SIEMENS

Data sheet 3UF7110-1AA01-0



Current/voltage measuring module V2; Set current 0.3 ... 4 A, Voltage measurement up to 690 V, Overall width 45 mm, Straight-through transformer, basic unit required pro V PB, pro V MR, pro V PN or pro V EIP

Product brand name	SIRIUS
Product designation	Current/voltage measuring module

General technical data	
Product function	
• Current measurement	Yes
• voltage measurement	Yes
• active power measurement	Yes
• Power measurement	Yes
• frequency measurement	Yes
Measuring procedure for current measurement	TRMS
Current measuring range extension with external current transformers	Yes
Measuring procedure for voltage measurement	TRMS
Measurable supply voltage between the outer conductors at AC maximum rated value	690 V
Outer conductors and neutral conductors internal resistance for voltage measurement	1 MΩ; RC-based voltage divider
Product component	
• input for thermistor connection	No

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Insulation voltage	
• with degree of pollution 3 at AC rated value	690 V
• for wires of main circuit acc. to IEC 60947-1 rated value	6 kV
Surge voltage resistance rated value	6 000 V
Protection class IP	IP20
Shock resistance	
• acc. to IEC 60068-2-27	15g / 11 ms; with basic unit snapped on
Vibration resistance	1-6 Hz / 15 mm; 6-500 Hz / 2 g; with basic unit snapped on: 1g
Reference code acc. to DIN EN 81346-2	F
Certificate of suitability	
• according to ATEX directive 2014/34/EU	BVS 06 ATEX F001
Explosion device group and category according to ATEX directive 2014/34/EU	II (2) G, II (2) D, I (M2)

Electromagnetic compatibility

EMC emitted interference	
• acc. to IEC 60947-1	class A
EMI immunity acc. to IEC 60947-1	corresponds to degree of severity 3
Conducted interference	
• due to burst acc. to IEC 61000-4-4	2 kV
• 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
Field-bound parasitic coupling acc. to IEC 61000-4-3	10 V/m

Inputs/ Outputs

Number of outputs as contact-affected switching element	0

Protective and monitoring functions

Product function	
• power factor monitoring	Yes
• ground-fault monitoring	Yes
• voltage detection	Yes
Product function	
• Current detection	Yes
• Overload protection	Yes

Precision

Measuring precision	
• of frequency measurement	+/- 1.5 %, 0.25 A ... 8 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos phi (0.5...1), 50/60 Hz, 25 °C
• for current measurement 1	+/- 1.5 %, in range 0.25 A ... 8 A, in range 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), 50/60 Hz, 25 °C

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• for current measurement 2	+/- 3 %, in range 8 A ... 32 A, in range 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), 50/60 Hz, 25 °C
• for voltage measurement 1	+/- 1.5 %, in range 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), 50/60 Hz, 25 °C
• at cos phi-measurement 1	+/- 1.5 %, 0.4 A ... 8 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos phi (0.5...1), 50/60 Hz, 25 °C
• at cos phi-measurement 2	+/- 5 %, 8 A ... 32 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos phi (0.5...1), 50/60 Hz, 25 °C
• at active power measurement 1	+/- 5 %, 0.25 ... 8 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos phi (0.5...1), 50/60 Hz, 25 °C
• at active power measurement 2	+/- 10 %, 8 A ... 32 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos phi (0.5...1), 50/60 Hz, 25 °C
• at energy measurement 1	+/- 5 %, 0.25 ... 8 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos phi (0.5...1), 50/60 Hz, 25 °C
• at energy measurement 2	+/- 10 %, 8 A ... 32 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos phi (0.5...1), 50/60 Hz, 25 °C
• at apparent power measurement 1	+/- 3 %, 0.25 ... 8 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos phi (0.5...1), 50/60 Hz, 25 °C
• at apparent power measurement 2	+/- 5 %, 8 A ... 32 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos phi (0.5...1), 50/60 Hz, 25 °C
Accuracy of ground-fault monitoring	In the range 30 % .. 120 %/Is: +/- 10 % (Class CI-A), in range 15 % .. 30 % Ie: +/- 25 % (Class CI-B), both values acc. to IEC 60947-1 Annex T
Temperature drift per °C	0.02 %/°C; Reference temperature: 25°C
Measured variable frequency	45 ... 65 Hz

Installation/ mounting/ dimensions

Mounting position	any
Mounting type	screw and snap-on mounting
Height	84 mm
Width	45 mm
Depth	64 mm
Required spacing	
• top	30 mm
• bottom	30 mm
• left	0 mm
• right	0 mm
Diameter of feed through opening	7.5 mm
Diameter of feed through opening for current measurement	7.5 mm

Connections/ Terminals

Type of electrical connection	
• for main current circuit	straight-through transformers
• for auxiliary and control current circuit	screw-type terminals

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Type of electrical connection at the measurement inputs for voltage	screw-type terminals
Type of connectable conductor cross-sections at the measurement inputs for voltage	
• finely stranded with core end processing	1x (0.25 ... 2.5 mm²), 2x (0.25 ... 1.0 mm²)
• solid	1x (0.25 ... 2.5 mm²), 2x (0.25 ... 1.0 mm²)
• at AWG conductors solid	1x (24 ... 14), 2x (24 ... 18)
• at AWG conductors stranded	1x (20 ... 14), 2x (20 ... 16)
Tightening torque at the measurement inputs for voltage	0.5 ... 0.6 N·m
Tightening torque [lbf·in] at the measurement inputs for voltage	4.4 ... 5.3 lbf·in
Type of electrical connection at the measurement inputs for current	Screw terminals possible with a suitable 3RT19 box terminal

Ambient conditions

Installation altitude at height above sea level	
• 1 maximum	2 000 m
• 2 maximum	3 000 m; max. +50 °C (no protective separation)
• 3 maximum	4 000 m; max. +40 °C (no protective separation)
Ambient temperature	
• during operation	-25 ... +60 °C
Environmental category	
• during operation acc. to IEC 60721	3K6 (no formation of ice, no condensation, relative humidity 10 ... 95%), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
• during storage acc. to IEC 60721	1K6 (no condensation, relative humidity 10 ... 95%), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4
• during transport acc. to IEC 60721	2K2, 2C1, 2S1, 2M2
Relative humidity	
• during operation	10 ... 95 %

Short-circuit protection

Product function Short circuit protection	No

Safety related data

Safety Integrity Level (SIL) acc. to IEC 61508	1

Galvanic isolation

(electrically) protective separation acc. to IEC 60947-1	All circuits with protective separation (double creepage paths and clearances), the information in the "Protective Separation" test report, No. A0258, must be observed (link see further information)

Main circuit

Number of poles for main current circuit	3
adjustable pick-up value current of the current-dependent overload release	0.3 ... 4 A

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Operating voltage	
• at AC	
— at 50 Hz rated value	110 ... 690 V
— at 60 Hz rated value	110 ... 690 V
Operating frequency rated value	50 ... 60 Hz

Control circuit/ Control

Type of voltage	AC
Inrush current maximum	40 A; 10 x Io

Certificates/ approvals

General Product Approval				EMC	For use in hazardous locations
CCC	CSA	UL	EAC	RCM	ATEX

For use in hazardous locations	Declaration of Conformity		Test Certificates		Marine / Shipping
IECEx	EG-Konf.	Miscellaneous	Type Test Certificates/Test Report	Special Test Certificate	ABS

Marine / Shipping			other		
LRS	RMRS		Confirmation	Profibus	PROFINET-Certification

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=3UF7110-1AA01-0

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF7110-1AA01-0

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3UF7110-1AA01-0

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF7110-1AA01-0&lang=en

Test report No. A0258, protective separation
https://support.industry.siemens.com/cs/ww/en/view/109748152

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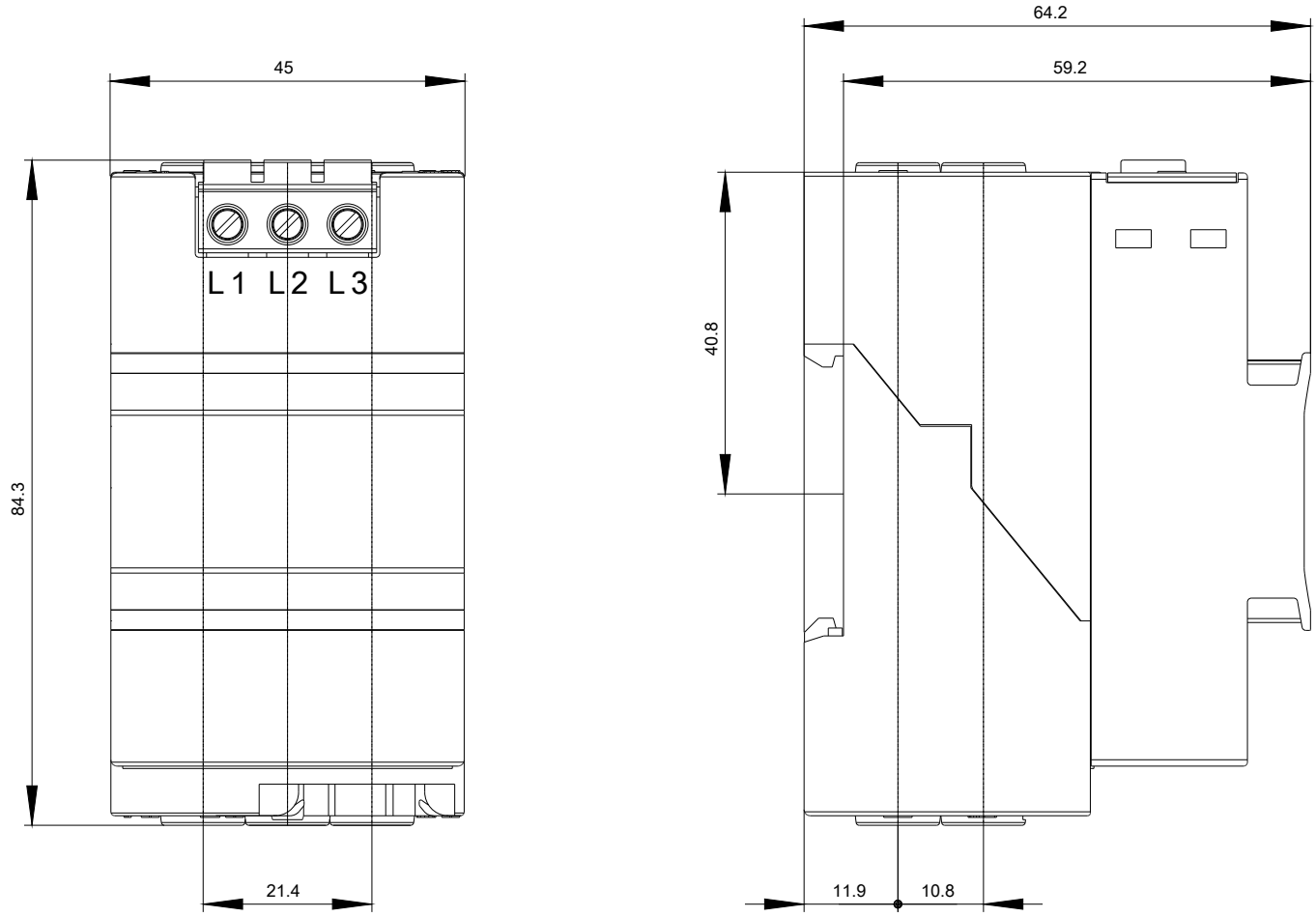

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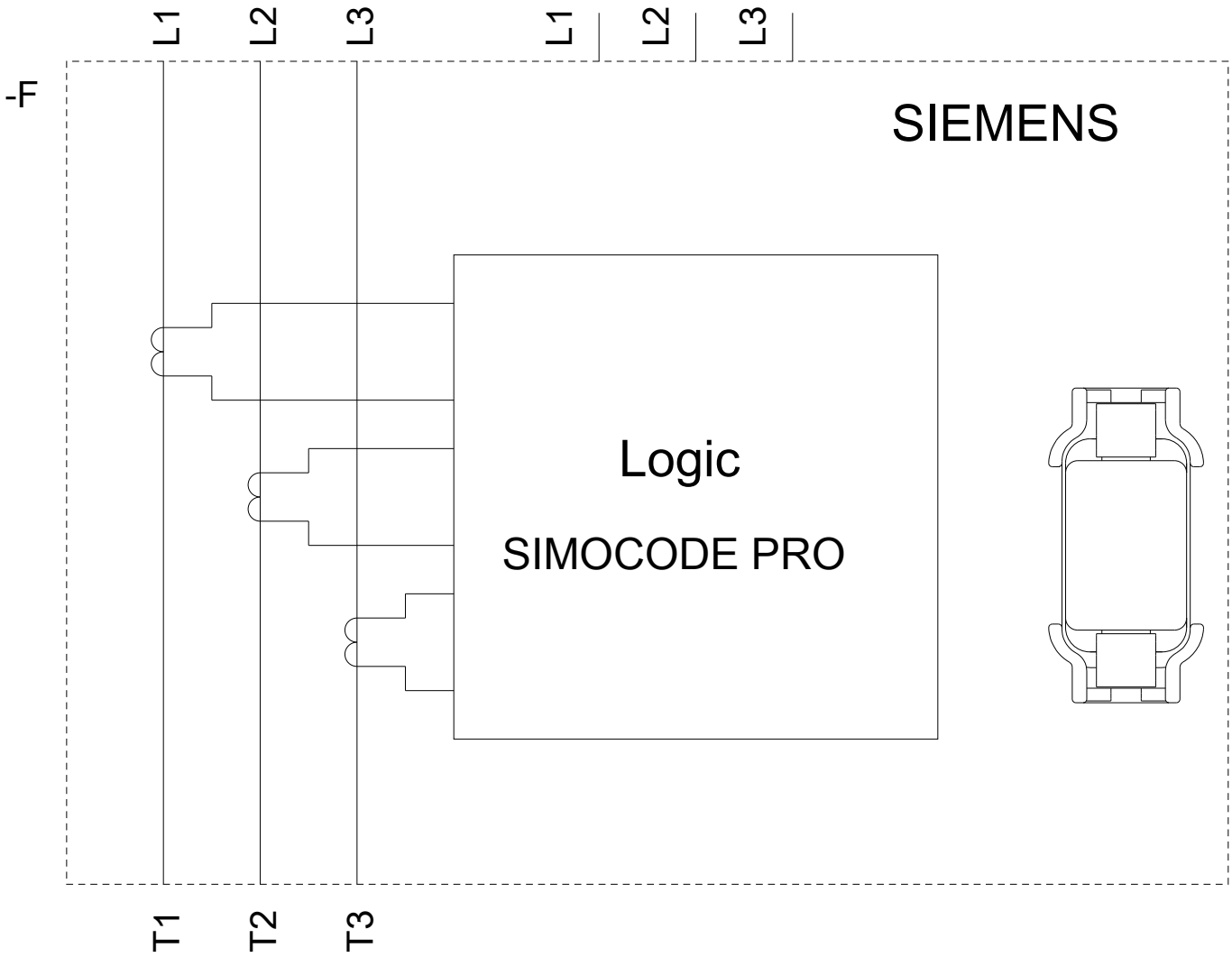

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