



Traction contactor, AC-3 12 A, 5.5 kW / 400 V 1 NC, 72 - 125 V DC, 0.7-1.25\*US with integrated varistor Size S00, Spring-type terminal suitable for PLC outputs

|                                                                                                  |                               |
|--------------------------------------------------------------------------------------------------|-------------------------------|
| product brand name                                                                               | SIRIUS                        |
| product designation                                                                              | Contacteur                    |
| design of the product                                                                            | With extended operating range |
| product type designation                                                                         | 3RT2                          |
| <b>General technical data</b>                                                                    |                               |
| size of contactor                                                                                | S00                           |
| 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                       | 3.6 W                         |
| • per pole                                                                                       | 1.2 W                         |
| power loss [W] for rated value of the current without load current share typical                 | 0.8 W                         |
| insulation voltage                                                                               |                               |
| • of main circuit with degree of pollution 3 rated value                                         | 690 V                         |
| • of auxiliary circuit with degree of pollution 3 rated value                                    | 690 V                         |
| 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                         |
| shock resistance at rectangular impulse                                                          |                               |
| • at DC                                                                                          | 6,7g / 5 ms, 4,2g / 10 ms     |
| shock resistance with sine pulse                                                                 |                               |
| • at DC                                                                                          | 10,5g / 5 ms, 6,6g / 10 ms    |
| mechanical service life (switching cycles)                                                       |                               |
| • of contactor typical                                                                           | 30 000 000                    |
| • of the contactor with added electronically optimized auxiliary switch block typical            | 5 000 000                     |
| • of the contactor with added auxiliary switch block typical                                     | 10 000 000                    |
| reference code acc. to IEC 81346-2                                                               | Q                             |
| Substance Prohibitance (Date)                                                                    | 01.10.2009                    |
| <b>Ambient conditions</b>                                                                        |                               |
| installation altitude at height above sea level maximum                                          | 2 000 m                       |
| ambient temperature                                                                              |                               |
| • during operation                                                                               | -40 ... +70 °C                |
| • during storage                                                                                 | -55 ... +80 °C                |
| relative humidity minimum                                                                        | 10 %                          |

|                                                                  |                                                           |
|------------------------------------------------------------------|-----------------------------------------------------------|
| relative humidity at 55 °C acc. to IEC 60068-2-30 maximum        | 95 %                                                      |
| <b>Main circuit</b>                                              |                                                           |
| number of poles for main current circuit                         | 3                                                         |
| number of NO contacts for main contacts                          | 3                                                         |
| number of NC contacts for main contacts                          | 0                                                         |
| operating voltage                                                |                                                           |
| • at AC-3 rated value maximum                                    | 690 V                                                     |
| • at AC-3e rated value maximum                                   | 690 V                                                     |
| operational current                                              |                                                           |
| • 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-2 at 400 V rated value                                   | 12 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-3e                                                       |                                                           |
| — 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                                                     |
| minimum cross-section in main circuit                            |                                                           |
| • at maximum AC-1 rated value                                    | 4 mm <sup>2</sup>                                         |
| • at maximum Ith rated value                                     | 4 mm <sup>2</sup>                                         |
| operational current for approx. 200000 operating cycles at AC-4  |                                                           |
| • at 400 V rated value                                           | 4.1 A                                                     |
| • at 690 V rated value                                           | 3.3 A                                                     |
| operating power                                                  |                                                           |
| • at AC-2 at 400 V rated value                                   | 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                                           | 5.5 kW                                                    |
| • at AC-3e                                                       |                                                           |
| — 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                                                    |
| operating power for approx. 200000 operating cycles at AC-4      |                                                           |
| • at 400 V rated value                                           | 2 kW                                                      |
| • at 690 V rated value                                           | 2.5 kW                                                    |
| short-time withstand current in cold operating state up to 40 °C |                                                           |
| • 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  |
| no-load switching frequency                                      |                                                           |
| • at DC                                                          | 1 500 1/h                                                 |
| operating frequency                                              |                                                           |
| • at AC-2 at AC-3e maximum                                       | 750 1/h                                                   |
| • at AC-4 maximum                                                | 250 1/h                                                   |

## Ratings for railway applications

|                                                     |      |
|-----------------------------------------------------|------|
| <b>thermal current (I<sub>th</sub>) up to 690 V</b> |      |
| • up to 40 °C according to IEC 60077 rated value    | 22 A |
| • up to 70 °C according to IEC 60077 rated value    | 18 A |

## Control circuit/ Control

|                                                                                       |                  |
|---------------------------------------------------------------------------------------|------------------|
| <b>type of voltage</b>                                                                | DC               |
| <b>type of voltage of the control supply voltage</b>                                  | DC               |
| <b>control supply voltage at DC</b>                                                   |                  |
| • rated value                                                                         | 72 ... 125 V     |
| <b>operating range factor control supply voltage rated value of magnet coil at DC</b> |                  |
| • initial value                                                                       | 0.7              |
| • full-scale value                                                                    | 1.25             |
| <b>design of the surge suppressor</b>                                                 | with varistor    |
| <b>inrush current peak</b>                                                            | 1.1 A            |
| <b>duration of inrush current peak</b>                                                | 50 µs            |
| <b>locked-rotor current mean value</b>                                                | 0.04 A           |
| <b>locked-rotor current peak</b>                                                      | 0.04 A           |
| <b>duration of locked-rotor current</b>                                               | 250 ms           |
| <b>holding current mean value</b>                                                     | 7 mA             |
| <b>closing power of magnet coil at DC</b>                                             | 4.5 W            |
| <b>holding power of magnet coil at DC</b>                                             | 0.75 W           |
| <b>closing delay</b>                                                                  |                  |
| • at DC                                                                               | 30 ... 70 ms     |
| <b>opening delay</b>                                                                  |                  |
| • at DC                                                                               | 25 ... 45 ms     |
| <b>arcing time</b>                                                                    | 10 ... 15 ms     |
| <b>control version of the switch operating mechanism</b>                              | Standard A1 - A2 |

## Auxiliary circuit

|                                                     |        |
|-----------------------------------------------------|--------|
| <b>number of NC contacts for auxiliary contacts</b> | 1      |
| • instantaneous contact                             | 1      |
| <b>operational current at AC-12 maximum</b>         | 10 A   |
| <b>operational 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>operational 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>operational 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  |

## UL/CSA ratings

|                                                     |        |
|-----------------------------------------------------|--------|
| <b>full-load current (FLA) for 3-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 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>• for 3-phase AC motor <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul>                                                                                                                                                                                                                                                    | 2 hp<br><br>3 hp<br>3 hp<br>7.5 hp<br>10 hp                                                                                                                                    |
| <b>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | A600 / Q600                                                                                                                                                                    |
| <b>Short-circuit protection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                |
| <b>product function short circuit protection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | No                                                                                                                                                                             |
| <b>design of the fuse link</b> <ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> <li>— with type of assignment 2 required</li> </ul> </li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul>                                                                                                                                                                                                  | gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 35 A<br>gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 20 A<br>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, standing, on horizontal mounting surface |
| <b>fastening method</b> <ul style="list-style-type: none"> <li>• side-by-side mounting</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022<br>Yes                                                                                  |
| <b>height</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 70 mm                                                                                                                                                                          |
| <b>width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 45 mm                                                                                                                                                                          |
| <b>depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 73 mm                                                                                                                                                                          |
| <b>required spacing</b> <ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul> | 10 mm<br>10 mm<br>10 mm<br>0 mm<br><br>10 mm<br>10 mm<br>6 mm<br>10 mm<br><br>10 mm<br>10 mm<br>10 mm<br>6 mm                                                                  |
| <b>Connections/ Terminals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                |
| <b>type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> <li>• at contactor for auxiliary contacts</li> <li>• of magnet coil</li> </ul>                                                                                                                                                                                                                                                                                                               | spring-loaded terminals<br>spring-loaded terminals<br>Spring-type terminals<br>Spring-type terminals                                                                           |
| <b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>• at AWG cables for main contacts</li> </ul>                                                                                                                                                                               | 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), 2x 4 mm²<br>2x (0.5 ... 4 mm²)<br>2x (0.5 ... 2.5 mm²)<br>2x (0.5 ... 2.5 mm²)<br>2x (20 ... 12)                                  |
| <b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for auxiliary contacts <ul style="list-style-type: none"> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>• at AWG cables for auxiliary contacts</li> </ul>                                                                                                                                                                                      | 2x (0.5 ... 4 mm²)<br>2x (0.5 ... 2.5 mm²)<br>2x (0.5 ... 2.5 mm²)<br>2x (20 ... 12)                                                                                           |
| <b>AWG number as coded connectable conductor cross</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                |

|                                                                           |                                                  |
|---------------------------------------------------------------------------|--------------------------------------------------|
| <b>section</b>                                                            |                                                  |
| • for main contacts                                                       | 20 ... 12                                        |
| • for auxiliary contacts                                                  | 20 ... 12                                        |
| <b>Safety related data</b>                                                |                                                  |
| B10 value 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 %                                             |
| failure rate [FIT] with low demand rate acc. to SN 31920                  | 100 FIT                                          |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b> | 20 y                                             |
| <b>protection class IP on the front acc. to IEC 60529</b>                 | IP20                                             |
| <b>touch protection on the front acc. to IEC 60529</b>                    | finger-safe, for vertical contact from the front |
| <b>Communication/ Protocol</b>                                            |                                                  |
| <b>product function bus communication</b>                                 | No                                               |
| <b>Certificates/ approvals</b>                                            |                                                  |
| <b>General Product Approval</b>                                           |                                                  |



[Confirmation](#)



[KC](#)



| EMC                                                                                 | Functional Safety/Safety of Machinery        | Declaration of Conformity                    | Test Certificates                                                                   |                                                                                                |
|-------------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
|  | <a href="#">Type Examination Certificate</a> | <a href="#">UK Declaration of Conformity</a> |  | <a href="#">Type Test Certificates/Test Report</a><br><a href="#">Special Test Certificate</a> |

#### Marine / Shipping



| Marine / Shipping                                                                   | other                        | Railway                                                                             | Dangerous Good                                                                                 |                                       |
|-------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------|
|  | <a href="#">Confirmation</a> |  | <a href="#">Type Test Certificates/Test Report</a><br><a href="#">Special Test Certificate</a> | <a href="#">Transport Information</a> |

#### 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=3RT2017-2XF42-0LA2>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2017-2XF42-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-2XF42-0LA2>

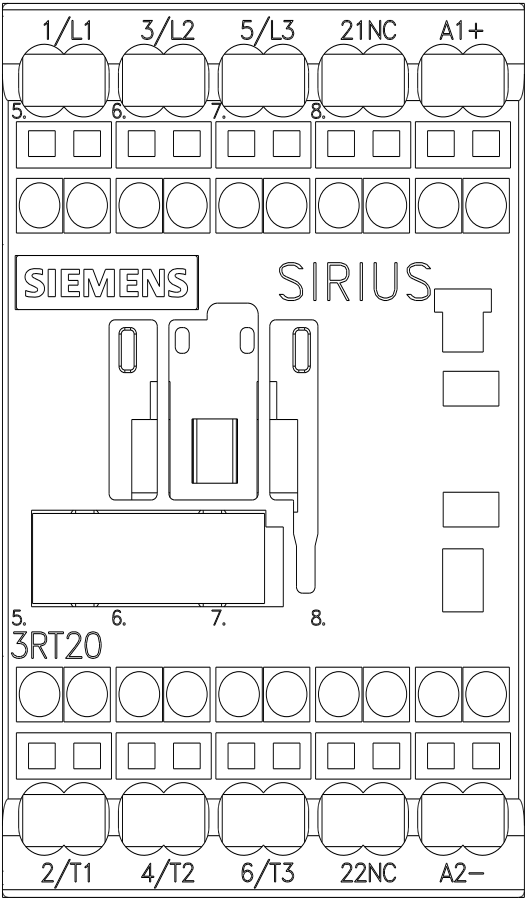
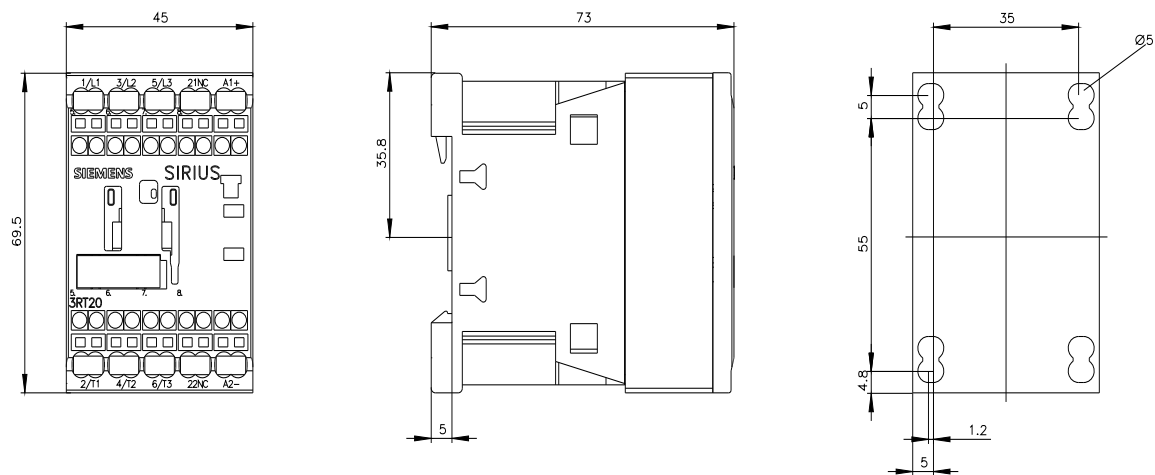
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

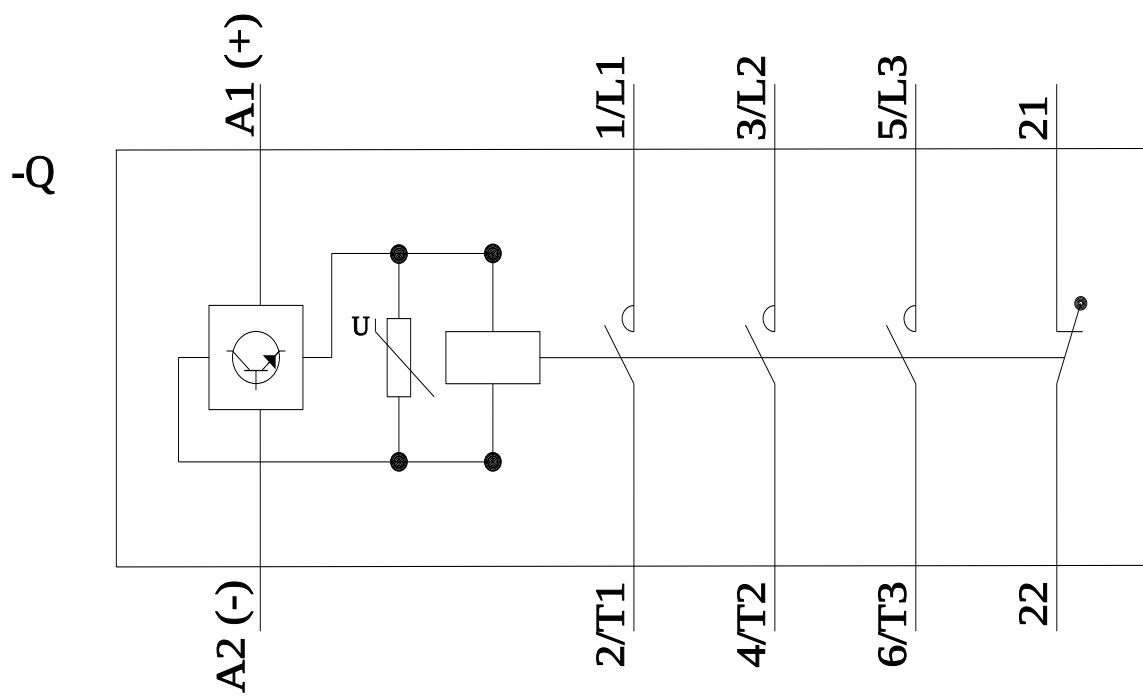
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2017-2XF42-0LA2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2017-2XF42-0LA2&lang=en)

Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-2XF42-0LA2/char>

Further characteristics (e.g. electrical endurance, switching frequency)  
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2017-2XF42-0LA2&objecttype=14&gridview=view1>





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