SIEMENS

Data sheet 3RT2045-1SB30



power contactor, AC-3e/AC-3, 80 A, 37 kW / 400 V, 3-pole, 21-33 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NC, screw terminal, size: S3, F-PLC-IN

Figure similar

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
 at AC in hot operating state per pole 	5.3 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 protective separation 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 	5 000 000
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000
 of the contactor with added auxiliary switch block typical 	5 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	01/29/2021
SVHC substance name	Blei - 7439-92-1 Bleimonoxid (Bleioxid) - 1317-36-8 2-Methyl-1-(4-methylthiophenyl)-2-morpho - 71868-10-5 Bleititanzirkonoxid - 12626-81-2 2,2',6,6'-Tetrabrom-4,4'-isopropylidendi - 79-94-7
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	

 during operation 	-25 +60 °C
during sportation 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 	125 A
 at AC-1 up to 690 V at ambient temperature 40 °C rated value 	125 A
— up to 690 V at ambient temperature 60 °C rated value	105 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 1000 V rated value	30 A
• at AC-3e	
— at 400 V rated value	80 A
— at 500 V rated value	80 A
— at 690 V rated value	58 A
— at 1000 V rated value	30 A
• at AC-4 at 400 V rated value	66 A
at AC-5a up to 690 V rated value	110 A
at AC-5b up to 400 V rated value	80 A
• at AC-6a	90 A
— up to 230 V for current peak value n=20 rated value	80 A
— up to 400 V for current peak value n=20 rated value	80 A 80 A
 up to 500 V for current peak value n=20 rated value up to 690 V for current peak value n=20 rated value 	58 A
up to 690 v for current peak value 11–20 fated value at AC-6a	0071
■ at AC-ba — up to 230 V for current peak value n=30 rated value	54 A
— up to 400 V for current peak value n=30 rated value	54 A
— up to 500 V for current peak value n=30 rated value	54 A
— up to 690 V for current peak value n=30 rated value	54 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	34 A
at 690 V rated value	24 A
operational current	
• at 1 current path at DC-1	400.4
— at 24 V rated value	100 A
— at 60 V rated value	60 A
— at 110 V rated value — at 220 V rated value	9 A 2 A
— at 440 V rated value — at 440 V rated value	0.6 A
— at 440 V rated value — at 600 V rated value	0.6 A 0.4 A
with 2 current paths in series at DC-1	V.771
— 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 	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
• at AC-3e	
— 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-	
at 400 V rated value	17.9 kW
at 690 V rated value	21.8 kW
operating apparent power at AC-6a	
up to 400 V for current peak value n=20 rated value	55 000 VA
 up to 500 V for current peak value n=20 rated value 	69 000 VA
 up to 690 V for current peak value n=20 rated value 	69 000 VA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	21 500 VA
• up to 400 V for current peak value n=30 rated value	37 400 VA
• up to 500 V for current peak value n=30 rated value	46 700 VA
• up to 690 V for current peak value n=30 rated value	64 500 VA
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	1 000 1/h
• at DC	1 000 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-3e maximum	1 000 1/h
• at AC-4 maximum	300 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	21 33 V
at 60 Hz rated value	21 33 V
control supply voltage at DC	
rated value	21 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
type of PLC-control input according to IEC 60947-1	Type 1
consumed current at PLC-control input according to IEC 60947-1 maximum	11 mA
voltage at PLC-control input rated value	24 V
- ·	0.8 1.1
operating range factor of the voltage at PLC-control input	with varistor
design of the surge suppressor inrush current peak	2 A
·	
duration of inrush current peak	100 μs
locked-rotor current mean value	4 A
locked-rotor current peak	6.5 A
duration of locked-rotor current	150 ms
holding current mean value	0.09 A
apparent pick-up power of magnet coil at AC	400.1/4
• at 50 Hz	130 VA
• at 60 Hz	130 VA
apparent holding power	
at minimum rated control supply voltage at DC	1.8 VA
at maximum rated control supply voltage at DC	1.8 VA
apparent holding power	
at minimum rated control supply voltage at AC	
— at 50 Hz	2.4 VA
— at 60 Hz	2.4 VA
at maximum rated control supply voltage at AC	
— at 50 Hz	2.4 VA
— at 60 Hz	2.4 VA
apparent holding power of magnet coil at AC	
• at 50 Hz	2.4 VA
• at 60 Hz	2.4 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.95
• at 60 Hz	0.95
closing power of magnet coil at DC	130 W
holding power of magnet coil at DC	1.8 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
recovery time after power failure typical	2.1 s
arcing time	10 20 ms
control version of the switch operating mechanism	Fail-safe PLC input (F-PLC-IN)
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous	1
contact	
number of NO contacts for auxiliary contacts instantaneous contact	0
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 40 V rated value at 60 V rated value	2 A
at 100 V rated value at 110 V rated value	1 A
	0.9 A
at 125 V rated value at 220 V rated value	
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	77 /
• at 480 V rated value	77 A
at 600 V rated value	62 A
yielded mechanical performance [hp]	
for single-phase AC motor	
— at 110/120 V rated value	7.5 hp
— at 230 V rated value	15 hp
• for 3-phase AC motor	
— at 200/208 V rated value	25 hp
— at 220/230 V rated value	30 hp
— at 460/480 V rated value	60 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
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
	10 111111
• for live parts	00
— 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	2x (2.5 35 mm²), 1x (2.5 50 mm²)
connectable conductor cross-section for main contacts	
• solid	2.5 16 mm²
stranded	6 70 mm²
	2.5 50 mm²
finely stranded with core end processing	2.5 50
connectable conductor cross-section for auxiliary contacts	0.5 0.52
solid or stranded	0.5 2.5 mm ²
finely stranded with core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	
for auxiliary contacts	
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
 finely stranded with core end processing 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
for AWG cables for auxiliary contacts	2x (20 16), 2x (18 14)
AWG number as coded connectable conductor cross	
section	
for main contacts	10 2
for auxiliary contacts	20 14
Safety related data	
product function	
 mirror contact according to IEC 60947-4-1 	Yes
 positively driven operation according to IEC 60947-5-1 	No
safety device type according to IEC 61508-2	Type B
suitability for use safety-related switching OFF	Yes
B10 value with high demand rate according to SN 31920	1 000 000
SIL Claim Limit (subsystem) according to EN 62061	2
performance level (PL) according to EN ISO 13849-1	С
category according to EN ISO 13849-1	2
stop category according to EN 60204-1	0
diagnostics test interval by internal test function maximum	28 800 s
proportion of dangerous failures	40.9%
with low demand rate according to SN 31920 with high demand rate according to SN 2000	40 %
with high demand rate according to SN 31920	73 %
PFHD with high demand rate according to EN 62061	7.7E-8 1/h
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
Safe failure fraction (SFF)	96 %
	0.000
PFDavg with low demand rate according to IEC 61508	0.0067

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

Certificates/ approvals

General Product Approval



Confirmation





<u>KC</u>



Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates
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Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

Marine / Shipping other Railway









Confirmation Vibration and Shock

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=3RT2045-1SB30

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2045-1SB30

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2045-1SB30

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

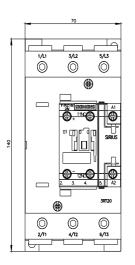
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2045-1SB30&lang=en

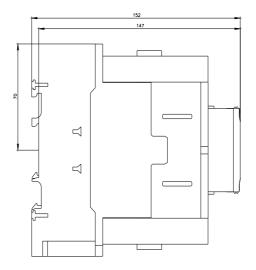
Characteristic: Tripping characteristics, I2t, Let-through current

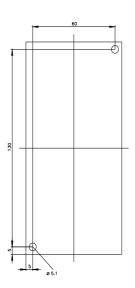
 $\underline{https://support.industry.siemens.com/cs/ww/en/ps/3RT2045-1SB30/char}$

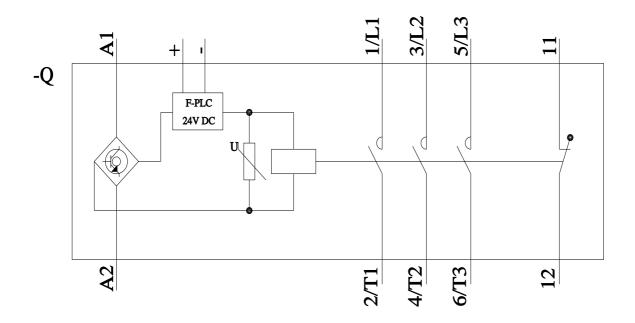
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2045-1SB30&objecttype=14&gridview=view1









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