## **SIEMENS**

Data sheet 3RT2035-1KB44



power contactor, AC-3e/AC-3, 41 A, 18.5 kW / 400 V, 3-pole, 24 V DC, 0.8-1.2\* Us, with integrated varistor, auxiliary contacts: 2 NO + 2 NC, screw terminal, size: S2, suitable for PLC outputs, removable auxiliary switch

product brand name	SIRIUS	
product designation	Coupling contactor	
product type designation	3RT2	
General technical data		
size of contactor	S2	
product extension		
<ul> <li>function module for communication</li> </ul>	No	
auxiliary switch	No	
power loss [W] for rated value of the current		
<ul> <li>at AC in hot operating state</li> </ul>	6.6 W	
<ul> <li>at AC in hot operating state per pole</li> </ul>	2.2 W	
<ul> <li>without load current share typical</li> </ul>	1 W	
insulation voltage		
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	690 V	
• of auxiliary circuit with degree of pollution 3 rated value	690 V	
surge voltage resistance		
<ul> <li>of main circuit rated value</li> </ul>	6 kV	
of auxiliary circuit rated value	6 kV	
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	400 V	
shock resistance at rectangular impulse		
• at DC	6.1g / 5 ms, 3.7g / 10 ms	
shock resistance with sine pulse		
• at DC	9.6g / 5 ms, 5.8g / 10 ms	
mechanical service life (operating cycles)		
of contactor typical	10 000 000	
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	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	3	

number of NO contacts for main contacts	3
operating voltage	
<ul> <li>at AC-3 rated value maximum</li> </ul>	690 V
at AC-3e rated value maximum	690 V
operational current	
<ul> <li>at AC-1 at 400 V at ambient temperature 40 °C rated</li> </ul>	60 A
value	
• at AC-1	
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> </ul>	60 A
— up to 690 V at ambient temperature 60 °C rated	55 A
value	
• at AC-3	
— at 400 V rated value	41 A
— at 500 V rated value	41 A
— at 690 V rated value	24 A
• at AC-3e	
— 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	35 A
• at AC-5a up to 690 V rated value	52.8 A
• 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	24 A
• at AC-6a	
— 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	24 A
minimum cross-section in main circuit at maximum AC-1 rated value	16 mm²
operational current for approx. 200000 operating cycles at	
AC-4	00.4
• 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 60 V rated value	23 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 60 V rated value	45 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
<ul><li>with 3 current paths in series at DC-1</li></ul>	
— at 24 V rated value	55 A
— at 60 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
<ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>	

— at 24 V rated value	35 A
— at 60 V rated value	6 A
— at 220 V rated value	1A
— at 440 V rated value	0.1 A
— at 600 V rated value	0.06 A
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	55 A
— at 60 V rated value	45 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
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	55 A
— at 60 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	22 kW
operating power for approx. 200000 operating cycles at AC-	
at 400 V rated value	11.6 kW
at 690 V rated value     at 690 V rated value	16.8 kW
operating apparent power at AC-6a	10.0 KVV
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  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	20.0 KV/
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  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  up to 500 V for current peak value n=30 rated value	21 kVA
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	28.6 kVA
short-time withstand current in cold operating state up to	
40 °C	
<ul> <li>limited to 1 s switching at zero current maximum</li> </ul>	843 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	596 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	400 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	241 A; Use minimum cross-section acc. to AC-1 rated value
• limited 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	
<u> </u>	

type of voltage of the control cumply voltage	DC
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	Z4 V
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	- 111
• at DC	35 80 ms
opening delay	55 55 Hill
• at DC	30 55 ms
arcing time	10 20 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	Otalidaid A1 - A2
number of NC contacts for auxiliary contacts instantaneous contact	2
number of NO contacts for auxiliary contacts instantaneous contact	2
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 115 V rated value     at 125 V rated value	2 A
at 220 V rated value	1A
	0.15 A
at 600 V rated value  Operational current at DC 13	0.10 A
operational current at DC-13  • at 24 V rated value	6 A
at 24 V rated value     at 48 V rated value	6 A 2 A
at 60 V rated value     at 110 V rated value	2 A
at 110 V rated value     at 125 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	40.4
at 480 V rated value	40 A
at 600 V rated value	41 A
yielded mechanical performance [hp]	
<ul> <li>for single-phase AC motor</li> </ul>	
— 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 / Q600
Short-circuit protection	
design of the fuse link	
for short-circuit protection of the main circuit	
<ul> <li>— with type of coordination 1 required</li> </ul>	gG: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)
<ul> <li>— with type of assignment 2 required</li> </ul>	gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (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	114 mm
width	55 mm
depth required spacing	174 mm
required spacing  • with side-by-side mounting	
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 circuit	screw-type terminals
at contactor for auxiliary contacts     of magnet coil	Screw type terminals
of magnet coil  type of connectable conductor cross sections for main contacts.	Screw-type terminals
type of connectable conductor cross-sections for main contacts  • solid or stranded	2x (1 35 mm²), 1x (1 50 mm²)
solid or stranded     finely stranded with core end processing	2x (1 35 mm²), 1x (1 35 mm²)  2x (1 25 mm²), 1x (1 35 mm²)
connectable conductor cross-section for main contacts	ZA (1 20 mm ), 1A (1 00 mm )
finely stranded with core end processing	1 35 mm²
connectable conductor cross-section for auxiliary contacts	
solid or stranded	0.5 2.5 mm²
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)
<ul> <li>finely stranded with core end processing</li> </ul>	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	18 1
for auxiliary contacts	20 14
Safety related data	
product function	
<ul> <li>mirror contact according to IEC 60947-4-1</li> </ul>	Yes
<ul> <li>positively driven operation according to IEC 60947-5-1</li> </ul>	No

B10 value with high demand rate according to SN 31920	1 000 000
proportion of dangerous failures	
<ul> <li>with low demand rate according to SN 31920</li> </ul>	40 %
<ul> <li>with high demand rate according to SN 31920</li> </ul>	73 %
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
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	
<ul> <li>safety-related switching OFF</li> </ul>	Yes
Cortificatos/ approvals	

Certificates/ approvals

## **General Product Approval**



Confirmation





<u>KC</u>



EMC

Functional Safety/Safety of Machinery

**Declaration of Conformity** 

**Test Certificates** 



Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

## Marine / Shipping













Marine / Shipping

other

Railway

**Environment** 



Confirmation

Vibration and Shock

Environmental Confirmations

## 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=3RT2035-1KB44

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2035-1KB44

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-1KB44

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

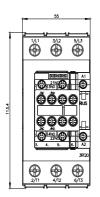
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2035-1KB44&lang=en

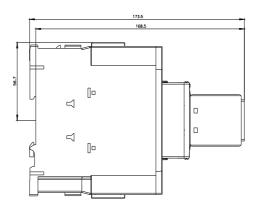
Characteristic: Tripping characteristics, I2t, Let-through current

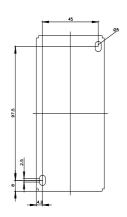
https://support.industry.siemens.com/cs/ww/en/ps/3RT2035-1KB44/char

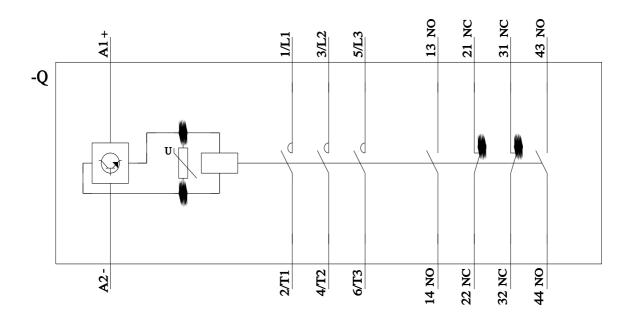
Further characteristics (e.g. electrical endurance, switching frequency)

 $\underline{\text{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RT2035-1KB44\&objecttype=14\&gridview=view1}$ 









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