

power contactor, AC-3 50 A, 22 kW / 400 V 1 NO + 1 NC, 110 V AC, 50 Hz, 3-pole, Size S2, screw 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
• at AC in hot operating state per pole	4 W
power loss [W] for rated value of the current without load current share typical	16 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

protection class IP	
• on the front	IP20
• of the terminal	IP00
shock resistance at rectangular impulse	
• at AC	11.8g / 5 ms, 7.4g / 10 ms
shock resistance with sine pulse	
• at AC	18.5g / 5 ms, 11.6g / 10 ms
mechanical service life (switching 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 acc. to IEC 81346-2	Q

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	
• at AC-1 at 400 V — at ambient temperature 40 °C rated value	70 A
• at AC-1 — up to 690 V at ambient temperature 40 °C rated value	70 A
— up to 690 V at ambient temperature 60 °C rated value	60 A
• at AC-3 — at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
• at AC-4 at 400 V rated value	41 A
• at AC-5a up to 690 V rated value	61.6 A
• at AC-5b up to 400 V rated value	41.5 A
• at AC-6a	

— up to 230 V for current peak value n=20 rated value	43.2 A
— up to 400 V for current peak value n=20 rated value	43.2 A
— up to 500 V for current peak value n=20 rated value	43.2 A
— up to 690 V for current peak value n=20 rated value	24 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	28.8 A
— up to 400 V for current peak value n=30 rated value	28.8 A
— up to 500 V for current peak value n=30 rated value	28.8 A
— 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	
• at 400 V rated value	24 A
• at 690 V rated value	20 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	55 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	55 A
— at 110 V rated value	45 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
— at 600 V rated value	0.8 A
• with 3 current paths in series at DC-1	
— at 24 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	45 A
— at 440 V rated value	2.9 A
— 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	
• at AC-2 at 400 V rated value	22 kW
• at AC-3	
— at 230 V rated value	15 kW
— at 400 V rated value	22 kW
— at 500 V rated value	30 kW
— at 690 V rated value	22 kW
operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	12.6 kW
• at 690 V rated value	18.2 kW
operating apparent power at AC-6a	
• up to 230 V for current peak value n=20 rated value	17.2 kV·A
• up to 400 V for current peak value n=20 rated value	29.9 kV·A
• up to 500 V for current peak value n=20 rated value	37.4 kV·A
• up to 690 V for current peak value n=20 rated value	28.6 kV·A
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	11.4 kV·A
• up to 400 V for current peak value n=30 rated value	19.9 kV·A

<ul style="list-style-type: none"> • up to 500 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value 	24.9 kV·A 28.6 kV·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 	5 000 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
control supply voltage at AC <ul style="list-style-type: none"> • at 50 Hz rated value 	110 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
apparent pick-up power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz 	190 V·A
inductive power factor with closing power of the coil <ul style="list-style-type: none"> • at 50 Hz 	0.72
apparent holding power of magnet coil at AC <ul style="list-style-type: none"> • at 50 Hz 	16 V·A
inductive power factor with the holding power of the coil <ul style="list-style-type: none"> • at 50 Hz 	0.37
closing delay <ul style="list-style-type: none"> • at AC 	10 ... 80 ms
opening delay <ul style="list-style-type: none"> • at AC 	10 ... 18 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	
• instantaneous contact	1
number of NO contacts for auxiliary contacts	
• instantaneous contact	1
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
• 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 3-phase AC motor	
• at 480 V rated value	52 A
• at 600 V rated value	52 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	3 hp
— at 230 V rated value	10 hp
• for 3-phase AC motor	
— at 200/208 V rated value	15 hp
— at 220/230 V rated value	15 hp

— at 460/480 V rated value	40 hp
— at 575/600 V rated value	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 	<p>gG: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)</p> <p>gG: 80 A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (415V,80kA)</p> <p>gG: 10 A (500 V, 1 kA)</p>

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 	<p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>0 mm</p> <p>10 mm</p> <p>10 mm</p> <p>6 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>6 mm</p>

Connections/ Terminals






type of electrical connection	
<ul style="list-style-type: none"> for main current circuit for auxiliary and control circuit 	<p>screw-type terminals</p> <p>screw-type terminals</p>




<ul style="list-style-type: none"> • at contactor for auxiliary contacts • of magnet coil 	Screw-type terminals Screw-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 	0.5 ... 2.5 mm ² 0.5 ... 2.5 mm ²
<ul style="list-style-type: none"> • type of connectable conductor cross-sections for auxiliary contacts <ul style="list-style-type: none"> — solid or stranded — finely stranded with core end processing • type of connectable conductor cross-sections at AWG cables for auxiliary contacts 	2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²) 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 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

B10 value <ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 	1 000 000
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] <ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 	100 FIT
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
T1 value for proof test interval or service life acc. to IEC 61508	20 y
touch 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
 CSA	 CCC	 UL	KC	 EAC	 RCM

Declaration of Conformity	Test Certificates		Marine / Shipping	
 EG-Konf.	Miscellaneous	Type Test Certificates/Test Report	Special Test Certificate	 ABS  BUREAU VERITAS

Marine / Shipping					other
 LRS	 PRS	 RINA	 RMRS	 DNV-GL.COM/AF	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=3RT2036-1AF00>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-1AF00>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1AF00>

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

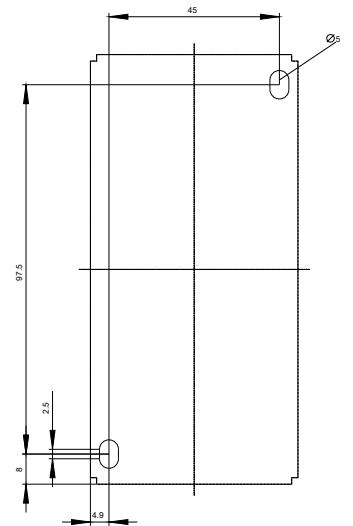
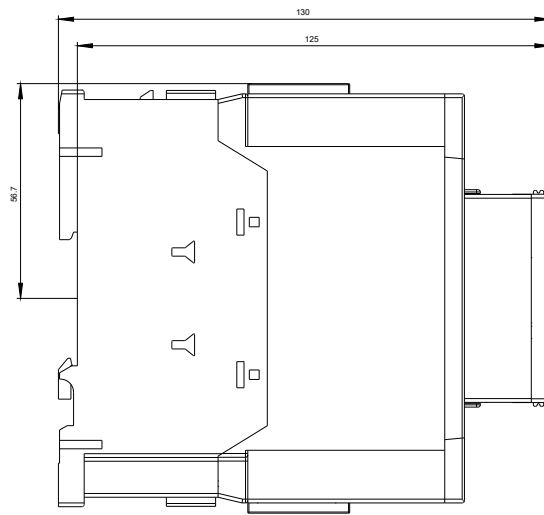
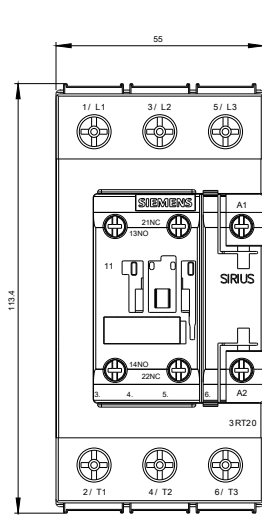
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-1AF00&lang=en

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1AF00/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2036-1AF00&objecttype=14&gridview=view1>





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