SIEMENS

Data sheet 3RM1307-1AA04

MOTOR STARTER SIRIUS 3RM1 REVERSING STARTER SAFETY 500 V; 1,6 - 7,0 A; 24 V DC 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	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
Shock resistance	6g / 11 ms
Vibration resistance	1 ... 6 Hz, 15 mm; 20 m/s², 500 Hz

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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 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	
• 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 (λdd)	1 400 FIT
Failure rate [FIT] at rate of non-recognizable hazardous failures (λdu)	16 FIT
Protection against electrical shock	finger-safe
OFF-delay time with safety-related request when switched off via control inputs maximum	65 ms

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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 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	7 A
Derating temperature	40 °C
Minimum load [% of IM]	20 %
Active power loss typical	3.4 W
Adjustable response value current of the current-dependent overload release	1.6 ... 7 A
Operating power for three-phase motors at 400 V at 50 Hz	0.55 ... 3 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	
• at DC	0.8 ... 1.25
Control current	
• at DC	
— in standby mode	13 mA

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— during operation	57 mA
— when switching on	150 mA
Input voltage at digital input	
• for signal <1>	
— at DC	15 ... 30 V
• with signal <0>	
— at DC	0 ... 5 V
Input current at digital input	
• for signal <1>	
— at DC	8 mA
• with signal <0>	
— at DC	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 the auxiliary contacts	
• at AC-15 at 230 V maximum	3 A
• at DC-13 at 24 V maximum	1 A

Installation/ mounting/ dimensions:	
mounting position	vertical, horizontal, standing
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	
• for main current circuit	screw-type terminals
• for auxiliary and control current circuit	screw-type terminals
Type of connectable conductor cross-section for main contacts	
• solid	1x (0,5 ... 4 mm²), 2x (0,5 ... 2,5 mm²)
• finely stranded	
— with core end processing	1x (0,5 ... 2,5 mm²), 2x (0,5 ... 1,5 mm²)
Type of connectable conductor cross-section for AWG conductors for main contacts	1x (20 ... 12), 2x (20 ... 14)
Type of connectable conductor cross-section for auxiliary contacts	
• solid	1x (0,5 ... 2,5 mm²), 2x (1,0 ... 1,5 mm²)
• finely stranded	
— with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1 mm²)

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Type of connectable conductor cross-section for 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	6.1 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V Rated value	0.25 hp
— at 230 V Rated value	0.5 hp
• for three-phase AC motor	
— at 200/208 V Rated value	1 hp
— at 220/230 V Rated value	1.5 hp
— at 460/480 V Rated value	3 hp

Certificates/ approvals:

General Product Approval			For use in hazardous locations	Functional Safety/Safety of Machinery	Declaration of Conformity
CCC	UL	EAC	ATEX	Baumusterbescheinigung	EG-Konf.

Test Certificates		other	
Typprüfbescheinigung/Werkszeugnis	spezielle Prüfbescheinigungen	Bestätigungen	Umweltbestätigung

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

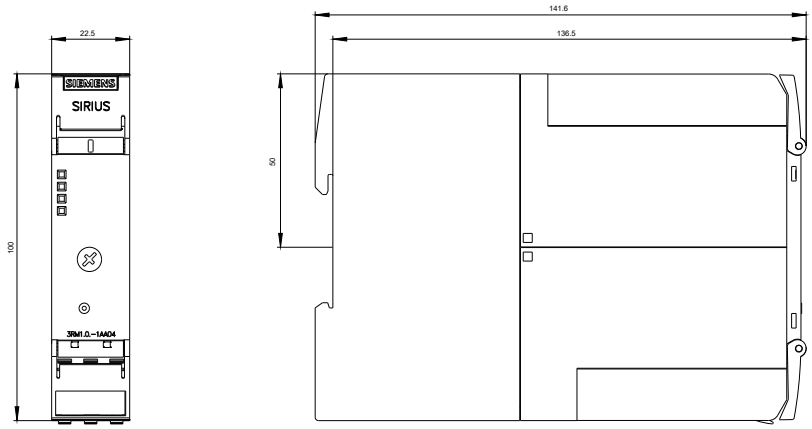
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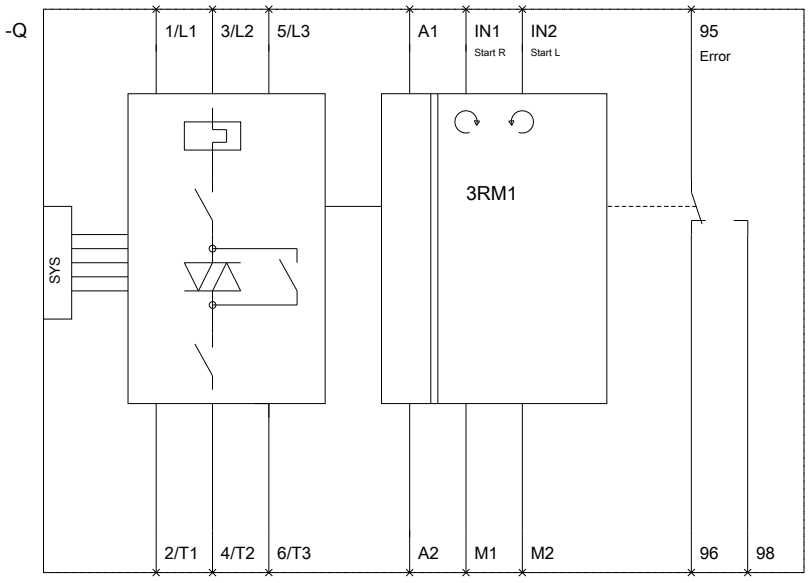
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Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RM13071AA04

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM13071AA04&lang=en

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