

Power contactor, AC-3 80 A, 37 kW / 400 V 1 NO + 1 NC, 24 V AC, 50 Hz 3-pole, size S2 screw terminals



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
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 electronics-compatible auxiliary switch block typical	5 000 000
• 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	
• maximum	2 000 m

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
Operating current	
• at AC-1 at 400 V	
— at ambient temperature 40 °C rated value	90 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	90 A
— up to 690 V at ambient temperature 60 °C rated value	80 A
• at AC-2 at 400 V rated value	80 A
• at AC-3	
— at 400 V rated value	80 A
— at 500 V rated value	80 A
— at 690 V rated value	58 A
• at AC-4 at 400 V rated value	55 A
• at AC-5a up to 690 V rated value	79.2 A
• at AC-5b up to 400 V rated value	66.4 A
• at AC-6a	
— up to 230 V at current peak n=20 rated value	70 A
— up to 400 V at current peak n=20 rated value	70 A
— up to 500 V at current peak n=20 rated value	70 A

— up to 690 V at current peak n=20 rated value	58 A
• at AC-6a	
— up to 230 V at current peak n=30 rated value	46.7 A
— up to 400 V at current peak n=30 rated value	46.7 A
— up to 500 V at current peak n=30 rated value	46.7 A
— up to 690 V at current peak n=30 rated value	46.7 A
Minimum cross-section in the main circuit	
• at maximum AC-1 rated value	35 mm ²
Operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	30 A
• at 690 V rated value	24 A
Operating 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
Operating current	
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	35 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.1 A

— at 600 V rated value	0.06 A
• with 2 current paths in series at DC-3 at DC-5 — 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	55 A 25 A 5 A 0.27 A 0.16 A
• with 3 current paths in series at DC-3 at DC-5 — 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	55 A 55 A 25 A 0.6 A 0.35 A
Operating power	
• at AC-1 — at 230 V rated value — at 230 V at 60 °C rated value — at 400 V rated value — at 400 V at 60 °C rated value — at 690 V rated value — at 690 V at 60 °C rated value • at AC-2 at 400 V rated value • at AC-3 — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value	34 kW 28 kW 59 kW 49 kW 102 kW 85 kW 37 kW 22 kW 37 kW 37 kW 45 kW
Operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value • at 690 V rated value	15.8 kW 21.8 kW
Thermal short-time current limited to 10 s	640 A
Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor	5.7 W
No-load switching frequency	
• at AC	5 000 1/h
Operating frequency	
• at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum	700 1/h 350 1/h 500 1/h 150 1/h

Control circuit/ Control	
Type of voltage of the control supply voltage	AC
Control supply voltage at AC at 50 Hz rated value	24 V
Operating range factor control supply voltage rated value of magnet coil at AC at 50 Hz	0.8 ... 1.1
Apparent pick-up power of magnet coil at AC at 50 Hz	190 V·A
Inductive power factor with closing power of the coil at 50 Hz	0.72
Apparent holding power of magnet coil at AC at 50 Hz	16 V·A
Inductive power factor with the holding power of the coil at 50 Hz	0.37
Closing delay at AC	10 ... 80 ms
Opening delay 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
Operating current at AC-12 maximum	10 A
Operating current at AC-15 - at 230 V rated value - at 400 V rated value - at 500 V rated value - at 690 V rated value	10 A 3 A 2 A 1 A
Operating 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
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	65 A
• at 600 V rated value	62 A
Yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	5 hp
— at 230 V rated value	15 hp
• for three-phase AC motor	
— at 200/208 V rated value	20 hp
— at 220/230 V rated value	25 hp
— at 460/480 V rated value	50 hp
— at 575/600 V rated value	60 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: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)
— with type of assignment 2 required	gG: 160A (690V,100kA), aM: 80A (690V,100kA), BS88: 125A (415V,80kA)
• for short-circuit protection of the auxiliary switch required	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
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
• Side-by-side mounting	Yes
Height	114 mm
Width	55 mm
Depth	130 mm
Required spacing	

• with side-by-side mounting	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
• for grounded parts	
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
• for live parts	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm

Connections/Terminals

Type of electrical connection	
• for main current circuit	screw-type terminals
• for auxiliary and control current circuit	screw-type terminals
• at contactor for auxiliary contacts	Screw-type terminals
• of magnet coil	Screw-type terminals
Type of connectable conductor cross-sections	
• for main contacts	
— single or multi-stranded	2x (1 ... 35 mm ²), 1x (1 ... 50 mm ²)
— finely stranded with core end processing	2x (1 ... 25 mm ²), 1x (1 ... 35 mm ²)
• at AWG conductors for main contacts	2x (18 ... 2), 1x (18 ... 1)
Connectable conductor cross-section for main contacts	
• finely stranded with core end processing	1 ... 35 mm ²
Connectable conductor cross-section for auxiliary contacts	
• single or multi-stranded	0.5 ... 2.5 mm ²
• finely stranded with core end processing	0.5 ... 2.5 mm ²
Type of connectable conductor cross-sections	
• for auxiliary contacts	
— single or multi-stranded	2x (0,5 ... 1,5 mm ²), 2x (0,75 ... 2,5 mm ²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²)
• at AWG conductors for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14)
AWG number as coded connectable conductor cross section	
• for main contacts	18 ... 1
• for auxiliary contacts	20 ... 14

Safety related data

B10 value	
• with high demand rate acc. to SN 31920	1 000 000
Proportion of dangerous failures	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	73 %
Failure rate [FIT]	
• with low demand rate acc. to SN 31920	100 FIT
Product function	
• Mirror contact acc. to IEC 60947-4-1	Yes
• positively driven operation acc. to IEC 60947-5-1	No
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 on	No
• safety-related switching OFF	No

Certificates/approvals

General Product Approval	Functional Safety/Safety of Machinery	Declaration of Conformity
 CCC	 EAC	 EG-Konf.
 CSA	Type Examination Certificate	
 UL		

Declaration of Conformity	Test Certificates	Marine / Shipping
Miscellaneous	Type Test Certificates/Test Report	Special Test Certificate
		 ABS
		 BUREAU VERITAS
		 LRS

Marine / Shipping	other
 PRS	Confirmation
 RINA	
 RMRS	
 DNV-GL DNVGL.COM/AF	

Further information

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

<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2038-1AB00>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2038-1AB00>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-1AB00>

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

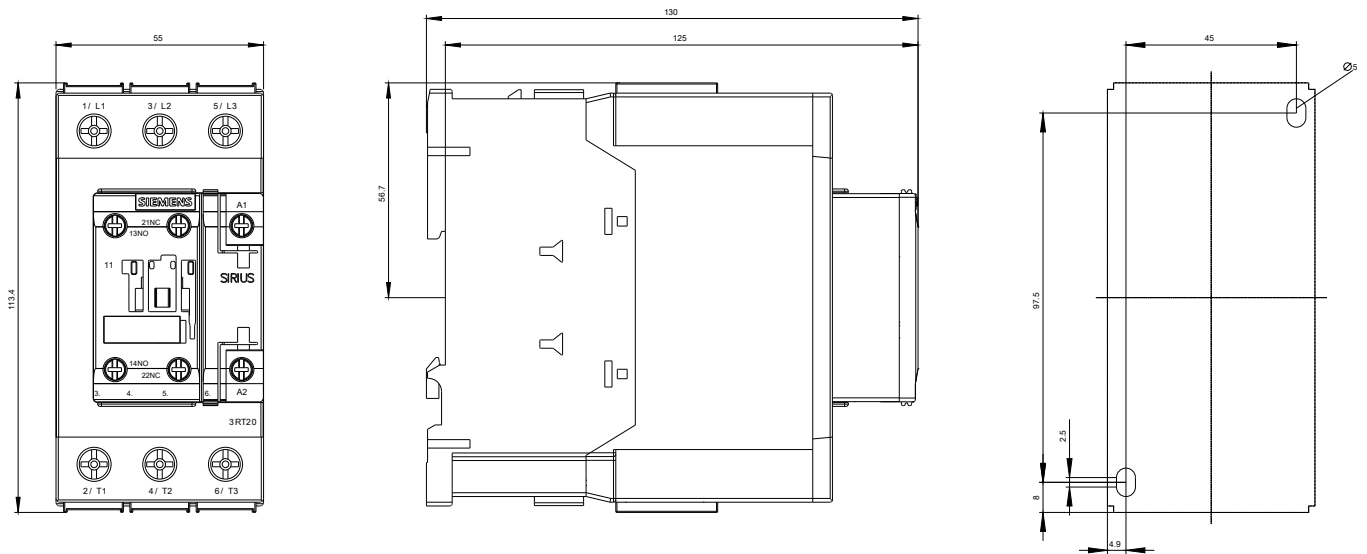
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2038-1AB00&lang=en

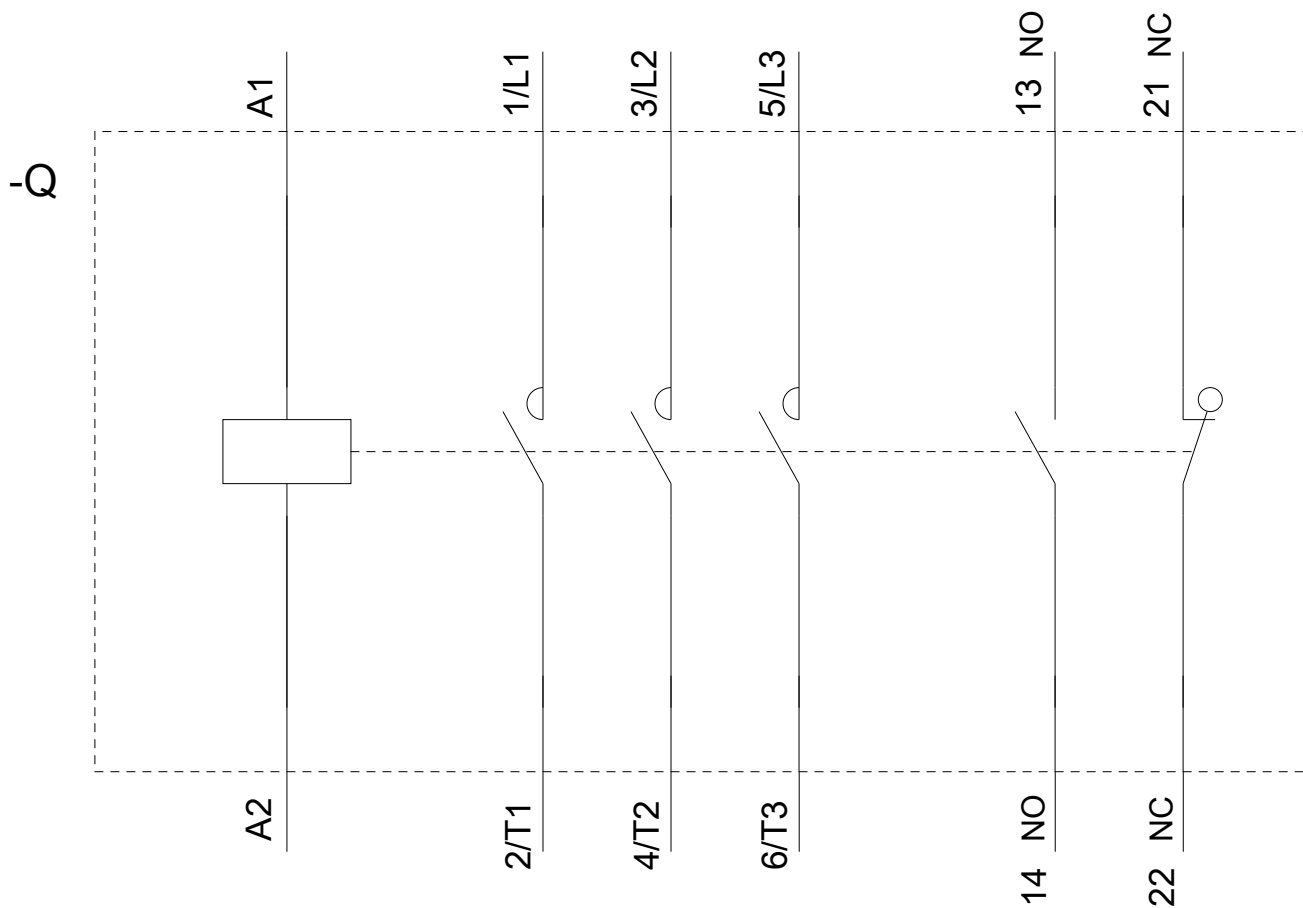
Characteristic: Tripping characteristics, I^2t , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2038-1AB00/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2038-1AB00&objecttype=14&gridview=view1>





last modified:

05/14/2019