## SIEMENS

## Data sheet

## 3RM1007-2AA14



direct-on-line starter, 3RM1, 500 V, 0.55 - 3 kW, 1.6 - 7 A, 110-230 V AC, spring-loaded terminal (push-in)

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	No		
power loss [W] for rated value of the current			
<ul> <li>at AC in hot operating state per pole</li> </ul>	1.13 W		
<ul> <li>without load current share typical</li> </ul>	5.06 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		
<ul> <li>between control and auxiliary circuit</li> </ul>	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	Blei - 7439-92-1 Bleimonoxid (Bleioxid) - 1317-36-8 2,2',6,6'-Tetrabrom-4,4'-isopropylidendi - 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		
• due to conductor-conductor surge according to IEC 61000-4-5	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 domestic, business and commercial environments; Class A for industrial environments at 110 V DC
field-bound HF interference emission according to CISPR11	Class B for domestic, business and commercial environments; Class A for industrial environments at 110 V DC
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	OUT, electronic, 24 V DC, 15 mA
function 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
<ul> <li>at AC-3 at 400 V rated value</li> </ul>	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	
<ul> <li>at DC rated value</li> </ul>	110 V
<ul> <li>with signal &lt;0&gt; at DC</li> </ul>	0 40 V
● for signal <1> at DC	79 121
input voltage at digital input	
at AC rated value	110 V
<ul> <li>with signal &lt;0&gt; at AC</li> </ul>	0 40 V
● for signal <1> at AC	93 253 V
input current at digital input	
<ul> <li>for signal &lt;1&gt; at DC</li> </ul>	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 at AC	440 000.14
• at 50 Hz rated value	110 230 V
at 60 Hz rated value	110 230 V
relative negative tolerance of the control supply voltage at AC at 60 Hz	15 %
relative positive tolerance of the control supply voltage at	10 %

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	
relative negative tolerance of the control supply voltage at DC	15 %	
relative positive tolerance of the control supply voltage at DC	10 %	
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		
<ul> <li>initial value</li> </ul>	0.85	
full-scale value	1.1	
operating range factor control supply voltage rated value at AC at 60 Hz		
initial value	0.85	
• full-scale value	1.1	
control current at AC		
<ul> <li>at 110 V in standby mode of operation</li> </ul>	16 mA	
<ul> <li>at 230 V in standby mode of operation</li> </ul>	9 mA	
<ul> <li>at 110 V when switching on</li> </ul>	55 mA	
<ul> <li>at 230 V when switching on</li> </ul>	33 mA	
<ul> <li>at 110 V during operation</li> </ul>	36 mA	
<ul> <li>at 230 V during operation</li> </ul>	22 mA	
control current at DC		
<ul> <li>in standby mode of operation</li> </ul>	6 mA	
<ul> <li>during operation</li> </ul>	30 mA	
inrush current peak		
• at AC at 110 V	1 200 mA	
• at AC at 230 V	2 900 mA	
<ul> <li>at AC at 110 V at switching on of motor</li> </ul>	1 200 mA	
<ul> <li>at AC at 230 V at switching on of motor</li> </ul>	2 900 mA	
duration of inrush current peak		
• at AC at 110 V	1 ms	
• at AC at 230 V	1 ms	
<ul> <li>at AC at 110 V at switching on of motor</li> </ul>	1 ms	
<ul> <li>at AC at 230 V at switching on of motor</li> </ul>	1 ms	
power loss [W] in auxiliary and control circuit		
<ul> <li>in switching state OFF</li> </ul>		
— with bypass circuit	2.1 W	
<ul> <li>in switching state ON</li> </ul>		
— with bypass circuit	5.06 W	
Response times		
ON-delay time	60 90 ms	
OFF-delay time	60 90 ms	
Power Electronics		
operational current		
• at 40 °C rated value	7 A	
• at 50 °C rated value	6.1 A	
• at 55 °C rated value	5.2 A	
• at 60 °C rated value	4.6 A	
Installation/ mounting/ dimensions		
mounting position	vertical, horizontal, standing (observe derating)	
fastening method	screw and snap-on mounting onto 35 mm DIN rail	
height	100 mm	
width	22.5 mm	

required spacing         • with side by side mounting           - forwards         0 mm           - bookwards         0 mm           - upwards         60 mm           - ownards         0 mm           - downards         0 max           - d	depth	141.6 mm
• • mi vide_bysite mounting• • • • • • • • • • • • • • • • • • •	•	
coversite0 mm coversards0 mm- coversards0 mm <td< td=""><td></td><td></td></td<>		
- baskwards         0 mm           - upwards         50 mm           - downwards         50 mm           - at the side         0 mm           - baskwards         0 mm           - at the side         0 for m           - at the side         0 for for derating see manual           attributed at height atooe sea level maximum         400 m; For derating see manual           attributed stributeg protein         40 - 70 ° C           - during transport         40 - 70 ° C           - attributeg protein		0 mm
- upwards60 mm- domwards50 mm- domwards0 mm- forwards0 mm- forwards0 mm- upwards0 mm- upwards0 mm- upwards00 m		
- downwads         60 mm           - downwads         0 mm           - for grounds parts         0           - backwads         0 mm           - upwads         50 mm           - upwads         50 mm           - upwads         50 mm           - upwads         50 mm           - downwads         60 mm           - downwads         50 mm           - downwads         400 m, For deraling see manual           amber temperature         -25 +60 °C           - downwads of extro for develops         300 mm           - downwads         900 mm           - downwads of extro for develops         300 mm           - downwads         900 mm		
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• during storage         -40 +70 °C           • during transport         SK6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6           • environmental category during operation         900 1 600 hBa           Communication / Protocol         900 1 600 hBa           Communication / Protocol         No           • PROFINET IO protocol         No           • PROFINET IO protocol         No           • product function bus communication         No           product function bus communication         No           • product function bus communication         No           • form ain current circuit         spring-loaded terminals (push-in) for main circuit, spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • form ain current circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • ford auxiliary and control circuit         spring-loaded terminals (push-in)           • ford out function cross-section for main contacts         solid or stranded         0.5 4	-	25 I 60 °C
• during transport         40 *70 °C           environmental category during operation according to IEC         3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), SS2 (and must not operation according to IEC           orgentation         10		
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Connections/Terminals           type of electrical connection         spring-loaded terminals (push-in) for main circuit, spring-loaded terminals (push-in) for control circuit           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • for auxiliary and autito core end processing         1x (0.5 4 mm <sup>2</sup> )           • for auxiliary contacts         0.5 4 mm <sup>2</sup> • for auxiliary contacts         0.5 1 fmr <sup>2</sup> • for auxiliary contacts         0.5 1 fmr <sup>2</sup> • for auxiliary contacts         0.5 1.5 mm <sup>2</sup> )           • for auxiliary contacts         1x	•	
type of electrical connection         spring-loaded terminals (push-in) for main circuit, spring-loaded terminals (push-in) for ontrol circuit           • for main current circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           wire length for motor unshielded maximum         100 m           type of connectable conductor cross-sections for main contacts         1x (0.5 4 mm²)           • finely stranded with core end processing         1x (0.5 4 mm²)           • finely stranded with core end processing         0.5 4 mm²           • solid or stranded         0.5 4 mm²           • finely stranded with core end processing         0.5 4 mm²           • finely stranded with core end processing         0.5 1.5 mm²           • solid or stranded         0.5 1.5 mm²           • solid or stranded         0.5 1.5 mm²           • finely stranded with core end processing         0.5 1.5 mm²           • finely stranded with core end processing         0.5 1.5 mm²           • finely stranded with core end processing         0.5 1.5 mm²), 2x (0.5 1.5 mm²)           • finely stranded with core end processing         1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)           • finely stranded with core end processing         1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)           • for auxiliar		
or main current circuit         spring-loaded terminals (push-in)           • for auxiliary and control circuit         spring-loaded terminals (push-in)           • wire length for motor unshielded maximum         00           type of connectable conductor cross-sections for main contacts         solid           • solid         1x (0.54 mm²)           • finely stranded with core end processing         1x (0.54 mm²)           • finely stranded with core end processing         0.54 mm²           • solid or stranded         0.54 mm²           • solid or stranded         0.54 mm²           • finely stranded with core end processing         0.54 mm²           • finely stranded with core end processing         0.54 mm²           • finely stranded with core end processing         0.51.5 mm²           • finely stranded with core end processing         0.51.5 mm²           • finely stranded with core end processing         0.51.5 mm²           • finely stranded with core end processing         0.51.5 mm²           • finely stranded with core end processing         1.x (0.51.5 mm²), 2x (0.51.5 mm²)           • for auxiliary contacts         - solid           • for auxiliary contacts         1.x (20.51.5 mm²), 2x (0.51.5 mm²)           • for auxiliary contacts         2.016 m²), 2x (0.51.5 m²), 2x (0.51	type of electrical connection	
of a uxiliary and control circuitspring-loaded terminals (push-in)wire length for motor unshielded maximum100 mtype of connectable conductor cross-sections for main contacts1x (0.5 4 mm²)• solid1x (0.5 4 mm²)• finely stranded with core end processing1x (0.5 4 mm²)• finely stranded without core end processing0.5 4 mm²)• solid or stranded0.5 4 mm²• solid or stranded0.5 4 mm²• finely stranded without core end processing0.5 4 mm²• finely stranded with core end processing0.5 1 mm²• finely stranded with core end processing0.5 1 mm²• finely stranded with core end processing0.5 1 mm²• finely stranded with core end processing0.5 1.5 mm²), 2x (0.5 1.5 mm²)• for auxiliary contacts- solid- solid1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)- finely stranded with core end processing1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)- finely stranded with core end processing1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)• for AWG cables for auxiliary contacts20 16• for AWG cables for auxiliary contacts20 16• for auxiliary contacts20 16• for main contacts20 16• for main contacts20 16		N ,
wire length for motor unshielded maximum     100 m       type of connectable conductor cross-sections for main contacts     isolid       isolid     1x (0.5 4 mm²)       ifinely stranded with core end processing     1x (0.5 4 mm²)       connectable conductor cross-section for main contacts     0.5 4 mm²)       ifinely stranded without core end processing     0.5 4 mm²       connectable conductor cross-section for main contacts     0.5 4 mm²       ifinely stranded with core end processing     0.5 4 mm²       connectable conductor cross-section for auxiliary contacts     0.5 4 mm²       solid or stranded     0.5 4 mm²       of inely stranded without core end processing     0.5 1.5 mm²       of inely stranded without core end processing     0.5 1.5 mm²       of inely stranded without core end processing     0.5 1.5 mm²       of connectable conductor cross-sections     0.5 1.5 mm²       if inely stranded without core end processing     0.5 1.5 mm²       of or auxiliary contacts     1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)       of finely stranded without core end processing     1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)       of or auxiliary contacts     1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)       of or auxiliary contacts     1x (20 16), 2x (20 16)       AWC number as coded connectable conductor cross section     1x (20 16, 2x (20 16)		
type of connectable conductor cross-sections for main contacts       1x (0.5 4 mm²)         ifnely stranded with core end processing       1x (0.5 4 mm²)         ifnely stranded without core end processing       1x (0.5 4 mm²)         connectable conductor cross-section for main contacts       0.5 4 mm²         o solid or stranded       0.5 4 mm²         e finely stranded with core end processing       0.5 4 mm²         connectable conductor cross-section for auxiliary contacts       0.5 4 mm²         o finely stranded without core end processing       0.5 4 mm²         connectable conductor cross-section for auxiliary contacts       0.5 1.5 mm²         o finely stranded without core end processing       0.5 1.5 mm²         o finely stranded with core end processing       0.5 1.5 mm²         o for auxiliary contacts       1.5 mm²). 2x (0.5 1.5 mm²)         o for auxiliary contacts       1.5 mm²). 2x (0.5 1.5 mm²)         - solid       1x (0.5 1.5 mm²). 2x (0.5 1.5 mm²)         - finely stranded with core end processing       1x (0.5 1.5 mm²). 2x (0.5 1.5 mm²)         - finely stranded with core end processing       1x (0.5 1.5 mm²). 2x (0.5 1.5 mm²)         - finely stranded with core end processing       1x (0.5 1.5 mm²). 2x (0.5 1.5 mm²)         - for dwWG cables for auxiliary contacts		
• solid       1x (0.5 4 mm²)         • finely stranded with core end processing       1x (0.5 2.5 mm²)         • finely stranded without core end processing       1x (0.5 4 mm²)         connectable conductor cross-section for main contacts       5 4 mm²         • solid or stranded       0.5 4 mm²         • finely stranded with core end processing       0.5 4 mm²         • finely stranded with core end processing       0.5 4 mm²         • finely stranded with core end processing       0.5 4 mm²         • solid or stranded       0.5 4 mm²         • finely stranded with core end processing       0.5 4 mm²         • finely stranded with core end processing       0.5 1.5 mm²         • finely stranded with core end processing       0.5 1.5 mm²         • finely stranded with core end processing       0.5 1.5 mm²         • finely stranded with core end processing       0.5 1.5 mm²         • for auxiliary contacts       -         - solid       1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)         - finely stranded with core end processing       1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)         - finely stranded with core end processing       1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)         - finely stranded with core end processing       1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)		100 m
<ul> <li>Inely stranded with core end processing</li> <li>Ix (0.5 2.5 mm<sup>2</sup>)</li> <li>(5 4 mm<sup>2</sup>)</li> <li>(5 1 m<sup>2</sup>)</li> <li>(5 1</li></ul>		
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• finely stranded with core end processing0.5 1 mm²• finely stranded without core end processing0.5 1.5 mm²type of connectable conductor cross-sections0.5 1.5 mm²• for auxiliary contacts1 x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)- solid1 x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)- finely stranded with core end processing1 x (0.5 1.0 mm²), 2x (0,5 1,0 mm²)- finely stranded without core end processing1 x (0.5 1.5 mm²), 2x (0.5 1.0 mm²)- finely stranded without core end processing1 x (0.5 1.5 mm²), 2x (0.5 1.0 mm²)- for AWG cables for auxiliary contacts1 x (20 16), 2x (20 16)AWG number as coded connectable conductor cross section20 12• for main contacts • for auxiliary contacts20 12UL/CSA ratings20 16	-	
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<ul> <li>for auxiliary contacts         <ul> <li>for auxiliary contacts</li> <li>solid</li> <li>finely stranded with core end processing</li> <li>finely stranded without core end processing</li> <li>finely stranded without core end processing</li> <li>for AWG cables for auxiliary contacts</li> <li>for AWG cables for auxiliary contacts</li> <li>for main contacts</li> <li>for auxiliary contacts</li> <li>20 12</li> <li>for auxiliary contacts</li> </ul> </li> <li>UL/CSA ratings</li> <li>yielded mechanical performance [hp]</li> </ul>		0.5 1.5 mm²
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<ul> <li>finely stranded with core end processing</li> <li>finely stranded without core end processing</li> <li>finely stranded without core end processing</li> <li>for AWG cables for auxiliary contacts</li> <li>for AWG cables for auxiliary contacts</li> <li>for main contacts</li> <li>for auxiliary contacts</li> <li>20 12</li> <li>for auxiliary contacts</li> <li>20 16</li> <li>UL/CSA ratings</li> <li>yielded mechanical performance [hp]</li> </ul>	-	
finely stranded without core end processing       1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)         • for AWG cables for auxiliary contacts       1x (20 16), 2x (20 16)         AWG number as coded connectable conductor cross section       20 12         • for main contacts       20 12         • for auxiliary contacts       20 16         UL/CSA ratings       yielded mechanical performance [hp]		
• for AWG cables for auxiliary contacts         1x (20 16), 2x (20 16)           AWG number as coded connectable conductor cross section         20 12, 20 12           • for main contacts         20 12           • for auxiliary contacts         20 12           • for auxiliary contacts         20 12           • for auxiliary contacts         20 16		
AWG number as coded connectable conductor cross section     20 12       • for main contacts     20 12       • for auxiliary contacts     20 16       UL/CSA ratings     yielded mechanical performance [hp]		
section     20 12       • for main contacts     20 12       • for auxiliary contacts     20 16       UL/CSA ratings     UL/CSA ratings		1x (20 16), 2x (20 16)
for auxiliary contacts 20 16 UL/CSA ratings yielded mechanical performance [hp]		
UL/CSA ratings yielded mechanical performance [hp]		20 12
yielded mechanical performance [hp]	<ul> <li>for main contacts</li> </ul>	
		20 16
for single-phase AC motor		20 16
	for auxiliary contacts UL/CSA ratings	20 16

— 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	
operational curre	nt at AC at 480 V according	to UL 508	6.1 A	
Certificates/ approv	vals			
General Product	Approval			
UK CA	<u>Confirmation</u>		CE EG-Konf.	EAC
EMV	Test Certificates	other	Railway	
RCM	Type Test Certific- ates/Test Report	<u>Confirmatio</u>	n <u>Special Test Certific-</u> <u>ate</u>	
	ided to exit the Russian mar		wn-russian-business	

Siemens is working on the renewal of the current EAC certificates.

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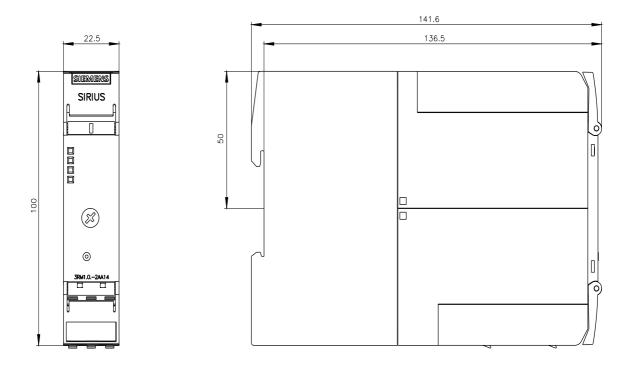
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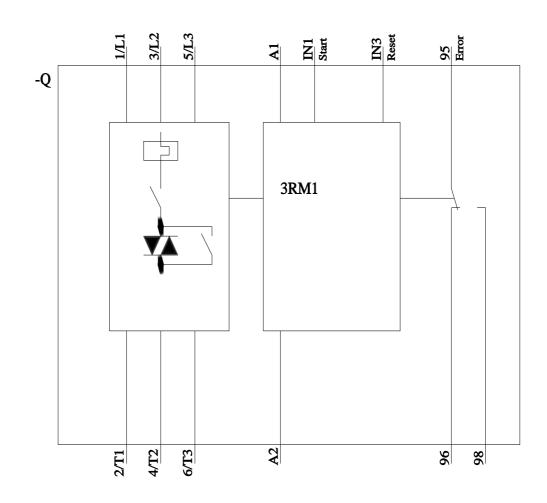
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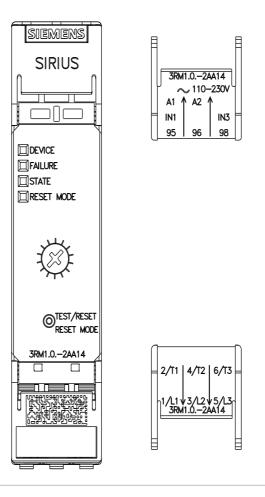
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