SIEMENS

Data sheet 3RT2035-3KB40



power contactor, AC-3 40 A, 18.5 kW / 400 V 1 NO + 1 NC, 24 V DC with varistor, 3-pole, Size S2, Spring-type terminal Suitable for 2 A PLC outputs

product brand name	SIRIUS
product designation	Coupling contactor
product type designation	3RT2
General technical data	
size of contactor	S2
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 	6.6 W
 at AC in hot operating state per pole 	2.2 W
 without load current share typical 	1 W
insulation voltage	
 of main circuit with degree of pollution 3 rated value 	690 V
 of auxiliary circuit with degree of pollution 3 rated value 	690 V
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 according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at DC	7.7g / 5 ms, 4.5g / 10 ms
shock resistance with sine pulse	
• at DC	12g / 5 ms, 7g / 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 according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2014
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	2
number of poles for main current circuit number of NO contacts for main contacts	3
operating voltage	3
at AC-3 rated value maximum	690 V
at AC-3 rated value maximum at AC-3e rated value maximum	690 V
operational current	090 V
at AC-1 at 400 V at ambient temperature 40 °C rated value	60 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	60 A
 up to 690 V at ambient temperature 60 °C rated value at AC-3 	55 A
— at 400 V rated value	41 A
— at 500 V rated value	41 A
— at 690 V rated value	24 A
• at AC-3e	24 A
— at 400 V rated value	41 A
— at 500 V rated value	41 A
— at 690 V rated value	24 A
at AC-4 at 400 V rated value	24 A 35 A
at AC-5a up to 690 V rated value	52.8 A
at AC-5a up to 690 V rated value at AC-5b up to 400 V rated value	33.2 A
• at AC-6a	
up to 230 V for current peak value n=20 rated value	36.5 A
 up to 400 V for current peak value n=20 rated value 	36.5 A
— up to 500 V for current peak value n=20 rated value	36.5 A
 up to 690 V for current peak value n=20 rated value at AC-6a 	24 A
up to 230 V for current peak value n=30 rated value	24.2 A
 up to 400 V for current peak value n=30 rated value 	24.2 A
— up to 500 V for current peak value n=30 rated value	24.2 A
— up to 690 V for current peak value n=30 rated value minimum cross-section in main circuit at maximum AC-1	24 A 16 mm²
rated value operational current for approx. 200000 operating	
cycles at AC-4	
at 400 V rated value	22 A
at 690 V rated value	18.5 A
operational 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	55 A
— 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 24 V rated value — at 110 V rated value	55 A 55 A
— at 110 V rated value — at 220 V rated value	55 A 45 A
— at 440 V rated value	2.9 A

— at 600 V rated value	1.4 A
at 1 current path at DC-3 at DC-5	1.4 A
— at 24 V rated value	35 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	0.00 A
— at 24 V rated value	55 A
— at 110 V rated value	25 A
— at 220 V rated value	5 A
— at 440 V rated value	0.27 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	55 A
— at 110 V rated value	55 A
— at 220 V rated value	25 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.35 A
operating power	
 at AC-2 at 400 V rated value 	18.5 kW
• at AC-3	
— at 230 V rated value	11 kW
— at 400 V rated value	18.5 kW
— at 500 V rated value	22 kW
— at 690 V rated value	22 kW
• at AC-3e	
— at 230 V rated value	11 kW
— at 400 V rated value	18.5 kW
— at 500 V rated value	22 kW
 — at 690 V rated value operating power for approx. 200000 operating cycles 	22 kW
at AC-4	
at 400 V rated value	11.6 kW
at 690 V rated value	16.8 kW
operating apparent power at AC-6a	
 up to 230 V for current peak value n=20 rated value 	14.5 kVA
 up to 400 V for current peak value n=20 rated value 	25.2 kVA
 up to 500 V for current peak value n=20 rated value 	31.6 kVA
 up to 690 V for current peak value n=20 rated value 	28.6 kVA
operating apparent power at AC-6a	
 up to 230 V for current peak value n=30 rated value 	9.6 kVA
 up to 400 V for current peak value n=30 rated value 	16.8 kVA
 up to 500 V for current peak value n=30 rated value 	21 kVA
• up to 690 V for current peak value n=30 rated value	28.6 kVA
short-time withstand current in cold operating state up to 40 °C	
Iimited to 1 s switching at zero current maximum	843 A; Use minimum cross-section acc. to AC-1 rated value
Ilmited to 1's switching at zero current maximum Ilmited to 5 s switching at zero current maximum	596 A; Use minimum cross-section acc. to AC-1 rated value
limited to 3 switching at zero current maximum limited to 10 s switching at zero current maximum	400 A; Use minimum cross-section acc. to AC-1 rated value
limited to 30 s switching at zero current maximum	241 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 60 s switching at zero current maximum	196 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at DC	1 500 1/h
operating frequency	
• at AC-1 maximum	1 200 1/h
 at AC-2 maximum 	750 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	DC
control supply voltage at DC	
rated value	24 V
operating range factor control supply voltage rated	

value of magnet coil at DC	
• initial value	0.8
• full-scale value	1.2
design of the surge suppressor	with varistor
inrush current peak	2.6 A
duration of inrush current peak	50 μs
locked-rotor current mean value	0.9 A
locked-rotor current peak	2.1 A
duration of locked-rotor current	230 ms
holding current mean value	40 mA
closing power of magnet coil at DC	21.5 W
holding power of magnet coil at DC	1 W
closing delay	
• at DC	35 80 ms
opening delay	
• at DC	30 55 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	10 A
operational current at AC-12 maximum operational current at AC-15	10 /
•	10 A
at 230 V rated value at 400 V rated value	3 A
 at 400 V rated value at 500 V rated value 	2 A
at 690 V rated value at 690 V rated value	1 A
	I A
operational current at DC-12	10 A
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	40.4
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 	40 A
at 600 V rated value	41 A
yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 110/120 V rated value	3 hp
— at 230 V rated value	7.5 hp
 for 3-phase AC motor 	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	15 hp
— at 460/480 V rated value	30 hp
— at 575/600 V rated value	40 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: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415
·	

- with type of assignment 2 required

• for short-circuit protection of the auxiliary switch required

V, 80 kA)

gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (415V,80kA)

gG: 10 A (500 V, 1 kA)

Installation/ mounting/ dimensions

mounting position

fastening method

• side-by-side mounting

height width depth

required spacing

with side-by-side mounting

forwardsupwardsdownwardsat the side

for grounded parts

forwardsupwardsat the sidedownwards

• for live parts

forwardsupwardsdownwards

+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715

Yes 114 mm 55 mm

10 mm 10 mm 10 mm 0 mm

10 mm 10 mm 6 mm 10 mm

> 10 mm 10 mm 10 mm 6 mm

Connections/ Terminals

type of electrical connection

— at the side

for main current circuit for auxiliary and control circuit at contactor for auxiliary contacts

• of magnet coil

type of connectable conductor cross-sections

• for main contacts

— solid or stranded

— finely stranded with core end processing

• at AWG cables for main contacts

connectable conductor cross-section for main contacts

finely stranded with core end processing

connectable conductor cross-section for auxiliary contacts

solid or stranded

finely stranded with core end processingfinely stranded without core end processing

type of connectable conductor cross-sections

for auxiliary contacts

— solid or stranded

finely stranded with core end processingfinely stranded without core end processing

• at AWG cables for auxiliary contacts

AWG number as coded connectable conductor cross section

for main contactsfor auxiliary contacts

screw-type terminals

spring-loaded terminals Spring-type terminals Spring-type terminals

2x (1 ... 35 mm²), 1x (1 ... 50 mm²) 2x (1 ... 25 mm²), 1x (1 ... 35 mm²) 2x (18 ... 2), 1x (18 ... 1)

1 ... 35 mm²

0.5 ... 2.5 mm² 0.5 ... 1.5 mm² 0.5 ... 2.5 mm²

2x (0.5 ... 2.5 mm²) 2x (0.5 ... 1.5 mm²) 2x (0.5 ... 2.5 mm²) 2x (20 ... 14)

18 ... 1 20 ... 14

Safety related data

product function

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

5-1

B10 value with high demand rate according to SN 31920

Yes

No

1 000 000

proportion of dangerous failures

• with low demand rate according to SN 31920

• with high demand rate according to SN 31920

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

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

protection class IP on the front according to IEC 60529

touch protection on the front according to IEC 60529 suitability for use

safety-related switching OFF

40 %

73 %

100 FIT

20 y

IP20

finger-safe, for vertical contact from the front

Yes

Certificates/ approvals

General Product Approval

EMC





Confirmation

<u>KC</u>





Functional Safety/Safety of Machinery

Declaration of Conformity

Test Certificates

Marine / Shipping

Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report



Marine / Shipping













other

Railway

Confirmation

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=3RT2035-3KB40

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2035-3KB40

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-3KB40

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

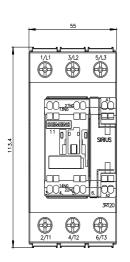
 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2035-3KB40\&lang=en}}$

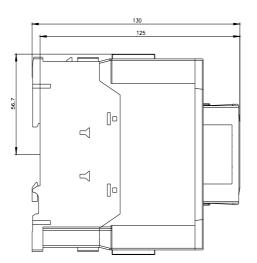
Characteristic: Tripping characteristics, I2t, Let-through current

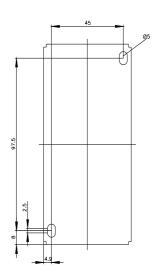
https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-3KB40/char

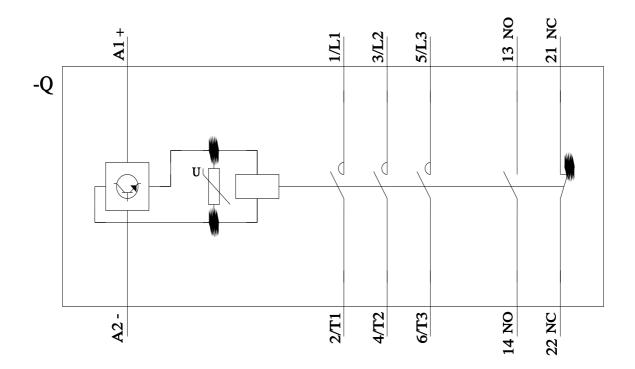
Further characteristics (e.g. electrical endurance, switching frequency)

 $\underline{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RT2035-3KB40\&objecttype=14\&gridview=view1}$









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