

Reversing starter, 3RM1, 500 V, 0.55 - 3 kW, 1.6 - 7 A, 24 V DC, spring-type 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

General technical data	
Trip class	CLASS 10A
Product function	
• Intrinsic device protection	Yes
Suitability for operation Device connector 3ZY12	Yes
Power loss [W] for rated value of the current at AC in hot operating state per pole	1.13 W
Insulation voltage	
• rated value	500 V
Surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
• between main and auxiliary circuit	500 V
• between control and auxiliary circuit	250 V
Protection class IP	IP20

<b>Shock resistance</b>	6g / 11 ms
<b>Vibration resistance</b>	1 ... 6 Hz, 15 mm; 20 m/s <sup>2</sup> , 500 Hz
<b>Operating frequency maximum</b>	1 1/s
<b>Mechanical service life (switching cycles)</b>	
• typical	30 000 000
<b>Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750</b>	Q
<b>Reference code acc. to DIN EN 81346-2</b>	Q
<b>Reference code acc. to DIN EN 61346-2</b>	Q
<b>Product function</b>	
• direct start	No
• reverse starting	Yes
<b>Product function Short circuit protection</b>	No

### Electromagnetic compatibility

<b>Conducted interference</b>	
• due to burst acc. to IEC 61000-4-4	3 kV / 5 kHz
• due to conductor-earth surge acc. to IEC 61000-4-5	2 kV
• due to conductor-conductor surge acc. to IEC 61000-4-5	1 kV
• due to high-frequency radiation acc. to IEC 61000-4-6	10 V
<b>Electrostatic discharge acc. to IEC 61000-4-2</b>	4 kV contact discharge / 8 kV air discharge
<b>Conducted HF-interference emissions acc. to CISPR11</b>	Class B for the domestic, business and commercial environments
<b>Field-bound HF-interference emission acc. to CISPR11</b>	Class B for the domestic, business and commercial environments

### Safety related data

<b>Protection against electrical shock</b>	finger-safe
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### Main circuit

<b>Number of poles for main current circuit</b>	3
<b>Design of the switching contact as NO contact for signaling function</b>	OUT, electronic, 24 V DC, 15 mA
<b>Adjustable pick-up value current of the current-dependent overload release</b>	1.6 ... 7 A
<b>Minimum load [%]</b>	20 %
<b>Type of the motor protection</b>	solid-state
<b>Operating voltage</b>	
• 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>Operating current</b>	
• at AC at 400 V rated value	7 A
• at AC-53a at 400 V at ambient temperature 40 °C rated value	7 A
<b>Ampacity when starting maximum</b>	56 A
Operating power for three-phase motors at 400 V at 50 Hz	0.55 ... 3 kW
<b>Derating temperature</b>	40 °C

#### Inputs/ Outputs

<b>Input voltage at digital input</b>	
• at DC rated value	24 V
• with signal <0> at DC	0 ... 5 V
• for signal <1> at DC	15 ... 30
<b>Input current at digital input</b>	
• with signal <0> typical	0.001 A
• for signal <1> typical	0.011 A
<b>Input current at digital input</b>	
• for signal <1> at DC	11 mA
• with signal <0> at DC	1 mA
Number of CO contacts for auxiliary contacts	1
<b>Operating current of auxiliary contacts at AC-15 at 230 V maximum</b>	3 A
<b>Operating current of auxiliary contacts at DC-13 at 24 V maximum</b>	1 A

#### Control circuit/ Control

<b>Type of voltage of the control supply voltage</b>	DC
<b>Control supply voltage 1</b>	
• at DC rated value	24 V
<b>Operating range factor control supply voltage rated value at DC</b>	
• initial value	0.8
• Full-scale value	1.25
<b>Control current at DC</b>	
• in standby mode	25 mA
• when switching on	150 mA
• during operation	70 mA

#### Response times

<b>Switch-on delay time</b>	60 ... 90 ms
<b>Off-delay time</b>	60 ... 90 ms

#### Installation/ mounting/ dimensions

<b>Mounting position</b>	vertical, horizontal, standing (observe derating)
<b>Mounting type</b>	screw and snap-on mounting onto 35 mm standard mounting 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 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 50 mm</li> <li>— downwards 50 mm</li> <li>— at the side 0 mm</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 50 mm</li> <li>— at the side 3.5 mm</li> <li>— downwards 50 mm</li> </ul> </li> </ul>	

#### Ambient conditions

<b>Installation altitude at height above sea level</b>	
<ul style="list-style-type: none"> <li>• maximum 4 000 m</li> </ul>	
<b>Ambient temperature</b>	
<ul style="list-style-type: none"> <li>• during operation -25 ... +60 °C</li> <li>• during storage -40 ... +70 °C</li> <li>• during transport -40 ... +70 °C</li> </ul>	
Relative humidity during operation	10 ... 95 %
<b>Air pressure</b>	
<ul style="list-style-type: none"> <li>• acc. to SN 31205 900 ... 1 060 hPa</li> </ul>	

#### Communication/ Protocol

<b>Product function Bus communication</b>	No
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#### Connections/ Terminals

<b>Type of electrical connection</b>	PUSH-IN connection (spring-loaded connection) for main circuit, spring-loaded terminals (push-in) for control circuit
<ul style="list-style-type: none"> <li>• for main current circuit PUSH-IN connection (spring-loaded connection)</li> <li>• for auxiliary and control current circuit spring-loaded terminals (push-in)</li> </ul>	
<b>Type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid 1x (0.5 ... 4 mm<sup>2</sup>)</li> <li>— finely stranded with core end processing 1x (0.5 ... 2.5 mm<sup>2</sup>)</li> <li>— finely stranded without core end processing 1x (0.5 ... 4 mm<sup>2</sup>)</li> </ul> </li> </ul>	

<ul style="list-style-type: none"> <li>• at AWG conductors for main contacts</li> </ul>	1x (20 ... 12)
<b>Connectable conductor cross-section for main contacts</b> <ul style="list-style-type: none"> <li>• single or multi-stranded</li> <li>• finely stranded with core end processing</li> <li>• finely stranded without core end processing</li> </ul>	0.5 ... 4 mm <sup>2</sup> 0.5 ... 2.5 mm <sup>2</sup> 0.5 ... 4 mm <sup>2</sup>
<b>Connectable conductor cross-section for auxiliary contacts</b> <ul style="list-style-type: none"> <li>• single or multi-stranded</li> <li>• finely stranded with core end processing</li> <li>• finely stranded without core end processing</li> </ul>	0.5 ... 1.5 mm <sup>2</sup> 0.5 ... 1 mm <sup>2</sup> 0.5 ... 1.5 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> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>• at AWG conductors for auxiliary contacts</li> </ul>	1x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> ) 1x (0,5 ... 1,0 mm <sup>2</sup> ), 2x (0,5 ... 1,0 mm <sup>2</sup> ) 1x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> ) 1x (20 ... 16), 2x (20 ... 16)
<b>AWG number as coded connectable conductor cross section</b> <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary contacts</li> </ul>	20 ... 12 20 ... 16

### UL/CSA ratings

<b>Yielded mechanical performance [hp]</b> <ul style="list-style-type: none"> <li>• for single-phase AC motor               <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul> </li> <li>• for three-phase AC motor               <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> </ul> </li> </ul>	0.25 hp 0.5 hp 1 hp 1.5 hp 3 hp
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### Certificates/ approvals

General Product Approval	EMC	Declaration of Conformity
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Declaration of Conformity	Test Certificates	other	Railway
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[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Confirmation](#)

[Special Test Certificate](#)

### Further information

**Information- and Downloadcenter (Catalogs, Brochures,...)**

[www.siemens.com/ic10](http://www.siemens.com/ic10)

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RM1207-2AA04>

**Cax online generator**

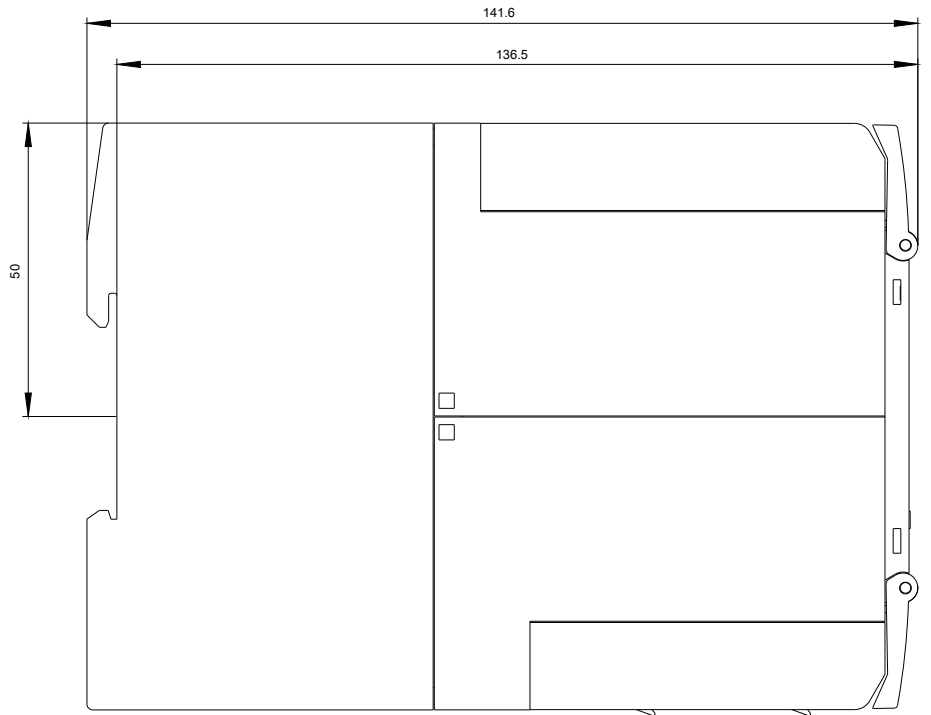
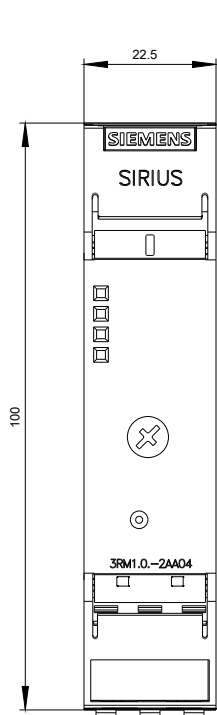
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1207-2AA04>

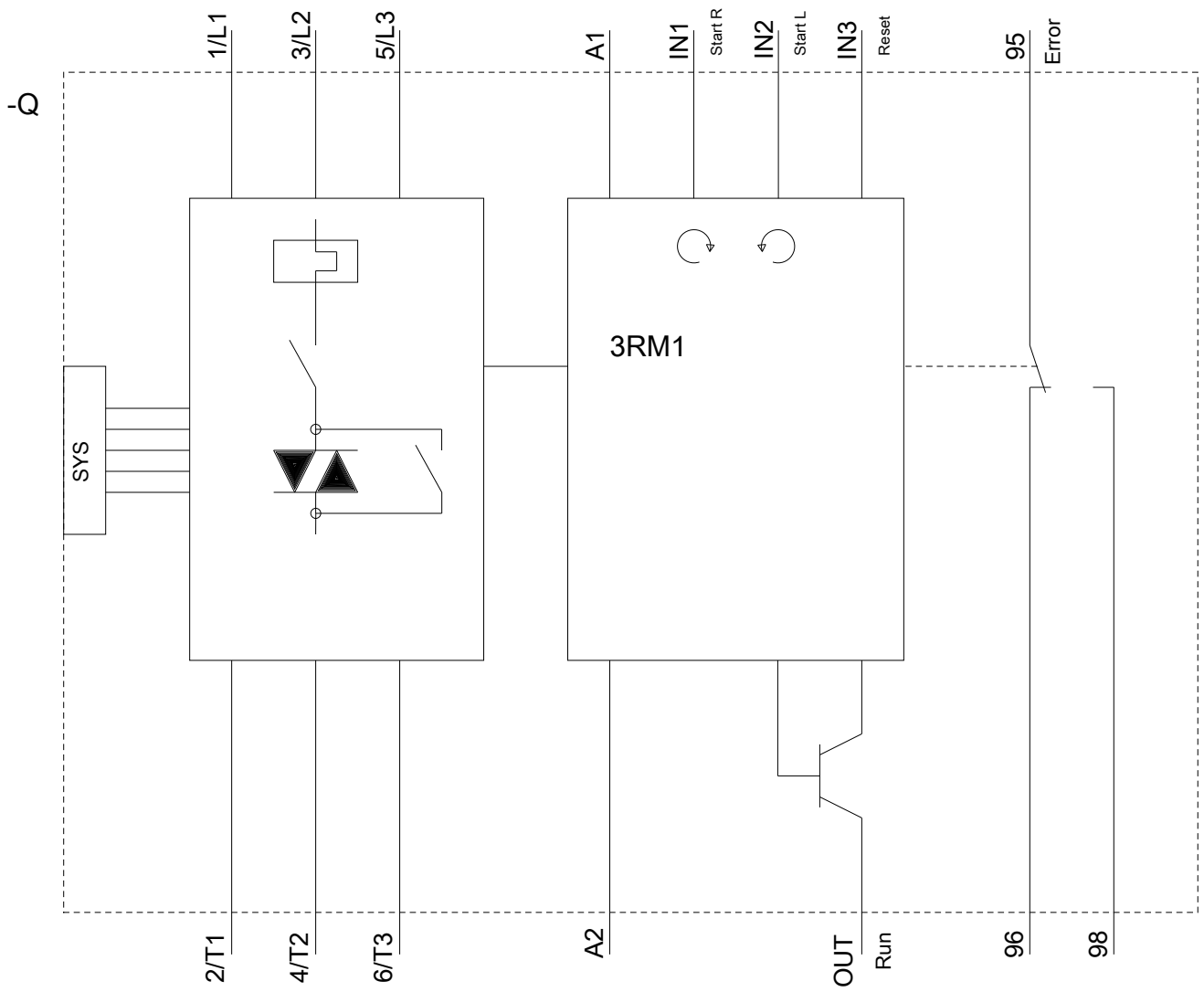
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/3RM1207-2AA04>

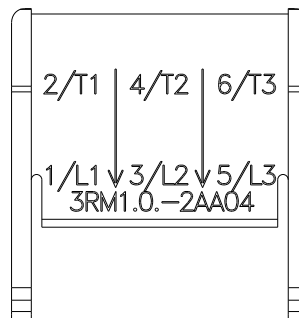
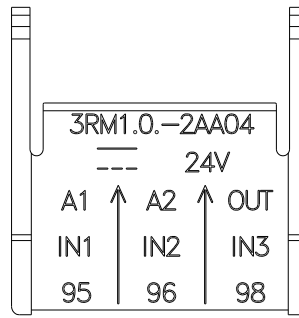
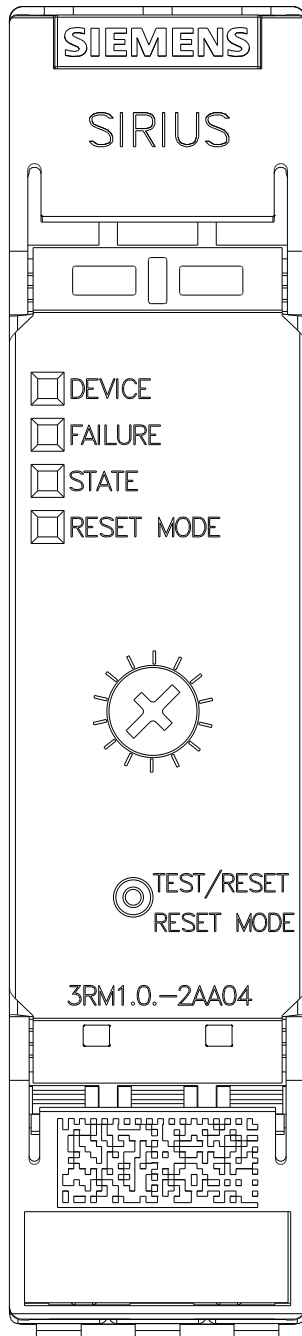
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RM1207-2AA04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM1207-2AA04&lang=en)









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