

Motor starter SIRIUS 3RM1 Reversing starter SAFETY 500 V; 0.1 - 0.5 A; 24 V DC Screw connection system



Figure similar

General technical data	
Product brand name	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
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 ² , 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"> • due to conductor-conductor surge acc. to IEC 61000-4-5 	2 kV
<ul style="list-style-type: none"> • due to conductor-earth surge acc. to IEC 61000-4-5 	4 kV signal lines 2 kV
<ul style="list-style-type: none"> • due to burst acc. to IEC 61000-4-4 	3 kV / 5 kHz
<ul style="list-style-type: none"> • 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 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"> • between main and auxiliary circuit 	500 V
<ul style="list-style-type: none"> • between control and auxiliary circuit 	250 V
Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	Q
Reference code acc. to DIN EN 61346-2	Q

Safety related data

Safety Integrity Level (SIL) acc. to IEC 61508	3
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 (λ_{dd})	1 400 FIT
Failure rate [FIT] at rate of non-recognizable hazardous failures (λ_{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	
• 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	0.5 A
Minimum load [%]	20 %
Power loss [W] typical	0.02 W
Adjustable pick-up value current of the current-dependent overload release	0.1 ... 0.5 A
Ampacity when starting maximum	4 A
Operating power for three-phase motors at 400 V at 50 Hz	0 ... 0.12 kW
Operating frequency maximum	1 1/s

Control circuit/ Control

Type of voltage of the control supply voltage	DC
Control supply voltage 1	
• at DC rated value	24 V

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

Auxiliary circuit

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

Installation/ mounting/ dimensions

Mounting position	vertical, horizontal, standing (observe derating)
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail
Width	22.5 mm
Height	100 mm
Depth	141.6 mm

Connections/Terminals


Type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit • for auxiliary and control current circuit 	screw-type terminals screw-type terminals
Type of connectable conductor cross-sections for main contacts	
<ul style="list-style-type: none"> • solid • finely stranded <ul style="list-style-type: none"> — with core end processing 	1x (0,5 ... 4 mm ²), 2x (0,5 ... 2,5 mm ²) 1x (0,5 ... 4 mm ²), 2x (0,5 ... 1,5 mm ²)

Type of connectable conductor cross-sections at AWG conductors for main contacts	1x (20 ... 12), 2x (20 ... 14)
Type of connectable conductor cross-sections for auxiliary contacts	1x (0,5 ... 2,5 mm ²), 2x (1,0 ... 1,5 mm ²)
<ul style="list-style-type: none"> • solid • finely stranded — with core end processing 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)
Type of connectable conductor cross-sections at AWG conductors for auxiliary contacts	1x (20 ... 14), 2x (18 ... 16)

UL ratings	
Full-load current (FLA) for three-phase AC motor at 480 V rated value	0.5 A

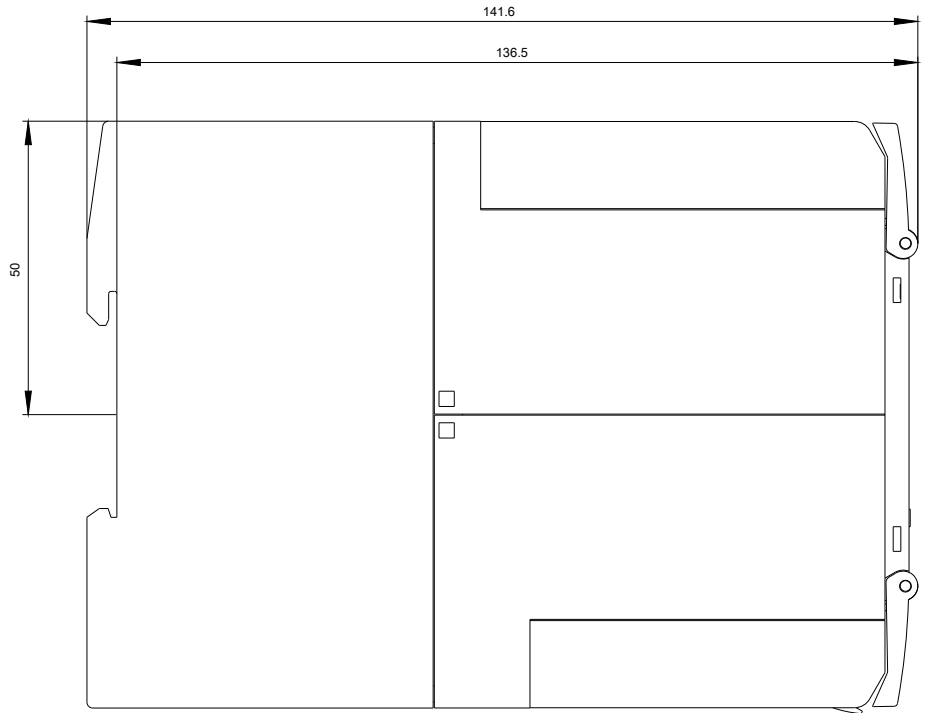
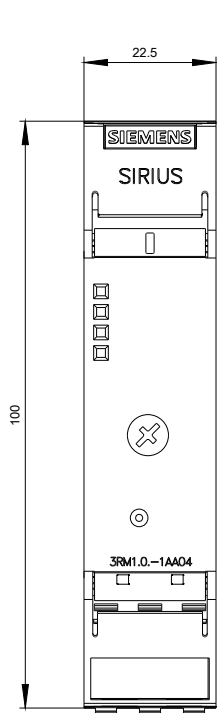
Certificates/approvals

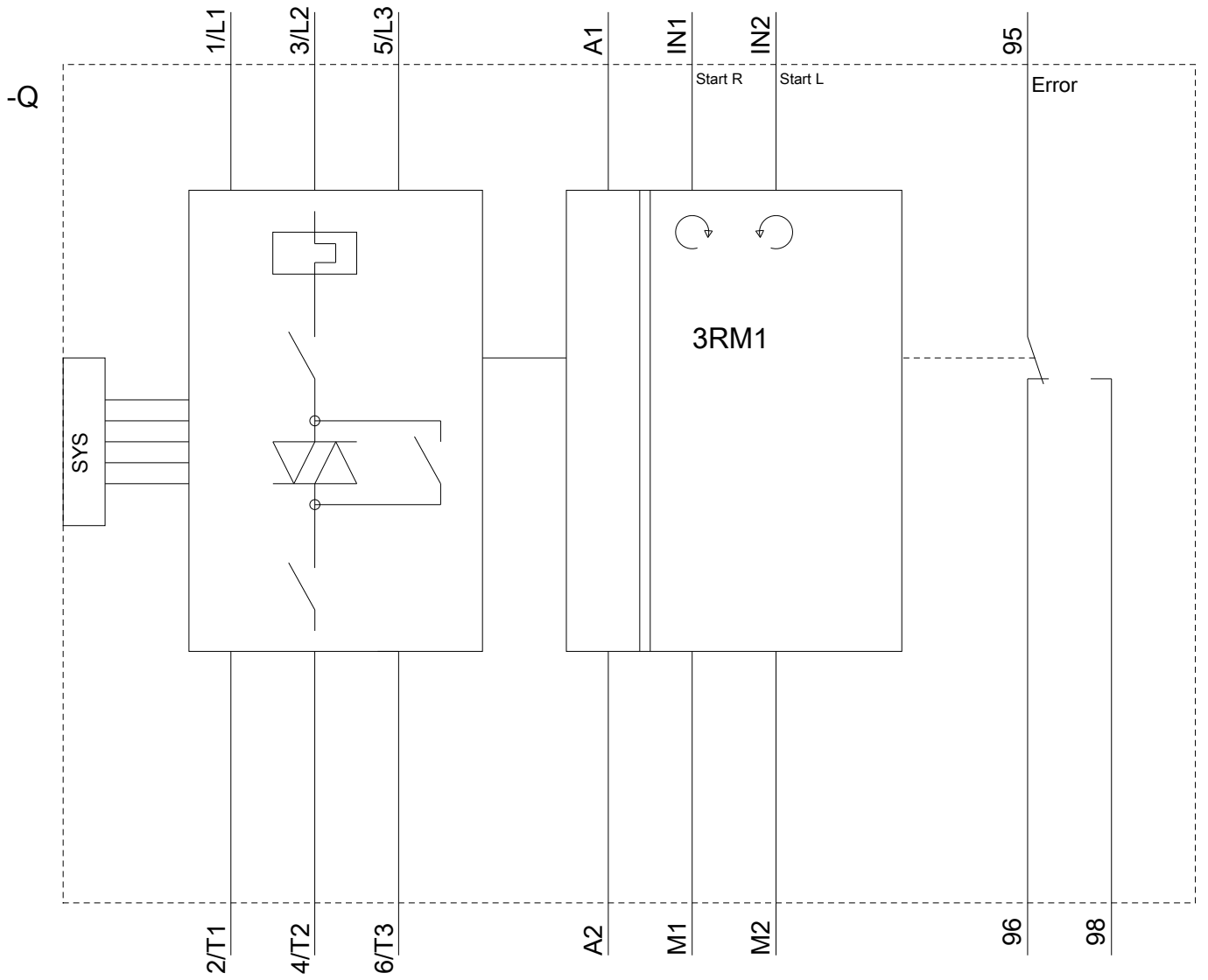
General Product Approval	For use in hazardous locations	Functional Safety/Safety of Machinery
 CCC	 CSA	 UL
 EAC		 ATEX
Type Examination		

Declaration of Conformity	Test Certificates	other
 EG-Konf.	Type Test Certificates/Test Report	Special Test Certificate
		Confirmation

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=3RM1301-1AA04>
- Cax online generator**
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1301-1AA04>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
<https://support.industry.siemens.com/cs/ww/en/ps/3RM1301-1AA04>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM1301-1AA04&lang=en





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