



reversing starter, 3RM1, 500 V, 0.09 - 0.75 kW, 0.4 - 2 A, 24 V DC, spring-loaded terminal (push-in)

|                                                                                                               |                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| product brand name                                                                                            | SIRIUS                                                                                                                                                                                            |
| product category                                                                                              | Motor starter                                                                                                                                                                                     |
| product designation                                                                                           | Reversing starter                                                                                                                                                                                 |
| design of the product                                                                                         | with electronic overload protection                                                                                                                                                               |
| product type designation                                                                                      | 3RM1                                                                                                                                                                                              |
| <b>General technical data</b>                                                                                 |                                                                                                                                                                                                   |
| equipment variant according to IEC 60947-4-2                                                                  | 3                                                                                                                                                                                                 |
| product function                                                                                              | Reversing starter                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>intrinsic device protection</li> </ul>                                 | Yes                                                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>for power supply reverse polarity protection</li> </ul>                | No                                                                                                                                                                                                |
| suitability for operation device connector 3ZY12                                                              | Yes                                                                                                                                                                                               |
| power loss [W] for rated value of the current                                                                 |                                                                                                                                                                                                   |
| <ul style="list-style-type: none"> <li>at AC in hot operating state per pole</li> </ul>                       | 0.1 W                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>without load current share typical</li> </ul>                          | 1.68 W                                                                                                                                                                                            |
| insulation voltage rated value                                                                                | 500 V                                                                                                                                                                                             |
| overvoltage category                                                                                          | III                                                                                                                                                                                               |
| surge voltage resistance rated value                                                                          | 6 kV                                                                                                                                                                                              |
| maximum permissible voltage for protective separation                                                         |                                                                                                                                                                                                   |
| <ul style="list-style-type: none"> <li>between main and auxiliary circuit</li> </ul>                          | 500 V                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>between control and auxiliary circuit</li> </ul>                       | 250 V                                                                                                                                                                                             |
| shock resistance                                                                                              | 6g / 11 ms                                                                                                                                                                                        |
| operating frequency maximum                                                                                   | 1 1/s                                                                                                                                                                                             |
| reference code according to IEC 81346-2                                                                       | Q                                                                                                                                                                                                 |
| Substance Prohibitance (Date)                                                                                 | 03/01/2017                                                                                                                                                                                        |
| SVHC substance name                                                                                           | Lead - 7439-92-1<br>Lead monoxide (lead oxide) - 1317-36-8<br>2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5<br>2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 |
| product function                                                                                              |                                                                                                                                                                                                   |
| <ul style="list-style-type: none"> <li>direct start</li> </ul>                                                | No                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>reverse starting</li> </ul>                                            | Yes                                                                                                                                                                                               |
| product function short circuit protection                                                                     | No                                                                                                                                                                                                |
| <b>Electromagnetic compatibility</b>                                                                          |                                                                                                                                                                                                   |
| EMC emitted interference according to IEC 60947-1                                                             | class A                                                                                                                                                                                           |
| EMC immunity according to IEC 60947-1                                                                         | Class A                                                                                                                                                                                           |
| conducted interference                                                                                        |                                                                                                                                                                                                   |
| <ul style="list-style-type: none"> <li>due to burst according to IEC 61000-4-4</li> </ul>                     | 3 kV / 5 kHz                                                                                                                                                                                      |
| <ul style="list-style-type: none"> <li>due to conductor-earth surge according to IEC 61000-4-5</li> </ul>     | 2 kV                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>due to conductor-conductor surge according to IEC 61000-4-5</li> </ul> | 1 kV                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>due to high-frequency radiation according to IEC 61000-4-6</li> </ul>  | 10 V                                                                                                                                                                                              |

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| field-based interference according to IEC 61000-4-3                                 | 10 V/m                                                         |
| electrostatic discharge according to IEC 61000-4-2                                  | 4 kV contact discharge / 8 kV air discharge                    |
| conducted HF interference emissions according to CISPR11                            | Class B for the domestic, business and commercial environments |
| field-bound HF interference emission according to CISPR11                           | Class B for the domestic, business and commercial environments |
| Electrical Safety                                                                   |                                                                |
| protection class IP on the front according to IEC 60529                             | IP20                                                           |
| touch protection on the front according to IEC 60529                                | finger-safe                                                    |
| Main circuit                                                                        |                                                                |
| number of poles for main current circuit                                            | 3                                                              |
| design of the switching contact                                                     | Hybrid                                                         |
| design of the switching contact as NO contact for signaling function                | OUT, electronic, 24 V DC, 15 mA                                |
| adjustable current response value current of the current-dependent overload release | 0.4 ... 2 A                                                    |
| minimum load [%]                                                                    | 20 %; from set rated current                                   |
| type of the motor protection                                                        | solid-state                                                    |
| operating voltage rated value                                                       | 48 ... 500 V                                                   |
| relative symmetrical tolerance of the operating voltage                             | 10 %                                                           |
| operating frequency 1 rated value                                                   | 50 Hz                                                          |
| operating frequency 2 rated value                                                   | 60 Hz                                                          |
| relative symmetrical tolerance of the operating frequency                           | 10 %                                                           |
| operational current                                                                 |                                                                |
| • at AC at 400 V rated value                                                        | 2 A                                                            |
| • at AC-3 at 400 V rated value                                                      | 2 A                                                            |
| • at AC-53a at 400 V at ambient temperature 40 °C rated value                       | 2 A                                                            |
| ampacity when starting maximum                                                      | 16 A                                                           |
| operating power for 3-phase motors at 400 V at 50 Hz                                | 0.09 ... 0.75 kW                                               |
| Inputs/ Outputs                                                                     |                                                                |
| input voltage at digital input                                                      |                                                                |
| • at DC rated value                                                                 | 24 V                                                           |
| • with signal <0> at DC                                                             | 0 ... 5 V                                                      |
| • for signal <1> at DC                                                              | 15 ... 30                                                      |
| input current at digital input                                                      |                                                                |
| • for signal <1> at DC                                                              | 11 mA                                                          |
| • with signal <0> at DC                                                             | 1 mA                                                           |
| number of CO contacts for auxiliary contacts                                        | 1                                                              |
| operational current of auxiliary contacts at AC-15 at 230 V maximum                 | 3 A                                                            |
| operational current of auxiliary contacts at DC-13 at 24 V maximum                  | 1 A                                                            |
| Control circuit/ Control                                                            |                                                                |
| type of voltage of the control supply voltage                                       | DC                                                             |
| control supply voltage at DC rated value                                            | 19.2 ... 30 V                                                  |
| relative negative tolerance of the control supply voltage at DC                     | 20 %                                                           |
| relative positive tolerance of the control supply voltage at DC                     | 25 %                                                           |
| control supply voltage 1 at DC rated value                                          | 24 V                                                           |
| operating range factor control supply voltage rated value at DC                     |                                                                |
| • initial value                                                                     | 0.8                                                            |
| • full-scale value                                                                  | 1.25                                                           |
| control current at DC                                                               |                                                                |
| • in standby mode of operation                                                      | 25 mA                                                          |
| • during operation                                                                  | 70 mA                                                          |
| inrush current peak                                                                 |                                                                |
| • at 24 V                                                                           | 0.28 A; values at 25 °C                                        |
| • at DC at 24 V                                                                     | 300 mA                                                         |
| • at DC at 24 V at switching on of motor                                            | 140 mA                                                         |
| duration of inrush current peak                                                     |                                                                |
| • at 24 V                                                                           | 85 ms                                                          |

|                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                         |
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| <ul style="list-style-type: none"> <li>• at DC at 24 V</li> </ul>                                                                                                                                                                                                                                                                                                                                                | 80 ms                                                                                                                   |
| <ul style="list-style-type: none"> <li>• at DC at 24 V at switching on of motor</li> </ul>                                                                                                                                                                                                                                                                                                                       | 80 ms                                                                                                                   |
| <b>power loss [W] in auxiliary and control circuit</b>                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                         |
| <ul style="list-style-type: none"> <li>• <b>in switching state OFF</b> <ul style="list-style-type: none"> <li>— with bypass circuit</li> </ul> </li> </ul>                                                                                                                                                                                                                                                       | 0.6 W                                                                                                                   |
| <ul style="list-style-type: none"> <li>• <b>in switching state ON</b> <ul style="list-style-type: none"> <li>— with bypass circuit</li> </ul> </li> </ul>                                                                                                                                                                                                                                                        | 1.68 W                                                                                                                  |
| <b>Response times</b>                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                         |
| <b>ON-delay time</b>                                                                                                                                                                                                                                                                                                                                                                                             | 60 ... 90 ms                                                                                                            |
| <b>OFF-delay time</b>                                                                                                                                                                                                                                                                                                                                                                                            | 60 ... 90 ms                                                                                                            |
| <b>Power Electronics</b>                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                         |
| <b>operational current</b>                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                         |
| <ul style="list-style-type: none"> <li>• at 40 °C rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                         | 2 A                                                                                                                     |
| <ul style="list-style-type: none"> <li>• at 50 °C rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                         | 2 A                                                                                                                     |
| <ul style="list-style-type: none"> <li>• at 55 °C rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                         | 2 A                                                                                                                     |
| <ul style="list-style-type: none"> <li>• at 60 °C rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                         | 2 A                                                                                                                     |
| <b>Installation/ mounting/ dimensions</b>                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                         |
| <b>mounting position</b>                                                                                                                                                                                                                                                                                                                                                                                         | vertical, horizontal, standing (observe derating)                                                                       |
| <b>fastening method</b>                                                                                                                                                                                                                                                                                                                                                                                          | screw and snap-on mounting onto 35 mm DIN rail                                                                          |
| <b>height</b>                                                                                                                                                                                                                                                                                                                                                                                                    | 100 mm                                                                                                                  |
| <b>width</b>                                                                                                                                                                                                                                                                                                                                                                                                     | 22.5 mm                                                                                                                 |
| <b>depth</b>                                                                                                                                                                                                                                                                                                                                                                                                     | 141.6 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>— backwards</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>— backwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> </ul> | 0 mm<br>0 mm<br>50 mm<br>50 mm<br>0 mm<br><br>0 mm<br>0 mm<br>50 mm<br>3.5 mm<br>50 mm                                  |
| <b>Ambient conditions</b>                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                         |
| installation altitude at height above sea level maximum                                                                                                                                                                                                                                                                                                                                                          | 4 000 m; For derating see manual                                                                                        |
| <b>ambient temperature</b>                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                         |
| <ul style="list-style-type: none"> <li>• during operation</li> </ul>                                                                                                                                                                                                                                                                                                                                             | -25 ... +60 °C                                                                                                          |
| <ul style="list-style-type: none"> <li>• during storage</li> </ul>                                                                                                                                                                                                                                                                                                                                               | -40 ... +70 °C                                                                                                          |
| <ul style="list-style-type: none"> <li>• during transport</li> </ul>                                                                                                                                                                                                                                                                                                                                             | -40 ... +70 °C                                                                                                          |
| environmental category during operation according to IEC 60721                                                                                                                                                                                                                                                                                                                                                   | 3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 |
| relative humidity during operation                                                                                                                                                                                                                                                                                                                                                                               | 10 ... 95 %                                                                                                             |
| air pressure according to SN 31205                                                                                                                                                                                                                                                                                                                                                                               | 900 ... 1 060 hPa                                                                                                       |
| <b>Communication/ Protocol</b>                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                         |
| <b>protocol is supported</b>                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                         |
| <ul style="list-style-type: none"> <li>• PROFINET IO protocol</li> </ul>                                                                                                                                                                                                                                                                                                                                         | No                                                                                                                      |
| <ul style="list-style-type: none"> <li>• PROFIsafe protocol</li> </ul>                                                                                                                                                                                                                                                                                                                                           | No                                                                                                                      |
| <b>product function bus communication</b>                                                                                                                                                                                                                                                                                                                                                                        | No                                                                                                                      |
| protocol is supported AS-Interface protocol                                                                                                                                                                                                                                                                                                                                                                      | No                                                                                                                      |
| <b>Connections/ Terminals</b>                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                         |
| <b>type of electrical connection</b>                                                                                                                                                                                                                                                                                                                                                                             | spring-loaded terminals (push-in) for main circuit, spring-loaded terminals (push-in) for control circuit               |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> </ul>                                                                                                                                                                                                                                                                                                                                     | spring-loaded terminals (push-in)                                                                                       |
| <ul style="list-style-type: none"> <li>• for auxiliary and control circuit</li> </ul>                                                                                                                                                                                                                                                                                                                            | spring-loaded terminals (push-in)                                                                                       |
| <b>wire length for motor unshielded maximum</b>                                                                                                                                                                                                                                                                                                                                                                  | 100 m                                                                                                                   |
| type of connectable conductor cross-sections for main contacts                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                         |
| <ul style="list-style-type: none"> <li>• solid</li> </ul>                                                                                                                                                                                                                                                                                                                                                        | 1x (0.5 ... 4 mm²)                                                                                                      |
| <ul style="list-style-type: none"> <li>• finely stranded with core end processing</li> </ul>                                                                                                                                                                                                                                                                                                                     | 1x (0.5 ... 2.5 mm²)                                                                                                    |
| <ul style="list-style-type: none"> <li>• finely stranded without core end processing</li> </ul>                                                                                                                                                                                                                                                                                                                  | 1x (0.5 ... 4 mm²)                                                                                                      |

|                                                                   |                                                                      |
|-------------------------------------------------------------------|----------------------------------------------------------------------|
| <b>connectable conductor cross-section for main contacts</b>      |                                                                      |
| • solid or stranded                                               | 0.5 ... 4 mm <sup>2</sup>                                            |
| • finely stranded with core end processing                        | 0.5 ... 2.5 mm <sup>2</sup>                                          |
| • finely stranded without core end processing                     | 0.5 ... 4 mm <sup>2</sup>                                            |
| <b>connectable conductor cross-section for auxiliary contacts</b> |                                                                      |
| • solid or stranded                                               | 0.5 ... 1.5 mm <sup>2</sup>                                          |
| • finely stranded with core end processing                        | 0.5 ... 1 mm <sup>2</sup>                                            |
| • finely stranded without core end processing                     | 0.5 ... 1.5 mm <sup>2</sup>                                          |
| <b>type of connectable conductor cross-sections</b>               |                                                                      |
| • for auxiliary contacts                                          |                                                                      |
| — solid                                                           | 1x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> ) |
| — finely stranded with core end processing                        | 1x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) |
| — finely stranded without core end processing                     | 1x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> ) |
| • for AWG cables for auxiliary contacts                           | 1x (20 ... 16), 2x (20 ... 16)                                       |
| <b>AWG number as coded connectable conductor cross section</b>    |                                                                      |
| • for main contacts                                               | 20 ... 12                                                            |
| • for auxiliary contacts                                          | 20 ... 16                                                            |

#### UL/CSA ratings

|                                                               |          |
|---------------------------------------------------------------|----------|
| <b>yielded mechanical performance [hp]</b>                    |          |
| • for single-phase AC motor                                   |          |
| — at 230 V rated value                                        | 0.125 hp |
| • for 3-phase AC motor                                        |          |
| — at 200/208 V rated value                                    | 0.333 hp |
| — at 220/230 V rated value                                    | 0.333 hp |
| — at 460/480 V rated value                                    | 0.75 hp  |
| <b>operational current at AC at 480 V according to UL 508</b> | 2 A      |

#### Approvals Certificates

##### General Product Approval



[Confirmation](#)



| EMV                                                                                        | Test Certificates                                  | other                        | Railway                                  | Environment                                 |
|--------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------|------------------------------------------|---------------------------------------------|
| <br>RCM | <a href="#">Type Test Certificates/Test Report</a> | <a href="#">Confirmation</a> | <a href="#">Special Test Certificate</a> | <a href="#">Environmental Confirmations</a> |

#### Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RM1202-2AA04>

Cax online generator

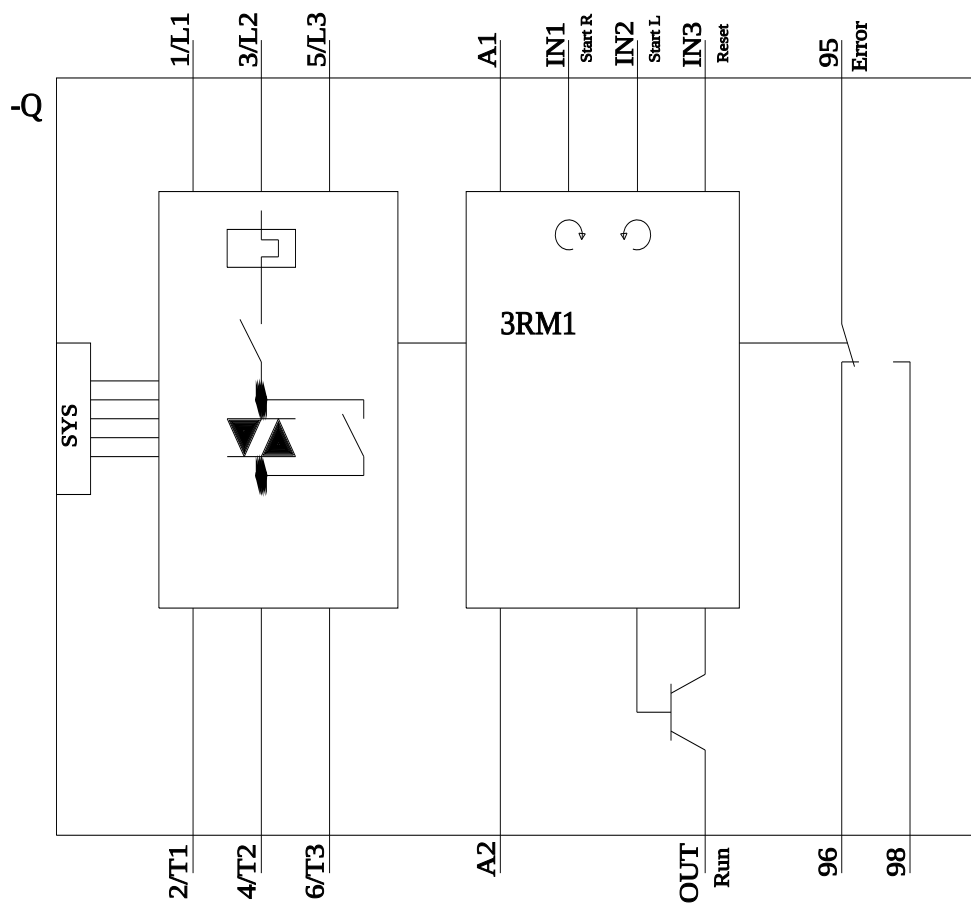
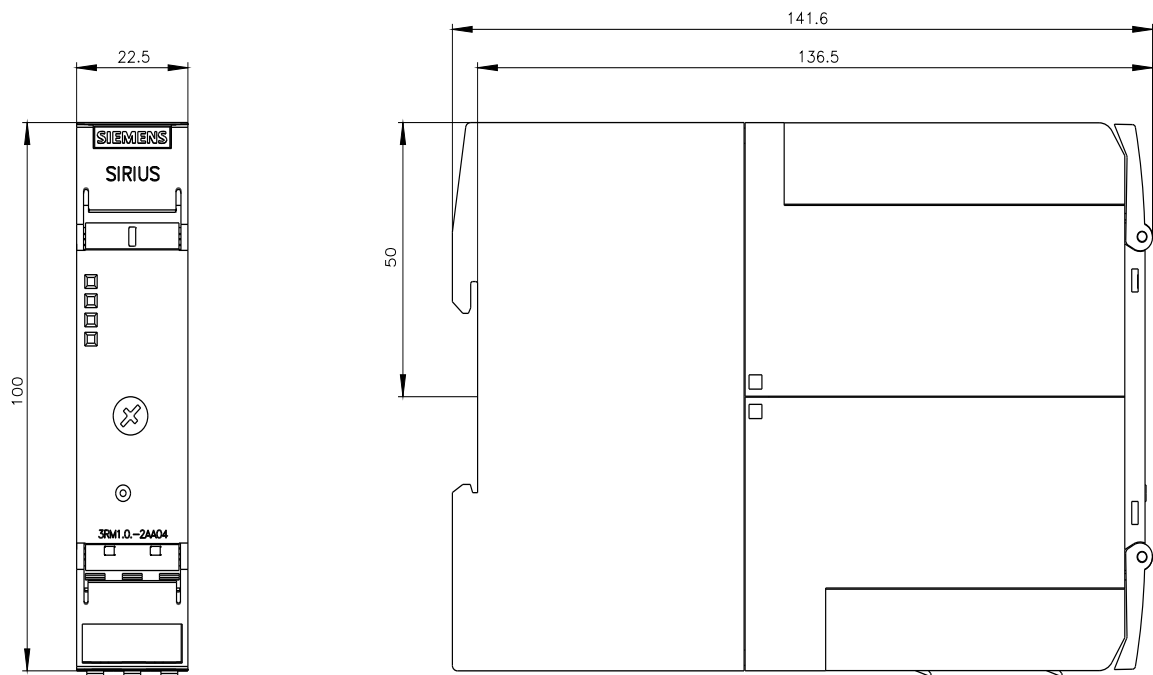
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1202-2AA04>

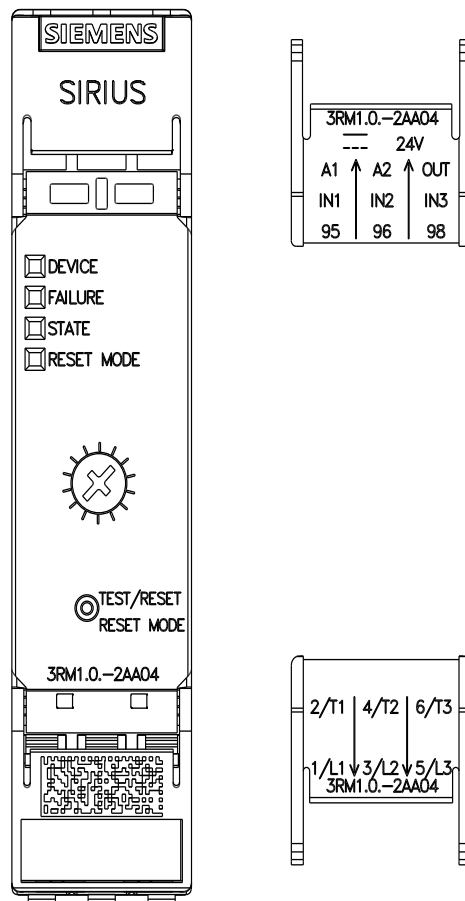
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RM1202-2AA04>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RM1202-2AA04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM1202-2AA04&lang=en)





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