# **SIEMENS**

Data sheet 3RM1007-1AA04



Direct starter, 3RM1, 500 V, 0.55 - 3 kW, 1.6 - 7 A, 24 V DC, 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	
equipment variant according to IEC 60947-4-2	3
product function	Direct-on-line starter
<ul> <li>intrinsic device protection</li> </ul>	Yes
<ul> <li>for power supply reverse polarity protection</li> </ul>	No
suitability for operation device connector 3ZY12	Yes
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state per pole</li> </ul>	1.13 W
without load current share typical	1.68 W
insulation voltage rated value	500 V
overvoltage category	III
surge voltage resistance rated value	6 kV
maximum permissible voltage for protective separation	
<ul> <li>between main and auxiliary circuit</li> </ul>	500 V
between control and auxiliary circuit	250 V
shock resistance	6g / 11 ms
operating frequency maximum	1 1/s
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	03/01/2017
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7
product function	
direct start	Yes
• reverse starting	No
product function short circuit protection	No
Electromagnetic compatibility	
EMC emitted interference according to IEC 60947-1	class A
EMC immunity according to IEC 60947-1	Class A
conducted interference	
<ul> <li>due to burst according to IEC 61000-4-4</li> </ul>	3 kV / 5 kHz
<ul> <li>due to conductor-earth surge according to IEC 61000-4-5</li> </ul>	2 kV
<ul> <li>due to conductor-conductor surge according to IEC 61000-4-5</li> </ul>	1 kV
<ul> <li>due to high-frequency radiation according to IEC 61000- 4-6</li> </ul>	10 V

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field-based interference according to IEC 61000-4-3	10 V/m
electrostatic discharge according to IEC 61000-4-2	4 kV contact discharge / 8 kV air discharge
conducted HF interference emissions according to CISPR11	Class B for the domestic, business and commercial environments
field-bound HF interference emission according to CISPR11	Class B for the domestic, business and commercial environments
Electrical Safety	
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe
Main circuit	
number of poles for main current circuit	3
design of the switching contact	Hybrid
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 %; from set rated current
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-3 at 400 V rated value	7 A
<ul> <li>at AC-53a at 400 V at ambient temperature 40 °C rated value</li> </ul>	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	24 V
<ul><li>with signal &lt;0&gt; at DC</li></ul>	0 5 V
• for signal <1> at DC	15 30
input current at digital input	
<ul><li>for signal &lt;1&gt; at DC</li></ul>	11 mA
• with signal <0> at DC	1 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	DC
control supply voltage at DC rated value	19.2 30 V
relative negative tolerance of the control supply voltage at DC	20 %
relative positive tolerance of the control supply voltage at DC	25 %
control supply voltage 1 at DC rated value	24 V
operating range factor control supply voltage rated value at DC	
initial value	0.8
• full-scale value	1.25
control current at DC	
in standby mode of operation	25 mA
during operation	70 mA
inrush current peak	
• at 24 V	0.28 A; values at 25 °C
• at DC at 24 V	300 mA
• at DC at 24 V • at DC at 24 V at switching on of motor	130 mA
	100 110 (
duration of inrush current peak	

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## ADC at 24 vs a swelching on of motor  power loss JNJ in a wulliary and control circuit ## in swelching state ON ## - with bipsase circuit ## - with circuit and walle ## - with side-by-acte mounting #	• at 24 V	85 ms
power lose [W] in auxiliary and control circuit  in switching state OR  with bypass circuit  fresponse times  OFF-delay time  OF-delay time		
In switching state OF		20 ms
- with typasas circuit - in switching state ON - with bypasas circuit - No Mediay time - So _ 90 ms - OFF-delay time - OFF-de		
Institutioning state on   Institution   In	•	
	•	0.6 W
Response limins	_	
ON-fireduly time 60 90 ms Power Electronics operational current  • at 40 °C rated value 5.2 A • at 50 °C rated value 5.2 A • at 60 °C rated value 5.3 A • at 60 °C rated value 6.1 A • at 60 °C rated value 7.2 A • at 60 °C rated value 8.3 A • at 60 °C rated value 9.3 A • at	• •	1.68 W
Constraint   Con		
operational current  • at 40 °C rated value • at 50 °C rated value • at 60 °C rated value •	•	
operational current		60 90 ms
at 40 °C rated value at 50 °C rated value 5.2 A 5.2 A 5.2 A 5.4 B 5.2 A 5.2 A 5.2 A 5.2 A 5.3 A 5.3 A 5.4 B 5.2 A 5.2 A 5.3 A 5.3 A 5.3 A 5.3 A 5.4 B 5.3 A		
at 50 °C rated value at 55 °C	•	
at 65°C rated value 4.6 A  to 50°C rated value 4.6 A  at 60°C rated value 4.6 A  Installation munuting dimensions  mounting position fastening method neight 100 mm  width 22.5 mm  depth 11.6 mm  required spacing • with side by side mounting — forwards — backwards — ownwards — downwards — downwards — of orgonoided parts — forwards — ownwards — ownwards — ownwards — of mm — at the side — ownwards — ownwar		
### A6 A Communitary dimensions    Institution mounting position   vertical, horizontal, standing (observe derating)   Institution mounting and the properties of the properti		
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width     22.5 mm       depth     141.8 mm       required spacing     • with side-by-side mounting       — forwards     0 mm       — backwards     0 mm       — upwards     50 mm       — at the side     0 mm       — forwards     0 mm       — backwards     0 mm       — backwards     0 mm       — upwards     50 mm       — backwards     0 mm       — upwards     50 mm       — at the side     3.5 mm       — downwards     50 mm       Amblent conditions     50 mm       installation altitude at height above sea level maximum     4 000 m; For derating see manual       ambient emporature     • during storage       • during storage     -40 +70 °C       • during transport     -40 +70 °C       environmental category during operation according to IEC 6721     386 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6       relative humidity during operation     10 95 %       air pressure according to SN 31205     900 1 060 hPa       communication Protocol     No       • PROFINET io protocol     No       • PROFINET protocol     No       • PROFINET protocol     No       • PROFINET perminals		
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- backwards - upwards - downwards - downwards - at the side - of or grounded parts - for younded parts - forwards - backwards - upwards - backwards - upwards - upwards - upwards - downwards - at the side - downwards - downwards - the side - downwards - on m  Mablent conditions  Installation altitude at height above sea level maximum amblent temperature - during storage - during storage - during transport - during transport - during transport - at uniformation according to IEC - 3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 air pressure according to SN 31205 - SPOFINET IO protocol - PROFISafe protocol - FROFISafe protocol - FROFISAF prot	-	
- upwards 50 mm 50 mm 50 mm 50 mm 50 mm 60		
- downwards - at the side • for grounded parts - forwards - backwards - upwards - at the side • for grounded parts - upwards - backwards - upwards - at the side - downwards - at the side - downwards - at the side - downwards - bomm    Ambient conditions   Installation altitude at height above sea level maximum   4 000 m; For derating see manual   Ambient temperature   during operation   40 uning storage   during storage   during transport   during transport   environmental category during operation according to IEC (sand must not get into the devices), 3M6     relative humidity during operation   10 95 %     air pressure according to SN 31205   900 1 060 hPa     Communication/ Protocol   protocol is supported     PROFINET IO protocol   No     PROFISafe protocol   No     PROFISafe protocol   No     Protocol's Supported As-Interface protocol   No     Protocol's Terminals     type of electrical connection     of or main current circuit     of or auxiliary and control circuit     screw-type terminals     type of connectable conductor cross-sections for main contacts     of oil     of one causiliary and control circuit     of or auxiliary and control circuit     of or finely stranded with core end processing     1x (0,5 4 mm²), 2x (0,5 1,5 mm²)		
- at the side  • for grounded parts  - forwards  - backwards  0 mm  - upwards  - at the side  3.5 mm  - downwards  50 mm  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation  • during storage  • during transport  environmental category during operation according to IEC 80721  relative humidity during operation  air pressure according to SN 31205  ground air pressure according to SN 31205  protocol is supported  • PROFINET IO protocol  • PROFINET IO protocol  • PROFISafe protocol  product function bus communication  protocol is supported AS-Interface protocol  • for auxiliary and control circuit  • for connectable conductor cross-sections for main contates  • solid  • finely stranded with core end processing  1x (0,5 4 mm²), 2x (0,5 2,5 mm²)  1x (0,5 4 mm²), 2x (0,5 2,5 mm²)  1x (0,5 4 mm²), 2x (0,5 1,5 mm²)	·	
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<ul> <li>during storage</li> <li>during transport</li> <li>during transport</li> <li>during transport</li> <li>environmental category during operation according to IEC</li> <li>60721</li> <li>grelative humidity during operation</li> <li>air pressure according to SN 31205</li> <li>goo 1 060 hPa</li> </ul> Communication/ Protocol <ul> <li>PROFINET IO protocol</li> <li>PROFIsafe protocol</li> <li>PROFIsafe protocol</li> <li>No</li> <li>protocol is supported AS-Interface protocol</li> <li>No</li> <li>protocol is supported AS-Interface protocol</li> <li>vipe of electrical connection</li> <li>for main current circuit</li> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> <li>wire length for motor unshielded maximum</li> <li>type of connectable conductor cross-sections for main contacts</li> <li>solid</li> <li>finely stranded with core end processing</li> </ul>	•	05 +00.00
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type of electrical connection  • for main current circuit  • for auxiliary and control circuit  wire length for motor unshielded maximum  type of connectable conductor cross-sections for main contacts  • solid  finely stranded with core end processing  screw-type terminals for main circuit, screw-type terminals for control circuit  screw-type terminals  100 m  1x (0,5 4 mm²), 2x (0,5 2,5 mm²)  1x (0,5 4 mm²), 2x (0,5 1,5 mm²)		
<ul> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> <li>screw-type terminals</li> <li>wire length for motor unshielded maximum</li> <li>type of connectable conductor cross-sections for main contacts</li> <li>solid</li> <li>1x (0,5 4 mm²), 2x (0,5 2,5 mm²)</li> <li>finely stranded with core end processing</li> <li>1x (0,5 4 mm²), 2x (0,5 1,5 mm²)</li> </ul>		screw-type terminals for main circuit, screw-type terminals for control circuit
<ul> <li>for auxiliary and control circuit</li> <li>wire length for motor unshielded maximum</li> <li>type of connectable conductor cross-sections for main contacts</li> <li>solid</li> <li>finely stranded with core end processing</li> <li>1x (0,5 4 mm²), 2x (0,5 2,5 mm²)</li> <li>1x (0,5 4 mm²), 2x (0,5 1,5 mm²)</li> </ul>		
wire length for motor unshielded maximum       100 m         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 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)	·	• •
<ul> <li>◆ solid</li> <li>1x (0,5 4 mm²), 2x (0,5 2,5 mm²)</li> <li>◆ finely stranded with core end processing</li> <li>1x (0,5 4 mm²), 2x (0,5 1,5 mm²)</li> </ul>		
• finely stranded with core end processing  1x (0,5 4 mm²), 2x (0,5 1,5 mm²)	•	1x (0,5 4 mm²), 2x (0,5 2,5 mm²)

<ul> <li>solid or stranded</li> </ul>	0.5 4 mm²
<ul> <li>finely stranded with core end processing</li> </ul>	0.5 4 mm²
connectable conductor cross-section for auxiliary contacts	
<ul> <li>solid or stranded</li> </ul>	0.5 2.5 mm²
<ul> <li>finely stranded with core end processing</li> </ul>	0.5 2.5 mm²
type of connectable conductor cross-sections	
<ul> <li>for auxiliary contacts</li> </ul>	
— solid	1x (0,5 2,5 mm²), 2x (1,0 1,5 mm²)
<ul> <li>finely stranded with core end processing</li> </ul>	1x (0.5 2.5 mm²), 2x (0.5 1 mm²)
<ul> <li>for AWG cables for auxiliary contacts</li> </ul>	1x (20 14), 2x (18 16)
AWG number as coded connectable conductor cross section	
• for main contacts	20 12
<ul> <li>for auxiliary contacts</li> </ul>	20 14
UL/CSA ratings	
yielded mechanical performance [hp]	
<ul> <li>for single-phase AC motor</li> </ul>	
— 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

### Approvals Certificates

#### **General Product Approval**





operational current at AC at 480 V according to UL 508

Confirmation







**EMV Test Certificates** other Railway **Environment** 

6.1 A



Type Test Certificates/Test Report

Confirmation

**Special Test Certific-**<u>ate</u>

**Environmental Confirmations** 

#### Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RM1007-1AA04

Cax online generator

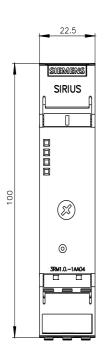
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1007-1AA04

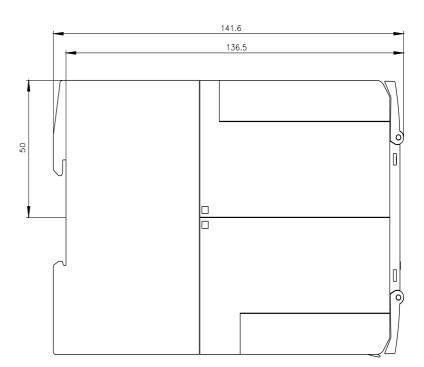
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

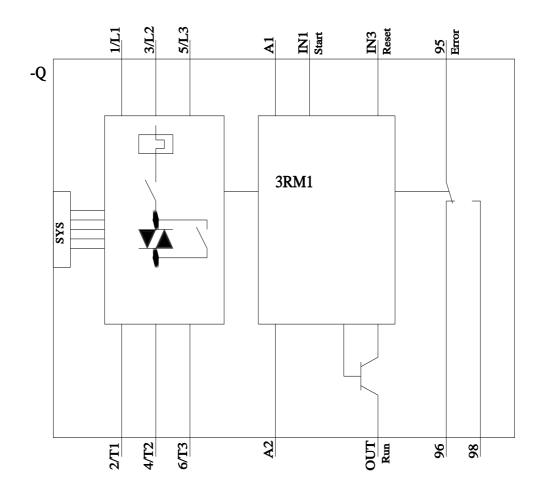
https://support.industry.siemens.com/cs/ww/en/ps/3RM1007-1AA04

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

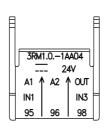
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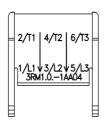












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