

power contactor, AC-3 95 A, 45 kW / 400 V 1 NO + 1 NC, 24 V DC 3-pole, 3 NO, Size S3 screw terminal integrated varistor Suitable for 2 A PLC outputs



Figure similar

Product brand name	SIRIUS
Product designation	Coupling relay
Product type designation	3RT2

General technical data	
Size of contactor	S3
Product extension	
<ul style="list-style-type: none"> function module for communication 	No
<ul style="list-style-type: none"> Auxiliary switch 	Yes
Surge voltage resistance	
<ul style="list-style-type: none"> of main circuit rated value 	8 kV
<ul style="list-style-type: none"> of auxiliary circuit rated value 	6 kV
maximum permissible voltage for safe isolation	
<ul style="list-style-type: none"> between coil and main contacts acc. to EN 60947-1 	690 V
Protection class IP	
<ul style="list-style-type: none"> on the front 	IP20
<ul style="list-style-type: none"> of the terminal 	IP00

Shock resistance at rectangular impulse	
<ul style="list-style-type: none"> • at AC • at DC 	6.3 g / 5 ms, 3.6 g / 10 ms 6.3 g / 5 ms, 3.6 g / 10 ms
Shock resistance with sine pulse	
<ul style="list-style-type: none"> • at AC • at DC 	9.8 g / 5 ms, 5.6 g / 10 ms 9.8 g / 5 ms, 5.6 g / 10 ms
Mechanical service life (switching cycles)	
<ul style="list-style-type: none"> • of contactor typical • of the contactor with added electronics-compatible auxiliary switch block typical • of the contactor with added auxiliary switch block typical 	10 000 000 5 000 000 10 000 000
Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	K
Reference code acc. to DIN EN 81346-2	Q

Ambient conditions

Installation altitude at height above sea level	
<ul style="list-style-type: none"> • maximum 	2 000 m
Ambient temperature	
<ul style="list-style-type: none"> • during operation • during storage 	-25 ... +60 °C -55 ... +80 °C

Main circuit

Number of poles for main current circuit	3
Number of NO contacts for main contacts	3
Operating voltage	
<ul style="list-style-type: none"> • at AC-3 rated value maximum 	1 000 V
Operating current	
<ul style="list-style-type: none"> • at AC-1 at 400 V <ul style="list-style-type: none"> — at ambient temperature 40 °C rated value • at AC-1 <ul style="list-style-type: none"> — up to 690 V at ambient temperature 40 °C rated value — up to 690 V at ambient temperature 60 °C rated value — up to 1000 V at ambient temperature 40 °C rated value — up to 1000 V at ambient temperature 60 °C rated value • at AC-2 at 400 V rated value • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value 	130 A 130 A 110 A 70 A 60 A 95 A 95 A 95 A

<ul style="list-style-type: none"> — at 690 V rated value • at AC-4 at 400 V rated value 	<p>78 A</p> <p>80 A</p>
<p>Connectable conductor cross-section in main circuit at AC-1</p> <ul style="list-style-type: none"> • at 60 °C minimum permissible • at 40 °C minimum permissible 	<p>35 mm²</p> <p>50 mm²</p>
<p>Operating current for approx. 200000 operating cycles at AC-4</p> <ul style="list-style-type: none"> • at 400 V rated value • at 690 V rated value 	<p>42 A</p> <p>30 A</p>
<p>Operating current</p> <ul style="list-style-type: none"> • at 1 current path at DC-1 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 2 current paths in series at DC-1 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 3 current paths in series at DC-1 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value 	<p>100 A</p> <p>9 A</p> <p>2 A</p> <p>0.6 A</p> <p>0.4 A</p> <p>100 A</p> <p>100 A</p> <p>10 A</p> <p>1.8 A</p> <p>1 A</p> <p>100 A</p> <p>100 A</p> <p>80 A</p> <p>4.5 A</p> <p>2.6 A</p>
<p>Operating current</p> <ul style="list-style-type: none"> • at 1 current path at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 2 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value 	<p>40 A</p> <p>2.5 A</p> <p>1 A</p> <p>0.15 A</p> <p>0.06 A</p> <p>100 A</p> <p>100 A</p> <p>7 A</p> <p>0.42 A</p> <p>0.16 A</p>

<ul style="list-style-type: none"> • with 3 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value 	<p>100 A</p> <p>100 A</p> <p>35 A</p> <p>0.8 A</p> <p>0.35 A</p>
Operating power	
<ul style="list-style-type: none"> • at AC-1 <ul style="list-style-type: none"> — at 230 V rated value — at 230 V at 60 °C rated value — at 400 V rated value — at 400 V at 60 °C rated value — at 690 V rated value — at 690 V at 60 °C rated value • at AC-2 at 400 V rated value • at AC-3 <ul style="list-style-type: none"> — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value 	<p>49 kW</p> <p>42 kW</p> <p>86 kW</p> <p>72 kW</p> <p>148 kW</p> <p>125 kW</p> <p>45 kW</p> <p>22 kW</p> <p>45 kW</p> <p>55 kW</p> <p>75 kW</p>
Operating power for approx. 200000 operating cycles at AC-4	
<ul style="list-style-type: none"> • at 400 V rated value • at 690 V rated value 	<p>22 kW</p> <p>27.4 kW</p>
Thermal short-time current limited to 10 s	760 A
Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor	6.6 W
No-load switching frequency	
<ul style="list-style-type: none"> • at DC 	1 000 1/h
Operating frequency	
<ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-4 maximum 	<p>900 1/h</p> <p>350 1/h</p> <p>850 1/h</p> <p>250 1/h</p>
Control circuit/ Control	
Type of voltage of the control supply voltage	DC
Control supply voltage at DC	
<ul style="list-style-type: none"> • rated value 	24 V
Operating range factor control supply voltage rated value of magnet coil at DC	
<ul style="list-style-type: none"> • initial value • Full-scale value 	<p>0.8</p> <p>1.2</p>

Design of the surge suppressor	with varistor
Inrush current peak	
• at 24 V	3 A
Closing power of magnet coil at DC	25 W
Holding power of magnet coil at DC	0.9 W
Closing delay	
• at DC	50 ... 70 ms
Opening delay	
• at DC	38 ... 57 ms
Arcing time	10 ... 20 ms

Auxiliary circuit

Number of NC contacts for auxiliary contacts	
• instantaneous contact	1
Number of NO contacts for auxiliary contacts	
• instantaneous contact	1
Operating current at AC-12 maximum	10 A
Operating 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
Operating 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
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 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 three-phase AC motor	
• at 480 V rated value	96 A

<ul style="list-style-type: none"> • at 600 V rated value 	77 A
Yielded mechanical performance [hp]	
<ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value — at 230 V rated value • for three-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 	10 hp 20 hp 30 hp 30 hp 75 hp 75 hp
Contact rating of auxiliary contacts according to UL	A600 / P600

Short-circuit protection

Design of the fuse link	
<ul style="list-style-type: none"> • for short-circuit protection of the main circuit <ul style="list-style-type: none"> — with type of coordination 1 required — with type of assignment 2 required • for short-circuit protection of the auxiliary switch required 	gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA) gG: 160 A (690 V, 100 kA), aM: 100 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA) fuse gG: 10 A

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
<ul style="list-style-type: none"> • Side-by-side mounting 	Yes
Height	140 mm
Width	70 mm
Depth	152 mm
Required spacing	
<ul style="list-style-type: none"> • with side-by-side mounting <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side • for grounded parts <ul style="list-style-type: none"> — forwards — upwards — at the side — downwards • for live parts 	20 mm 10 mm 10 mm 0 mm 20 mm 10 mm 10 mm 10 mm

— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm

Connections/Terminals

Type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit • for auxiliary and control current circuit 	<p>screw-type terminals</p> <p>screw-type terminals</p>
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — finely stranded with core end processing • at AWG conductors for main contacts 	<p>2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)</p> <p>2x (10 ... 1/0), 1x (10 ... 2)</p>
Connectable conductor cross-section for main contacts	
<ul style="list-style-type: none"> • solid • stranded • finely stranded with core end processing 	<p>2.5 ... 16 mm²</p> <p>6 ... 70 mm²</p> <p>2.5 ... 50 mm²</p>
Connectable conductor cross-section for auxiliary contacts	
<ul style="list-style-type: none"> • single or multi-stranded • finely stranded with core end processing 	<p>0.5 ... 2.5 mm²</p> <p>0.5 ... 2.5 mm²</p>
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — single or multi-stranded — finely stranded with core end processing • at AWG conductors for auxiliary contacts 	<p>2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²)</p> <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (20 ... 16), 2x (18 ... 14)</p>
AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> • for main contacts • for auxiliary contacts 	<p>10 ... 2</p> <p>20 ... 14</p>

Safety related data

B10 value	
<ul style="list-style-type: none"> • with high demand rate acc. to SN 31920 	1 000 000
Proportion of dangerous failures	
<ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 • with high demand rate acc. to SN 31920 	<p>40 %</p> <p>73 %</p>
Failure rate [FIT]	
<ul style="list-style-type: none"> • with low demand rate acc. to SN 31920 	100 FIT
Product function	
<ul style="list-style-type: none"> • Mirror contact acc. to IEC 60947-4-1 • positively driven operation acc. to IEC 60947-5-1 	<p>Yes</p> <p>No</p>

T1 value for proof test interval or service life acc. to IEC 61508	20 y
Protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529

Certificates/approvals

General Product Approval	EMC	Declaration of Conformity
 CCC	 EAC	 EG-Konf.
 CSA	 UL	 C-Tick

Test Certificates	other	Railway
Type Test Certificates/Test Report	Special Test Certificate	Confirmation
		Vibration and Shock

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2046-1KB40>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2046-1KB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2046-1KB40>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2046-1KB40&lang=en

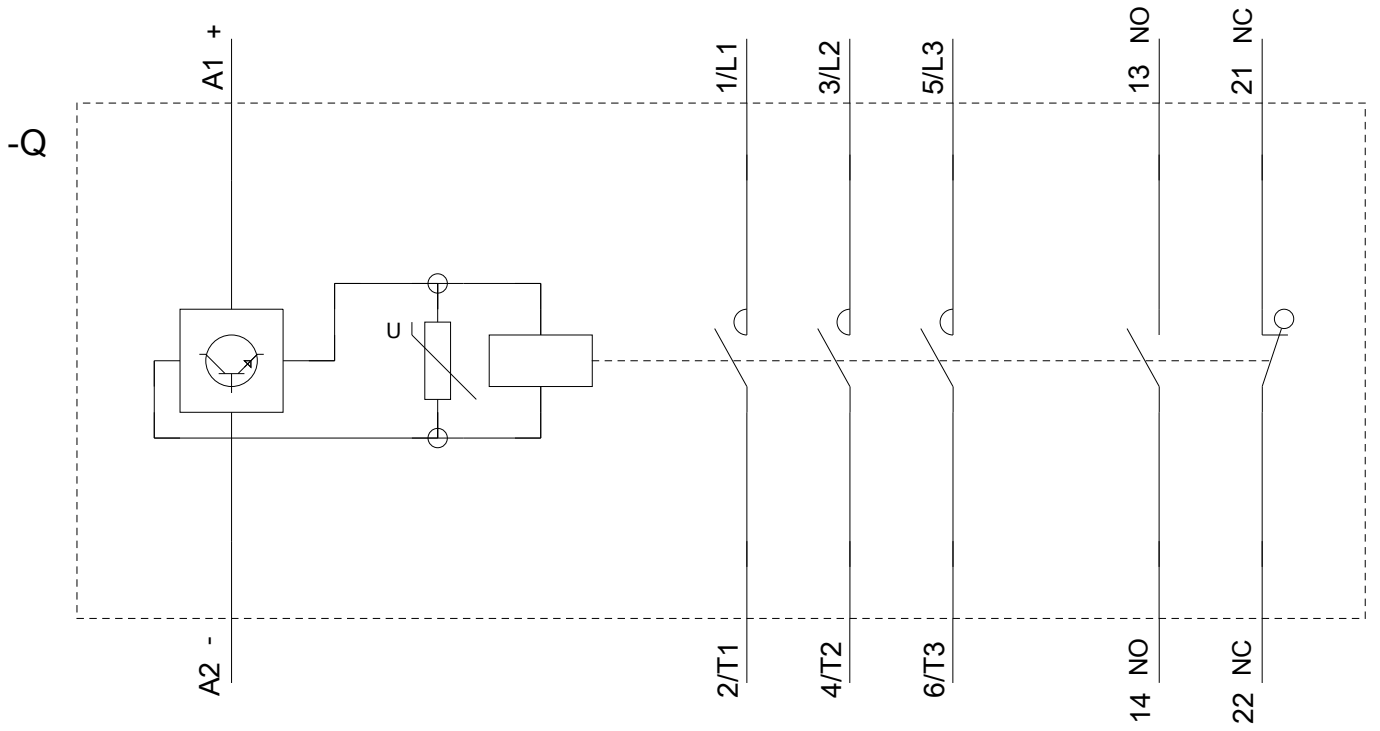
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2046-1KB40/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2046-1KB40&objecttype=14&gridview=view1>





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