SIEMENS

Data sheet

3RM1107-1AA04



Fail-safe 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	Fail-safe direct starter			
design of the product	With electronic overload protection and safety-related disconnection			
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	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/s², 500 Hz			
operating frequency maximum	1 1/s			
mechanical service life (switching cycles) typical	15 000 000			
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 	4 kV signal lines 2 kV			
• due to conductor-conductor surge acc. to IEC 61000-4-5	2 kV			
 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			
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			

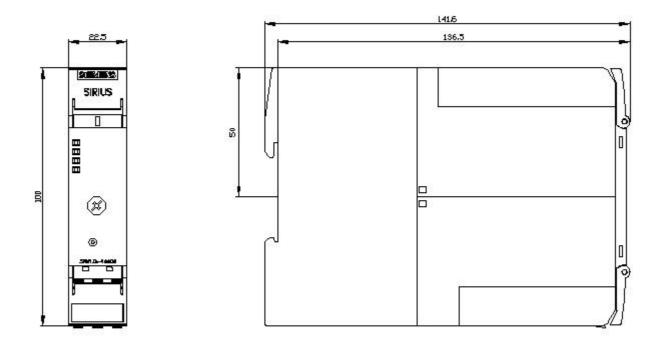
Safety related data	
safety device type acc. to IEC 61508-2	Туре В
Safety Integrity Level (SIL) acc. to IEC 61508	3
performance level (PL) acc. to EN ISO 13849-1	е
category acc. to EN ISO 13849-1	4
stop category acc. to DIN EN 60204-1	0
Safe failure fraction (SFF)	99.4 %
average diagnostic coverage level (DCavg)	99 %
diagnostics test interval by internal test function	600 s
maximum	
function test interval maximum	1 y
failure rate [FIT]	
 at rate of recognizable hazardous failures (λdd) 	1 400 FIT
 at rate of non-recognizable hazardous failures (λdu) 	16 FIT
PFHD with high demand rate acc. to EN 62061	0.0000002 1/h
PFDavg with low demand rate acc. to IEC 61508	0.000018
MTTFd	75 y
hardware fault tolerance acc. to IEC 61508	1
T1 value for proof test interval or service life acc. to	20 y
IEC 61508	
safe state	Load circuit open
OFF delay time with safety-related request	
 when switched off via control inputs maximum 	43 ms
 when switched off via supply voltage maximum 	120 ms
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	0.0000005 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 у
Main circuit	
number of poles for main current circuit	3
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	10 %
voltage operating frequency 1 rated value	50 Hz
	60 Hz
operating frequency 2 rated value relative symmetrical tolerance of the operating frequency	10 %
operational current	
at AC at 400 V rated value	7 A
	7A
at AC-53a at 400 V at ambient temperature 40 °C rated value	
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
• with signal <0> at DC	0 5 V
● for signal <1> at DC	15 30
input current at digital input	

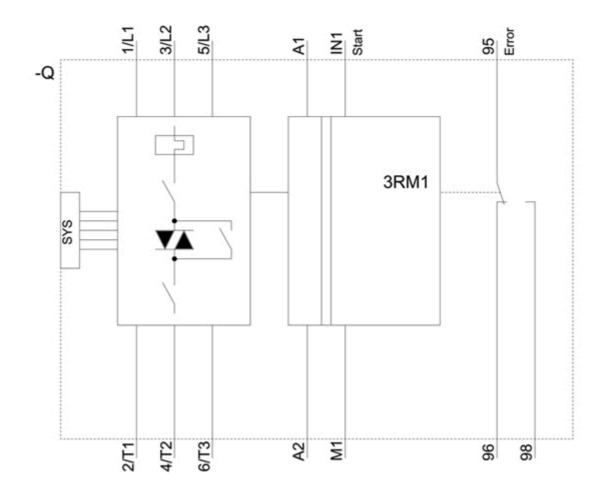
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operational current of avuillary contacts at AC-16 at 28 V maximum 3 A operational current of avuillary contacts at DC-13 at 24 V maximum 1 A Control circuit/ Control DC e.control supply voltage DC e.control supply voltage 1 at DC rated value 24 V operating range factor control supply voltage rated value at DC 0.8 e.initial value 0.4 e.initial value 0.5 e.initial value 0.6 e.initial value 0.8 e.					
230 V maximum IA 9 operational current of auxiliary contacts at DC-13 at 24 V maximum IA Type of voltage of the control supply voltage DC • control stupply voltage 1 at DC rated value 08 • initial value 0.8 • when switching on 150 mA • when switching on 50 mA • during operation 57 mA CPF delay time 30 43 ms Trabalation/ mounting/ dimensions wertext. horizontal, standing (observe drafing) mounting position wertext. horizontal, standing (observe drafing) festening method screw strape on meunting onto 35 mm standard mounting rail height 100 mm • dormards 0 mm - forwards 0 mm - dorwards	· · · · · · · · · · · · · · · · · · ·				
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type of electrical connection screw-type terminals for main circuit, screw-type terminals for control circuit • for main current circuit screw-type terminals • for auxiliary and control circuit screw-type terminals type of electrical wiring screw-type terminals • for main current circuit 1 or 2 conductors • for auxiliary and control circuit 1 or 2 conductors • for auxiliary and control circuit 1 or 2 conductors • for auxiliary and control circuit 1 or 2 conductors • for main contacts - solid • for main contacts 1x (0,5 4 mm²), 2x (0,5 2,5 mm²)		NO			
• for main current circuit screw-type terminals • for auxiliary and control circuit screw-type terminals • type of electrical wiring • for main current circuit 1 or 2 conductors • for auxiliary and control circuit 1 or 2 conductors • for auxiliary and control circuit 1 or 2 conductors • for auxiliary and control circuit 1 or 2 conductors • for main contacts 1 or 2 conductors • for main contacts 1 x (0,5 4 mm²), 2x (0,5 2,5 mm²)		acrow two terminals for main size it earns the standing to the second standing to the standing to the second standing to the s			
• for auxiliary and control circuit screw-type terminals type of electrical wiring - • for main current circuit 1 or 2 conductors • for auxiliary and control circuit 1 or 2 conductors type of connectable conductor cross-sections - • for main contacts -		circuit			
type of electrical wiring 1 or 2 conductors • for main current circuit 1 or 2 conductors • for auxiliary and control circuit 1 or 2 conductors type of connectable conductor cross-sections • for main contacts • for main contacts 1 x (0,5 4 mm²), 2x (0,5 2,5 mm²)					
 for main current circuit for auxiliary and control circuit type of connectable conductor cross-sections for main contacts – solid 1 or 2 conductors 1 or 2 conductors 		screw-type terminals			
• for auxiliary and control circuit 1 or 2 conductors type of connectable conductor cross-sections - solid • for main contacts - solid - solid 1x (0,5 4 mm²), 2x (0,5 2,5 mm²)					
type of connectable conductor cross-sections • for main contacts — solid 1x (0,5 4 mm²), 2x (0,5 2,5 mm²)					
• for main contacts — solid 1x (0,5 4 mm ²), 2x (0,5 2,5 mm ²)		1 or 2 conductors			
— solid 1x (0,5 4 mm²), 2x (0,5 2,5 mm²)					
	 for main contacts 				
- finely stranded with core end processing $1x (0,5 \dots 4 \text{ mm}^2), 2x (0,5 \dots 1,5 \text{ mm}^2)$					
	 finely stranded with core end processing 	1x (0,5 4 mm²), 2x (0,5 1,5 mm²)			

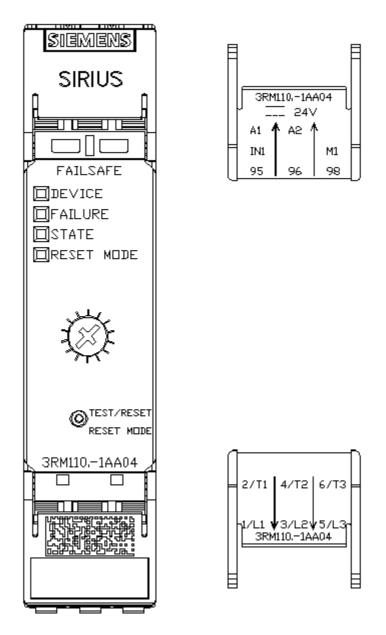
 at AWG cables 	 at AWG cables for main contacts 			1x (20 12), 2x (20 14)			
connectable conduc	connectable conductor cross-section for main contacts						
 solid or strande 	d		0.5 4 mm²				
 finely stranded 	with core end processir	ng	0.5 .	4 mm²			
connectable conduc contacts	connectable conductor cross-section for auxiliary			-			
 solid or strande 	d		0.5 2.5 mm²				
 finely stranded 	with core end processir	ng	0.5 .	0.5 2.5 mm ²			
type of connectable	conductor cross-sect	ions					
 for auxiliary cor 	ntacts						
— solid			1x (C),5 2,5 mm²), 2x (1,0	1,5 mm²)		
— finely strar	nded with core end proc	essing).5 2.5 mm²), 2x (0.5			
	for auxiliary contacts	U		20 14), 2x (18 16)	,		
	s coded connectable co	onductor	20 12				
	s coded connectable co	onductor	20	. 14			
UL/CSA ratings	, , , , , , , , , , , , , , , , , , ,	· · · · · · · · · · · · · · · · · · ·					
yielded mechanical	performance [hp]		_				
 for single-phase 							
•	V rated value		0.25	hp			
— at 230 V ra			0.5 h	•			
• for 3-phase AC			0.51	ιp			
	— at 200/208 V rated value			1 hp			
	— at 220/230 V rated value			1.5 hp			
	V rated value		3 hp				
Certificates/ approval	S		_		_		
General Product Ap	pproval				EMC	For use in hazardous locations	
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<u>وت</u>	<u>m</u>	৻৸		tHL		(EX)	
C.I.Y.						0.60	
Functional Safety/Safety of Machinery	Declaration of Conf	ormity		Test Certificates	other	Railway	
<u>Type Examination</u> <u>Certificate</u>	CE EG-Konf.	<u>Miscellaneo</u>	<u>us</u>	<u>Type Test</u> <u>Certificates/Test</u> <u>Report</u>	<u>Confirmation</u>	<u>Special Test</u> <u>Certificate</u>	
Further information							

Further information

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last modified:

12/23/2020 🖸