SIEMENS

Data sheet

3RT2516-1BB40

Power contactor, AC-3 9 A, 4 kW / 400 V 2 NO + 2 NC 24 V DC 4pole Size S00 screw terminals



Product brand name	SIRIUS
Product designation	contactor
Product type designation	3RT25
General technical data	
Size of contactor	S00
Product extension	
 function module for communication 	No

 function module for communication 	No
Auxiliary switch	Yes
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 	400 V
60947-1	
Protection class IP	
• on the front	IP20
• of the terminal	IP20
Shock resistance at rectangular impulse	
• at DC	6,7g / 5 ms, 4,2g / 10 ms

• at DC10,5g / 5 ms, 6,6g / 10 msMechanical service life (switching cycles)0• of contactor typical30 000 000• of the contactor with added electronics- compatible auxiliary switch block typical5000 000• of the contactor with added auxiliary switch block typical10 000 000• of the contactor with added auxiliary switch block typical0Reference code acc. to DIN EN 81346-2QAmbient conditions2000 mAmbient conditions2000 mAmbient temperature • during operation • during storage-25 +60 °C -55 +80 °CMumber of No contacts for main contacts2Operating current • at AC-1 · rated value4• at AC-1 · up to 690 V at ambient temperature 40 °C rated value18 A - - - per NC contact rated value• at AC-2 · at AC-3 at AC-3 at 400 V · per NC contact rated value9 A - - - per NC contact rated value• at AC-1 · at AC-12.5 mm² - AConnectable conductor cross-section in main circuit at AC-1 · at AC-1 · AC-1 · at AC-1 · at AC-1 · at AC	Shock resistance with sine pulse	
• of contactor typical30 000 000• of the contactor with added electronics- compatible auxiliary switch block typical5 000 000• of the contactor with added auxiliary switch block typical10 000 000Reference code acc. to DIN EN 81346-2QAmbient conditions2 000 mInstallation altitude at height above sea level • maximum2 000 mAmbient temperature • during operation-55 +60 °C• during storage-55 +60 °C• during storage-55 +60 °C• during storage2Number of Poles for main current circuit4Number of NO contacts for main contacts2Q2Operating current • at AC-1 • per to 690 V at ambient temperature 40 °C rated value18 A• at AC-1 • per NO contact rated value9 A• per NO contact rated value9 A• at AC-1 • per NO contact rated value9 A• at 60 °C minimum permissible2.5 mm²• at 60 °C minimum permissible2.5 mm²• at 0 °C minimum permissible2.5 mm²• at 1 current path at DC-1 • at 24 V rated value20 A	• at DC	10,5g / 5 ms, 6,6g / 10 ms
• of the contactor with added electronics- compatible auxiliary switch block typical 5 000 000 • of the contactor with added auxiliary switch block typical 10 000 000 • of the contactor with added auxiliary switch block typical 10 000 000 • reference code acc. to DIN EN 81346-2 Q Ambient conditions 2 000 m Ambient conditions 2 000 m • maximum 2 000 m Ambient temperature	Mechanical service life (switching cycles)	
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• of the contactor with added auxiliary switch block typical10 000 000Reference code acc. to DIN EN 81346-2QAmbient conditions2 000 mInstallation attitude at height above sea level • maximum2 000 mAmbient temperature • during operation2 000 mAmbient temperature • during storage2 000 mMumber of poles for main current circuit4Number of NC contacts for main current circuit4Number of NC contacts for main contacts2Operating current • at AC-1 • up to 680 V at ambient temperature 40 °C rated value18 A• at AC-2 • up to 680 V at ambient temperature 60 °C rated value16 A• at AC-2 at AC-3 at 400 V 	 of the contactor with added electronics- 	5 000 000
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Installation altitude at height above sea level 2000 m Ambient temperature -25 +60 °C • during operation -25 +60 °C • during storage -55 +80 °C Main circuit 4 Number of poles for main current circuit 4 Number of NC contacts for main contacts 2 Operating current 2 • at AC-1 -up to 690 V at ambient temperature 40 °C rated value 18 A - up to 690 V at ambient temperature 60 °C 16 A - up to 690 V at ambient temperature 60 °C 16 A - up to contact rated value 9 A - per NO contact rated value 9 A - per NC contact rated value 9 A - per NC contact rated value 9 A - per NC contact rated value 9 A - at 40 °C minimum permissible 2.5 mm² • at 40 °C minimu permissible 2.5 mm² • at 0 °C minimum permissible 2.5 mm² • at 0 °C minimum permissible 2.5 mm² • at 1 current path at DC-1 20 A	Reference code acc. to DIN EN 81346-2	Q
• maximum2 000 mAmbient temperature • during operation • during storage-25 +60 °C - 55 +80 °CMumber of poles for main current circuit4Number of NO contacts for main contacts2Number of NC contacts for main contacts2Operating current • at AC-1 • up to 690 V at ambient temperature 40 °C rated value18 A• at AC-2 • up to 690 V at ambient temperature 60 °C • rated value16 A• at AC-2 at AC-3 at 400 V • per NC contact rated value9 A• at AC-1 • per NC contact rated value9 A• at 60 °C minimum permissible2.5 mm²• at 60 °C minimum permissible2.5 mm²• at 40 °C minimum permissible3.0 A	Ambient conditions	
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• during operation • during storage-25 +60 °C -55 +80 °CMain circuit4Number of poles for main current circuit4Number of NC contacts for main contacts2Operating current • at AC-14• at AC-118 A• at AC-116 A• at AC-19 A• purp to 690 V at ambient temperature 60 °C rated value9 A• at AC-2 at AC-3 at 400 V9 A• at AC-2 at AC-3 at 400 V9 A• at AC-150 Connectable conductor cross-section in main circuit at AC-1• at AC-2 at AC-3 at 400 V9 A• at AC-150 Connectable conductor cross-section in main circuit at AC-1• at AC-150 Connectable conductor cross-section in main circuit at AC-1• at AC-150 Connectable conductor cross-section in main circuit at AC-1• at AC-150 Connectable conductor cross-section in main circuit at AC-1• at at O°C minimum permissible25 mm²• at at O°C minimum permissible25 mm²• at at O°C minimum permissible25 mm²• at at O°C minimum permissible20 A	• maximum	2 000 m
• during storage-55 +80 °CMain circuit4Number of poles for main current circuit4Number of NC contacts for main contacts2Number of NC contacts for main contacts2Operating current-• at AC-1 up to 690 V at ambient temperature 40 °C18 A- up to 690 V at ambient temperature 60 °C16 A- up to 690 V at ambient temperature 60 °C9 A- up to 690 V at ambient temperature 60 °C9 A- up to 690 V at ambient temperature 60 °C25 mm²at AC-2 at AC-3 at 400 V9 A- per NC contact rated value9 A- per NC contact rated value2.5 mm²• at AC-12.5 mm²• at 40 °C minimum permissible2.5 mm²• at 40 °C minimum permissible2.5 mm²• at 1 current path at DC-1 - at 24 V rated value20 A	Ambient temperature	
Main circuit 4 Number of poles for main current circuit 4 Number of NC contacts for main contacts 2 Operating current 2 • at AC-1 - up to 690 V at ambient temperature 40 °C 18 A - up to 690 V at ambient temperature 60 °C 16 A - up to 690 V at ambient temperature 60 °C 16 A - up to 690 V at ambient temperature 60 °C 16 A - up to 690 V at ambient temperature 60 °C 16 A - up to 690 V at ambient temperature 60 °C 16 A - up to 690 V at ambient temperature 60 °C 16 A - up to 690 V at ambient temperature 60 °C 16 A - up to Contact rated value 9 A - per NC contact rated value 9 A - per NC contact rated value 9 A - per NC contact rated value 2.5 mm² - at 40 °C minimum permissible 2.5 mm² • at 40 °C minimum permissible 2.5 mm² • at 1 current path at DC-1 - at 24 V rated value	 during operation 	
Number of poles for main current circuit4Number of NO contacts for main contacts2Number of NC contacts for main contacts2Operating current-• at AC-1 up to 690 V at ambient temperature 40 °C18 A- up to 690 V at ambient temperature 60 °C16 A- up to 690 V at ambient temperature 60 °C9 A- up to 690 V at ambient temperature 60 °C9 A- up to Contact rated value9 A- per NO contact rated value9 A- per NC contact rated value2.5 mm²- at 40 °C minimum permissible2.5 mm²Operating current2.5 mm²• at 40 °C minimum permissible2.5 mm²Operating current2.4 V rated value• at 41 current path at DC-120 A	• during storage	-55 +80 °C
Number of NO contacts for main contacts2Number of NC contacts for main contacts2Operating current2• at AC-1- up to 690 V at ambient temperature 40 °C18 A- up to 690 V at ambient temperature 60 °C16 A- up to 690 V at ambient temperature 60 °C16 A- up to 690 V at ambient temperature 60 °C16 A- up to 690 V at ambient temperature 60 °C19 A- up to Contact rated value9 A- per NO contact rated value9 A- per NC contact rated value9 A- per NC contact rated value2.5 mm²• at 60 °C minimum permissible2.5 mm²• at 40 °C minimum permissible3.5 mm²• at 40 °C minimum permissible3.5 mm²• at 40 °C minimum permissible3.5 mm²• at 40 °C minimum p	Main circuit	
Number of NC contacts for main contacts2Operating current • at AC-1Image: contact and contact	Number of poles for main current circuit	4
Operating current• at AC-1- up to 690 V at ambient temperature 40 °Crated value- up to 690 V at ambient temperature 60 °Crated value- up to 690 V at ambient temperature 60 °Crated value16 A• at AC-2 at AC-3 at 400 V- per NO contact rated value9 A- per NC contact rated value9 A• at 60 °C minimum permissible• at 40 °C minimum permissible2.5 mm²Operating current• at 1 current path at DC-1- at 24 V rated value20 A	Number of NO contacts for main contacts	2
 at AC-1 up to 690 V at ambient temperature 40 °C rated value up to 690 V at ambient temperature 60 °C rated value 16 A at AC-2 at AC-3 at 400 V per NO contact rated value 9 A per NC contact rated value 9 A connectable conductor cross-section in main circuit at AC-1 at 60 °C minimum permissible 2.5 mm² Operating current at 1 current path at DC-1 at 24 V rated value 20 A 	Number of NC contacts for main contacts	2
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rated value • at AC-2 at AC-3 at 400 V - per NO contact rated value - per NC contact rated value - per NC contact rated value 9 A 9 A 9 A 9 A 9 A 9 A 9 A 9 A		18 A
per NO contact rated value9 Aper NC contact rated value9 AConnectable conductor cross-section in main circuit at AC-19 A• at 60 °C minimum permissible2.5 mm²• at 40 °C minimum permissible2.5 mm²• at 40 °C minimum permissible2.5 mm²• at 1 current path at DC-1 - at 24 V rated value20 A		16 A
	• at AC-2 at AC-3 at 400 V	
Connectable conductor cross-section in main circuit at AC-1	— per NO contact rated value	9 A
at AC-1	— per NC contact rated value	9 A
• at 40 °C minimum permissible 2.5 mm² Operating current - at 1 current path at DC-1 - at 24 V rated value 20 A		
Operating current • at 1 current path at DC-1 — at 24 V rated value 20 A	• at 60 °C minimum permissible	2.5 mm ²
at 1 current path at DC-1 — at 24 V rated value 20 A	• at 40 °C minimum permissible	2.5 mm ²
— at 24 V rated value 20 A	Operating current	
	• at 1 current path at DC-1	
— at 110 V rated value 2.1 A	— at 24 V rated value	20 A
	— at 110 V rated value	2.1 A
- at 220 V rated value 0.8 A	— at 220 V rated value	0.8 A
— at 440 V rated value 0.6 A	— at 440 V rated value	0.6 A
• with 2 current paths in series at DC-1	 with 2 current paths in series at DC-1 	
— at 24 V rated value 20 A	— at 24 V rated value	20 A
— at 110 V rated value 12 A	— at 110 V rated value	12 A
— at 220 V rated value 1.6 A	— at 220 V rated value	1.6 A

— at 440 V rated value	0.8 A
Operating current	
• at 1 current path at DC-3 at DC-5	
— at 24 V per NC contact rated value	16 A
— at 24 V per NO contact rated value	16 A
— at 110 V per NC contact rated value	0.075 A
— at 110 V per NO contact rated value	0.15 A
— at 220 V per NC contact rated value	0.375 A
— at 220 V per NO contact rated value	0.75 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V per NC contact rated value	16 A
— at 24 V per NO contact rated value	16 A
— at 110 V per NC contact rated value	0.175 A
— at 110 V per NO contact rated value	0.35 A
Operating power	
• at AC-1	
— at 230 V rated value	6.5 kW
— at 400 V rated value	11 kW
● at AC-2 at AC-3	
— at 230 V per NC contact rated value	2.2 kW
— at 230 V per NO contact rated value	2.2 kW
— at 400 V per NC contact rated value	4 kW
— at 400 V per NO contact rated value	4 kW
Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor	0.7 W
No-load switching frequency	
• at AC	10 000 1/h
• at DC	10 000 1/h
Operating frequency	
● at AC-1 maximum	1 000 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	1.1
Closing power of magnet coil at DC	4 W
Holding power of magnet coil at DC	4 W
Closing delay	
• at DC	30 100 ms

Opening delay	
• at DC	7 13 ms
Arcing time	10 15 ms
Residual current of the electronics for control with signal <0>	
• at DC at 24 V maximum permissible	0.01 A
Auxiliary circuit	
Number of NC contacts for auxiliary contacts	
 instantaneous contact 	0
Number of NO contacts for auxiliary contacts	
 instantaneous contact 	0
Operating current at AC-12 maximum	10 A
Operating current at AC-15	
• at 230 V rated value	10 A
• at 400 V rated value	3 A
Operating current at DC-12	
• 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
Operating 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 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	
Yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	0.33 hp
— at 230 V rated value	1 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	
— with type of coordination 1 required	gG: 35 A (690 V, 100 kA)
— with type of assignment 2 required	gG: 20A (690V, 100kA)

• for short-circuit protection of the auxiliary switch 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
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022
 Side-by-side mounting 	Yes
Height	57.5 mm
Width	45 mm
Depth	73 mm
Required spacing	
 with side-by-side mounting 	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	0 mm
 for grounded parts 	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— at the side	6 mm
— downwards	0 mm
 for live parts 	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	6 mm
Connections/Terminals	

fuse gG: 10 A

Type of electrical connection

• for main contacts

- solid

• for main current circuit

· for auxiliary and control current circuit Type of connectable conductor cross-sections

- single or multi-stranded

• at AWG conductors for main contacts

Type of connectable conductor cross-sections

- finely stranded with core end processing

screw-type terminals

screw-type terminals

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), 2x 4 mm²

2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), 2x 4 mm²

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)

2x (20 ... 16), 2x (18 ... 14), 2x 12

 for auxiliary contacts 				
— solid		2x (0.5 1.5 mm²), 2x	κ (0.75 2.5 mm²), 2x -	4 mm²
— single or multi-stranded		2x (0,5 1,5 mm²), 2x	k (0,75 2,5 mm²), 2x k	4 mm²
— finely stranded with core	end processing	2x (0.5 1.5 mm²), 2x	k (0.75 2.5 mm²)	
 at AWG conductors for auxili 		2x (20 16), 2x (18	. 14), 2x 12	
G number as coded connectab	le conductor cross	20 12		
tion for main contacts				
ty related data				
duct function				
Mirror contact acc. to IEC 60	947-4-1	Yes; with 3RH29		
 positively driven operation ac 1 	c. to IEC 60947-5-	No		
value for proof test interval or s 61508	ervice life acc. to	20 у		
tection against electrical shock		finger-safe		
ficates/approvals				
General Product Approval			Functional Safety/Safety of Machinery	Declaration of Conformity
		EHC	Type Examination	EG-Konf.
est Certific- Marine / S tes	hipping			
where the second	B U R E A U VERITAS	GL	Llovd's Register	PRS
Iarine / Shipping		other		_
RINA RMRS	DNV-GL DNVGLCOM/AF	Confirmation	VDE VDE	
RINA RMRS			VDE	

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Cax online generator

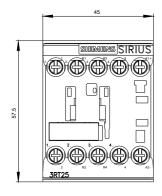
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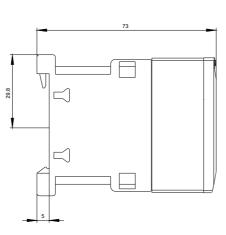
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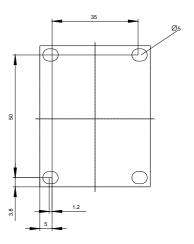
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2516-1BB40&lang=en

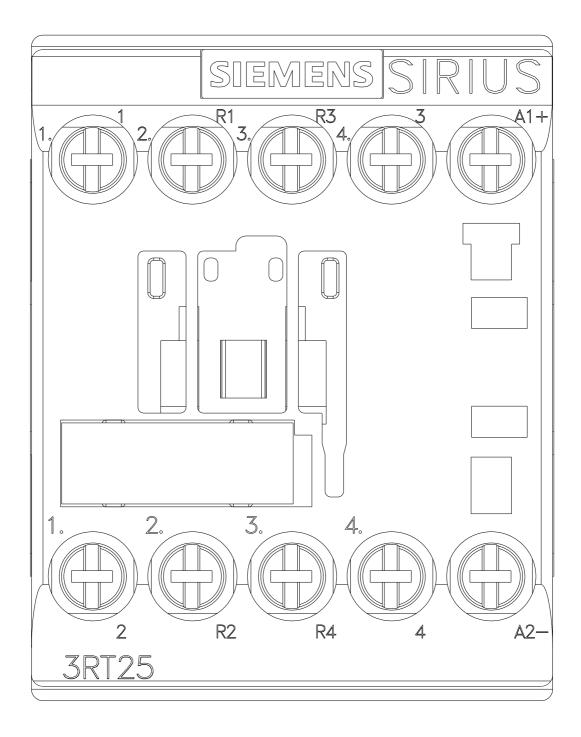
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2516-1BB40/char

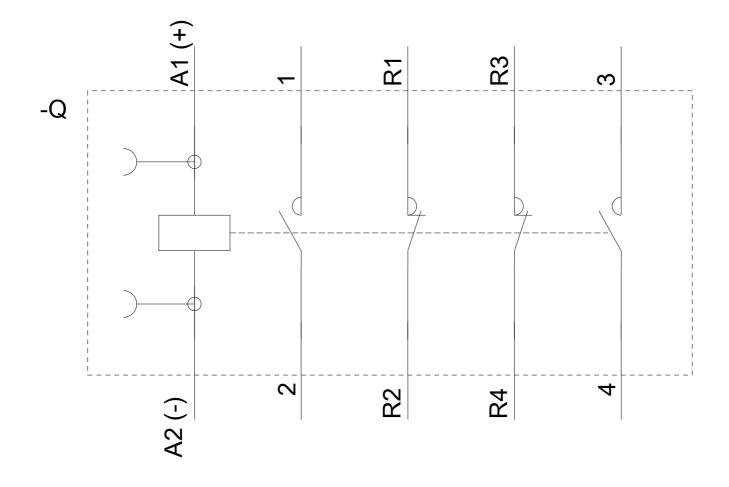
Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2516-1BB40&objecttype=14&gridview=view1











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