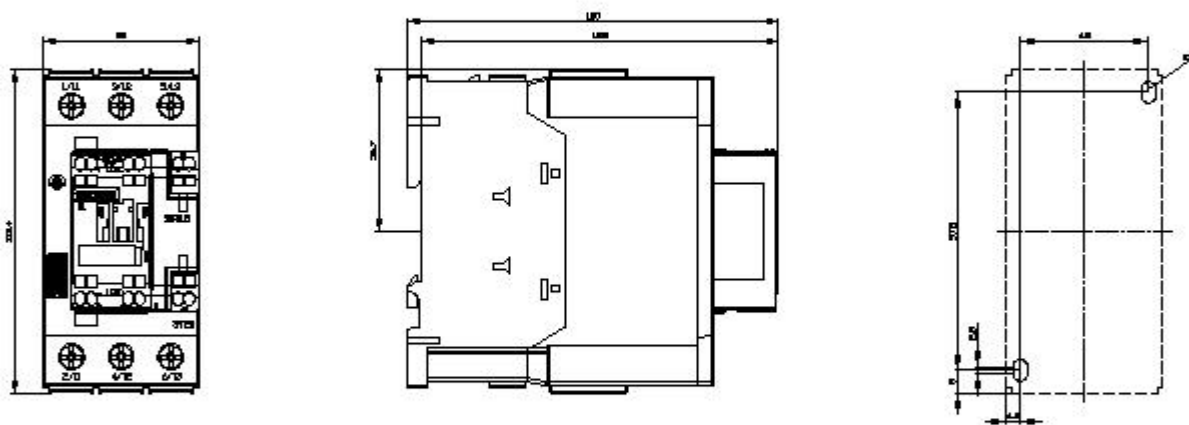
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-3SB30&lang=en

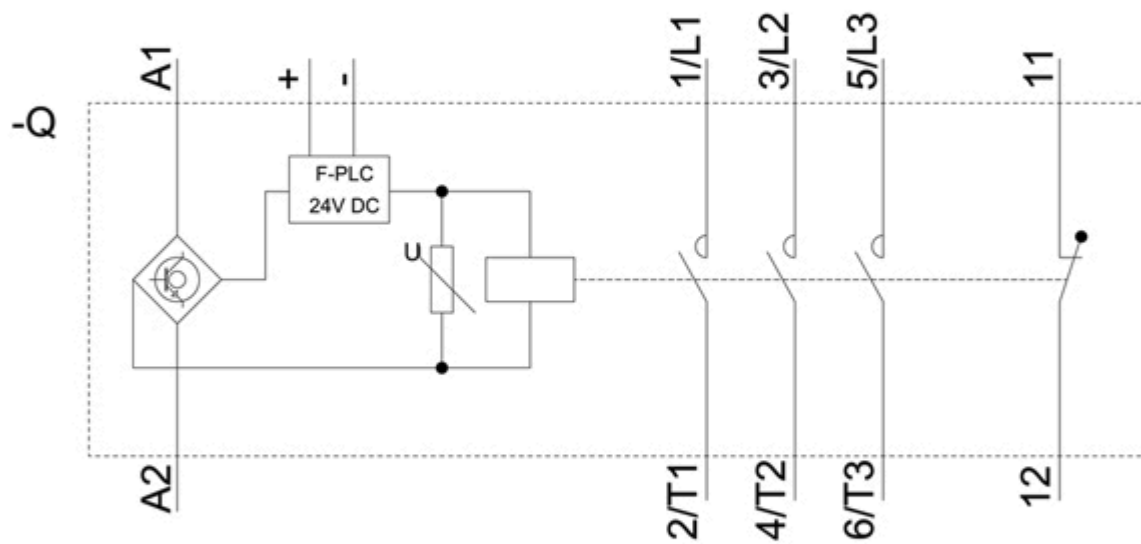
Characteristic: Tripping characteristics, I^2t , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3SB30/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2036-3SB30&objecttype=14&gridview=view1>





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