## **SIEMENS**

Data sheet 3RT2024-1AV60



power contactor, AC-3 12 A, 5.5 kW / 400 V 1 NO + 1 NC, 480 V AC, 60 Hz 3-pole, Size S0 screw terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S0
product extension	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	Yes
power loss [W] for rated value of the current at AC in hot operating state	1.5 W
• per pole	0.5 W
power loss [W] for rated value of the current without load current share typical	7.2 W
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 safe isolation between coil and main contacts acc. to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	7,5g / 5 ms, 4,7g / 10 ms
shock resistance with sine pulse	
• at AC	11,8g / 5 ms, 7,4g / 10 ms
mechanical service life (switching cycles)	
<ul> <li>of contactor typical</li> </ul>	10 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	10 000 000
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	01.10.2009 00:00:00
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
<ul><li>during operation</li></ul>	-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	690 V

operational current	40.4
<ul> <li>at AC-1 at 400 V at ambient temperature 40 °C rated value</li> </ul>	40 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C	40 A
rated value	
<ul><li>up to 690 V at ambient temperature 60 °C</li></ul>	35 A
rated value	
• at AC-3	
— at 400 V rated value	12 A
— at 500 V rated value	12 A
— at 690 V rated value	9 A
at AC-4 at 400 V rated value	12.5 A
at AC-5a up to 690 V rated value	35.2 A
at AC-5b up to 400 V rated value	9.9 A
• at AC-6a	44.4.5
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	11.4 A
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	11.4 A
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	11.3 A
<ul> <li>— up to 690 V for current peak value n=20 rated value</li> <li>• at AC-6a</li> </ul>	9 A
■ at AC-ba  — up to 230 V for current peak value n=30 rated	7.6 A
value  — up to 400 V for current peak value n=30 rated  — up to 400 V for current peak value n=30 rated	7.6 A
value  — up to 500 V for current peak value n=30 rated  — up to 500 V for current peak value n=30 rated	7.6 A
value  — up to 690 V for current peak value n=30 rated  — up to 690 V for current peak value n=30 rated	7.6 A
value	7.0 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	5.5 A
at 690 V rated value	5.5 A
operational current	
at 1 current path at DC-1	25.4
— at 24 V rated value	35 A
— at 110 V rated value	4.5 A
— at 220 V rated value — at 440 V rated value	1 A 0.4 A
— at 440 v rated value  — at 600 V rated value	0.4 A 0.25 A
with 2 current paths in series at DC-1	0.20 /1
— at 24 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 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
operational current	
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	20 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
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 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
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 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	
<ul><li>at AC-2 at 400 V rated value</li></ul>	5.5 kW
• at AC-3	
— at 230 V rated value	3 kW
— at 400 V rated value	5.5 kW
— at 500 V rated value	5.5 kW
— at 690 V rated value	7.5 kW
operating power for approx. 200000 operating cycles	
at AC-4	
• at 400 V rated value	2.6 kW
at 690 V rated value	4.6 kW
operating apparent power at AC-6a	
• up to 230 V for current peak value n=20 rated value	4.5 kV·A
• up to 400 V for current peak value n=20 rated value	7.8 kV·A
• up to 500 V for current peak value n=20 rated value	9.8 kV·A
• up to 690 V for current peak value n=20 rated value	10.7 kV·A
operating apparent power at AC-6a	0.11/4
• up to 230 V for current peak value n=30 rated value	3 kV·A
• up to 400 V for current peak value n=30 rated value	5.2 kV·A
• up to 500 V for current peak value n=30 rated value	6.5 kV·A
• up to 690 V for current peak value n=30 rated value	9 kV·A
short-time withstand current in cold operating state up to 40 °C	
Iimited to 1 s switching at zero current maximum	210 A; Use minimum cross-section acc. to AC-1 rated value
limited to 5 s switching at zero current maximum	210 A; Use minimum cross-section acc. to AC-1 rated value
limited to 10 s switching at zero current maximum	162 A; Use minimum cross-section acc. to AC-1 rated value
limited to 30 s switching at zero current maximum	103 A; Use minimum cross-section acc. to AC-1 rated value
limited to 60 s switching at zero current maximum	88 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	1 000 1/h
• at AC-2 maximum	1 000 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 60 Hz rated value	480 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 60 Hz	0.85 1.1
apparent pick-up power of magnet coil at AC	
•	

4.00.11	<b>70.17.4</b>
• at 60 Hz	73 V·A
inductive power factor with closing power of the coil	0.70
• at 60 Hz	0.76
apparent holding power of magnet coil at AC	
● at 60 Hz	7.2 V·A
inductive power factor with the holding power of the coil	
• at 60 Hz	0.28
closing delay	0.20
• at AC	8 40 ms
opening delay	0 40 III3
• at AC	4 16 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	Claridate / 11 / 12
number of NC contacts for auxiliary contacts	1
instantaneous contact	<b>'</b>
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	11 A
at 600 V rated value	11 A
yielded mechanical performance [hp]	
for single-phase AC motor	
— at 110/120 V rated value	1 hp
— at 230 V rated value	2 hp
• for 3-phase AC motor	
— at 200/208 V rated value	3 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	7.5 hp
— at 575/600 V rated value	10 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	
protostori or tro main onomi	

<ul> <li>— with type of coordination 1 required</li> </ul>	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)
<ul> <li>— with type of assignment 2 required</li> </ul>	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)
<ul> <li>for short-circuit protection of the auxiliary switch</li> </ul>	gG: 10 A (500 V, 1 kA)
required	
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 standard mounting rail according to DIN EN 60715
side-by-side mounting	Yes
height	85 mm
width	45 mm
depth	97 mm
required spacing	
<ul><li>with side-by-side mounting</li></ul>	
— 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	
Connections/ Terminals type of electrical connection	
	screw-type terminals
type of electrical connection	screw-type terminals screw-type terminals
type of electrical connection  • for main current circuit	
type of electrical connection	screw-type terminals
<ul> <li>type of electrical connection</li> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> <li>at contactor for auxiliary contacts</li> </ul>	screw-type terminals Screw-type terminals
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section

• for main contacts

• for auxiliary contacts

16 ... 8

20 ... 14

Cofety valeted date	
Safety related data	
product function mirror contact acc. to IEC 60947-4-1	Yes
B10 value with high demand rate acc. to SN 31920	450 000
proportion of dangerous failures	
<ul> <li>with low demand rate acc. to SN 31920</li> </ul>	40 %
<ul> <li>with high demand rate acc. to SN 31920</li> </ul>	73 %
failure rate [FIT] with low demand rate acc. to SN 31920	100 FIT
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	
<ul> <li>safety-related switching OFF</li> </ul>	Yes
Cartificates / supressals	

Certificates/ approvals

**General Product Approval** 

**EMC** 













Functional	
Safety/Safety of	f
Machinery	

**Declaration of Conformity** 

**Test Certificates** 

Marine / Shipping

**Type Examination** Certificate



**UK Declaration of** Conformity

Type Test Certificates/Test Report

**Special Test Certific-**<u>ate</u>



Marine / Shipping











Confirmation

other

other



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=3RT2024-1AV60

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2024-1AV60

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2024-1AV60

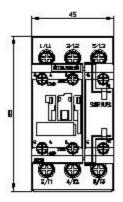
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

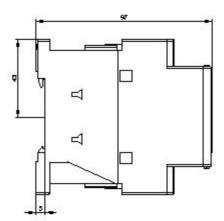
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2024-1AV60&lang=en

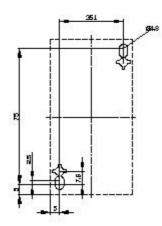
Characteristic: Tripping characteristics, I2t, Let-through current

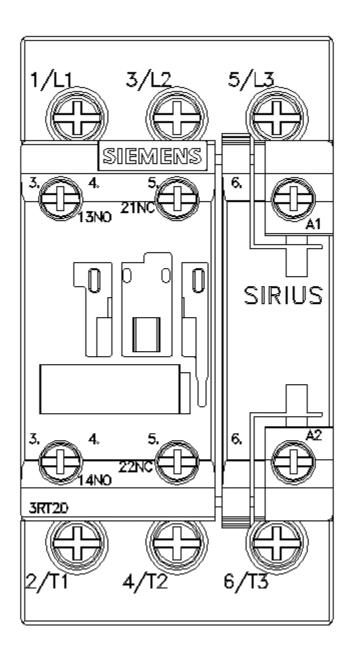
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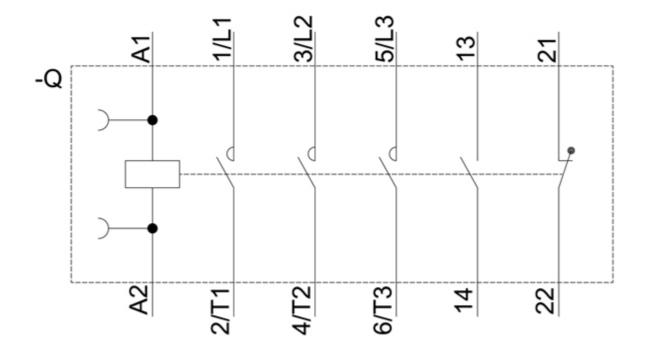
Further characteristics (e.g. electrical endurance, switching frequency)











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