



power contactor, AC-3e/AC-3, 110 A, 55 kW / 400 V, 3-pole, 20-33 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, screw terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S3
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	23.7 W
• at AC in hot operating state per pole	7.9 W
• without load current share typical	3.5 W
insulation voltage	
• of main circuit with degree of pollution 3 rated value	1 000 V
• of auxiliary circuit with degree of pollution 3 rated value	690 V
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 according to EN 60947-1	690 V
shock resistance at rectangular impulse	
• at AC	10.3g / 5 ms, 6..g / 10 ms
• at DC	6.7 g / 5 ms, 4g / 10 ms
shock resistance with sine pulse	
• at AC	16.3g / 5 ms, 10.g / 10 ms
• at DC	10.6 g / 5 ms, 6.3 g / 10 ms
mechanical service life (operating 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 according to IEC 81346-2	Q
Substance Prohibition (Date)	03/01/2017
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
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %

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
• at AC-3e rated value maximum	1 000 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	130 A
— up to 690 V at ambient temperature 40 °C rated value	130 A
— up to 690 V at ambient temperature 60 °C rated value	110 A
• at AC-3	
— at 400 V rated value	110 A
— at 500 V rated value	110 A
— at 690 V rated value	98 A
— at 1000 V rated value	30 A
• at AC-3e	
— at 400 V rated value	110 A
— at 500 V rated value	110 A
— at 690 V rated value	98 A
— at 1000 V rated value	30 A
• at AC-4 at 400 V rated value	97 A
• at AC-5a up to 690 V rated value	120 A
• at AC-5b up to 400 V rated value	110 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	98 A
— up to 400 V for current peak value n=20 rated value	98 A
— up to 500 V for current peak value n=20 rated value	98 A
— up to 690 V for current peak value n=20 rated value	98 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	65.3 A
— up to 400 V for current peak value n=30 rated value	65.3 A
— up to 500 V for current peak value n=30 rated value	65.3 A
— up to 690 V for current peak value n=30 rated value	65.3 A
minimum cross-section in main circuit at maximum AC-1 rated value	50 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	46 A
• at 690 V rated value	36 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	100 A
— at 60 V rated value	60 A
— at 110 V rated value	9 A
— at 220 V rated value	2 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.4 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	100 A
— at 60 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	10 A
— at 440 V rated value	1.8 A
— at 600 V rated value	1 A

• with 3 current paths in series at DC-1	— at 24 V rated value	100 A
	— at 60 V rated value	100 A
	— at 110 V rated value	100 A
	— at 220 V rated value	80 A
	— at 440 V rated value	4.5 A
	— at 600 V rated value	2.6 A
• at 1 current path at DC-3 at DC-5	— at 24 V rated value	40 A
	— at 60 V rated value	6 A
	— at 110 V rated value	2.5 A
	— at 220 V rated value	1 A
	— at 440 V rated value	0.15 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	100 A
	— at 60 V rated value	100 A
	— at 110 V rated value	100 A
	— at 220 V rated value	7 A
	— at 440 V rated value	0.42 A
	— at 600 V rated value	0.16 A
• with 3 current paths in series at DC-3 at DC-5	— at 24 V rated value	100 A
	— at 60 V rated value	100 A
	— at 110 V rated value	100 A
	— at 220 V rated value	35 A
	— at 440 V rated value	0.8 A
	— at 600 V rated value	0.35 A
operating power		
• at AC-2 at 400 V rated value		55 kW
• at AC-3		
— at 230 V rated value		30 kW
— at 400 V rated value		55 kW
— at 500 V rated value		75 kW
— at 690 V rated value		90 kW
— at 1000 V rated value		37 kW
• at AC-3e		
— at 230 V rated value		30 kW
— at 400 V rated value		55 kW
— at 500 V rated value		75 kW
— at 690 V rated value		90 kW
— at 1000 V rated value		37 kW
operating power for approx. 200000 operating cycles at AC-4		
• at 400 V rated value		24.3 kW
• at 690 V rated value		32.9 kW
operating apparent power at AC-6a		
• up to 230 V for current peak value n=20 rated value		39 kVA
• up to 400 V for current peak value n=20 rated value		67 kVA
• up to 500 V for current peak value n=20 rated value		84 kVA
• up to 690 V for current peak value n=20 rated value		117 kVA
operating apparent power at AC-6a		
• up to 230 V for current peak value n=30 rated value		26 kVA
• up to 400 V for current peak value n=30 rated value		45.2 kVA
• up to 500 V for current peak value n=30 rated value		56.5 kVA
• up to 690 V for current peak value n=30 rated value		78 kVA
short-time withstand current in cold operating state up to 40 °C		
• limited to 1 s switching at zero current maximum		1 960 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum		1 502 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum		1 095 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum		707 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum		562 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency		

• at AC	1 000 1/h
• at DC	1 000 1/h
operating frequency	
• at AC-1 maximum	900 1/h
• at AC-2 maximum	350 1/h
• at AC-3 maximum	850 1/h
• at AC-3e maximum	850 1/h
• at AC-4 maximum	200 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	20 ... 33 V
• at 60 Hz rated value	20 ... 33 V
control supply voltage at DC	
• rated value	20 ... 33 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
inrush current peak	6.5 A
duration of inrush current peak	50 µs
locked-rotor current mean value	3.2 A
locked-rotor current peak	6.5 A
duration of locked-rotor current	150 ms
holding current mean value	75 mA
apparent pick-up power of magnet coil at AC	
• at 50 Hz	151 VA
• at 60 Hz	151 VA
apparent holding power of magnet coil at AC	
• at 50 Hz	3.5 VA
• at 60 Hz	3.5 VA
closing power of magnet coil at DC	76 W
holding power of magnet coil at DC	2.7 W
closing delay	
• at AC	50 ... 70 ms
• at DC	50 ... 70 ms
opening delay	
• at AC	38 ... 57 ms
• at DC	38 ... 57 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	1
instantaneous contact	
number of NO contacts for auxiliary contacts	1
instantaneous contact	
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	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	96 A
• at 600 V rated value	99 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	10 hp
— at 230 V rated value	20 hp
• for 3-phase AC motor	
— at 200/208 V rated value	30 hp
— at 220/230 V rated value	40 hp
— at 460/480 V rated value	75 hp
— at 575/600 V rated value	100 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: 200A (690V,100kA), aM: 100A (690V,100kA), BS88: 160A (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
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
• side-by-side mounting	Yes
height	140 mm
width	70 mm
depth	152 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	
type of electrical connection	
• for main current circuit	screw-type terminals
• for auxiliary and control 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

- finely stranded with core end processing

connectable conductor cross-section for main contacts

- solid
- stranded
- finely stranded with core end processing

connectable conductor cross-section for auxiliary contacts

- solid or stranded
- finely stranded with core end processing

type of connectable conductor cross-sections

- for auxiliary contacts
 - solid or stranded
 - finely stranded with core end processing
- at AWG cables for auxiliary contacts

AWG number as coded connectable conductor cross section

- for main contacts
- for auxiliary contacts

2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)

2.5 ... 16 mm²
6 ... 70 mm²
2.5 ... 50 mm²

0.5 ... 2.5 mm²
0.5 ... 2.5 mm²

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)
2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)
2x (20 ... 16), 2x (18 ... 14)

10 ... 2
20 ... 14

Safety related data

product function

- mirror contact according to IEC 60947-4-1
- positively driven operation according to IEC 60947-5-1

Yes

No

B10 value with high demand rate according to SN 31920 performance level (PL) according to EN ISO 13849-1

1 000 000

c

category according to EN ISO 13849-1

2

stop category according to EN 60204-1

0

proportion of dangerous failures

- with low demand rate according to SN 31920
- with high demand rate according to SN 31920

40 %

73 %

failure rate [FIT] with low demand rate according to SN 31920

100 FIT

PFHD with high demand rate according to EN 62061

4.5E-7 1/h

PFDavg with low demand rate according to IEC 61508

0.007

MTBF

75 a

hardware fault tolerance according to IEC 61508

0

T1 value for proof test interval or service life according to IEC 61508

20 a

protection class IP on the front according to IEC 60529

IP20

touch protection on the front according to IEC 60529

finger-safe, for vertical contact from the front

suitability for use

- safety-related switching on
- safety-related switching OFF

No

Yes

Certificates/ approvals

General Product Approval



[Confirmation](#)



ccc



KC



EMC	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates
-----	---------------------------------------	---------------------------	-------------------



[Type Examination Certificate](#)



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

Marine / Shipping



other	Railway	Dangerous Good
Confirmation	Vibration and Shock	Transport Information

Further information

Siemens has decided to exit the Russian market (see here).

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RT2047-1NB30>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2047-1NB30>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-1NB30>

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

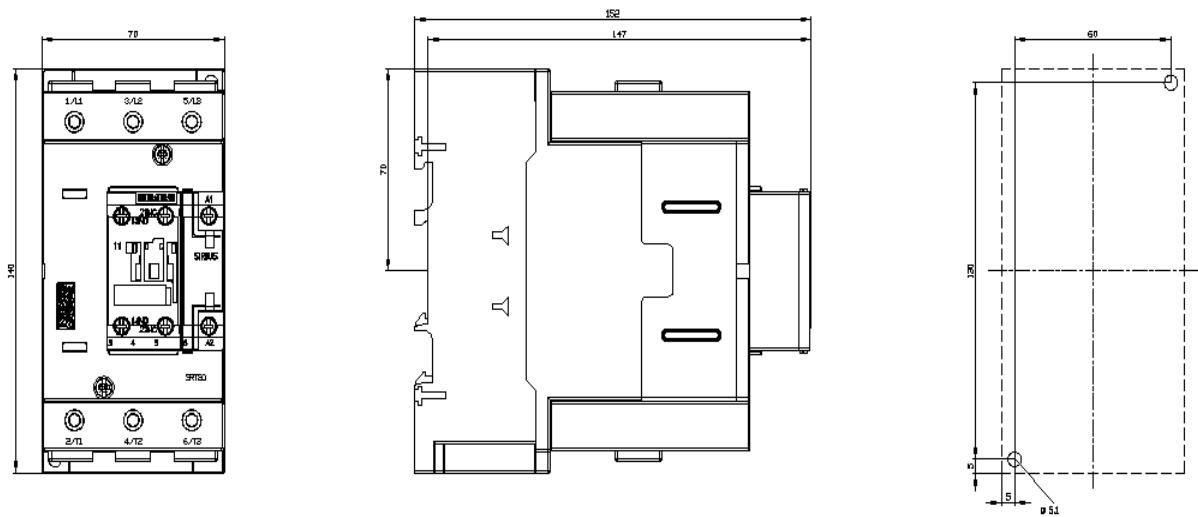
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2047-1NB30&lang=en

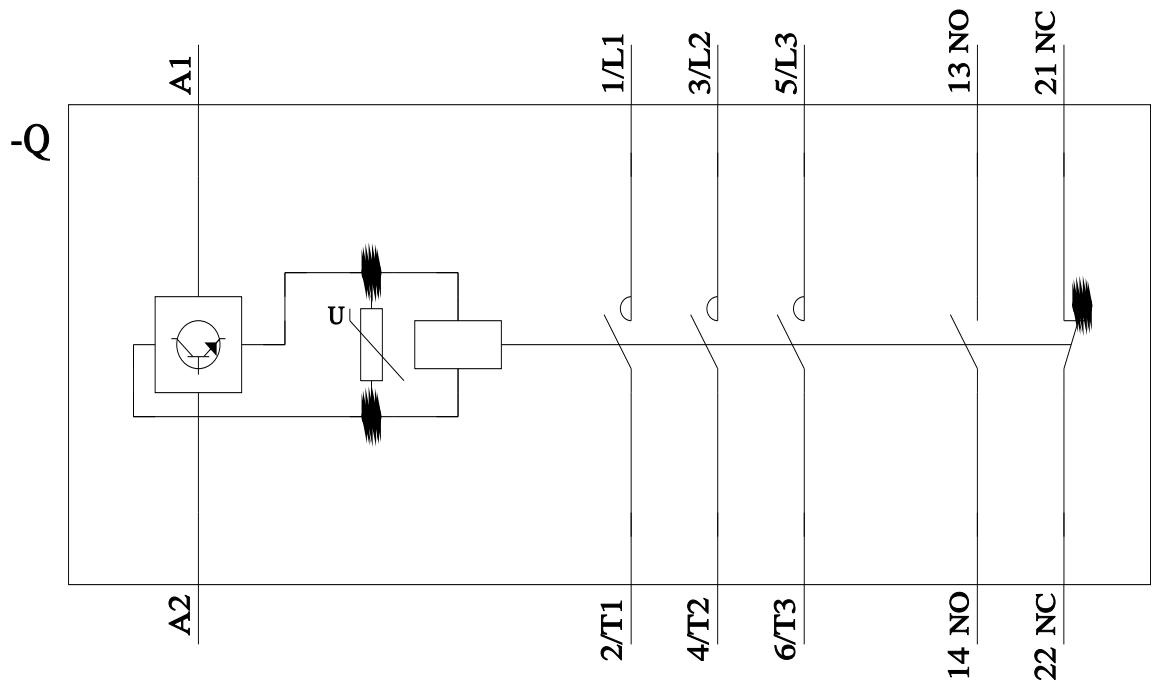
Characteristic: Tripping characteristics, I^2t , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-1NB30/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2047-1NB30&objecttype=14&gridview=view1>





last modified:

2/10/2023