SIEMENS

Data sheet

3RT2024-1AV00

power contactor, AC-3 12 A, 5.5 kW / 400 V 1 NO + 1 NC, 400 V AC, 50 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	SO
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 	1.5 W
 at AC in hot operating state per pole 	0.5 W
power loss [W] for rated value of the current without load current share typical	7.6 W
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 acc. to EN 60947-1	400 V

protection class IP			
• on the front	IP20		
• of the terminal	IP20		
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)			
 of contactor typical 	10 000 000		
 of the contactor with added electronics- 	5 000 000		
compatible auxiliary switch block typical			
• of the contactor with added auxiliary switch	10 000 000		
block typical			
reference code acc. to DIN EN 81346-2	Q		
Ambient conditions			
 installation altitude at height above sea level 	2 000 m		
maximum			
ambient temperature			
 during operation 	-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		
operating current			
• 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 value	40 A		
— up to 690 V at ambient temperature 60 °C rated value	35 A		
• 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			

— 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	11.4 A
rated value	
— up to 500 V for current peak value n=20 rated value	11.3 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	7.6 A
— up to 690 V for current peak value n=30 rated value	7.6 A
minimum cross-section in main circuit	
• at maximum AC-1 rated value	10 mm²
operating 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
operating current	
• at 1 current path at DC-1	
— at 24 V rated value	35 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 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
operating current	

• at 1 current path at DC-3 at DC-5	20 A
— at 24 V rated value	
— 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 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 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-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 output 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 output at AC-6a	
 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				
 limited 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 50 Hz rated value	400 V			
operating range factor control supply voltage rated value of magnet coil at AC				
• at 50 Hz	0.8 1.1			
apparent pick-up power of magnet coil at AC				
• at 50 Hz	65 V·A			
	65 V·A			
• at 50 Hz	65 V·A 0.82			
• at 50 Hz inductive power factor with closing power of the coil				
 at 50 Hz inductive power factor with closing power of the coil at 50 Hz 				
 at 50 Hz inductive power factor with closing power of the coil at 50 Hz apparent holding power of magnet coil at AC 	0.82			
 at 50 Hz inductive power factor with closing power of the coil at 50 Hz apparent holding power of magnet coil at AC at 50 Hz inductive power factor with the holding power of the coil 	0.82			
 at 50 Hz inductive power factor with closing power of the coil at 50 Hz apparent holding power of magnet coil at AC at 50 Hz inductive power factor with the holding power of the coil at 50 Hz 	0.82 7.6 V·A			
 at 50 Hz inductive power factor with closing power of the coil at 50 Hz apparent holding power of magnet coil at AC at 50 Hz inductive power factor with the holding power of the coil at 50 Hz closing delay 	0.82 7.6 V·A			
 at 50 Hz inductive power factor with closing power of the coil at 50 Hz apparent holding power of magnet coil at AC at 50 Hz inductive power factor with the holding power of the coil at 50 Hz closing delay at AC 	0.82 7.6 V·A 0.25			
 at 50 Hz inductive power factor with closing power of the coil at 50 Hz apparent holding power of magnet coil at AC at 50 Hz inductive power factor with the holding power of the coil at 50 Hz closing delay 	0.82 7.6 V·A 0.25			

10 10 ms		
Standard A1 - A2		
1		
1		
10 A		
10 A		
3 A		
2 A		
1 A		
10 A		
6 A		
6 A		
3 A		
2 A		
1 A		
0.15 A		
10 A		
2 A		
2 A		
1 A		
0.9 A		
0.3 A		
0.1 A		
1 faulty switching per 100 million (17 V, 1 mA)		
11 A		
11 A		

- at 230 V rated value

- at 200/208 V rated value

- at 220/230 V rated value

• for three-phase AC motor

2 hp

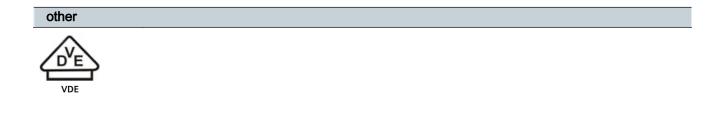
3 hp

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				
— with type of coordination 1 required	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)			
 — 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)			
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			
mounting type	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				
 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 current 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)			
— single or multi-stranded	2x (1 2,5 mm ²), 2x (2,5 10 mm ²)			
 finely stranded with core end processing 	$2x (1 2.5 mm^2), 2x (2.5 10 mm^2)$ $2x (1 2.5 mm^2), 2x (2.5 6 mm^2), 1x 10 mm^2$			
at AWG conductors for main contacts	2x (1 2.5 mm ⁻), 2x (2.5 6 mm ⁻), 1x 10 mm ⁻ 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				
 single or multi-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 				
— single or multi-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)			
 type of connectable conductor cross-sections at AWG conductors 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				
B10 value				
• with high demand rate acc. to SN 31920	1 000 000			
proportion of dangerous failures				
• with low demand rate acc. to SN 31920	40 %			
• with high demand rate acc. to SN 31920	73 %			
failure rate [FIT]				
• with low demand rate acc. to SN 31920	100 FIT			
product function	Ver			
• mirror contact acc. to IEC 60947-4-1	Yes			
T1 value for proof test interval or service life acc. to IEC 61508	20 y			
protection against electrical shock	finger-safe			
suitability for use safety-related switching OFF	Yes			
Certificates/ approvals				

General Product	Approval				EMC
	CSA		<u>KC</u>	EHC	RCM
Functional Safety/Safety of Machinery	Declaration o	f Conformity	Test Certificates	1	Marine / Ship- ping
Type Examination Certificate	EG-Konf.	Miscellaneous	Type Test Certific- ates/Test Report	Special Test Certi- ficate	ABS
Marine / Shippin	g				other
B U R E A U V F I T A S	Llovd's Register	RINA	RMRS	DNV-GL DNV-GL	Confirmation



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=3RT2024-1AV00

Cax online generator

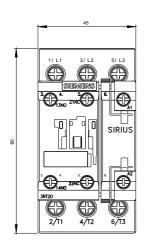
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2024-1AV00

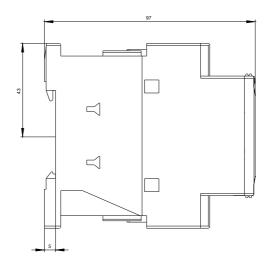
Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RT2024-1AV00

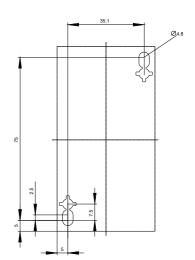
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2024-1AV00&lang=en

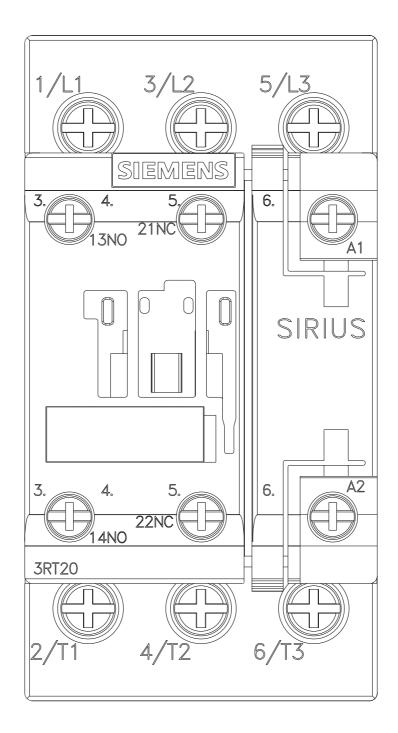
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2024-1AV00/char

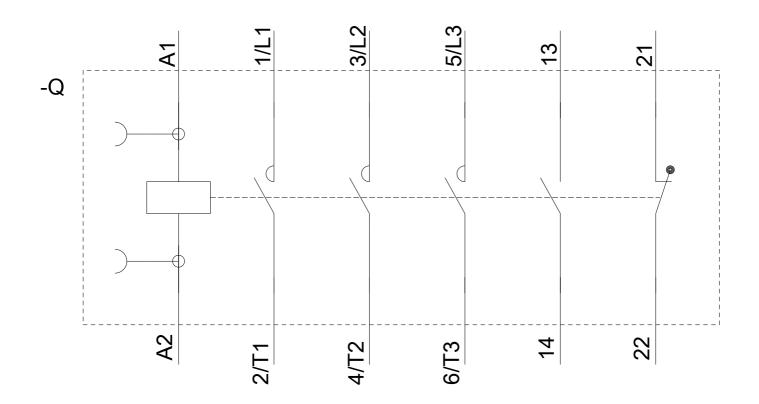
Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2024-1AV00&objecttype=14&gridview=view1











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