

MOTOR STARTER SIRIUS 3RM1 REVERSE STARTER SAFETY  
500 V; 0,4 - 2,0 A; 24 V DC PUSH-IN CONNECTION SYSTEM



Figure similar

General technical data	
product brandname	SIRIUS
Product category	Motor starter
Product designation	Failsafe reversing starters
Design of the product	With electronic overload protection and safety-related disconnection
Trip class	CLASS 10A
Protection class IP	IP20
Suitability for operation Device connector 3ZY12	Yes
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

Relative humidity during operation	10 ... 95 %
Air pressure acc. to SN 31205	900 ... 1 060 hPa
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	
<ul style="list-style-type: none"> <li>• due to conductor-conductor surge acc. to IEC 61000-4-5</li> </ul>	2 kV
<ul style="list-style-type: none"> <li>• due to conductor-earth surge acc. to IEC 61000-4-5</li> </ul>	4 kV signal lines 2 kV
<ul style="list-style-type: none"> <li>• due to burst acc. to IEC 61000-4-4</li> </ul>	3 kV / 5 kHz
<ul style="list-style-type: none"> <li>• due to high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	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 the domestic, business and commercial environments
Conducted HF-interference emissions acc. to CISPR11	Class B for the domestic, business and commercial environments
maximum permissible voltage for safe isolation	
<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
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

#### ATEX

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

#### Main circuit

Number of poles for main current circuit	3
Operating voltage rated value	48 ... 500 V
Relative symmetrical tolerance of the operating voltage	10 %
Operating frequency <ul style="list-style-type: none"> <li>• 1 rated value</li> <li>• 2 rated value</li> </ul>	50 Hz 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 %
Power loss [W] typical	0.3 W
Adjustable pick-up 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

#### Control circuit/ Control

Type of voltage of the control supply voltage	DC
Control supply voltage 1 <ul style="list-style-type: none"> <li>• at DC rated value</li> </ul>	24 V

<b>Operating range factor control supply voltage rated value</b>	
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	0.8 ... 1.25
<b>Control current</b>	
<ul style="list-style-type: none"> <li>• at DC <ul style="list-style-type: none"> <li>— in standby mode</li> <li>— during operation</li> <li>— when switching on</li> </ul> </li> </ul>	13 mA 57 mA 150 mA
<b>Input voltage at digital input</b>	
<ul style="list-style-type: none"> <li>• for signal &lt;1&gt; <ul style="list-style-type: none"> <li>— at DC</li> </ul> </li> <li>• with signal &lt;0&gt; <ul style="list-style-type: none"> <li>— at DC</li> </ul> </li> </ul>	15 ... 30 V 0 ... 5 V
<b>Input current at digital input</b>	
<ul style="list-style-type: none"> <li>• for signal &lt;1&gt; <ul style="list-style-type: none"> <li>— at DC</li> </ul> </li> <li>• with signal &lt;0&gt; <ul style="list-style-type: none"> <li>— at DC</li> </ul> </li> </ul>	8 mA 1 mA
<b>Switch-on delay time</b>	90 ... 120 ms
<b>Off-delay time</b>	40 ... 55 ms

#### Auxiliary circuit

<b>Number of CO contacts for auxiliary contacts</b>	1
<b>Operating current of auxiliary contacts</b>	
<ul style="list-style-type: none"> <li>• at AC-15 at 230 V maximum</li> <li>• at DC-13 at 24 V maximum</li> </ul>	3 A 1 A

#### Installation/ mounting/ dimensions

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

Type of connectable conductor cross-sections at AWG conductors for main contacts	1x (20 ... 12)
Type of connectable conductor cross-sections 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> )
— without core end processing	1x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
Type of connectable conductor cross-sections at AWG conductors for auxiliary contacts	1x (20 ... 16), 2x (20 ... 16)

<b>UL ratings</b>	
Full-load current (FLA) for three-phase AC motor at 480 V rated value	2 A
Yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 230 V rated value	0.125 hp
• for three-phase AC motor	
— at 200/208 V rated value	0.333 hp
— at 220/230 V rated value	0.333 hp
— at 460/480 V rated value	0.75 hp

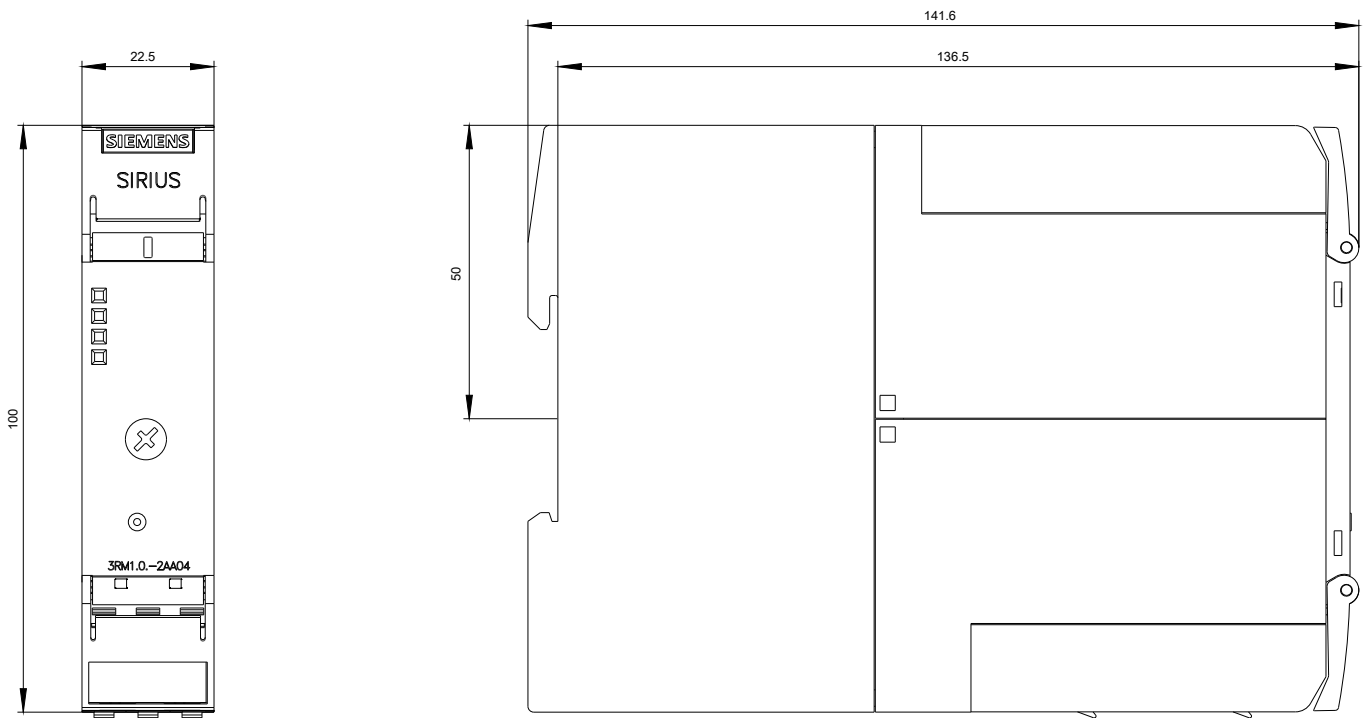
### Certificates/approvals

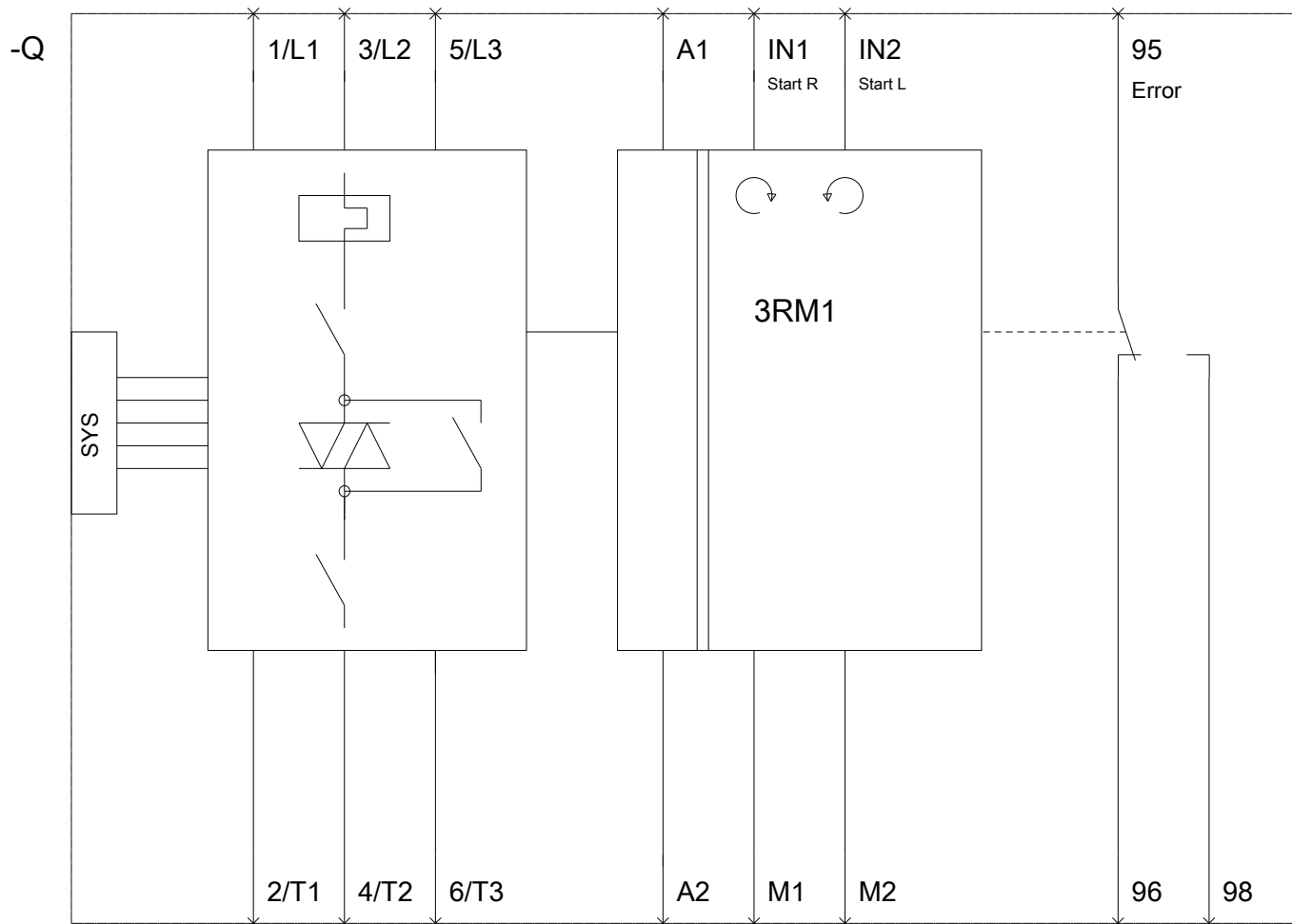
<b>General Product Approval</b>	<b>For use in hazardous locations</b>	<b>Functional Safety/Safety of Machinery</b>
 CCC  CSA  UL  EAC  ATEX		<a href="#">Baumusterbescheinigung</a>

<b>Declaration of Conformity</b>	<b>Test Certificates</b>	<b>other</b>
 EG-Konf.	<a href="#">Typprüfbescheinigung/Werkszeugnis</a> <a href="#">spezielle Prüfbescheinigung</a> <a href="#">n</a>	<a href="#">Bestätigungen</a> <a href="#">Umweltbestätigung</a>

### Further information

- Information- and Downloadcenter (Catalogs, Brochures,...)**  
<http://www.siemens.com/industrial-controls/catalogs>
- Industry Mall (Online ordering system)**  
<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RM1302-2AA04>
- Cax online generator**  
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1302-2AA04>





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