

power contactor, AC-3 12 A, 5.5 kW / 400 V 1 NC, 24 V DC 0.85-1.85\*US 3-pole, size S00 screw terminal not expandable with auxiliary switch



product brand name	SIRIUS
product designation	Coupling relay
product type designation	3RT2
General technical data	
size of contactor	S00
product extension	<ul style="list-style-type: none"><li>• function module for communication</li><li>• auxiliary switch</li></ul> No
power loss [W] for rated value of the current	<ul style="list-style-type: none"><li>• at AC in hot operating state 3.6 W</li><li>• at AC in hot operating state per pole 1.2 W</li></ul>
power loss [W] for rated value of the current without load current share typical	1.6 W
surge voltage resistance	<ul style="list-style-type: none"><li>• of main circuit rated value 6 kV</li><li>• of auxiliary circuit rated value 6 kV</li></ul>
maximum permissible voltage for safe isolation	<ul style="list-style-type: none"><li>• between coil and main contacts acc. to EN 60947-1 400 V</li></ul>

<b>protection class IP</b>	
• on the front	IP20
• of the terminal	IP20
<b>shock resistance at rectangular impulse</b>	
• at DC	7.3g / 5 ms, 4.7g / 10 ms
<b>shock resistance with sine pulse</b>	
• at DC	11.4g / 5 ms, 7.3g / 10 ms
<b>mechanical service life (switching cycles)</b>	
• of contactor typical	30 000 000
<b>reference code acc. to DIN EN 81346-2</b>	Q
<b>Ambient conditions</b>	
• installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C
<b>Main circuit</b>	
<b>number of poles for main current circuit</b>	3
<b>number of NO contacts for main contacts</b>	3
<b>operating voltage</b>	
• at AC-3 rated value maximum	690 V
<b>operating current</b>	
• at AC-1 at 400 V — at ambient temperature 40 °C rated value	22 A
• at AC-1 — up to 690 V at ambient temperature 40 °C rated value	22 A
— up to 690 V at ambient temperature 60 °C rated value	20 A
• at AC-3 — at 400 V rated value	12 A
— at 500 V rated value	9.2 A
— at 690 V rated value	6.7 A
• at AC-4 at 400 V rated value	8.5 A
• at AC-5a up to 690 V rated value	19.4 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	7.2 A
— up to 400 V for current peak value n=20 rated value	7.2 A

— up to 500 V for current peak value n=20 rated value	7.2 A
— up to 690 V for current peak value n=20 rated value	6.7 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	4.8 A
— up to 400 V for current peak value n=30 rated value	4.8 A
— up to 500 V for current peak value n=30 rated value	4.8 A
— up to 690 V for current peak value n=30 rated value	4.8 A
<b>minimum cross-section in main circuit</b>	
• at maximum AC-1 rated value	4 mm <sup>2</sup>
<b>operating current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	4.1 A
• at 690 V rated value	3.3 A
<b>operating current</b>	
• at 1 current path at DC-1	
— at 24 V rated value	20 A
— at 110 V rated value	2.1 A
— at 220 V rated value	0.8 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	20 A
— at 110 V rated value	12 A
— at 220 V rated value	1.6 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.7 A
• with 3 current paths in series at DC-1	
— at 24 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	20 A
— at 440 V rated value	1.3 A
— at 600 V rated value	1 A
<b>operating current</b>	
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 110 V rated value	0.1 A
• with 2 current paths in series at DC-3 at DC-5	

— at 24 V rated value	20 A
— at 110 V rated value	0.35 A
• with 3 current paths in series at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	1.5 A
— at 440 V rated value	0.2 A
— at 600 V rated value	0.2 A
<b>operating power</b>	
• 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	5.5 kW
<b>operating power for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	2 kW
• at 690 V rated value	2.5 kW
<b>operating apparent output at AC-6a</b>	
• up to 230 V for current peak value n=20 rated value	2.8 kV·A
• up to 400 V for current peak value n=20 rated value	4.9 kV·A
• up to 500 V for current peak value n=20 rated value	6.2 kV·A
• up to 690 V for current peak value n=20 rated value	8 kV·A
<b>operating apparent output at AC-6a</b>	
• up to 230 V for current peak value n=30 rated value	1.9 kV·A
• up to 400 V for current peak value n=30 rated value	3.3 kV·A
• up to 500 V for current peak value n=30 rated value	4.1 kV·A
• up to 690 V for current peak value n=30 rated value	5.7 kV·A
<b>short-time withstand current in cold operating state up to 40 °C</b>	
• limited to 1 s switching at zero current maximum	200 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum	123 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	96 A; Use minimum cross-section acc. to AC-1 rated value

• limited to 30 s switching at zero current maximum	74 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	61 A; Use minimum cross-section acc. to AC-1 rated value
<b>no-load switching frequency</b>	
• at DC	10 000 1/h
<b>operating frequency</b>	
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	750 1/h
• at AC-3 maximum	750 1/h
• at AC-4 maximum	250 1/h

<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage at DC</b>	
• rated value	24 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value	0.85
• full-scale value	1.85
<b>closing power of magnet coil at DC</b>	1.6 W
<b>holding power of magnet coil at DC</b>	1.6 W
<b>closing delay</b>	
• at DC	30 ... 100 ms
<b>opening delay</b>	
• at DC	7 ... 13 ms
<b>arcing time</b>	10 ... 15 ms
<b>control version of the switch operating mechanism</b>	Standard A1 - A2

<b>Auxiliary circuit</b>	
<b>number of NC contacts for auxiliary contacts</b>	
• instantaneous contact	1
<b>operating current at AC-12 maximum</b>	10 A
<b>operating current at AC-15</b>	
• 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
<b>operating current at DC-12</b>	
• 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
<b>operating current at DC-13</b>	
• 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
<b>contact reliability of auxiliary contacts</b>	1 faulty switching per 100 million (17 V, 1 mA)
<b>UL/CSA ratings</b>	
<b>full-load current (FLA) for three-phase AC motor</b>	
• at 480 V rated value	11 A
• at 600 V rated value	11 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 110/120 V rated value	0.5 hp
— at 230 V rated value	2 hp
• for three-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
<b>contact rating of auxiliary contacts according to UL</b>	A600 / Q600
<b>Short-circuit protection</b>	
<b>design of the fuse link</b>	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 50A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)
— with type of assignment 2 required	gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
<b>mounting type</b>	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
• side-by-side mounting	Yes
<b>height</b>	58 mm

<b>width</b>	45 mm
<b>depth</b>	73 mm
<b>required spacing</b>	
• 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

<b>type of electrical connection</b>	
• 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
<b>type of connectable conductor cross-sections</b>	
• for main contacts	
— solid	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup>
— single or multi-stranded	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup>
— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )
• at AWG conductors for main contacts	2x (20 ... 16), 2x (18 ... 14), 2x 12
<b>connectable conductor cross-section for main contacts</b>	
• solid	0.5 ... 4 mm <sup>2</sup>
• stranded	0.5 ... 4 mm <sup>2</sup>
• finely stranded with core end processing	0.5 ... 2.5 mm <sup>2</sup>
<b>connectable conductor cross-section for auxiliary contacts</b>	
• single or multi-stranded	0.5 ... 4 mm <sup>2</sup>
• finely stranded with core end processing	0.5 ... 2.5 mm <sup>2</sup>
• type of connectable conductor cross-sections for auxiliary contacts	
— single or multi-stranded	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup>

— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )
• type of connectable conductor cross-sections at AWG conductors for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14), 2x 12
<b>AWG number as coded connectable conductor cross section</b>	
• for main contacts	20 ... 12
• for auxiliary contacts	20 ... 12
<b>Safety related data</b>	
<b>B10 value</b>	
• with high demand rate acc. to SN 31920	1 000 000
<b>proportion of dangerous failures</b>	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	73 %
<b>failure rate [FIT]</b>	
• with low demand rate acc. to SN 31920	100 FIT
<b>product function</b>	
• mirror contact acc. to IEC 60947-4-1	Yes
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y
<b>protection against electrical shock</b>	finger-safe
suitability for use safety-related switching OFF	Yes

## Certificates/ approvals



CCC



CSA



UL

KC



RCM

Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	Marine / Shipping
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[Type Examination Certificate](#)


EG-Konf.

[Miscellaneous](#)
[Special Test Certificate](#)
[Type Test Certificates/Test Report](#)


ABS

### Marine / Shipping



BUREAU VERITAS



LRS



PRS



RINA



RMRS



DNVGL.COM/AF

### other

[Confirmation](#)

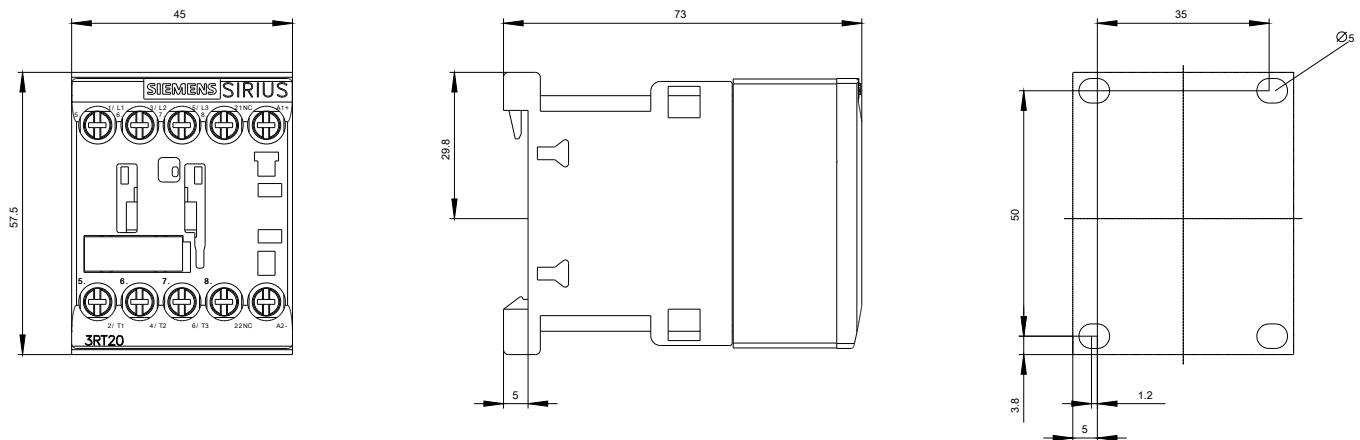

VDE

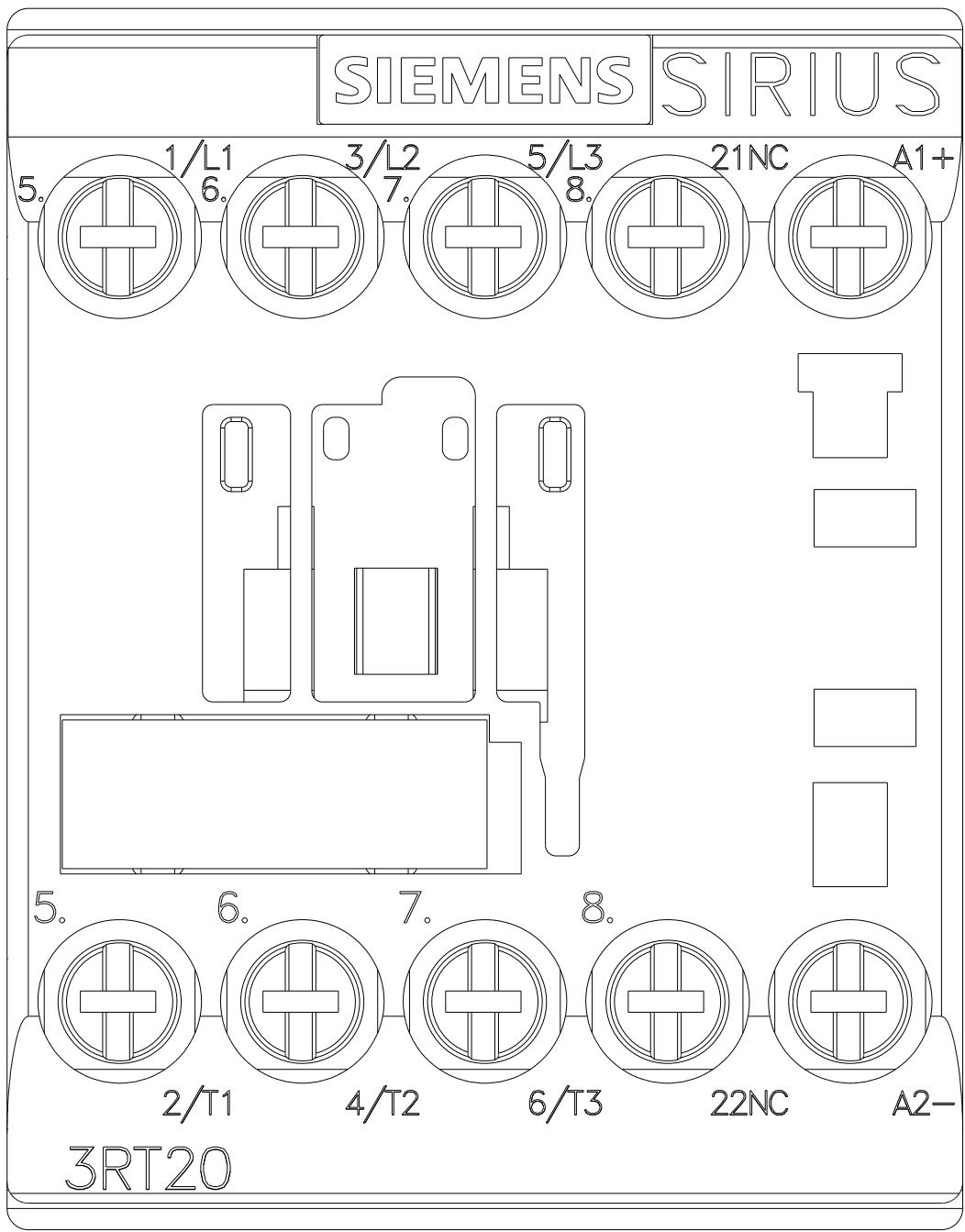
### Railway

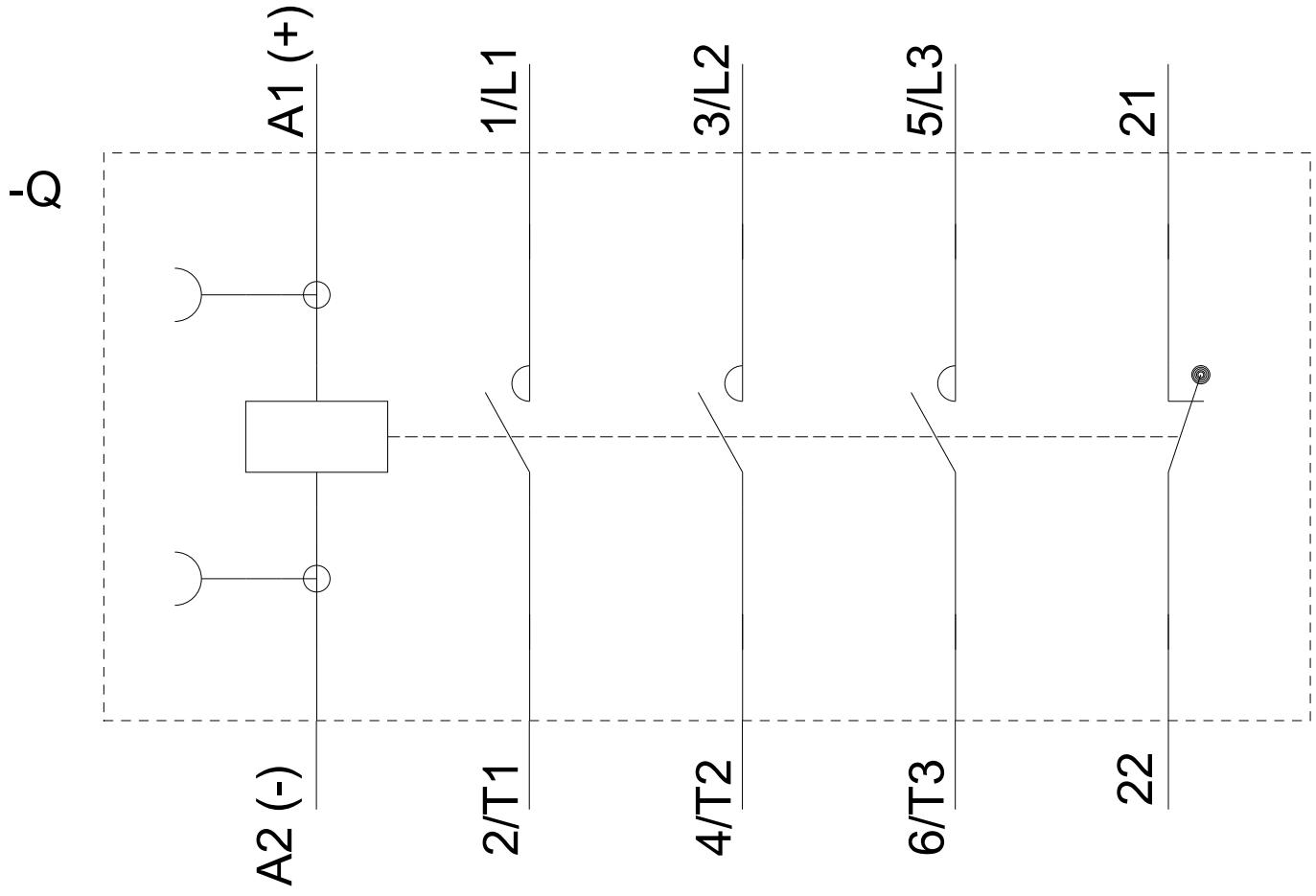
[Vibration and Shock](#)

### 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=3RT2017-1MB42-0KT0>
**Cax online generator**
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2017-1MB42-0KT0>
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1MB42-0KT0>
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2017-1MB42-0KT0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2017-1MB42-0KT0&lang=en)
**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1MB42-0KT0/char>
**Further characteristics (e.g. electrical endurance, switching frequency)**
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2017-1MB42-0KT0&objecttype=14&gridview=view1>







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