

Motor starter SIRIUS 3RM1 DOL starter SAFETY 500 V; 1.6 - 7.0 A;
24 V DC Screw connection system



Figure similar

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	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	7 A
Derating temperature	40 °C
Minimum load [%]	20 %
Power loss [W] typical	3.4 W
Adjustable pick-up value current of the current-dependent overload release	1.6 ... 7 A
Ampacity when starting maximum	56 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	

<ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> — 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	6.1 A
Yielded mechanical performance [hp]	
<ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value — at 230 V rated value • for three-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value 	0.25 hp 0.5 hp 1 hp 1.5 hp 3 hp

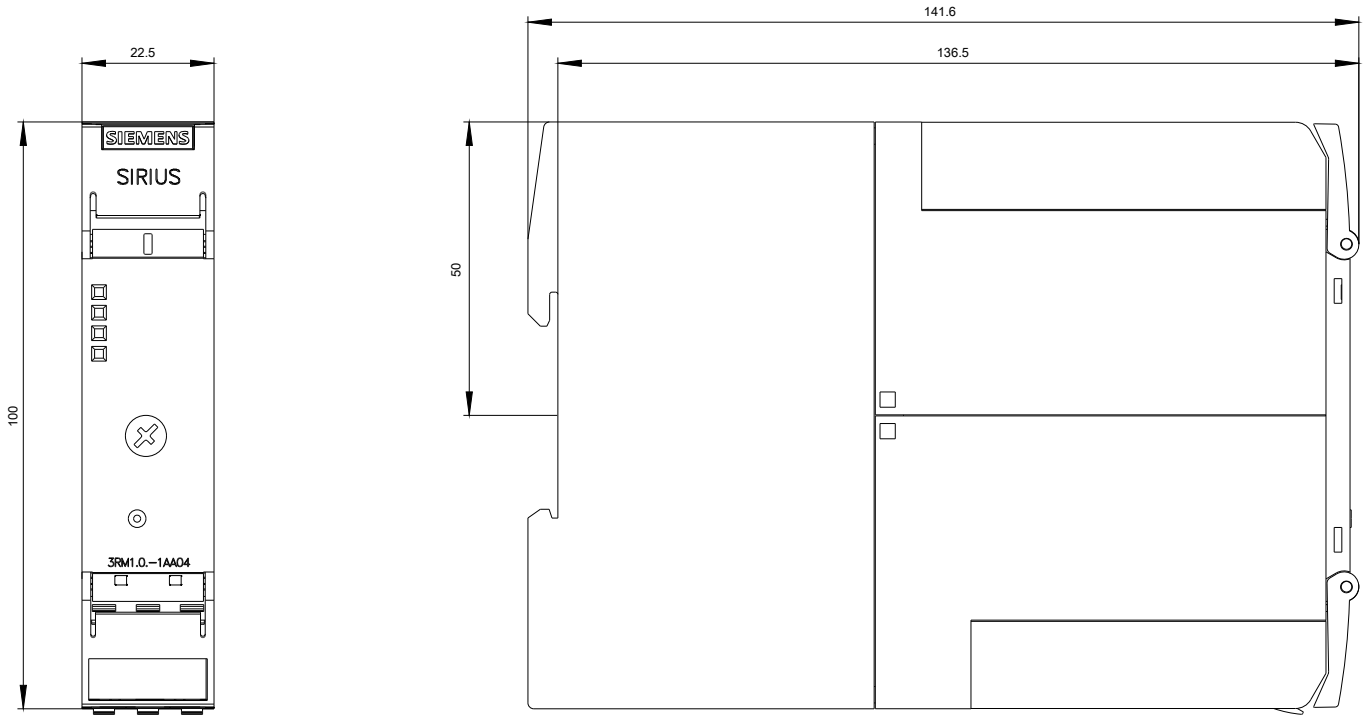
Certificates/approvals

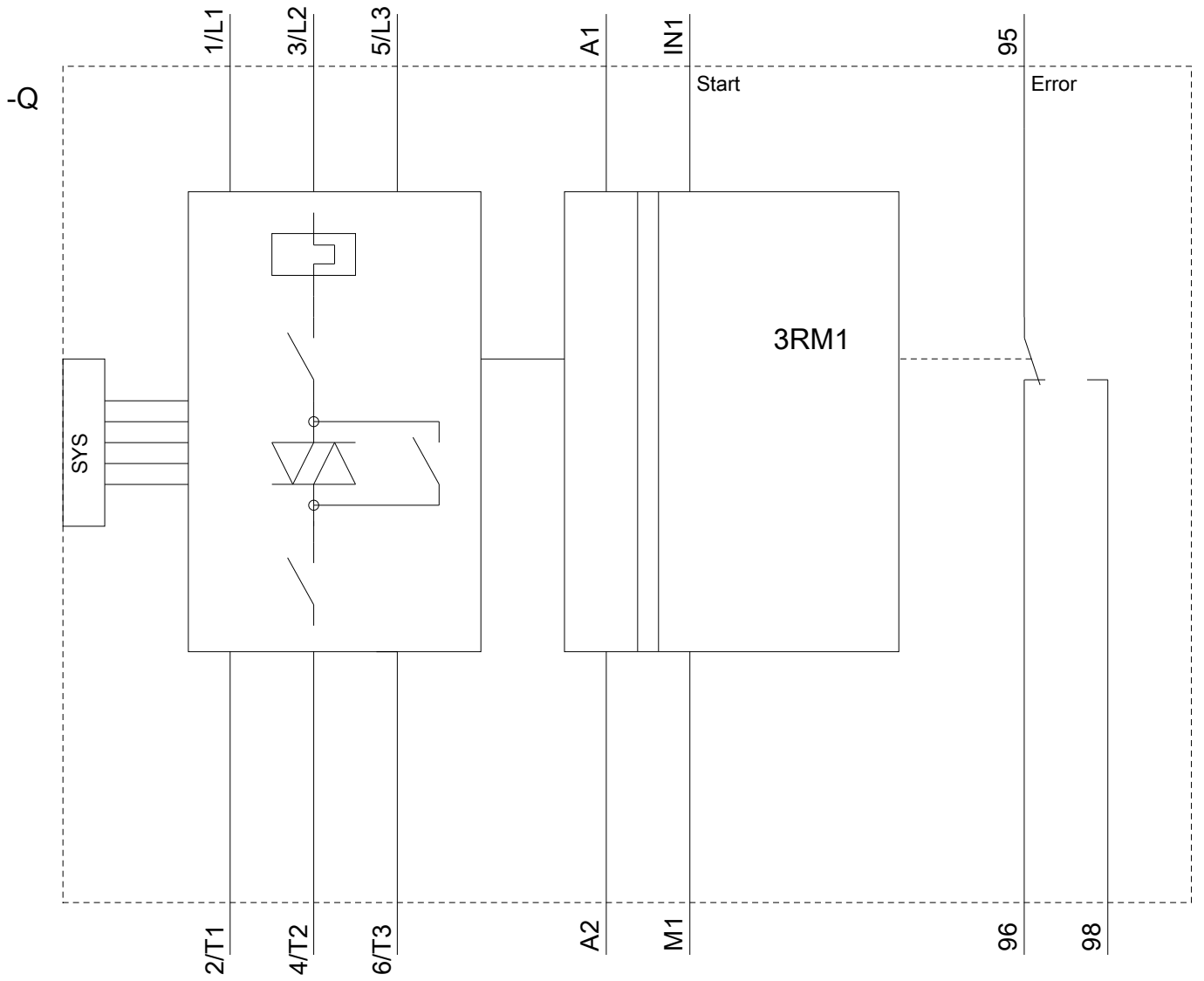
General Product Approval	For use in hazardous locations	Functional Safety/Safety of Machinery
 CCC	 CSA	 UL
 EAC	 ATEX	Type Examination

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=3RM1107-1AA04>
- Cax online generator**
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1107-1AA04>





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