SIEMENS

Data sheet 3RM1101-1AA14

Motor starter SIRIUS 3RM1 DOL starter SAFETY 500 V; 0.1-0.5 A; 110-230 V AC Screw connection system

General technical data	
Product brand name	SIRIUS
Product category	Motor starter
Product designation	Fail-safe direct starter
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	No
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/s², 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
• due to conductor-earth surge acc. to IEC 61000-4-5	4 kV signal lines 2 kV
• due to burst acc. to IEC 61000-4-4	3 kV / 5 kHz
• 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
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 (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
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	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
Control current	
• 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
Input voltage at digital input	
• 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
Input current at digital input	
• 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
Switch-on delay time	90 ... 120 ms
Off-delay time	60 ... 90 ms

Auxiliary circuit

Number of CO contacts for auxiliary contacts	1
Operating current of 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-sections for main contacts	
• solid	1x (0,5 ... 4 mm²), 2x (0,5 ... 2,5 mm²)
• finely stranded	

— with core end processing	1x (0,5 … 4 mm²), 2x (0,5 … 1,5 mm²)
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	
• 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)
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

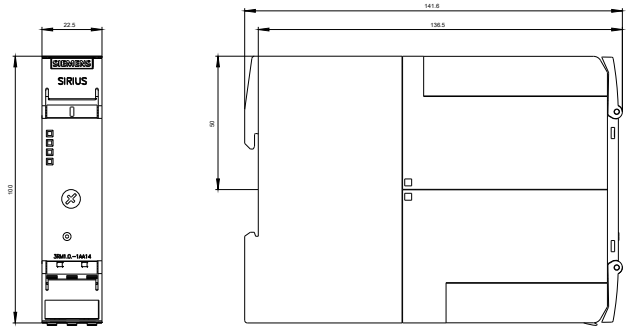
Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

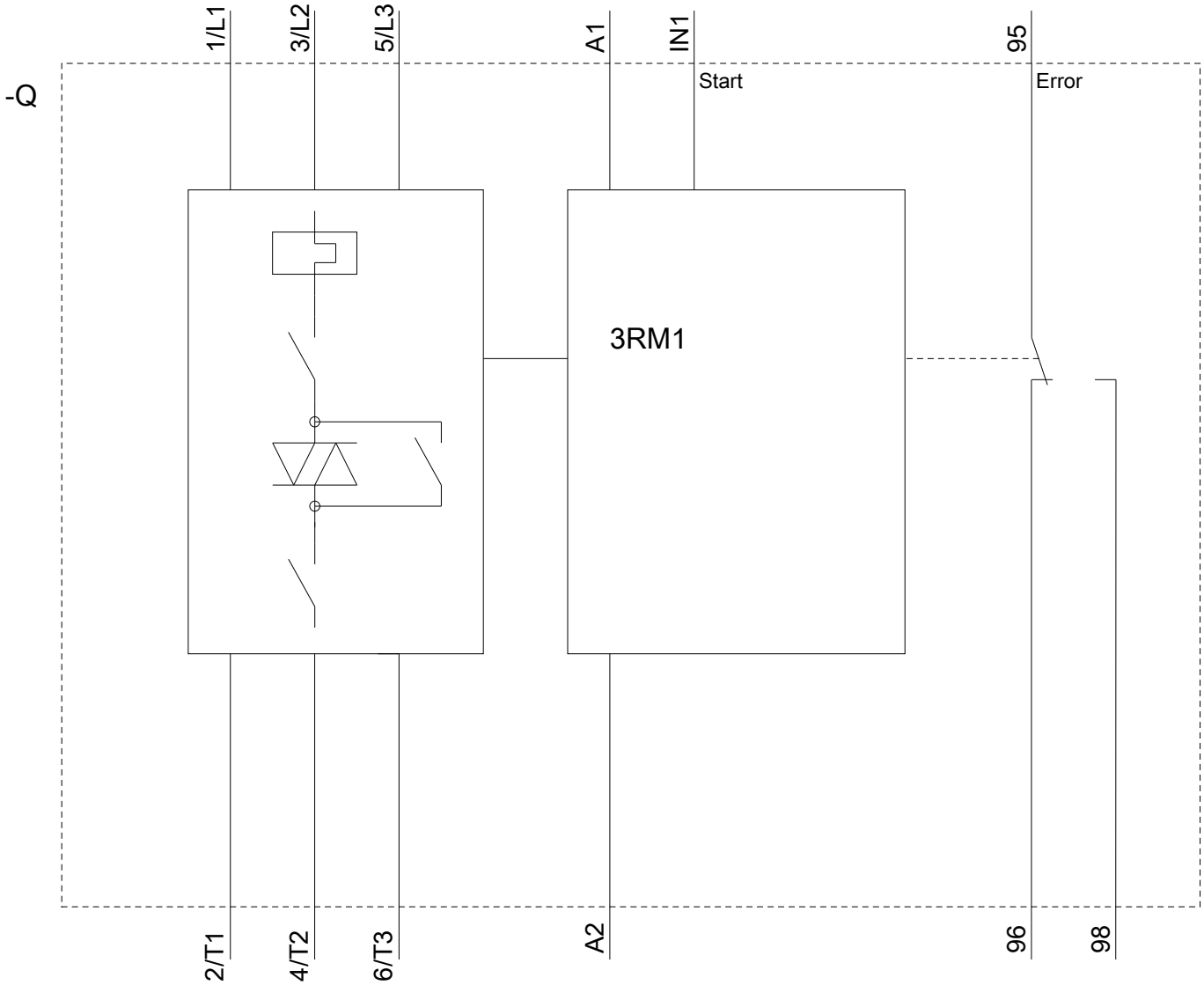
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RM1101-1AA14

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1101-1AA14

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RM1101-1AA14

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM1101-1AA14&lang=en





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