

Power contactor, AC-3 300 A, 160 kW / 400 V AC (50-60 Hz) / DC operation 220-240 V UC Auxiliary contacts 2 NO + 2 NC 3-pole, Size S10 Busbar connections Drive: conventional screw terminal



product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT1
General technical data	
size of contactor	S10
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	66 W
• at AC in hot operating state per pole	22 W
power loss [W] for rated value of the current without load current share typical	7.4 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

protection class IP	
• on the front • of the terminal	IP00; IP20 on the front with cover / box terminal IP00
shock resistance at rectangular impulse	
• 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	
• 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)	
• of contactor typical • of the contactor with added electronically optimized 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 IEC 81346-2	Q

Ambient conditions	
• installation altitude at height above sea level maximum	2 000 m
ambient temperature	
• 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	
• at AC-3 rated value maximum	1 000 V
operational current	
• at AC-1 at 400 V — at ambient temperature 40 °C rated value • at AC-1 — 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-3 — at 400 V rated value — at 500 V rated value	330 A 330 A 300 A 150 A 150 A 300 A 300 A

— at 690 V rated value	280 A
— at 1000 V rated value	95 A
• at AC-4 at 400 V rated value	280 A
• at AC-5a up to 690 V rated value	290 A
• at AC-5b up to 400 V rated value	249 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	292 A
— up to 400 V for current peak value n=20 rated value	292 A
— up to 500 V for current peak value n=20 rated value	292 A
— up to 690 V for current peak value n=20 rated value	280 A
— up to 1000 V for current peak value n=20 rated value	95 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	195 A
— up to 400 V for current peak value n=30 rated value	195 A
— up to 500 V for current peak value n=30 rated value	195 A
— up to 690 V for current peak value n=30 rated value	195 A
— up to 1000 V for current peak value n=30 rated value	95 A
minimum cross-section in main circuit	
• at maximum AC-1 rated value	185 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	125 A
• at 690 V rated value	115 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	300 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	300 A
— at 110 V rated value	300 A

— at 220 V rated value	300 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	300 A
— at 110 V rated value	300 A
— at 220 V rated value	300 A
— at 440 V rated value	11 A
— at 600 V rated value	5.2 A
operational current	
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	300 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	300 A
— at 110 V rated value	300 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	300 A
— at 110 V rated value	300 A
— at 220 V rated value	300 A
— at 440 V rated value	1.4 A
— at 600 V rated value	0.75 A
operating power	
• at AC-3	
— at 230 V rated value	90 kW
— at 400 V rated value	160 kW
— at 500 V rated value	200 kW
— at 690 V rated value	250 kW
— at 1000 V rated value	132 kW
operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	71 kW
• at 690 V rated value	112 kW
operating apparent power at AC-6a	
• up to 230 V for current peak value n=20 rated value	110 000 kV·A

• 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 • up to 1000 V for current peak value n=20 rated value	200 000 V·A 250 000 V·A 330 000 V·A 160 000 V·A
operating apparent power at AC-6a • 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 • up to 1000 V for current peak value n=30 rated value	70 000 V·A 130 000 V·A 160 000 V·A 230 000 V·A 160 000 V·A
short-time withstand current in cold operating state up to 40 °C • 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	5 524 A; Use minimum cross-section acc. to AC-1 rated value 4 579 A; Use minimum cross-section acc. to AC-1 rated value 3 153 A; Use minimum cross-section acc. to AC-1 rated value 1 883 A; Use minimum cross-section acc. to AC-1 rated value 1 445 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency • at AC • at DC	2 000 1/h 2 000 1/h
operating frequency • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum	750 1/h 250 1/h 500 1/h 130 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC • at 50 Hz rated value • at 60 Hz rated value	220 ... 240 V 220 ... 240 V

control supply voltage at DC	
• rated value	220 ... 240 V
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
apparent pick-up power of magnet coil at AC	
• at 50 Hz	590 V·A
inductive power factor with closing power of the coil	
• at 50 Hz	0.9
apparent holding power of magnet coil at AC	
• at 50 Hz	6.7 V·A
inductive power factor with the holding power of the coil	
• at 50 Hz	0.9
closing power of magnet coil at DC	650 W
holding power of magnet coil at DC	7.4 W
closing delay	
• at AC	30 ... 95 ms
• at DC	30 ... 95 ms
opening delay	
• at AC	40 ... 80 ms
• at DC	40 ... 80 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
operational current at AC-12 maximum	10 A
operational 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
operational current at DC-12	

• at 24 V rated value • 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	10 A 6 A 6 A 3 A 2 A 1 A 0.15 A
operational current at DC-13	
• at 24 V rated value • 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	10 A 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	
• at 480 V rated value • at 600 V rated value	302 A 289 A
yielded mechanical performance [hp]	
• for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value	100 hp 125 hp 250 hp 300 hp
contact rating of auxiliary contacts according to UL	A600 / Q600

Short-circuit protection

design of the fuse link	
• for short-circuit protection of the main circuit — with type of coordination 1 required — with type of assignment 2 required • for short-circuit protection of the auxiliary switch required	gG: 500 A (690 V, 100 kA) gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 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
fastening method	screw fixing
• side-by-side mounting	Yes
height	210 mm

width	145 mm
depth	202 mm
required spacing	
• with side-by-side mounting — forwards 20 mm — upwards 10 mm — downwards 10 mm — at the side 0 mm • for grounded parts — forwards 20 mm — upwards 10 mm — at the side 10 mm — downwards 10 mm • for live parts — forwards 20 mm — upwards 10 mm — downwards 10 mm — at the side 10 mm	

Connections/ Terminals	
width of connection bar	25 mm
thickness of connection bar	6 mm
diameter of holes	11 mm
number of holes	1
type of electrical connection	
• for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil	Connection bar screw-type terminals Screw-type terminals Screw-type terminals
type of connectable conductor cross-sections	
• at AWG cables for main contacts	2/0 ... 500 kcmil
connectable conductor cross-section for main contacts	
• stranded	70 ... 240 mm ²
connectable conductor cross-section for auxiliary contacts	
• solid or stranded • finely stranded with core end processing	0.5 ... 4 mm ² 0.5 ... 2.5 mm ²
• type of connectable conductor cross-sections for auxiliary contacts — solid — solid or stranded — finely stranded with core end processing	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)

type of connectable conductor cross-sections at AWG cables for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14), 1x 12
AWG number as coded connectable conductor cross section for auxiliary contacts	18 ... 14

Safety related data

B10 value with high demand rate acc. to SN 31920	1 000 000
product function - mirror contact acc. to IEC 60947-4-1 - positively driven operation acc. to IEC 60947-5-1	Yes No
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
			KC		
CSA	CCC	UL			RCM

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

Marine / Shipping	other	Railway		
		Miscellaneous	Confirmation	Special Test Certificate
RMRS	DNV-GL DNVGL.COM/AF			

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=3RT1066-6AP36>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1066-6AP36>

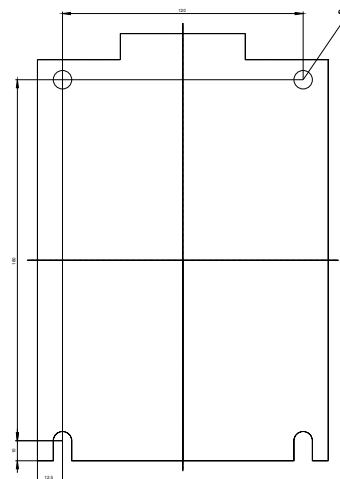
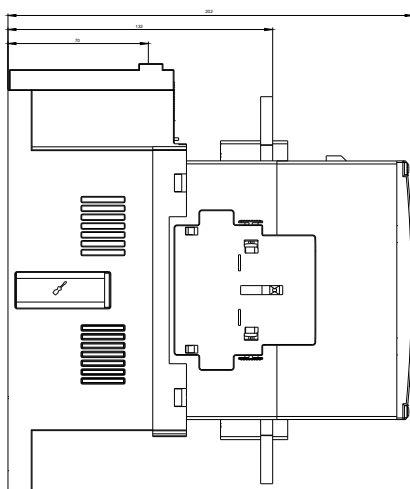
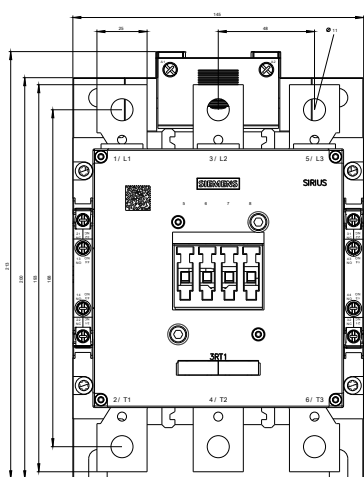
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

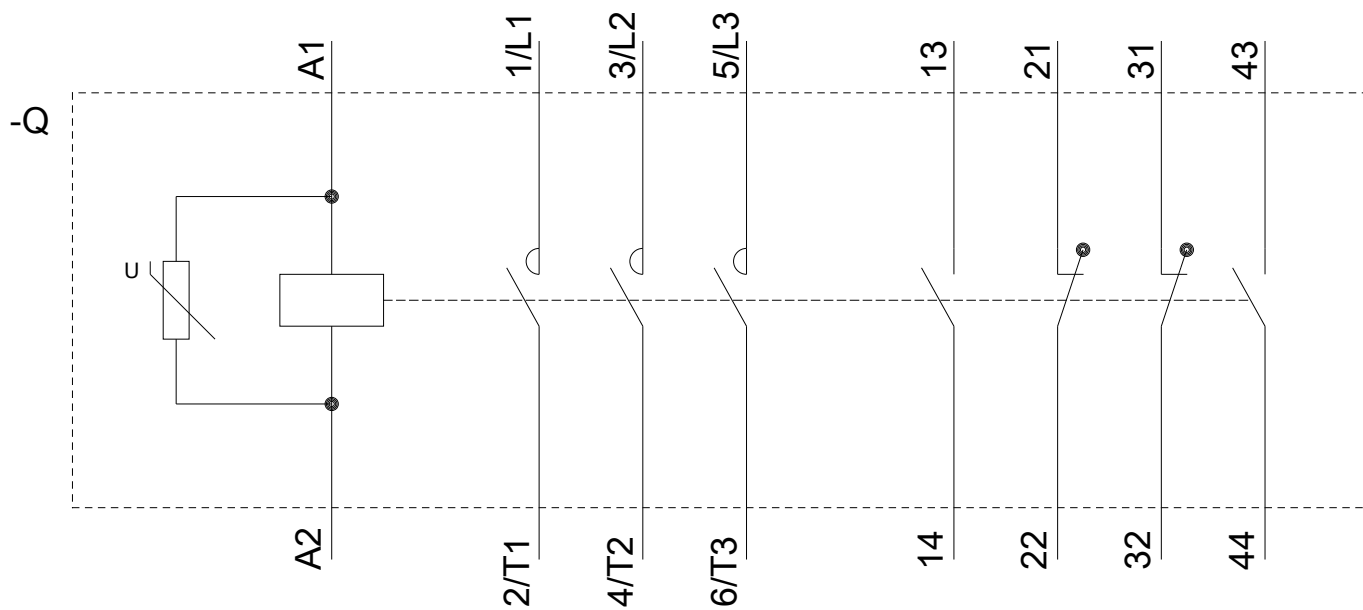
<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6AP36>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1066-6AP36&lang=en

Characteristic: Tripping characteristics, I^2t , Let-through current
<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6AP36/char>

Further characteristics (e.g. electrical endurance, switching frequency)
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1066-6AP36&objecttype=14&gridview=view1>





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