



power contactor, AC-3 80 A, 37 kW / 400 V 1 NO + 1 NC, 110 V AC/50 Hz
120 V/60 Hz 3-pole, 3 NO, Size S3 Spring-type 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	15.9 W
• per pole	5.3 W
power loss [W] for rated value of the current without load current share typical	22 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
shock resistance at rectangular impulse	
• at AC	6.7 g / 5 ms, 4.0 g / 10 ms
shock resistance with sine pulse	
• at AC	10.6 g / 5 ms, 6.3 g / 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
Substance Prohibitance (Date)	01.03.2017 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	1 000 V

— at 600 V rated value	2.6 A
operational current	
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	40 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 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 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	37 kW
• at AC-3	
— at 230 V rated value	22 kW
— at 400 V rated value	37 kW
— at 500 V rated value	45 kW
— at 690 V rated value	55 kW
— at 1000 V rated value	37 kW
operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	17.9 kW
• at 690 V rated value	21.8 kW
operating apparent power at AC-6a	
• up to 230 V for current peak value n=20 rated value	31 kV·A
• up to 400 V for current peak value n=20 rated value	55 kV·A
• up to 500 V for current peak value n=20 rated value	69 kV·A
• up to 690 V for current peak value n=20 rated value	69 kV·A
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	21.5 kV·A
• up to 400 V for current peak value n=30 rated value	37.4 kV·A
• up to 500 V for current peak value n=30 rated value	46.7 kV·A
• up to 690 V for current peak value n=30 rated value	64.5 kV·A
short-time withstand current in cold operating state up to 40 °C	
• limited to 1 s switching at zero current maximum	1 500 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum	1 186 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	851 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	538 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	423 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	5 000 1/h
operating frequency	
• at AC-1 maximum	900 1/h
• at AC-2 maximum	400 1/h
• at AC-3 maximum	1 000 1/h
• at AC-4 maximum	300 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	

• at 50 Hz rated value • at 60 Hz rated value	110 V 120 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz • at 60 Hz	0.8 ... 1.1 0.8 ... 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz • at 60 Hz	326 V·A 326 V·A
inductive power factor with closing power of the coil	
• at 50 Hz • at 60 Hz	0.62 0.55
apparent holding power of magnet coil at AC	
• at 50 Hz • at 60 Hz	22 V·A 22 V·A
inductive power factor with the holding power of the coil	
• at 50 Hz • at 60 Hz	0.36 0.4
closing delay	
• at AC	13 ... 50 ms
opening delay	
• at AC	10 ... 21 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 • at 400 V rated value • at 500 V rated value • at 690 V rated value	6 A 3 A 2 A 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	77 A 62 A
yielded mechanical performance [hp]	
• for single-phase AC motor	

— at 110/120 V rated value — at 230 V rated value • 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	7.5 hp 15 hp 25 hp 30 hp 60 hp 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 — with type of assignment 2 required • for short-circuit protection of the auxiliary switch required	gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA) gG: 160A (690V,100kA), aM: 80A (690V,100kA), BS88: 125A (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 • side-by-side mounting	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715 Yes
height	140 mm
width	70 mm
depth	152 mm
required spacing • with side-by-side mounting — forwards — upwards — downwards — at the side • for grounded parts — forwards — upwards — at the side — downwards • for live parts — forwards — upwards — downwards — at the side	20 mm 10 mm 10 mm 0 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm
Connections/ Terminals	
type of electrical connection • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil	screw-type terminals spring-loaded terminals Spring-type terminals Spring-type terminals
type of connectable conductor cross-sections • for main contacts — finely stranded with core end processing • at AWG cables for main contacts	2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²) 2x (10 ... 1/0), 1x (10 ... 2)
connectable conductor cross-section for main contacts • solid • stranded • finely stranded with core end processing	2.5 ... 16 mm² 6 ... 70 mm² 2.5 ... 50 mm²
connectable conductor cross-section for auxiliary contacts • solid or stranded	0.5 ... 2.5 mm²

- finely stranded with core end processing - finely stranded without core end processing	0.5 ... 2.5 mm ² 0.5 ... 2.5 mm ²
type of connectable conductor cross-sections - for auxiliary contacts — 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 ... 16)
AWG number as coded connectable conductor cross section - for main contacts - for auxiliary contacts	10 ... 2 20 ... 14

Safety related data	
product function mirror contact acc. to IEC 60947-4-1	Yes
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 - 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
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 - safety-related switching on - safety-related switching OFF	Yes Yes

Certificates/ approvals	
General Product Approval	EMC



[KC](#)



Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	Marine / Shipping
---------------------------------------	---------------------------	-------------------	-------------------

[Type Examination Certificate](#)



EG-Konf.

[UK Declaration of Conformity](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



ABS

Marine / Shipping	other
-------------------	-------



LRS



PRS



RINA



RMRS



DNV-GL

[Confirmation](#)

Railway

[Vibration and Shock](#)

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=3RT2045-3AK60>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2045-3AK60>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2045-3AK60>

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

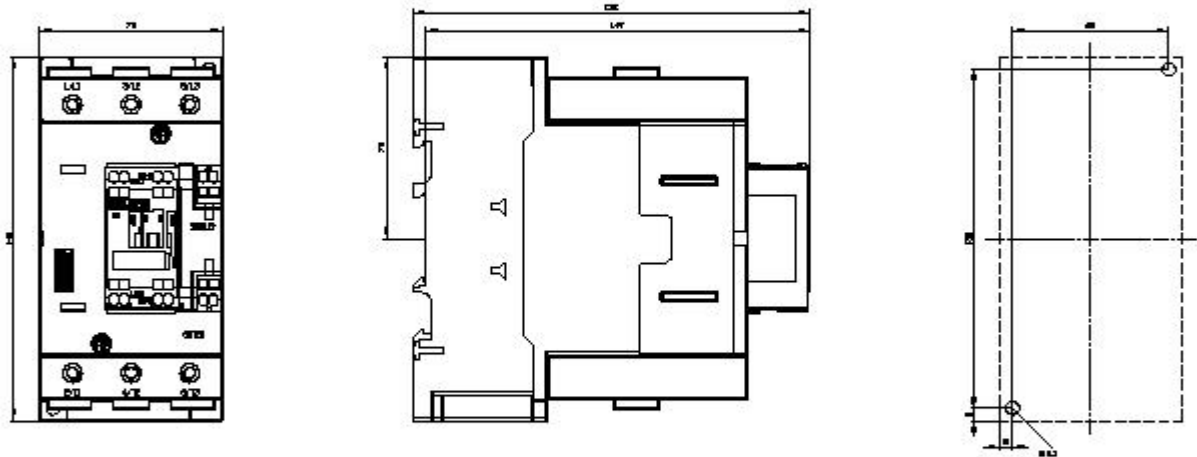
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2045-3AK60&lang=en

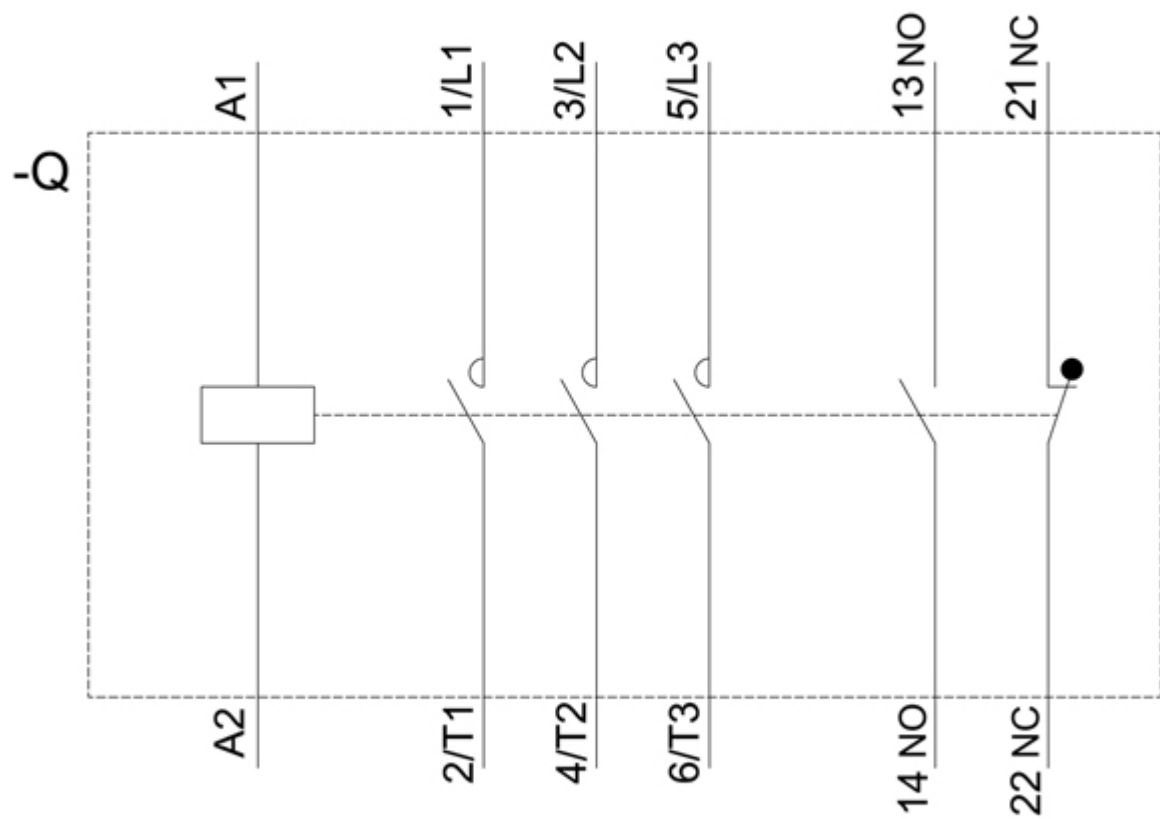
Characteristic: Tripping characteristics, I^2t , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2045-3AK60/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2045-3AK60&objecttype=14&gridview=view1>





last modified:

3/26/2021 [🔗](#)