SIEMENS

Data sheet



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 24 V DC, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0, upright mounting position, reusable packaging, pack = 48 units

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S0
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	0.6 W
 at AC in hot operating state per pole 	0.2 W
without load current share typical	5.9 W
type of calculation of power loss depending on pole	quadratic
surge voltage resistance	
of main circuit rated value	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	10g / 5 ms, 7,5g / 10 ms
shock resistance with sine pulse	
• at DC	15g / 5 ms, 10g / 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 Prohibitance (Date)	10/01/2009
Weight	0.604 kg
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	200 V
at AC-3 rated value maximum	690 V
at AC-3e rated value maximum	690 V
operational current	40.4
 at AC-1 at 400 V at ambient temperature 40 °C rated value 	40 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated	40 A
value	
— up to 690 V at ambient temperature 60 °C rated	35 A
value	
• at AC-3	9 A
— at 400 V rated value— at 500 V rated value	9 A
— at 690 V rated value	9 A
• at AC-3e	9 A
— at 400 V rated value	9 A
— at 500 V rated value	9 A
— at 690 V rated value	9 A
at AC-4 at 400 V rated value	8.5 A
at AC-5a up to 690 V rated value	35.2 A
at AC-5b up to 400 V rated value	7.4 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	11.4 A
— up to 400 V for current peak value n=20 rated value	11.4 A
— up to 500 V for current peak value n=20 rated value	9.1 A
— up to 690 V for current peak value n=20 rated value	9 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	7.6 A
— up to 400 V for current peak value n=30 rated value	7.6 A
— up to 500 V for current peak value n=30 rated value	6.1 A
— up to 690 V for current peak value n=30 rated value	6.1 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 mm²
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	4.1 A
at 690 V rated value	3.3 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value	20 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	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 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	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	35 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	
— at 24 V rated value	20 A

-t 00 \ /tdd	F.A.
— at 60 V rated value	5 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 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	35 A
— at 60 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 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	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
operating power	
at AC-2 at 400 V rated value	4 kW
• at AC-3	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	7.5 kW
• at AC-3e	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	7.5 kW
operating power for approx. 200000 operating cycles at AC-	
4	
at 400 V rated value	2 kW
• at 690 V rated value	2.5 kW
at 690 V rated value operating apparent power at AC-6a	2.5 kW
	2.5 kW 4.5 kVA
operating apparent power at AC-6a	
operating apparent power at AC-6a • up to 230 V for current peak value n=20 rated value	4.5 kVA
 operating apparent power at AC-6a up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value 	4.5 kVA 7.8 kVA
 operating apparent power at AC-6a up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value 	4.5 kVA 7.8 kVA 7.8 kVA
operating apparent power at AC-6a up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value up to 690 V for current peak value n=20 rated value	4.5 kVA 7.8 kVA 7.8 kVA
operating apparent power at AC-6a up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value up to 690 V for current peak value n=20 rated value operating apparent power at AC-6a up to 230 V for current peak value n=30 rated value	4.5 kVA 7.8 kVA 7.8 kVA 10.7 kVA
operating apparent power at AC-6a • up to 230 V for current peak value n=20 rated value • up to 400 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 690 V for current peak value n=20 rated value operating apparent power at AC-6a • up to 230 V for current peak value n=30 rated value • up to 400 V for current peak value n=30 rated value	4.5 kVA 7.8 kVA 7.8 kVA 10.7 kVA 3 kVA 5.2 kVA
operating apparent power at AC-6a • up to 230 V for current peak value n=20 rated value • up to 400 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 690 V for current peak value n=20 rated value operating apparent power at AC-6a • up to 230 V for current peak value n=30 rated value • up to 400 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value	4.5 kVA 7.8 kVA 7.8 kVA 10.7 kVA 3 kVA 5.2 kVA
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operating apparent power at AC-6a oup to 230 V for current peak value n=20 rated value oup to 400 V for current peak value n=20 rated value oup to 500 V for current peak value n=20 rated value oup to 690 V for current peak value n=20 rated value operating apparent power at AC-6a oup to 230 V for current peak value n=30 rated value oup to 400 V for current peak value n=30 rated value oup to 500 V for current peak value n=30 rated value oup to 690 V for current peak value n=30 rated value oup to 690 V for current peak value n=30 rated value short-time withstand current in cold operating state up to 40 °C olimited to 1 s switching at zero current maximum olimited to 5 s switching at zero current maximum	4.5 kVA 7.8 kVA 7.8 kVA 10.7 kVA 3 kVA 5.2 kVA 5.2 kVA 7.2 kVA 170 A; Use minimum cross-section acc. to AC-1 rated value 170 A; Use minimum cross-section acc. to AC-1 rated value
operating apparent power at AC-6a up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value up to 690 V for current peak value n=20 rated value operating apparent power at AC-6a up to 230 V for current peak value n=30 rated value up to 400 V for current peak value n=30 rated value up to 500 V for current peak value n=30 rated value up to 690 V for current peak value n=30 rated value short-time withstand current in cold operating state up to 40 °C limited to 1 s switching at zero current maximum limited to 10 s switching at zero current maximum	4.5 kVA 7.8 kVA 7.8 kVA 10.7 kVA 3 kVA 5.2 kVA 5.2 kVA 7.2 kVA 170 A; Use minimum cross-section acc. to AC-1 rated value 170 A; Use minimum cross-section acc. to AC-1 rated value 140 A; Use minimum cross-section acc. to AC-1 rated value
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operating apparent power at AC-6a oup to 230 V for current peak value n=20 rated value oup to 400 V for current peak value n=20 rated value oup to 500 V for current peak value n=20 rated value oup to 690 V for current peak value n=20 rated value operating apparent power at AC-6a oup to 230 V for current peak value n=30 rated value oup to 400 V for current peak value n=30 rated value oup to 500 V for current peak value n=30 rated value oup to 690 V for current peak value n=30 rated value oup to 690 V for current peak value n=30 rated value short-time withstand current in cold operating state up to 40 °C olimited to 1 s switching at zero current maximum olimited to 5 s switching at zero current maximum olimited to 30 s switching at zero current maximum olimited to 60 s switching at zero current maximum olimited to 60 s switching at zero current maximum olimited to 60 s switching at zero current maximum	4.5 kVA 7.8 kVA 7.8 kVA 10.7 kVA 3 kVA 5.2 kVA 5.2 kVA 7.2 kVA 170 A; Use minimum cross-section acc. to AC-1 rated value 170 A; Use minimum cross-section acc. to AC-1 rated value 140 A; Use minimum cross-section acc. to AC-1 rated value 104 A; Use minimum cross-section acc. to AC-1 rated value 104 A; Use minimum cross-section acc. to AC-1 rated value 88 A; Use minimum cross-section acc. to AC-1 rated value
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operating apparent power at AC-6a oup to 230 V for current peak value n=20 rated value oup to 400 V for current peak value n=20 rated value oup to 500 V for current peak value n=20 rated value oup to 690 V for current peak value n=20 rated value operating apparent power at AC-6a oup to 230 V for current peak value n=30 rated value oup to 400 V for current peak value n=30 rated value oup to 500 V for current peak value n=30 rated value oup to 690 V for current peak value n=30 rated value short-time withstand current in cold operating state up to 40 °C olimited to 1 s switching at zero current maximum olimited to 10 s switching at zero current maximum olimited to 30 s switching at zero current maximum olimited to 60 s switching at zero current maximum olimited to 60 s switching at zero current maximum no-load switching frequency out at DC operating frequency out at AC-1 maximum	4.5 kVA 7.8 kVA 7.8 kVA 10.7 kVA 3 kVA 5.2 kVA 5.2 kVA 7.2 kVA 170 A; Use minimum cross-section acc. to AC-1 rated value 170 A; Use minimum cross-section acc. to AC-1 rated value 140 A; Use minimum cross-section acc. to AC-1 rated value 144 A; Use minimum cross-section acc. to AC-1 rated value 1500 A; Use minimum cross-section acc. to AC-1 rated value 1500 1/h
operating apparent power at AC-6a oup to 230 V for current peak value n=20 rated value oup to 400 V for current peak value n=20 rated value oup to 500 V for current peak value n=20 rated value oup to 690 V for current peak value n=20 rated value operating apparent power at AC-6a oup to 230 V for current peak value n=30 rated value oup to 400 V for current peak value n=30 rated value oup to 500 V for current peak value n=30 rated value oup to 690 V for current peak value n=30 rated value short-time withstand current in cold operating state up to 40 °C olimited to 1 s switching at zero current maximum olimited to 10 s switching at zero current maximum olimited to 30 s switching at zero current maximum olimited to 60 s switching at zero current maximum no-load switching frequency out at DC operating frequency out AC-1 maximum out AC-2 maximum	4.5 kVA 7.8 kVA 7.8 kVA 10.7 kVA 3 kVA 5.2 kVA 5.2 kVA 7.2 kVA 170 A; Use minimum cross-section acc. to AC-1 rated value 170 A; Use minimum cross-section acc. to AC-1 rated value 140 A; Use minimum cross-section acc. to AC-1 rated value 104 A; Use minimum cross-section acc. to AC-1 rated value 88 A; Use minimum cross-section acc. to AC-1 rated value 1 500 1/h 1 000 1/h 1 000 1/h 1 000 1/h
operating apparent power at AC-6a • up to 230 V for current peak value n=20 rated value • up to 400 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 690 V for current peak value n=20 rated value • up to 230 V for current peak value n=30 rated value • up to 400 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value short-time withstand current in cold operating state up to 40 °C • limited to 1 s switching at zero current maximum • limited to 5 s switching at zero current maximum • limited to 30 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-3 maximum • at AC-3 maximum	4.5 kVA 7.8 kVA 7.8 kVA 10.7 kVA 3 kVA 5.2 kVA 5.2 kVA 7.2 kVA 170 A; Use minimum cross-section acc. to AC-1 rated value 170 A; Use minimum cross-section acc. to AC-1 rated value 140 A; Use minimum cross-section acc. to AC-1 rated value 144 A; Use minimum cross-section acc. to AC-1 rated value 1500 1/h 1 000 1/h 1 000 1/h 1 000 1/h 1 000 1/h 1 000 1/h
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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	1.1
closing power of magnet coil at DC	5.9 W
holding power of magnet coil at DC	5.9 W
closing delay • at DC	50 170 ms
	50 170 IIIS
opening delay	1E 10 mg
• at DC	15 18 ms 10 10 ms
arcing time	Standard A1 - A2
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	10 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	7.6 A
• at 600 V rated value	9 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	1 hp
— at 230 V rated value	1 hp
• for 3-phase AC motor	
— at 200/208 V rated value	2 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	5 hp
— at 575/600 V rated value	7.5 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA
design of the fuse link	
for short-circuit protection of the main circuit	
with type of coordination 1 required	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)
— with type of coordination i required	go. 00/1 (000 v, 1001/h), aivi. 02/1 (000 v, 100/h), 0000. 00/1 (410 v,00/h)

— with type of assignment 2 required	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)
for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
nstallation/ mounting/ dimensions	
mounting position	standing, on horizontal mounting surface
fastening method side-by-side mounting	Yes
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
height	85 mm
width	45 mm
depth	107 mm
required spacing	
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 	Screw-type terminals
of magnet coil	Screw-type terminals
type of connectable conductor cross-sections	
for main contacts	
— solid	2x (1 2.5 mm²), 2x (2.5 10 mm²)
— solid or stranded	2x (1 2.5 mm²), 2x (2.5 10 mm²)
 finely stranded with core end processing 	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
for AWG cables for main contacts	2x (16 12), 2x (14 8)
connectable conductor cross-section for main contacts	
• solid	1 10 mm²
• stranded	1 10 mm²
finely stranded with core end processing	1 10 mm²
connectable conductor cross-section for auxiliary contacts	
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	16 8
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
suitable for safety function	Yes
suitability for use safety-related switching OFF	Yes
service life maximum	20 a

proportion of dangerous failures	
 with low demand rate according to SN 31920 	40 %
 with high demand rate according to SN 31920 	73 %
B10 value with high demand rate according to SN 31920	1 000 000
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
safety device type according to IEC 61508-2	Type A
Electrical Safety	
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
Further information	

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=3RT2023-1BB40-1AA0-Z X95

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT2023-1BB40-1AA0-Z~X95}$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2023-1BB40-1AA0-Z X95

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

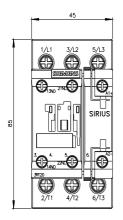
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2023-1BB40-1AA0-Z X95&lang=en

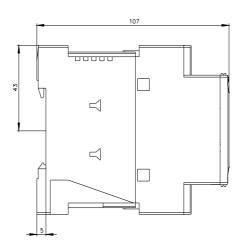
Characteristic: Tripping characteristics, I²t, Let-through current

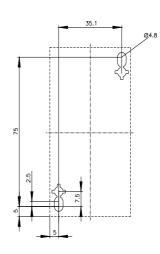
https://support.industry.siemens.com/cs/ww/en/ps/3RT2023-1BB40-1AA0-Z X95/char

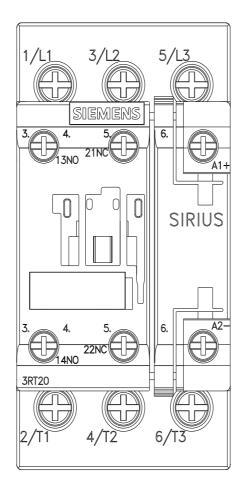
Further characteristics (e.g. electrical endurance, switching frequency)

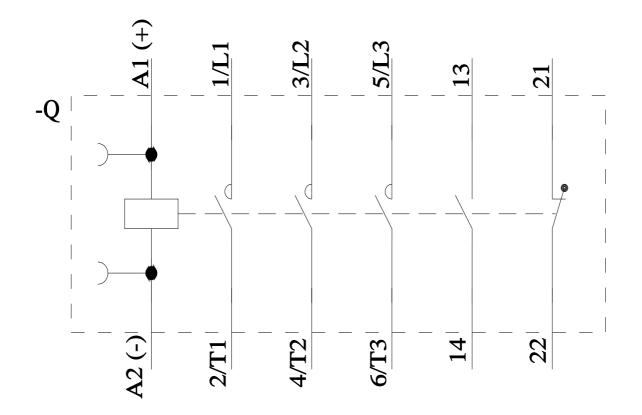
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2023-1BB40-1AA0-Z X95&objecttype=14&gridview=view1











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