



Direct starter, 3RM1, 500 V, 0 - 0.12 kW, 0.1 - 0.5 A, 110-230 V AC, screw/spring-type terminals

<b>product brand name</b>	SIRIUS
<b>product category</b>	Motor starter
<b>product designation</b>	Direct-on-line starter
<b>design of the product</b>	with electronic overload protection
<b>product type designation</b>	3RM1
<b>General technical data</b>	
<b>trip class</b>	CLASS 10A
<b>product function</b>	Yes
• intrinsic device protection	Yes
<b>suitability for operation device connector 3ZY12</b>	No
power loss [W] for rated value of the current at AC in hot operating state per pole	0.01 W
insulation voltage rated value	500 V
<b>surge voltage resistance rated value</b>	6 kV
<b>maximum permissible voltage for safe isolation</b>	
• between main and auxiliary circuit	500 V
• between control and auxiliary circuit	250 V
<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
mechanical service life (switching cycles) typical	30 000 000
<b>reference code acc. to IEC 81346-2</b>	Q
Substance Prohibitance (Date)	01.03.2017 00:00:00
<b>product function</b>	Yes
• direct start	Yes
• reverse starting	No
<b>product function short circuit protection</b>	No
<b>Electromagnetic compatibility</b>	
<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 domestic, business and commercial environments; Class A for industrial environments at 110 V DC
<b>field-bound HF interference emission acc. to CISPR11</b>	Class B for domestic, business and commercial environments; Class A

	for industrial environments at 110 V DC
<b>Main circuit</b>	
number of poles for main current circuit	3
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 %
type of the motor protection	solid-state
<ul style="list-style-type: none"> <li>operating voltage rated value</li> </ul>	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	
<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-53a at 400 V at ambient temperature 40 °C rated value</li> </ul>	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	
<ul style="list-style-type: none"> <li>at DC rated value</li> </ul>	110 V
<ul style="list-style-type: none"> <li>with signal &lt;0&gt; at DC</li> </ul>	0 ... 40 V
<ul style="list-style-type: none"> <li>for signal &lt;1&gt; at DC</li> </ul>	79 ... 121
input voltage at digital input	
<ul style="list-style-type: none"> <li>at AC rated value</li> </ul>	110 V
<ul style="list-style-type: none"> <li>with signal &lt;0&gt; at AC</li> </ul>	0 ... 40 V
<ul style="list-style-type: none"> <li>for signal &lt;1&gt; at AC</li> </ul>	93 ... 253 V
input current at digital input	
<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
input current at digital input with signal <0> at AC	
<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
input current at digital input for signal <1> at AC	
<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
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	AC/DC
control supply voltage 1 at AC	
<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
control supply voltage frequency	
<ul style="list-style-type: none"> <li>1 rated value</li> </ul>	50 Hz
<ul style="list-style-type: none"> <li>2 rated value</li> </ul>	60 Hz
<ul style="list-style-type: none"> <li>control supply voltage 1 at DC rated value</li> </ul>	110 V
operating range factor control supply voltage rated value at DC	
<ul style="list-style-type: none"> <li>initial value</li> </ul>	0.85
<ul style="list-style-type: none"> <li>full-scale value</li> </ul>	1.1
operating range factor control supply voltage rated value at AC at 50 Hz	

<ul style="list-style-type: none"> <li>initial value</li> </ul>	0.85
<ul style="list-style-type: none"> <li>full-scale value</li> </ul>	1.1
<b>operating range factor control supply voltage rated value at AC at 60 Hz</b>	
<ul style="list-style-type: none"> <li>initial value</li> </ul>	1.1
<ul style="list-style-type: none"> <li>full-scale value</li> </ul>	0.85
<b>control current at AC</b>	
<ul style="list-style-type: none"> <li>at 110 V in standby mode of operation</li> </ul>	16 mA
<ul style="list-style-type: none"> <li>at 230 V in standby mode of operation</li> </ul>	9 mA
<ul style="list-style-type: none"> <li>at 110 V when switching on</li> </ul>	55 mA
<ul style="list-style-type: none"> <li>at 230 V when switching on</li> </ul>	33 mA
<ul style="list-style-type: none"> <li>at 110 V during operation</li> </ul>	36 mA
<ul style="list-style-type: none"> <li>at 230 V during operation</li> </ul>	22 mA
<b>control current at DC</b>	
<ul style="list-style-type: none"> <li>in standby mode of operation</li> </ul>	6 mA
<ul style="list-style-type: none"> <li>when switching on</li> </ul>	15 mA
<ul style="list-style-type: none"> <li>during operation</li> </ul>	30 mA
<b>Response times</b>	
<b>switch ON delay time</b>	60 ... 90 ms
<b>OFF delay time</b>	60 ... 90 ms
<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 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</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 0 mm 50 mm 50 mm 0 mm  0 mm 0 mm 50 mm 3.5 mm 50 mm
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	4 000 m
relative humidity during operation	10 ... 95 %
<ul style="list-style-type: none"> <li>air pressure acc. to SN 31205</li> </ul>	900 ... 1 060 hPa
<b>Communication/ Protocol</b>	
<b>product function bus communication</b>	No
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	screw-type terminals for main circuit, spring-loaded terminals (push-in) for control circuit
<ul style="list-style-type: none"> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> </ul>	screw-type terminals spring-loaded terminals (push-in)
<b>type of electrical wiring</b>	
<ul style="list-style-type: none"> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> </ul>	1 or 2 conductors 1 or 2 conductors
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>for main contacts <ul style="list-style-type: none"> <li>solid</li> <li>finely stranded with core end processing</li> </ul> </li> <li>at AWG cables for main contacts</li> </ul>	1x (0,5 ... 4 mm <sup>2</sup> ), 2x (0,5 ... 2,5 mm <sup>2</sup> ) 1x (0,5 ... 4 mm <sup>2</sup> ), 2x (0,5 ... 1,5 mm <sup>2</sup> ) 1x (20 ... 12), 2x (20 ... 14)

<b>connectable conductor cross-section for main contacts</b> <ul style="list-style-type: none"> <li>• solid or stranded</li> <li>• finely stranded with core end processing</li> </ul>	0.5 ... 4 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>• solid or 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 cables 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)
<ul style="list-style-type: none"> <li>• AWG number as coded connectable conductor cross section for main contacts</li> <li>• AWG number as coded connectable conductor cross section for auxiliary contacts</li> </ul>	20 ... 12  20 ... 16

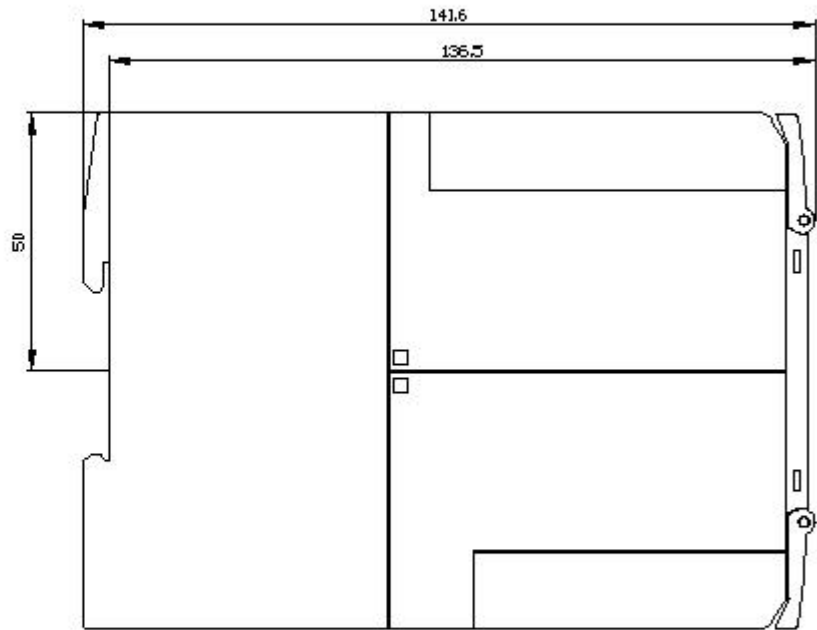
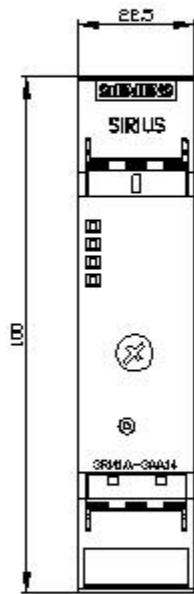
**Certificates/ approvals**

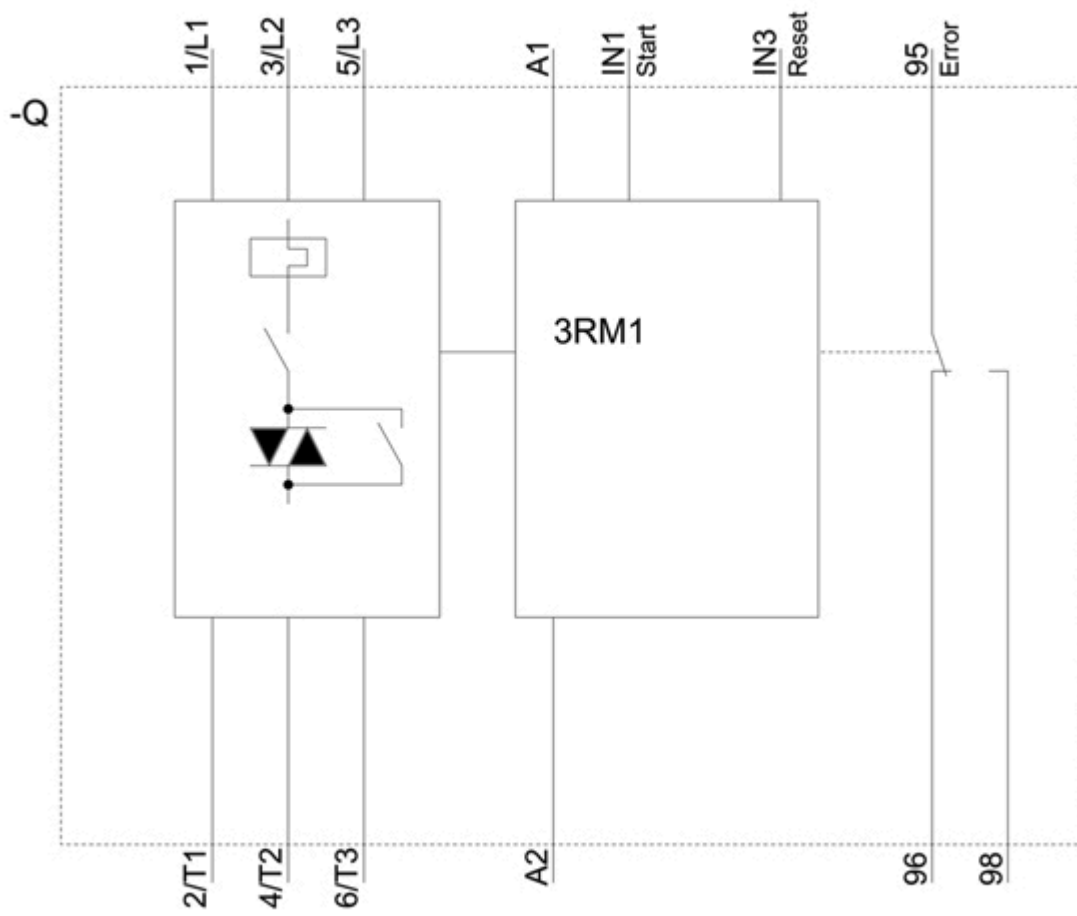
<b>General Product Approval</b>	<b>EMC</b>	<b>Declaration of Conformity</b>
    		<a href="#">Miscellaneous</a>

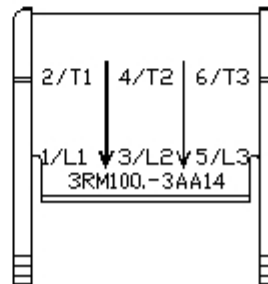
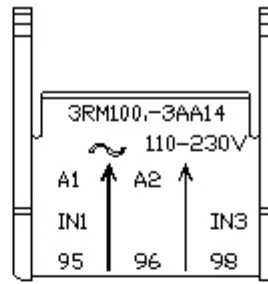
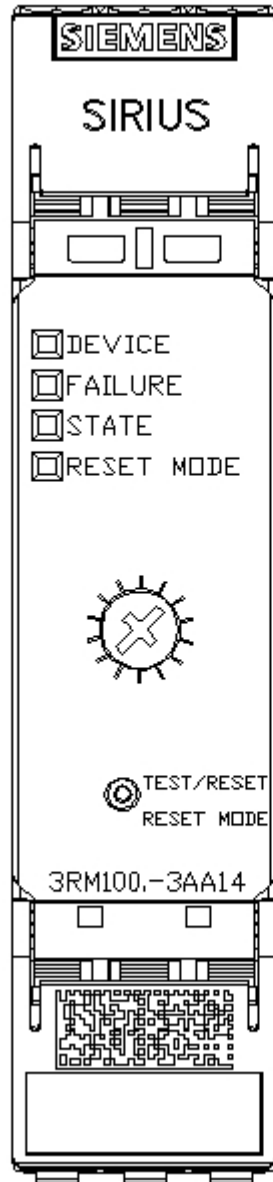
<b>Declaration of Conformity</b>	<b>other</b>
	<a href="#">Confirmation</a>

**Further information**

**Information- and Downloadcenter (Catalogs, Brochures,...)**  
<https://www.siemens.com/ic10>  
**Industry Mall (Online ordering system)**  
<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RM1001-3AA14>  
**Cax online generator**  
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1001-3AA14>  
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<https://support.industry.siemens.com/cs/ww/en/ps/3RM1001-3AA14>  
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