



Direct starter, 3RM1, 500 V, 0.55 - 3 kW, 1.6 - 7 A, 110-230 V AC, screw 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	No
power loss [W] for rated value of the current at AC in hot operating state per pole	1.13 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
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 IEC 81346-2	Q
Substance Prohibitance (Date)	01.03.2017 00:00:00
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 domestic, business and commercial environments; Class A for industrial environments at 110 V DC
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
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 current response value current of the current-dependent overload release	1.6 ... 7 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 %
operational current	
at AC at 400 V rated value	7 A
at AC-53a at 400 V at ambient temperature 40 °C rated value	7 A
ampacity when starting maximum	56 A
operating power for 3-phase motors at 400 V at 50 Hz	0.55 ... 3 kW
derating temperature	40 °C
Inputs/ Outputs	
input voltage at digital input	
at DC rated value	110 V
with signal <0> at DC	0 ... 40 V
for signal <1> at DC	79 ... 121
input voltage at digital input	
at AC rated value	110 V
with signal <0> at AC	0 ... 40 V
for signal <1> at AC	93 ... 253 V
input current at digital input	
for signal <1> at DC	1.5 mA
with signal <0> at DC	0.25 mA
input current at digital input with signal <0> at AC	
at 110 V	0.2 mA
at 230 V	0.4 mA
input current at digital input for signal <1> at AC	
at 110 V	1.1 mA
at 230 V	2.3 mA
number of CO contacts for auxiliary contacts	1
operational current of auxiliary contacts at AC-15 at 230 V maximum	3 A
operational current of auxiliary contacts at DC-13 at 24 V maximum	1 A
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage 1 at AC	
at 50 Hz	110 ... 230 V
at 60 Hz	110 ... 230 V
control supply voltage frequency	
1 rated value	50 Hz
2 rated value	60 Hz
control supply voltage 1 at DC rated value	110 V
operating range factor control supply voltage rated value at DC	
initial value	0.85
full-scale value	1.1

operating range factor control supply voltage rated value at AC at 50 Hz - initial value - full-scale value	0.85 1.1
operating range factor control supply voltage rated value at AC at 60 Hz - initial value - full-scale value	1.1 0.85
control current at AC - at 110 V in standby mode of operation - at 230 V in standby mode of operation - at 110 V when switching on - at 230 V when switching on - at 110 V during operation - at 230 V during operation	16 mA 9 mA 55 mA 33 mA 36 mA 22 mA
control current at DC - in standby mode of operation - when switching on - during operation	6 mA 15 mA 30 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)
fastening method	screw and snap-on mounting onto 35 mm standard mounting rail
height	100 mm
width	22.5 mm
depth	141.6 mm
required spacing - with side-by-side mounting - forwards - backwards - upwards - downwards - at the side - for grounded parts - forwards - backwards - upwards - at the side - downwards	0 mm 0 mm 50 mm 50 mm 0 mm 0 mm 0 mm 50 mm 3.5 mm 50 mm
Ambient conditions	
installation altitude at height above sea level maximum	4 000 m
relative humidity during operation	10 ... 95 %
air pressure acc. to SN 31205	900 ... 1 060 hPa
Communication/ Protocol	
product function bus communication	No
Connections/ Terminals	
type of electrical connection - for main current circuit - for auxiliary and control circuit	screw-type terminals for main circuit, screw-type terminals for control circuit screw-type terminals screw-type terminals
type of electrical wiring - for main current circuit - for auxiliary and control circuit	1 or 2 conductors 1 or 2 conductors
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 mm ²), 2x (0,5 ... 1,5 mm ²)
• at AWG cables for main contacts	1x (20 ... 12), 2x (20 ... 14)
connectable conductor cross-section for main contacts	
• solid or stranded	0.5 ... 4 mm ²
• finely stranded with core end processing	0.5 ... 4 mm ²
connectable conductor cross-section for auxiliary contacts	
• solid or stranded	0.5 ... 2.5 mm ²
• finely stranded with core end processing	0.5 ... 2.5 mm ²
type of connectable conductor cross-sections	
• for auxiliary contacts	
— solid	1x (0,5 ... 2,5 mm ²), 2x (1,0 ... 1,5 mm ²)
— finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)
• at AWG cables for auxiliary contacts	1x (20 ... 14), 2x (18 ... 16)
• AWG number as coded connectable conductor cross section for main contacts	20 ... 12
• AWG number as coded connectable conductor cross section for auxiliary contacts	20 ... 14

UL/CSA ratings

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 3-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	EMC	Declaration of Conformity
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[Miscellaneous](#)

Declaration of Conformity	Test Certificates	other	Railway
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EG-Konf.

[Type Test
Certificates/Test
Report](#)

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Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RM1007-1AA14>

Cax online generator

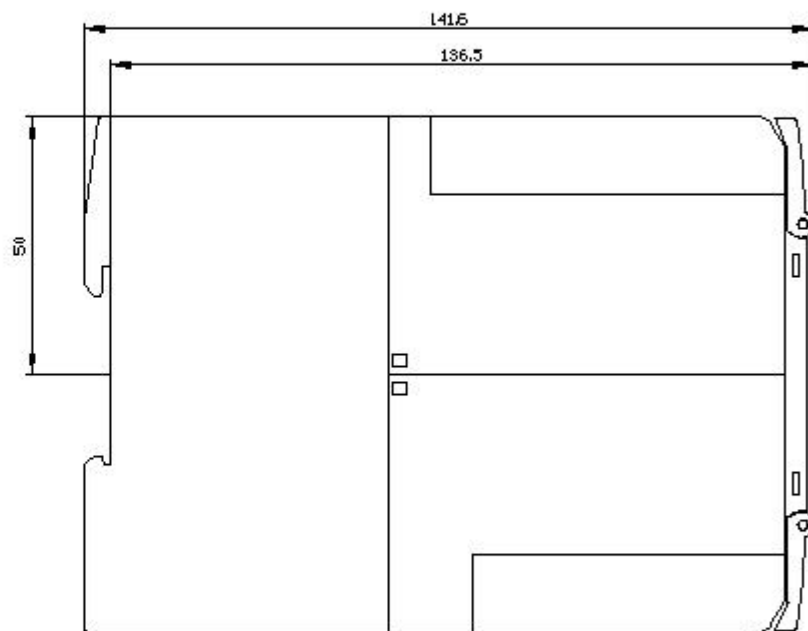
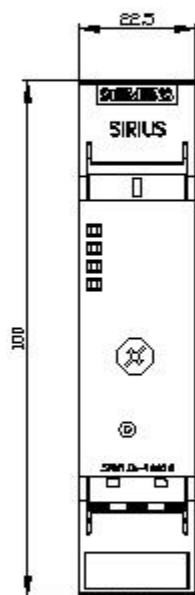
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1007-1AA14>

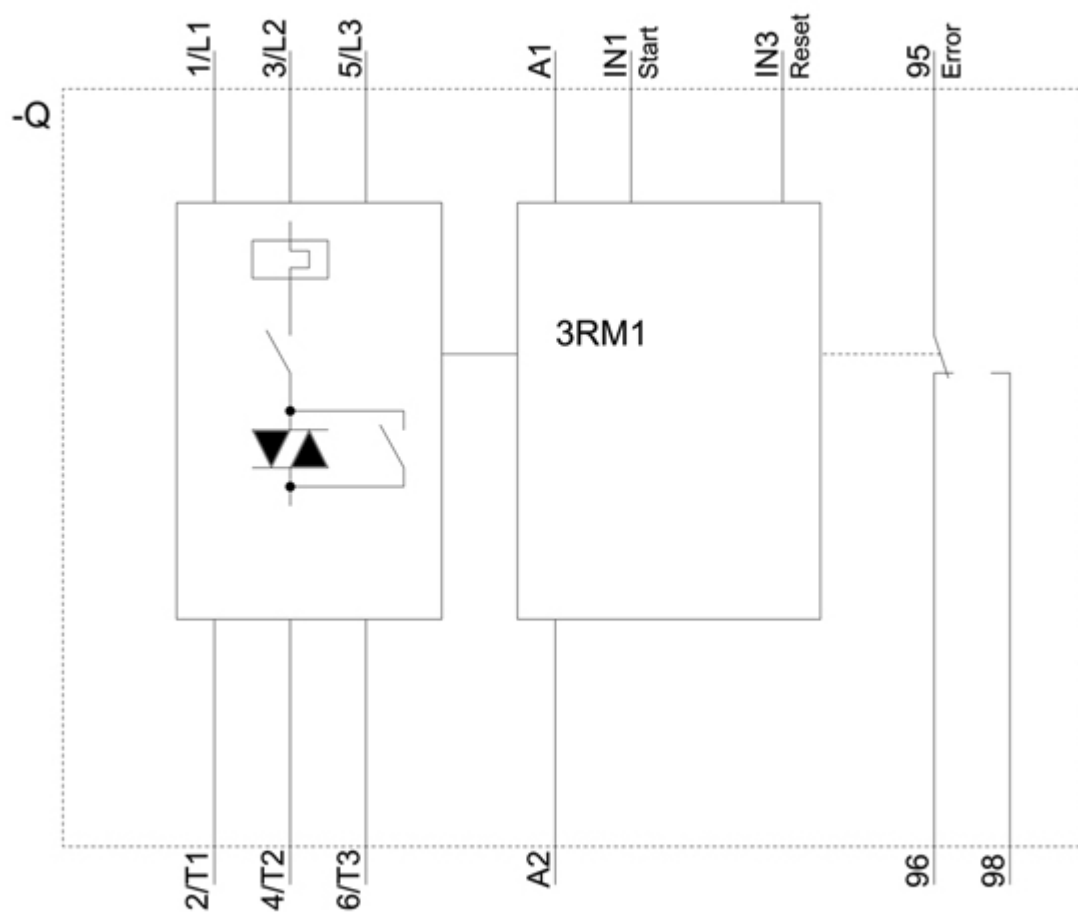
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

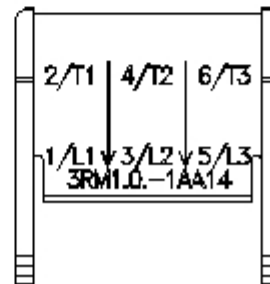
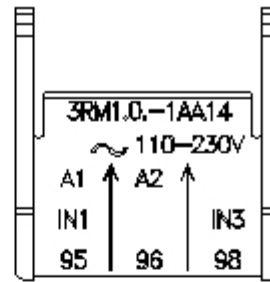
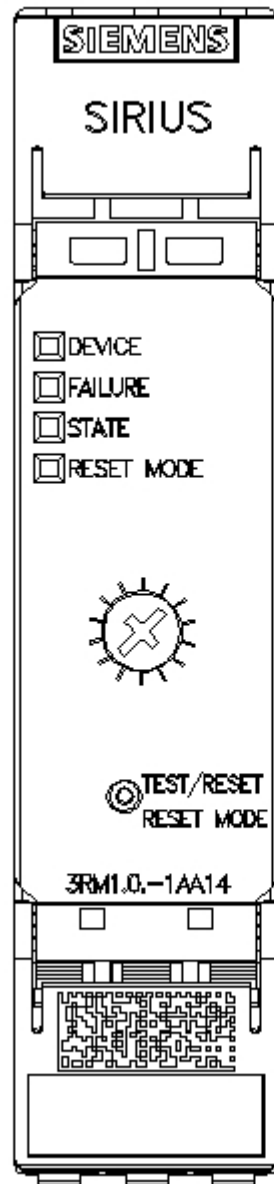
<https://support.industry.siemens.com/cs/ww/en/ps/3RM1007-1AA14>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM1007-1AA14&lang=en







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12/21/2020