



Reversing starter, 3RM1, 500 V, 0 - 0.12 kW, 0.1 - 0.5 A, 24 V DC, screw terminals

|   |   |
|---|---|
| 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   |
| • intrinsic device protection                                 | Yes   |
| • for power supply reverse polarity protection                | No  |
| suitability for operation device connector 3ZY12              | Yes   |
| power loss [W] for rated value of the current                 |   |
| • at AC in hot operating state per pole                       | 0.01 W  |
| • without load current share typical                          | 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         |   |
| • between main and auxiliary circuit                          | 500 V   |
| • between control and auxiliary circuit                       | 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  |   |
| • direct start  | No  |
| • reverse starting  | 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  |   |
| • due to burst according to IEC 61000-4-4                     | 3 kV / 5 kHz  |
| • due to conductor-earth surge according to IEC 61000-4-5     | 2 kV  |
| • due to conductor-conductor surge according to IEC 61000-4-5 | 1 kV  |
| • due to high-frequency radiation according to IEC 61000-4-6  | 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 |
| <b>Electrical Safety</b>  |  |
| protection class IP on the front according to IEC 60529                             | IP20   |
| touch protection on the front according to IEC 60529                                | finger-safe  |
| <b>Main circuit</b>   |  |
| 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 | 0.1 ... 0.5 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  | 0.5 A  |
| • at AC-3 at 400 V rated value  | 0.5 A  |
| • at AC-53a at 400 V at ambient temperature 40 °C rated value                       | 0.5 A  |
| ampacity when starting maximum  | 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   | 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  |
| <b>Control circuit/ Control</b>   |  |
| 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>• in switching state OFF <ul style="list-style-type: none"> <li>— with bypass circuit</li> </ul> </li> </ul>  | 0.6 W   |
| <ul style="list-style-type: none"> <li>• in switching state ON <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>   | 0.5 A   |
| <ul style="list-style-type: none"> <li>• at 50 °C rated value</li> </ul>   | 0.5 A   |
| <ul style="list-style-type: none"> <li>• at 55 °C rated value</li> </ul>   | 0.5 A   |
| <ul style="list-style-type: none"> <li>• at 60 °C rated value</li> </ul>   | 0.5 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>   | screw-type terminals for main circuit, screw-type terminals for control circuit   |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> </ul>   | screw-type terminals  |
| <ul style="list-style-type: none"> <li>• for auxiliary and control circuit</li> </ul>  | screw-type terminals  |
| <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 mm <sup>2</sup> ), 2x (0,5 ... 2,5 mm <sup>2</sup> )  |
| <ul style="list-style-type: none"> <li>• finely stranded with core end processing</li> </ul>   | 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>   |   |
| <ul style="list-style-type: none"> <li>• solid or stranded</li> </ul>  | 0.5 ... 4 mm <sup>2</sup>   |

|   |  |
|---|--|
| <ul style="list-style-type: none"> <li>finely stranded with core end processing</li> </ul>  | 0.5 ... 4 mm <sup>2</sup>  |
| <b>connectable conductor cross-section for auxiliary contacts</b>   |  |
| <ul style="list-style-type: none"> <li>solid or stranded</li> </ul>   | 0.5 ... 2.5 mm <sup>2</sup>  |
| <ul style="list-style-type: none"> <li>finely stranded with core end processing</li> </ul>  | 0.5 ... 2.5 mm <sup>2</sup>  |
| <b>type of connectable conductor cross-sections</b>   |  |
| <ul style="list-style-type: none"> <li>for auxiliary contacts <ul style="list-style-type: none"> <li>— solid</li> </ul> </li> </ul> | 1x (0,5 ... 2,5 mm <sup>2</sup> ), 2x (1,0 ... 1,5 mm <sup>2</sup> ) |
| <ul style="list-style-type: none"> <li>— finely stranded with core end processing</li> </ul>  | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )   |
| <ul style="list-style-type: none"> <li>for AWG cables for auxiliary contacts</li> </ul>   | 1x (20 ... 14), 2x (18 ... 16)                                       |
| <b>AWG number as coded connectable conductor cross section</b>  |  |
| <ul style="list-style-type: none"> <li>for main contacts</li> </ul>   | 20 ... 12  |
| <ul style="list-style-type: none"> <li>for auxiliary contacts</li> </ul>  | 20 ... 14  |

**UL/CSA ratings**

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

**Approvals Certificates**

**General Product Approval**



[Confirmation](#)



|     |                   |       |         |             |
|-----|-------------------|-------|---------|-------------|
| EMV | Test Certificates | other | Railway | Environment |
|-----|-------------------|-------|---------|-------------|



[Type Test Certificates/Test Report](#)

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**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=3RM1201-1AA04>

Cax online generator

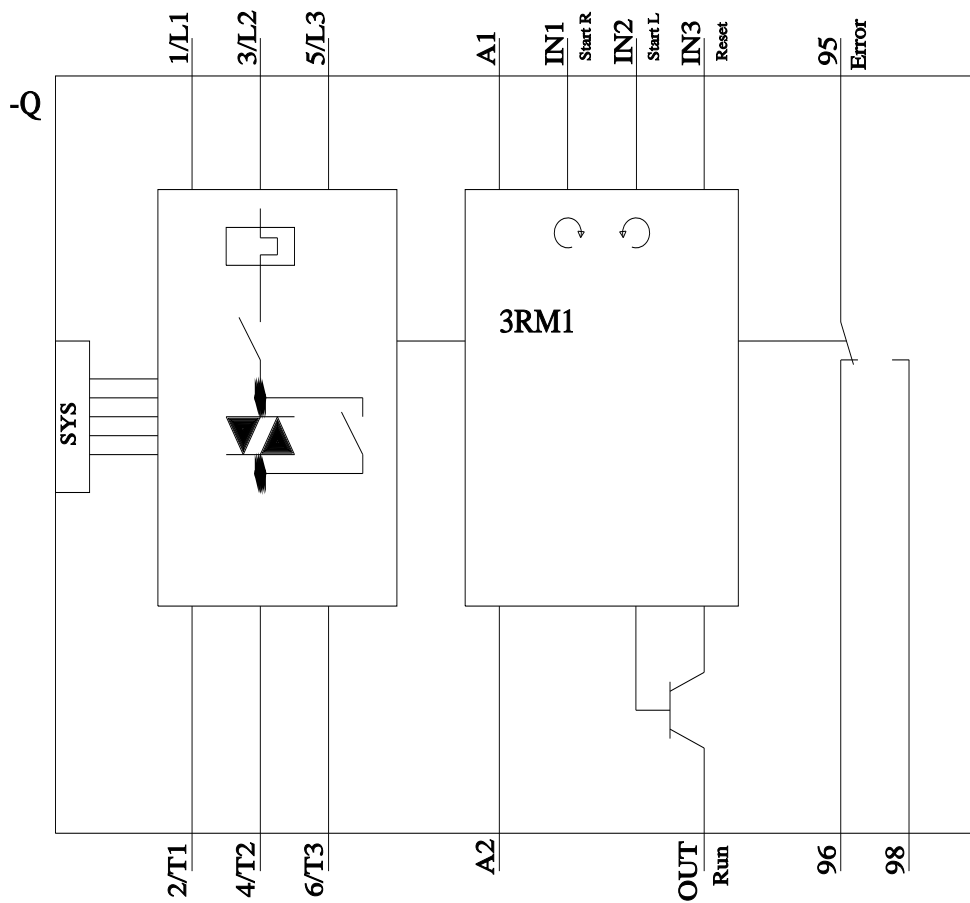
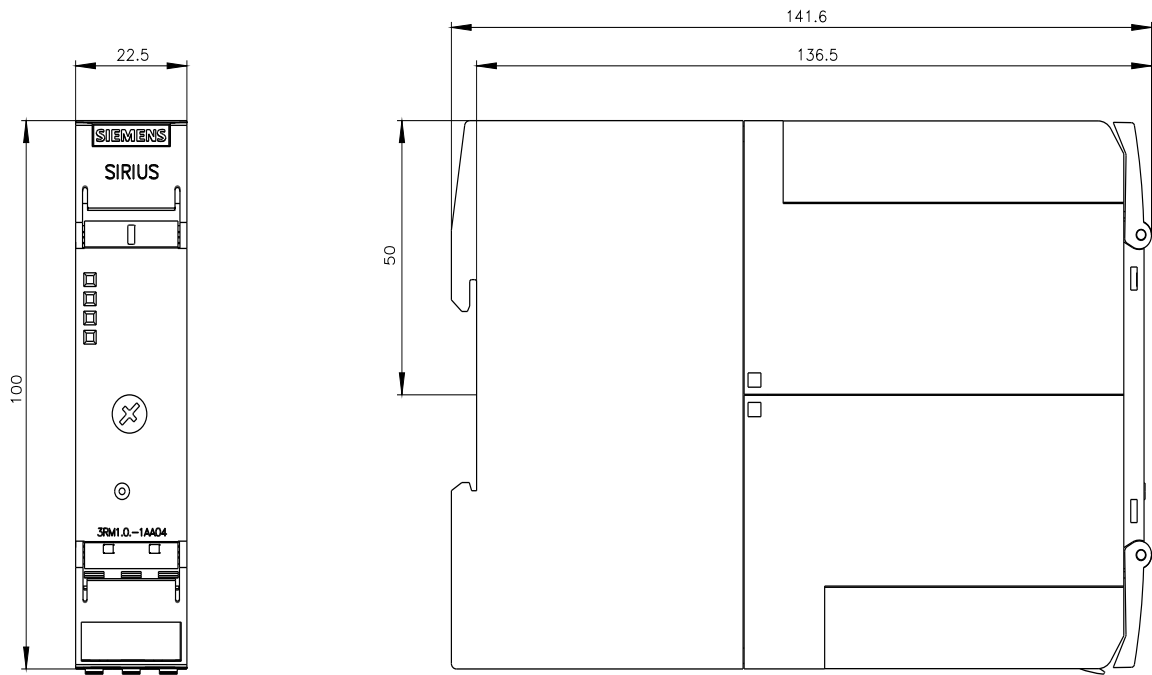
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1201-1AA04>

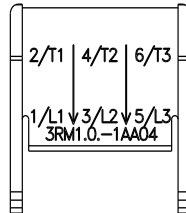
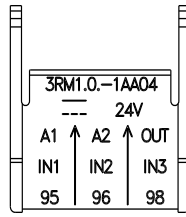
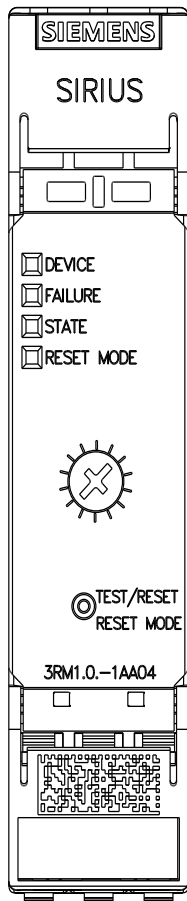
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RM1201-1AA04>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RM1201-1AA04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM1201-1AA04&lang=en)





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