

Direct starter, 3RM1, 500 V, 0 - 0.12 kW, 0.1 - 0.5 A, 24 V DC, screw/spring-type terminals



Product brand name	SIRIUS
Product category	Motor starter
Product designation	Direct-on-line starter
Design of the product	with electronic overload protection
Product type designation	3RM1

General technical data	
Trip class	CLASS 10A
Product function	
• Intrinsic device protection	Yes
Suitability for operation Device connector 3ZY12	Yes
Power loss [W] for rated value of the current at AC in hot operating state per pole	0.01 W
Insulation voltage	
• rated value	500 V
Surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
• between main and auxiliary circuit	500 V
• between control and auxiliary circuit	250 V
Protection class IP	IP20

Shock resistance	6g / 11 ms
Vibration resistance	1 ... 6 Hz, 15 mm; 20 m/s ² , 500 Hz
Operating frequency maximum	1 1/s
Mechanical service life (switching cycles)	
• typical	30 000 000
Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	Q
Reference code acc. to DIN EN 81346-2	Q
Reference code acc. to DIN EN 61346-2	Q
Product function	
• direct start	Yes
• reverse starting	No
Product function Short circuit protection	No

Electromagnetic compatibility

Conducted interference	
• due to burst acc. to IEC 61000-4-4	3 kV / 5 kHz
• due to conductor-earth surge acc. to IEC 61000-4-5	2 kV
• due to conductor-conductor surge acc. to IEC 61000-4-5	1 kV
• due to high-frequency radiation acc. to IEC 61000-4-6	10 V
Electrostatic discharge acc. to IEC 61000-4-2	4 kV contact discharge / 8 kV air discharge
Conducted HF-interference emissions acc. to CISPR11	Class B for the domestic, business and commercial environments
Field-bound HF-interference emission acc. to CISPR11	Class B for the domestic, business and commercial environments

Safety related data

Protection against electrical shock	finger-safe
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Main circuit

Number of poles for main current circuit	3
Design of the switching contact as NO contact for signaling function	OUT, electronic, 24 V DC, 15 mA
Adjustable pick-up value current of the current-dependent overload release	0.1 ... 0.5 A
Minimum load [%]	20 %
Type of the motor protection	solid-state
Operating voltage	
• rated value	48 ... 500 V
Relative symmetrical tolerance of the operating voltage	10 %
Operating frequency 1 rated value	50 Hz
Operating frequency 2 rated value	60 Hz

Relative symmetrical tolerance of the operating frequency	10 %
Operating current	
<ul style="list-style-type: none"> • at AC at 400 V rated value 	0.5 A
<ul style="list-style-type: none"> • at AC-53a at 400 V at ambient temperature 40 °C rated value 	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

Inputs/ Outputs

Input voltage at digital input	
<ul style="list-style-type: none"> • at DC rated value 	24 V
<ul style="list-style-type: none"> • with signal <0> at DC 	0 ... 5 V
<ul style="list-style-type: none"> • for signal <1> at DC 	15 ... 30
Input current at digital input	
<ul style="list-style-type: none"> • with signal <0> typical 	0.001 A
<ul style="list-style-type: none"> • for signal <1> typical 	0.011 A
Input current at digital input	
<ul style="list-style-type: none"> • for signal <1> at DC 	11 mA
<ul style="list-style-type: none"> • with signal <0> at DC 	1 mA
Number of CO contacts for auxiliary contacts	1
Operating current of auxiliary contacts at AC-15 at 230 V maximum	3 A
Operating current of auxiliary contacts at DC-13 at 24 V maximum	1 A

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 at DC	
<ul style="list-style-type: none"> • initial value 	0.8
<ul style="list-style-type: none"> • Full-scale value 	1.25
Control current at DC	
<ul style="list-style-type: none"> • in standby mode 	25 mA
<ul style="list-style-type: none"> • when switching on 	150 mA
<ul style="list-style-type: none"> • during operation 	70 mA

Response times

Switch-on delay time	60 ... 90 ms
Off-delay time	60 ... 90 ms

Installation/ mounting/ dimensions

Mounting position	vertical, horizontal, standing (observe derating)
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Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail
Height	100 mm
Width	22.5 mm
Depth	141.6 mm
Required spacing	
<ul style="list-style-type: none"> • with side-by-side mounting <ul style="list-style-type: none"> — forwards 0 mm — Backwards 0 mm — upwards 50 mm — downwards 50 mm — at the side 0 mm • for grounded parts <ul style="list-style-type: none"> — forwards 0 mm — Backwards 0 mm — upwards 50 mm — at the side 3.5 mm — downwards 50 mm 	

Ambient conditions

Installation altitude at height above sea level	
<ul style="list-style-type: none"> • maximum 4 000 m 	
Ambient temperature	
<ul style="list-style-type: none"> • during operation -25 ... +60 °C • during storage -40 ... +70 °C • during transport -40 ... +70 °C 	
Relative humidity during operation	10 ... 95 %
Air pressure	
<ul style="list-style-type: none"> • acc. to SN 31205 900 ... 1 060 hPa 	

Communication/ Protocol

Product function Bus communication	No
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Connections/ Terminals

Type of electrical connection	screw-type terminals for main circuit, spring-loaded terminals (push-in) for control circuit
<ul style="list-style-type: none"> • for main current circuit screw-type terminals • for auxiliary and control current circuit spring-loaded terminals (push-in) 	
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — 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) • at AWG conductors for main contacts 1x (20 ... 12), 2x (20 ... 14) 	
Connectable conductor cross-section for main contacts	

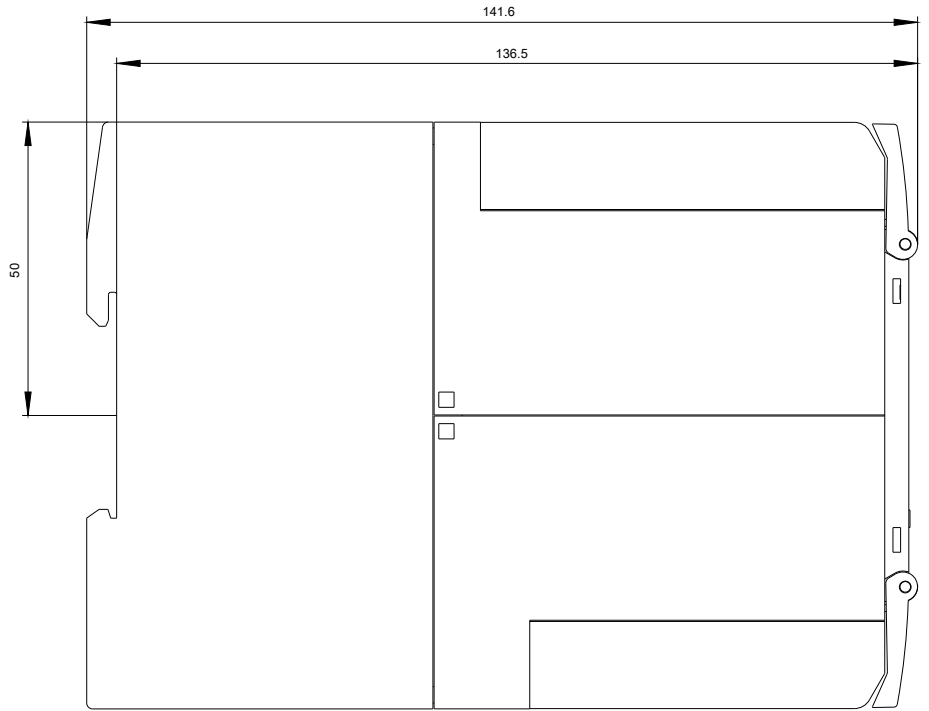
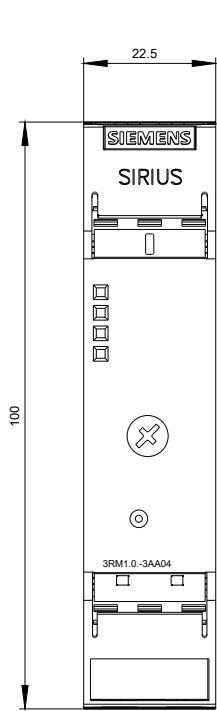
<ul style="list-style-type: none"> • single or multi-stranded • finely stranded with core end processing 	0.5 ... 4 mm ² 0.5 ... 4 mm ²
Connectable conductor cross-section for auxiliary contacts <ul style="list-style-type: none"> • single or multi-stranded • finely stranded with core end processing • finely stranded without core end processing 	0.5 ... 1.5 mm ² 0.5 ... 1 mm ² 0.5 ... 1.5 mm ²
Type of connectable conductor cross-sections <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — solid — finely stranded with core end processing — finely stranded without core end processing • at AWG conductors for auxiliary contacts 	1x (0.5 ... 1.5 mm ²), 2x (0.5 ... 1.5 mm ²) 1x (0,5 ... 1,0 mm ²), 2x (0,5 ... 1,0 mm ²) 1x (0.5 ... 1.5 mm ²), 2x (0.5 ... 1.5 mm ²) 1x (20 ... 16), 2x (20 ... 16)
AWG number as coded connectable conductor cross section <ul style="list-style-type: none"> • for main contacts • for auxiliary contacts 	20 ... 12 20 ... 16

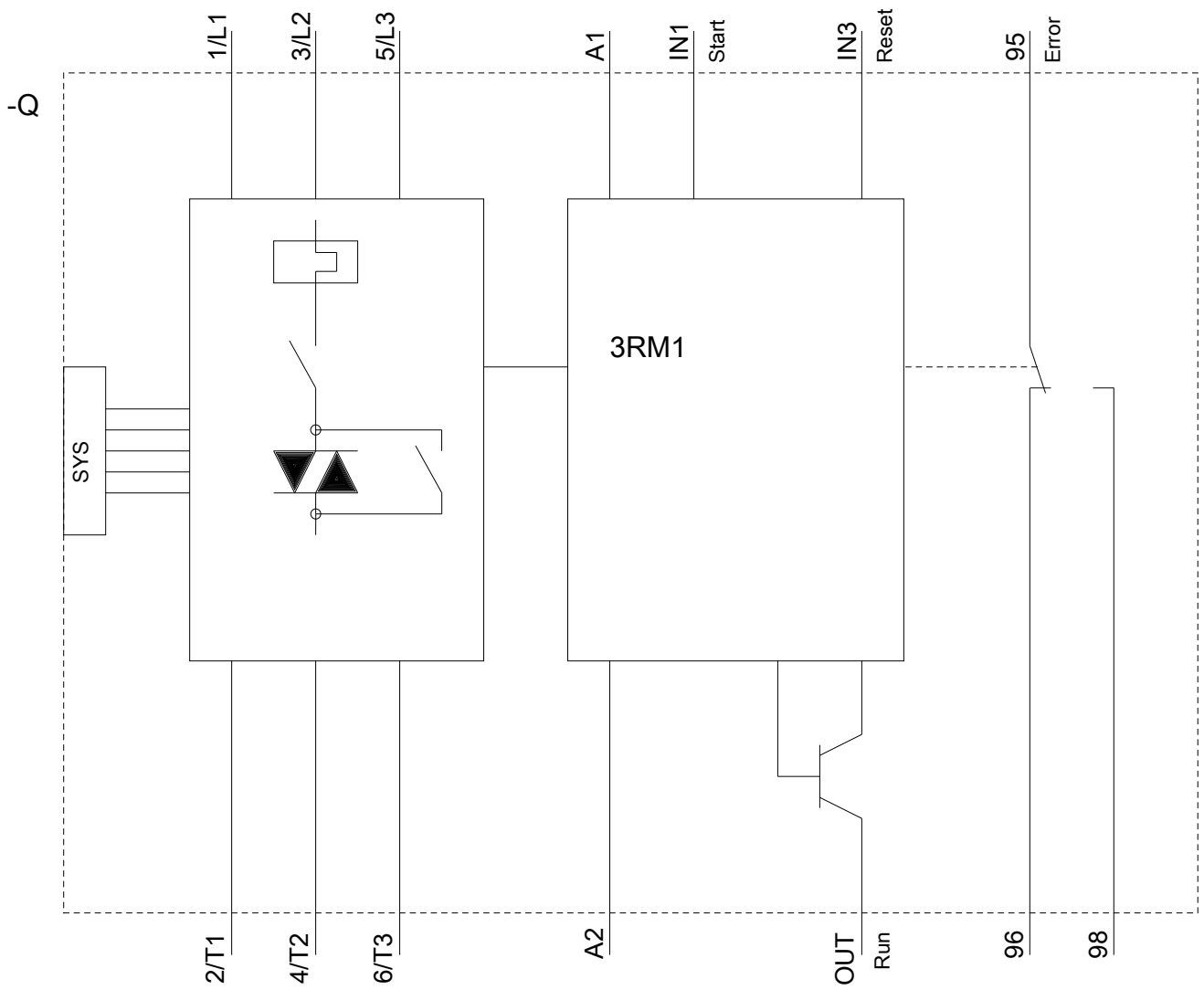
Certificates/ approvals

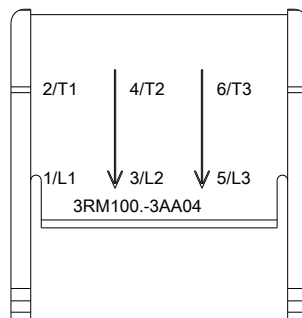
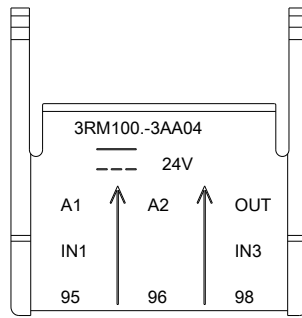
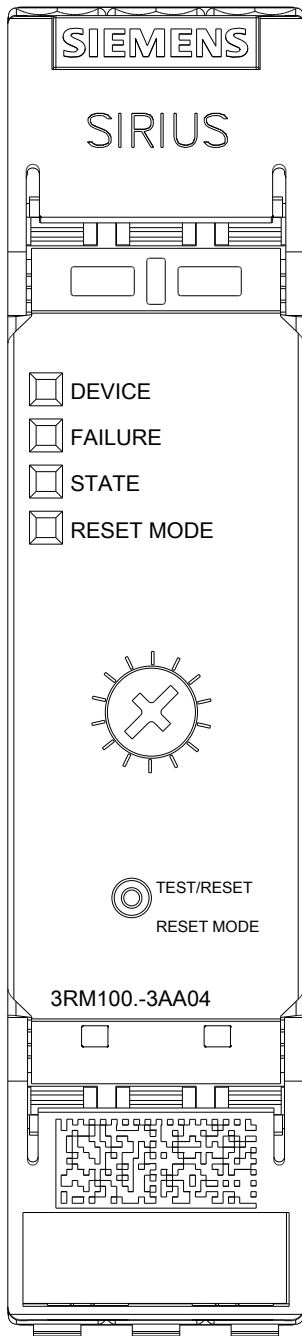
General Product Approval	EMC	other
 CCC	 EAC	 RCM Confirmation
 CSA		
 UL		

Further information

- Information- and Downloadcenter (Catalogs, Brochures,...)**
www.siemens.com/ic10
- Industry Mall (Online ordering system)**
<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RM1001-3AA04>
- Cax online generator**
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1001-3AA04>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
<https://support.industry.siemens.com/cs/ww/en/ps/3RM1001-3AA04>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM1001-3AA04&lang=en







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