

MOTOR STARTER SIRIUS 3RM1 REVERSING STARTER SAFETY  
500 V; 0,4-2,0 A; 110-230 V AC SCREW-TYPE CONNECTION  
SYSTEM



Figure similar

General technical data:	
product brand name	SIRIUS
Product designation	Motor starter
Design of the product	with reversing functionality and electronic overload protection and safety-related shutdown
Trip class	CLASS 10A
Protection class IP	IP20
Suitability for operation Device connector 3ZY12	No
Product function Intrinsic device protection	Yes
Type of the motor protection	solid-state
Product function Adjustable current limitation	Yes
Installation altitude at height above sea level maximum	2 000 m
Ambient temperature	
• during operation	-25 ... +60 °C
• during transport	-40 ... +70 °C
• during storage	-40 ... +70 °C
Shock resistance	6g / 11 ms
Vibration resistance	1 ... 6 Hz, 15 mm; 20 m/s <sup>2</sup> , 500 Hz

Surge voltage resistance Rated value	6 kV
Insulation voltage Rated value	500 V
Mechanical service life (switching cycles) typical	30 000 000
Conducted interference due to conductor-conductor surge acc. to IEC 61000-4-5	2 kV
Conducted interference due to burst acc. to IEC 61000-4-4	3 kV / 5 kHz
Conducted interference due to high-frequency radiation acc. to IEC 61000-4-6	10 V
Electrostatic discharge acc. to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge
Field-bound HF-interference emission acc. to CISPR11	Class B for domestic, business and commercial environments; Class A for industrial environments at 110 V DC
Conducted HF-interference emissions acc. to CISPR11	Class B for domestic, business and commercial environments; Class A for industrial environments at 110 V DC
maximum permissible voltage for safe isolation	
• between main and auxiliary circuit	500 V
• between control and auxiliary circuit	250 V
Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	Q
Equipment marking acc. to DIN EN 61346-2	Q

#### Safety related data:

Safety Integrity Level (SIL) acc. to IEC 61508	SIL3
Performance level (PL) acc. to EN ISO 13849-1	e
Category acc. to EN ISO 13849-1	4
Safety device type acc. to IEC 61508-2	Type B
Hardware fault tolerance acc. to IEC 61508	1
PFHD with high demand rate acc. to EN 62061	0.00000002 1/h
PFDAvg with low demand rate acc. to IEC 61508	0.000018
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Safe state	Load circuit open
Stop category acc. to DIN EN 60204-1	0
Safe failure fraction (SFF)	99.4 %
MTTFd	75 y
Average diagnostic coverage level (DCavg)	99 %
Function test interval maximum	1 y
Diagnostics test interval by internal test function maximum	600 s
Failure rate [FIT] at rate of recognizable hazardous failures ( $\lambda_{dd}$ )	1 400 FIT
Failure rate [FIT] at rate of non-recognizable hazardous failures ( $\lambda_{du}$ )	16 FIT
Protection against electrical shock	finger-safe
OFF-delay time with safety-related request when switched off via control inputs maximum	65 ms

OFF-delay time with safety-related request when switched off via supply voltage maximum	120 ms
<b>ATEX</b>	
Hardware fault tolerance acc. to IEC 61508 relating to ATEX	0
PFDavg with low demand rate acc. to IEC 61508 relating to ATEX	0.0005
PFHD with high demand rate acc. to EN 62061 relating to ATEX	0.00000005 1/h
Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX	SIL2
T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX	3 y
<b>Main circuit:</b>	
Number of poles for main current circuit	3
Operating voltage Rated value maximum	500 V
Relative symmetrical tolerance of the operating voltage	10 %
Operating frequency	
• 1 Rated value	50 Hz
• 2 Rated value	60 Hz
Relative symmetrical tolerance of the operating frequency	10 %
Operating current at AC-53a at 400 V at ambient temperature 40 °C Rated value	2 A
Minimum load [% of IM]	20 %
Active power loss typical	0.3 W
Adjustable response value current of the current-dependent overload release	0.4 ... 2 A
Operating power for three-phase motors at 400 V at 50 Hz	0.09 ... 0.75 kW
Operating frequency maximum	1 1/s
<b>Control circuit/ Control:</b>	
Type of voltage of the control supply voltage	AC/DC
Control supply voltage 1	
• at DC Rated value	110 V
• at AC	
— at 50 Hz	110 ... 230 V
— at 60 Hz	110 ... 230 V
Operating range factor control supply voltage rated value	
• at DC	0.85 ... 1.1
• at AC	

— at 50 Hz	0.85 ... 1.1
— at 60 Hz	1.1 ... 0.85
<b>Control current</b>	
• at AC	
— at 230 V	
— in standby mode	6 mA
— during operation	14 mA
— when switching on	25 mA
— at 110 V	
— in standby mode	8 mA
— during operation	25 mA
— when switching on	40 mA
• at DC	
— in standby mode	4 mA
— during operation	30 mA
— when switching on	13 mA
<b>Input voltage at digital input</b>	
• for signal <1>	
— at DC	79 ... 121 V
— at AC	93 ... 253 V
• with signal <0>	
— at AC	0 ... 40 V
— at DC	0 ... 40 V
<b>Input current at digital input</b>	
• for signal <1>	
— at AC at 230 V	2.3 mA
— at AC at 110 V	1.1 mA
— at DC	1.5 mA
• with signal <0>	
— at AC at 230 V	0.4 mA
— at AC at 110 V	0.2 mA
— at DC	0.25 mA
<b>Switch-on delay time</b>	90 ... 120 ms
<b>OFF-delay time</b>	60 ... 90 ms
<b>Auxiliary circuit:</b>	
<b>Number of CO contacts for auxiliary contacts</b>	1
<b>Operating current of the auxiliary contacts</b>	
• at AC-15 at 230 V maximum	3 A
• at DC-13 at 24 V maximum	1 A
<b>Installation/ mounting/ dimensions:</b>	
<b>mounting position</b>	vertical, horizontal, standing

<b>Mounting type</b>	screw and snap-on mounting onto 35 mm standard mounting rail
<b>Width</b>	22.5 mm
<b>Height</b>	100 mm
<b>Depth</b>	141.6 mm

#### Connections/ Terminals:

<b>Type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control current circuit</li> </ul>	<p>screw-type terminals</p> <p>screw-type terminals</p>
<b>Type of connectable conductor cross-section for main contacts</b>	
<ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded</li> <li>— with core end processing</li> </ul>	<p>1x (0,5 ... 4 mm<sup>2</sup>), 2x (0,5 ... 2,5 mm<sup>2</sup>)</p> <p>1x (0,5 ... 2,5 mm<sup>2</sup>), 2x (0,5 ... 1,5 mm<sup>2</sup>)</p>
<b>Type of connectable conductor cross-section for AWG conductors for main contacts</b>	1x (20 ... 12), 2x (20 ... 14)
<b>Type of connectable conductor cross-section for auxiliary contacts</b>	
<ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded</li> <li>— with core end processing</li> </ul>	<p>1x (0,5 ... 2,5 mm<sup>2</sup>), 2x (1,0 ... 1,5 mm<sup>2</sup>)</p> <p>1x (0,5 ... 2,5 mm<sup>2</sup>), 2x (0,5 ... 1 mm<sup>2</sup>)</p>
<b>Type of connectable conductor cross-section for AWG conductors for auxiliary contacts</b>	1x (20 ... 14), 2x (18 ... 16)

#### UL ratings:

<b>Full-load current (FLA) for three-phase AC motor at 480 V Rated value</b>	2 A
<b>yielded mechanical performance [hp]</b>	
<ul style="list-style-type: none"> <li>• for single-phase AC motor</li> <li>— at 230 V Rated value</li> <li>• for three-phase AC motor</li> <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>	<p>0.125 hp</p> <p>0.333 hp</p> <p>0.333 hp</p> <p>0.75 hp</p>

#### Certificates/ approvals:

General Product Approval	For use in hazardous locations	Functional Safety/Safety of Machinery	Declaration of Conformity
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[Baumusterbescheinigung](#)



Test Certificates	other
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### Further information

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

<http://www.siemens.com/industrial-controls/catalogs>

#### Industry Mall (Online ordering system)

<http://www.siemens.com/industrymall>

#### Cax online generator

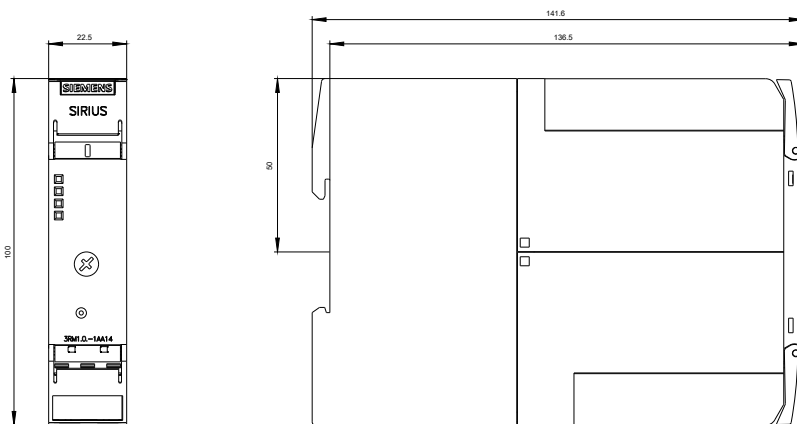
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3RM13021AA14>

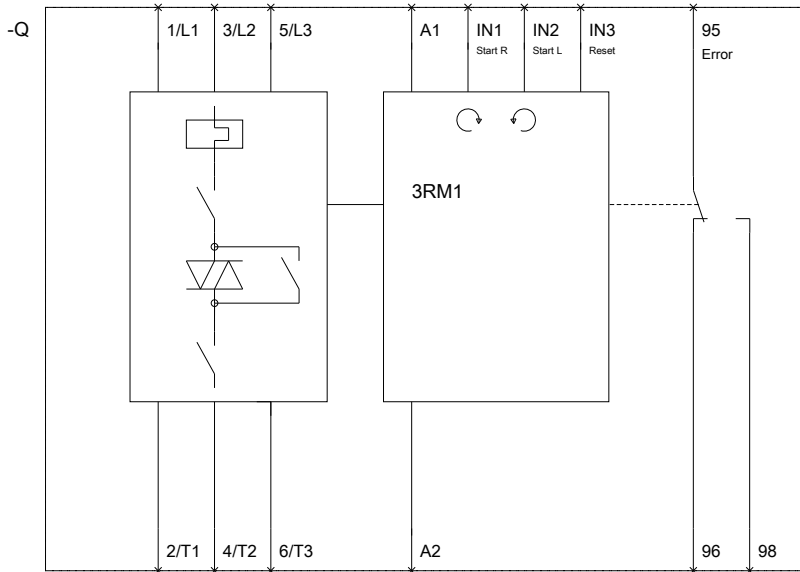
#### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RM13021AA14>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mfb=3RM13021AA14&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3RM13021AA14&lang=en)





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