



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 per V PB, per V MR in version -ZB01, per V PN or per 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

<b>Insulation voltage</b>	
<ul style="list-style-type: none"> <li>• with degree of pollution 3 rated value</li> <li>• for wires of main circuit acc. to IEC 60947-1 rated value</li> </ul>	690 V 6 kV
<b>Surge voltage resistance rated value</b>	6 000 V
<b>Protection class IP</b>	IP20
<b>Shock resistance</b>	
<ul style="list-style-type: none"> <li>• acc. to IEC 60068-2-27</li> </ul>	15g / 11 ms; with basic unit snapped on
<b>Vibration resistance</b>	1-6 Hz / 15 mm; 6-500 Hz / 2 g; with basic unit snapped on: 1g
<b>Reference code acc. to DIN EN 81346-2</b>	F

#### Electromagnetic compatibility

<b>EMC emitted interference</b>	
<ul style="list-style-type: none"> <li>• acc. to IEC 60947-1</li> </ul>	class A
<b>EMI immunity acc. to IEC 60947-1</b>	corresponds to degree of severity 3
<b>Conducted interference</b>	
<ul style="list-style-type: none"> <li>• due to burst acc. to IEC 61000-4-4</li> <li>• due to conductor-earth surge acc. to IEC 61000-4-5</li> <li>• due to conductor-conductor surge acc. to IEC 61000-4-5</li> </ul>	2 kV 2 kV 1 kV
<b>Field-bound parasitic coupling acc. to IEC 61000-4-3</b>	10 V/m

#### Inputs/ Outputs

<b>Number of outputs as contact-affected switching element</b>	0
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#### Protective and monitoring functions

<b>Product function</b>	
<ul style="list-style-type: none"> <li>• power factor monitoring</li> <li>• ground-fault monitoring</li> <li>• voltage detection</li> </ul>	Yes Yes Yes
<b>Product function</b>	
<ul style="list-style-type: none"> <li>• Current detection</li> <li>• Overload protection</li> </ul>	Yes Yes

#### Precision

<b>Measuring precision</b>	
<ul style="list-style-type: none"> <li>• of frequency measurement</li> <li>• for current measurement 1</li> <li>• for current measurement 2</li> <li>• for voltage measurement 1</li> </ul>	+/- 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 +/- 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 +/- 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 +/- 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
<b>Accuracy of ground-fault monitoring</b>	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
<b>Temperature drift per °C</b>	0.02 %/°C; Reference temperature: 25°C
<b>Measured variable frequency</b>	45 ... 65 Hz

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

Connections/Terminals	
<b>Type of electrical connection</b>	
• for main current circuit	straight-through transformers
• for auxiliary and control current circuit	screw-type terminals
<b>Type of electrical connection at the measurement inputs for voltage</b>	screw-type terminals
<b>Type of connectable conductor cross-sections at the measurement inputs for voltage</b>	
• finely stranded with core end processing	1x (0.25 ... 2.5 mm²), 2x (0.25 ... 1.0 mm²)

<ul style="list-style-type: none"> <li>• solid</li> <li>• at AWG conductors solid</li> <li>• at AWG conductors stranded</li> </ul>	1x (0.25 ... 2.5 mm <sup>2</sup> ), 2x (0.25 ... 1.0 mm <sup>2</sup> ) 1x (24 ... 14), 2x (24 ... 18) 1x (20 ... 14), 2x (20 ... 16)
<b>Tightening torque at the measurement inputs for voltage</b>	0.5 ... 0.6 N·m
<b>Tightening torque [lbf·in] at the measurement inputs for voltage</b>	4.4 ... 5.3 lbf·in
<b>Type of electrical connection at the measurement inputs for current</b>	Screw terminals possible with a suitable 3RT19 box terminal

#### Ambient conditions

<b>Installation altitude at height above sea level</b>	
<ul style="list-style-type: none"> <li>• 1 maximum</li> <li>• 2 maximum</li> <li>• 3 maximum</li> </ul>	2 000 m 3 000 m; No protective separation at 50 °C 4 000 m; No protective separation at 40 °C
<b>Ambient temperature</b>	
<ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> <li>• during transport</li> </ul>	-25 ... +60 °C -40 ... +80 °C -40 ... +80 °C
<b>Environmental category</b>	
<ul style="list-style-type: none"> <li>• during operation acc. to IEC 60721</li> <li>• during storage acc. to IEC 60721</li> <li>• during transport acc. to IEC 60721</li> </ul>	3K6 (no formation of ice, no condensation, relative humidity 10 ... 95%), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 1K6 (no condensation, relative humidity 10 ... 95%), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4 2K2, 2C1, 2S1, 2M2
<b>Relative humidity</b>	
<ul style="list-style-type: none"> <li>• during operation</li> </ul>	10 ... 95 %

#### Short-circuit protection

<b>Product function Short circuit protection</b>	No
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#### Safety related data

<b>Safety Integrity Level (SIL) acc. to IEC 61508</b>	1
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#### Main circuit

<b>Number of poles for main current circuit</b>	3
<b>Adjustable pick-up value current of the current-dependent overload release</b>	0.3 ... 4 A
<b>Operating voltage</b>	
<ul style="list-style-type: none"> <li>• at AC <ul style="list-style-type: none"> <li>— at 50 Hz rated value</li> <li>— at 60 Hz rated value</li> </ul> </li> </ul>	110 ... 690 V 110 ... 690 V
<b>Operating frequency rated value</b>	50 ... 60 Hz

#### Control circuit/ Control

Type of voltage	AC
Type of voltage of the control supply voltage	AC
Inrush current maximum	40 A; 10 x I <sub>o</sub>

#### Certificates/approvals

General Product Approval	EMC	For use in hazardous locations
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Declaration of Conformity	Test Certificates	Marine / Shipping
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[Type Test Certificates/Test Report](#)



#### other

[Confirmation](#)

[PROFIsafe-Certification](#)



Profibus

[PROFINET-Certification](#)

#### Further information

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

<http://www.siemens.com/industrial-controls/catalogs>

**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,...)**

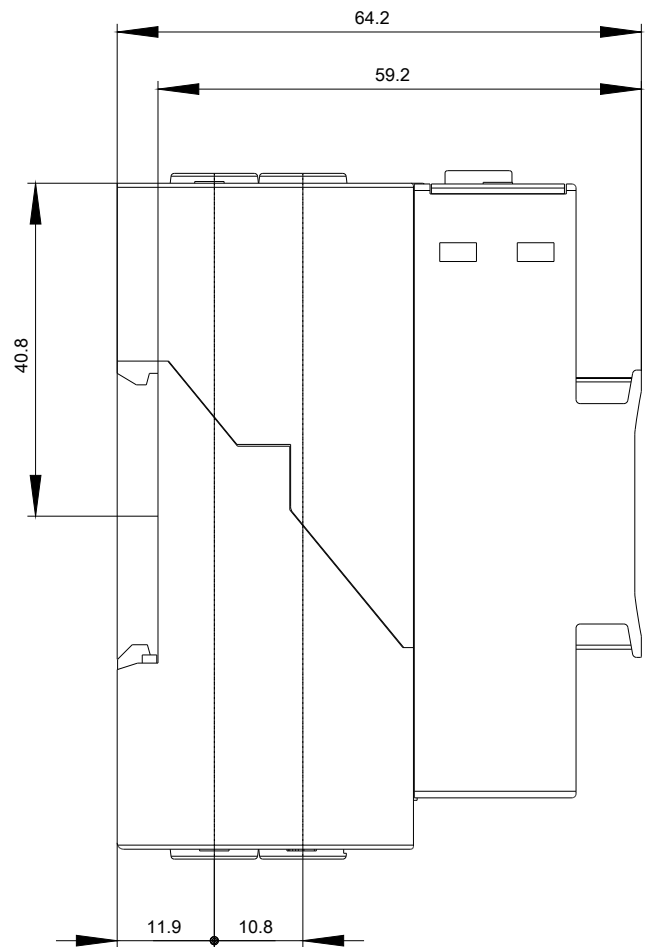
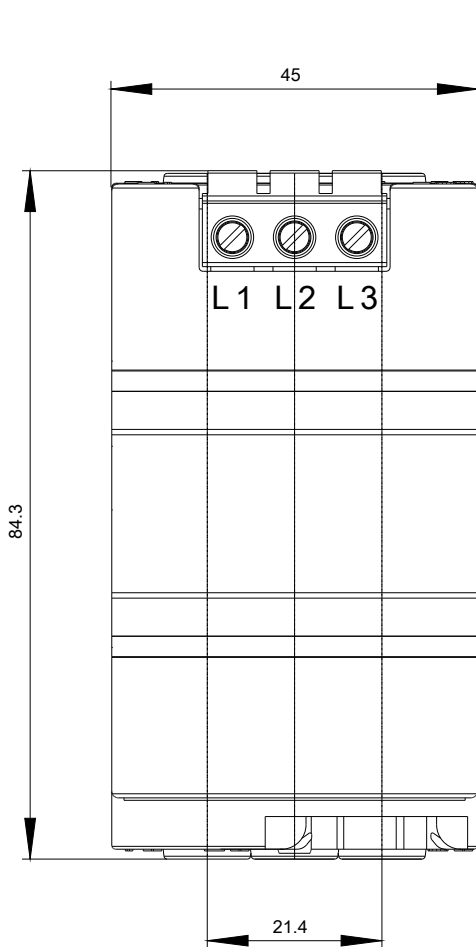
<https://support.industry.siemens.com/cs/ww/en/ps/3UF7110-1AA01-0>

**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](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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