



direct-on-line starter, 3RM1, 500 V, 0 - 0.12 kW, 0.1 - 0.5 A, 110-230 V AC, screw/spring-loaded terminals (push-in)

|                                                                                                           |                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| product brand name                                                                                        | SIRIUS                                                                                                                                                                              |
| product category                                                                                          | Motor starter                                                                                                                                                                       |
| product designation                                                                                       | Direct-on-line starter                                                                                                                                                              |
| design of the product                                                                                     | with electronic overload protection                                                                                                                                                 |
| product type designation                                                                                  | 3RM1                                                                                                                                                                                |
| <b>General technical data</b>                                                                             |                                                                                                                                                                                     |
| equipment version according to IEC 60947-4-2                                                              | 3                                                                                                                                                                                   |
| product function                                                                                          | Direct-on-line 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                                                          | No                                                                                                                                                                                  |
| 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>                   | 0.01 W                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>without load current share typical</li> </ul>                      | 5.06 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                                                                                                                                                                          |
| vibration resistance                                                                                      | 1 ... 6 Hz, 15 mm; 20 m/s <sup>2</sup> , 500 Hz                                                                                                                                     |
| 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>2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7<br>6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol - 119-47-1 |
| Weight                                                                                                    | 0.31 kg                                                                                                                                                                             |
| product function                                                                                          |                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>direct start</li> </ul>                                            | Yes                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>reverse starting</li> </ul>                                        | No                                                                                                                                                                                  |
| 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</li> </ul>       | 1 kV                                                                                                                                                                                |

|                                                                                                               |                                                                                                             |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 61000-4-5                                                                                                     |                                                                                                             |
| <ul style="list-style-type: none"> <li>due to high-frequency radiation according to IEC 61000-4-6</li> </ul>  | 10 V                                                                                                        |
| <b>field-based interference according to IEC 61000-4-3</b>                                                    | 10 V/m                                                                                                      |
| <b>electrostatic discharge according to IEC 61000-4-2</b>                                                     | 4 kV contact discharge / 8 kV air discharge                                                                 |
| <b>conducted HF interference emissions according to CISPR11</b>                                               | Class B for domestic, business and commercial environments; Class A for industrial environments at 110 V DC |
| <b>field-bound HF interference emission according to CISPR11</b>                                              | Class B for domestic, business and commercial environments; Class A for industrial environments at 110 V DC |
| <b>Electrical Safety</b>                                                                                      |                                                                                                             |
| <b>protection class IP on the front according to IEC 60529</b>                                                | IP20                                                                                                        |
| <b>touch protection on the front according to IEC 60529</b>                                                   | finger-safe                                                                                                 |
| <b>Main circuit</b>                                                                                           |                                                                                                             |
| <b>number of poles for main current circuit</b>                                                               | 3                                                                                                           |
| <b>design of the switching contact</b>                                                                        | Hybrid                                                                                                      |
| <b>design of the switching contact as NO contact for signaling function</b>                                   | OUT, electronic, 24 V DC, 15 mA                                                                             |
| <b>adjustable current response value current of the current-dependent overload release</b>                    | 0.1 ... 0.5 A                                                                                               |
| <b>minimum load [%]</b>                                                                                       | 20 %; from set rated current                                                                                |
| <b>type of the motor protection</b>                                                                           | solid-state                                                                                                 |
| operating voltage rated value                                                                                 | 48 ... 500 V                                                                                                |
| <b>relative symmetrical tolerance of the operating voltage</b>                                                | 10 %                                                                                                        |
| <b>operating frequency 1 rated value</b>                                                                      | 50 Hz                                                                                                       |
| <b>operating frequency 2 rated value</b>                                                                      | 60 Hz                                                                                                       |
| <b>relative symmetrical tolerance of the operating frequency</b>                                              | 10 %                                                                                                        |
| <b>operational current</b>                                                                                    |                                                                                                             |
| <ul style="list-style-type: none"> <li>at AC at 400 V rated value</li> </ul>                                  | 0.5 A                                                                                                       |
| <ul style="list-style-type: none"> <li>at AC-3 at 400 V rated value</li> </ul>                                | 0.5 A                                                                                                       |
| <ul style="list-style-type: none"> <li>at AC-53a at 400 V at ambient temperature 40 °C rated value</li> </ul> | 0.5 A                                                                                                       |
| <b>ampacity when starting maximum</b>                                                                         | 4 A                                                                                                         |
| operating power for 3-phase motors at 400 V at 50 Hz                                                          | 0 ... 0.12 kW                                                                                               |
| <b>Inputs/ Outputs</b>                                                                                        |                                                                                                             |
| input voltage at digital input at DC rated value                                                              | 110 V                                                                                                       |
| input voltage at digital input at AC rated value                                                              | 110 V                                                                                                       |
| <b>input current at digital input</b>                                                                         |                                                                                                             |
| <ul style="list-style-type: none"> <li>for signal &lt;1&gt; at DC</li> </ul>                                  | 1.5 mA                                                                                                      |
| <ul style="list-style-type: none"> <li>with signal &lt;0&gt; at DC</li> </ul>                                 | 0.25 mA                                                                                                     |
| <b>input current at digital input with signal &lt;0&gt; at AC</b>                                             |                                                                                                             |
| <ul style="list-style-type: none"> <li>at 110 V</li> </ul>                                                    | 0.2 mA                                                                                                      |
| <ul style="list-style-type: none"> <li>at 230 V</li> </ul>                                                    | 0.4 mA                                                                                                      |
| <b>input current at digital input for signal &lt;1&gt; at AC</b>                                              |                                                                                                             |
| <ul style="list-style-type: none"> <li>at 110 V</li> </ul>                                                    | 1.1 mA                                                                                                      |
| <ul style="list-style-type: none"> <li>at 230 V</li> </ul>                                                    | 2.3 mA                                                                                                      |
| number of CO contacts for auxiliary contacts                                                                  | 1                                                                                                           |
| <b>operational current of auxiliary contacts at AC-15 at 230 V maximum</b>                                    | 3 A                                                                                                         |
| <b>operational current of auxiliary contacts at DC-13 at 24 V maximum</b>                                     | 1 A                                                                                                         |
| <b>Control circuit/ Control</b>                                                                               |                                                                                                             |
| <b>type of voltage of the control supply voltage</b>                                                          | AC/DC                                                                                                       |
| <b>control supply voltage at AC</b>                                                                           |                                                                                                             |
| <ul style="list-style-type: none"> <li>at 50 Hz rated value</li> </ul>                                        | 110 ... 230 V                                                                                               |
| <ul style="list-style-type: none"> <li>at 60 Hz rated value</li> </ul>                                        | 110 ... 230 V                                                                                               |
| <b>relative negative tolerance of the control supply voltage at AC at 60 Hz</b>                               | 15 %                                                                                                        |
| <b>relative positive tolerance of the control supply voltage at AC at 60 Hz</b>                               | 10 %                                                                                                        |
| <b>control supply voltage 1 at AC</b>                                                                         |                                                                                                             |
| <ul style="list-style-type: none"> <li>at 50 Hz</li> </ul>                                                    | 110 ... 230 V                                                                                               |
| <ul style="list-style-type: none"> <li>at 60 Hz</li> </ul>                                                    | 110 ... 230 V                                                                                               |
| <b>control supply voltage frequency</b>                                                                       |                                                                                                             |
| <ul style="list-style-type: none"> <li>1 rated value</li> </ul>                                               | 50 Hz                                                                                                       |

|                                                                          |                                                   |
|--------------------------------------------------------------------------|---------------------------------------------------|
| • 2 rated value                                                          | 60 Hz                                             |
| relative negative tolerance of the control supply voltage at DC          | 15 %                                              |
| relative positive tolerance of the control supply voltage at DC          | 10 %                                              |
| control supply voltage 1 at DC rated value                               | 110 V                                             |
| operating range factor control supply voltage rated value at DC          |                                                   |
| • initial value                                                          | 0.85                                              |
| • full-scale value                                                       | 1.1                                               |
| operating range factor control supply voltage rated value at AC at 50 Hz |                                                   |
| • initial value                                                          | 0.85                                              |
| • full-scale value                                                       | 1.1                                               |
| operating range factor control supply voltage rated value at AC at 60 Hz |                                                   |
| • initial value                                                          | 0.85                                              |
| • full-scale value                                                       | 1.1                                               |
| control current at AC                                                    |                                                   |
| • at 110 V in standby mode of operation                                  | 16 mA                                             |
| • at 230 V in standby mode of operation                                  | 9 mA                                              |
| • at 110 V when switching on                                             | 55 mA                                             |
| • at 230 V when switching on                                             | 33 mA                                             |
| • at 110 V during operation                                              | 36 mA                                             |
| • at 230 V during operation                                              | 22 mA                                             |
| control current at DC                                                    |                                                   |
| • in standby mode of operation                                           | 6 mA                                              |
| • during operation                                                       | 30 mA                                             |
| inrush current peak                                                      |                                                   |
| • at AC at 110 V                                                         | 1 200 mA                                          |
| • at AC at 230 V                                                         | 2 900 mA                                          |
| • at AC at 110 V at switching on of motor                                | 1 200 mA                                          |
| • at AC at 230 V at switching on of motor                                | 2 900 mA                                          |
| duration of inrush current peak                                          |                                                   |
| • at AC at 110 V                                                         | 1 ms                                              |
| • at AC at 230 V                                                         | 1 ms                                              |
| • at AC at 110 V at switching on of motor                                | 1 ms                                              |
| • at AC at 230 V at switching on of motor                                | 1 ms                                              |
| power loss [W] in auxiliary and control circuit                          |                                                   |
| • in switching state OFF                                                 |                                                   |
| — with bypass circuit                                                    | 2.1 W                                             |
| • in switching state ON                                                  |                                                   |
| — with bypass circuit                                                    | 5.06 W                                            |
| <b>Response times</b>                                                    |                                                   |
| ON-delay time                                                            | 60 ... 90 ms                                      |
| OFF-delay time                                                           | 60 ... 90 ms                                      |
| <b>Power Electronics</b>                                                 |                                                   |
| operational current                                                      |                                                   |
| • at 40 °C rated value                                                   | 0.5 A                                             |
| • at 50 °C rated value                                                   | 0.5 A                                             |
| • at 55 °C rated value                                                   | 0.5 A                                             |
| • at 60 °C rated value                                                   | 0.5 A                                             |
| <b>Installation/ mounting/ dimensions</b>                                |                                                   |
| mounting position                                                        | vertical, horizontal, standing (observe derating) |
| fastening method                                                         | screw and snap-on mounting onto 35 mm DIN rail    |
| height                                                                   | 100 mm                                            |
| width                                                                    | 22.5 mm                                           |
| depth                                                                    | 141.6 mm                                          |
| required spacing                                                         |                                                   |
| • with side-by-side mounting                                             |                                                   |
| — forwards                                                               | 0 mm                                              |
| — backwards                                                              | 0 mm                                              |

|                      |        |
|----------------------|--------|
| — upwards            | 50 mm  |
| — downwards          | 50 mm  |
| — at the side        | 0 mm   |
| ● for grounded parts |        |
| — forwards           | 0 mm   |
| — backwards          | 0 mm   |
| — upwards            | 50 mm  |
| — at the side        | 3.5 mm |
| — downwards          | 50 mm  |

#### Ambient conditions

|                                                                |                                                                                                                         |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| installation altitude at height above sea level maximum        | 4 000 m; For derating see manual                                                                                        |
| <b>ambient temperature</b>                                     |                                                                                                                         |
| ● during operation                                             | -25 ... +60 °C                                                                                                          |
| ● during storage                                               | -40 ... +70 °C                                                                                                          |
| ● during transport                                             | -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                                                                                                       |

#### Communication/ Protocol

|                                             |    |
|---------------------------------------------|----|
| <b>protocol is supported</b>                |    |
| ● PROFINET IO protocol                      | No |
| ● PROFI-safe protocol                       | No |
| <b>product function bus communication</b>   | No |
| protocol is supported AS-Interface protocol | No |

#### Connections/ Terminals

|                                                                   |                                                                                              |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>type of electrical connection</b>                              | screw-type terminals for main circuit, spring-loaded terminals (push-in) for control circuit |
| ● for main current circuit                                        | screw-type terminals                                                                         |
| ● for auxiliary and control circuit                               | spring-loaded terminals (push-in)                                                            |
| <b>wire length for motor unshielded maximum</b>                   | 100 m                                                                                        |
| type of connectable conductor cross-sections for main contacts    |                                                                                              |
| ● solid                                                           | 1x (0,5 ... 4 mm <sup>2</sup> ), 2x (0,5 ... 2,5 mm <sup>2</sup> )                           |
| ● finely stranded with core end processing                        | 1x (0,5 ... 4 mm <sup>2</sup> ), 2x (0,5 ... 1,5 mm <sup>2</sup> )                           |
| <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 ... 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                                                                                    |

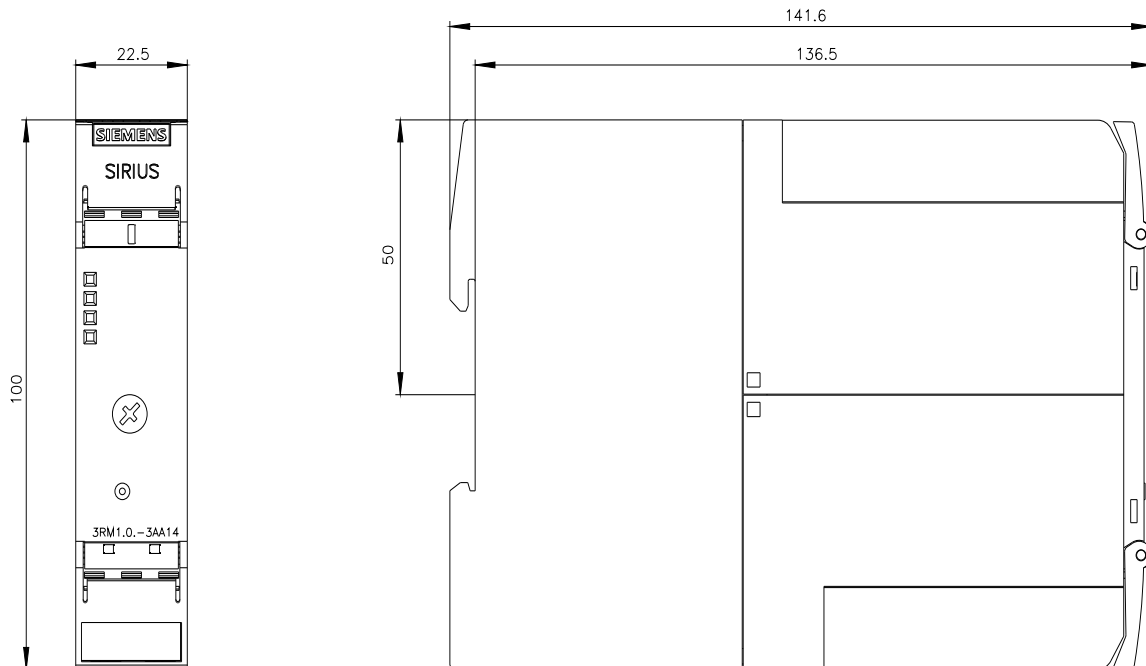
#### UL/CSA ratings

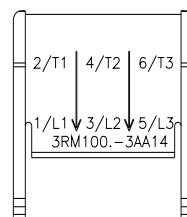
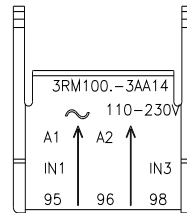
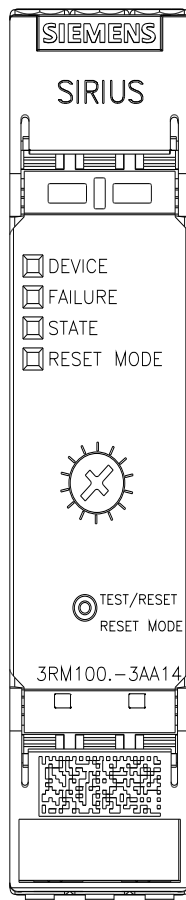
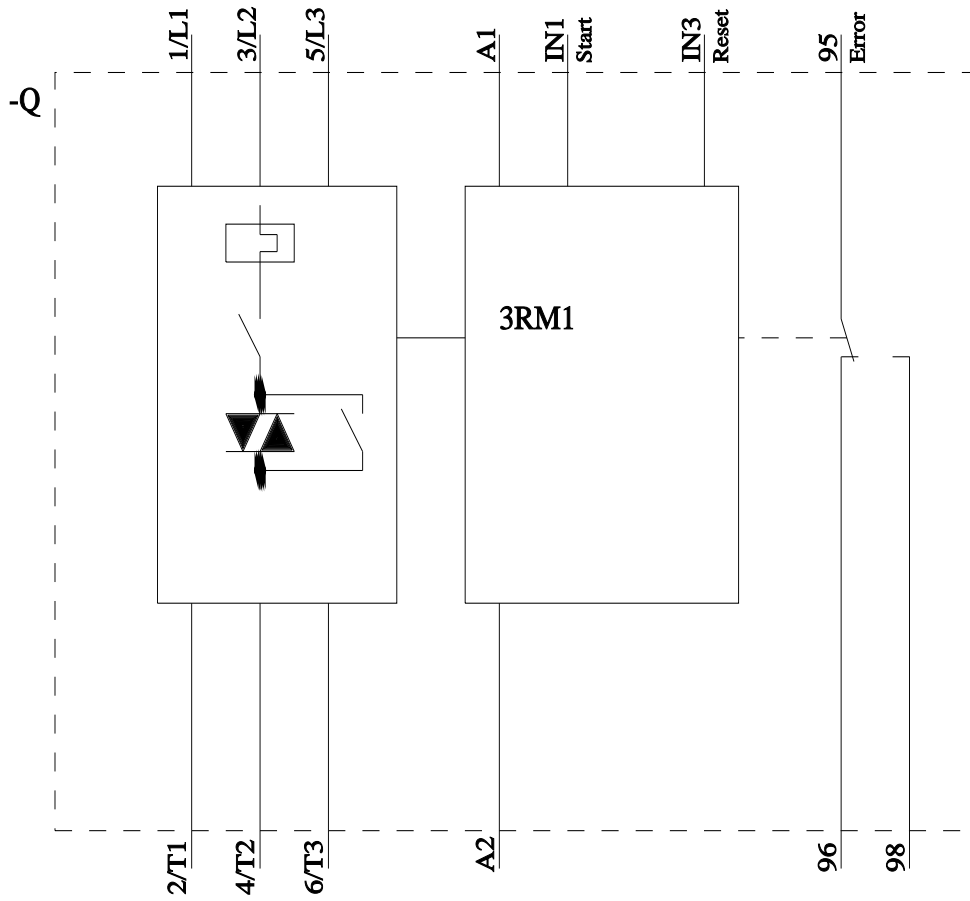
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|--------------------------------------------------------|-------|
| operational current at AC at 480 V according to UL 508 | 0.5 A |
|--------------------------------------------------------|-------|

#### Approvals Certificates

|                          |     |
|--------------------------|-----|
| General Product Approval | EMV |
|--------------------------|-----|



[Confirmation](#)[Environmental Con-  
firmations](#)**Further information****Information on the packaging**<https://support.industry.siemens.com/cs/ww/en/view/109813875>**Information for data generation and storage**<https://support.industry.siemens.com/cs/ww/en/view/109995012>**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=3RM1001-3AA14>**Cax online generator**<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1001-3AA14>**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**<https://support.industry.siemens.com/cs/ww/en/ps/3RM1001-3AA14>**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RM1001-3AA14&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM1001-3AA14&lang=en)



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