

Current/voltage measuring module for dry-running protection of centrifugal pumps in hazardous areas; set current 20 ... 200 A, voltage measurement up to 690 V, width 120 mm, straight-through transformer



<b>product brand name</b>	SIRIUS
<b>product designation</b>	Current/voltage measuring module
<b>General technical data</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>• current measurement</li> <li>• voltage measurement</li> <li>• active power measurement</li> <li>• power measurement</li> <li>• frequency measurement</li> <li>• active power monitoring for pump dry-run according to Ignition protection type Ex b</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> </ul>
<b>measuring procedure for current measurement</b>	TRMS
<b>current measuring range extension with external current transformers</b>	No
<b>measuring procedure for voltage measurement</b>	TRMS
<b>measurable supply voltage between the line conductors at AC maximum rated value</b>	690 V
<b>line conductors and neutral conductors internal resistance for voltage measurement</b>	RC-based voltage divider
<b>product component</b>	
<ul style="list-style-type: none"> <li>• input for thermistor connection</li> </ul>	No
<b>insulation voltage</b>	
<ul style="list-style-type: none"> <li>• with degree of pollution 3 at AC rated value</li> <li>• for wires of main circuit acc. to IEC 60947-1 rated value</li> </ul>	<ul style="list-style-type: none"> <li>690 V</li> <li>6 kV</li> </ul>
<b>surge voltage resistance rated value</b>	6 000 V
<b>protection class IP</b>	IP20
shock resistance acc. to IEC 60068-2-27	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>Substance Prohibitance (Date)</b>	28.05.2009 00:00:00
<b>certificate of suitability</b>	
<ul style="list-style-type: none"> <li>• IECEx</li> <li>• according to ATEX directive 2014/34/EU</li> </ul>	<ul style="list-style-type: none"> <li>Yes; IECEx PTB 18.0004X</li> <li>BVS 06 ATEX F001, PTB 18 ATEX 5003 X</li> </ul>
explosion device group and category according to ATEX directive 2014/34/EU	II (2) G, II (2) D, I (M2) / I (1G/M2), II (1/2) G, II (1G/2D)
<b>Electromagnetic compatibility</b>	
EMC emitted interference acc. to IEC 60947-1	class A
EMC immunity acc. to IEC 60947-1	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> </ul>	<ul style="list-style-type: none"> <li>2 kV</li> <li>2 kV</li> </ul>

<ul style="list-style-type: none"> <li>• due to conductor-conductor surge acc. to IEC 61000-4-5</li> </ul>	1 kV
<b>field-based interference acc. to IEC 61000-4-3</b>	10 V/m
<b>Inputs/ Outputs</b>	
<b>number of outputs as contact-affected switching element</b>	0
<b>Protective and monitoring functions</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>• power factor monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• ground-fault monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• voltage detection</li> </ul>	Yes
<b>product function</b>	
<ul style="list-style-type: none"> <li>• current detection</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• overload protection</li> </ul>	Yes
<b>Precision</b>	
<b>measuring precision</b>	
<ul style="list-style-type: none"> <li>• of frequency measurement</li> </ul>	+/- 1.5 %, 15 A ... 400 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
<ul style="list-style-type: none"> <li>• for current measurement 1</li> </ul>	+/- 1.5 %, in range 400 A ... 1600 A, in range 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), 50/60 Hz, 25 °C
<ul style="list-style-type: none"> <li>• for current measurement 2</li> </ul>	+/- 5 %, in range 400 A ... 1600 A, in range 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), 50/60 Hz, 25 °C
<ul style="list-style-type: none"> <li>• for voltage measurement 1</li> </ul>	+/- 1.5 %, in range 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), 50/60 Hz, 25 °C
<ul style="list-style-type: none"> <li>• at cos phi-measurement 1</li> </ul>	+/- 1.5 %, 15 A ... 400 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
<ul style="list-style-type: none"> <li>• at cos phi-measurement 2</li> </ul>	+/- 5 %, 400 A ... 1600 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
<ul style="list-style-type: none"> <li>• at active power measurement 1</li> </ul>	+/- 5 %, 15 A ... 400 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
<ul style="list-style-type: none"> <li>• at active power measurement 2</li> </ul>	+/- 10 %, 400 A ... 1600 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
<ul style="list-style-type: none"> <li>• at energy measurement 1</li> </ul>	+/- 5 %, 47 ... 1260 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
<ul style="list-style-type: none"> <li>• at energy measurement 2</li> </ul>	+/- 10 %, 400 A ... 1600 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
<ul style="list-style-type: none"> <li>• at apparent power measurement 1</li> </ul>	+/- 3 %, 15 A ... 400 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
<ul style="list-style-type: none"> <li>• at apparent power measurement 2</li> </ul>	+/- 5 %, 400 A ... 1600 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>	0.01 %/°C; Reference temperature: 25°C
<b>measured variable frequency</b>	45 ... 65 Hz
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	any
<b>fastening method</b>	screw and snap-on mounting
<b>height</b>	95 mm
<b>width</b>	120 mm
<b>depth</b>	145 mm
<b>required spacing</b>	
<ul style="list-style-type: none"> <li>• top</li> </ul>	30 mm
<ul style="list-style-type: none"> <li>• bottom</li> </ul>	30 mm
<ul style="list-style-type: none"> <li>• left</li> </ul>	0 mm
<ul style="list-style-type: none"> <li>• right</li> </ul>	0 mm
<b>diameter of inlet opening</b>	25 mm
<b>diameter of inlet opening for current measurement</b>	25 mm
<b>Connections/ Terminals</b>	
<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>	
<ul style="list-style-type: none"> <li>• finely stranded with core end processing</li> </ul>	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )

<ul style="list-style-type: none"> <li>• solid</li> <li>• at AWG cables solid</li> <li>• at AWG cables stranded</li> </ul>	1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> ) 1x (20 ... 12), 2x (20 ... 14) 1x (20 ... 14), 2x (20 ... 16)
<b>tightening torque at the measurement inputs for voltage</b>	0.8 ... 1.2 N·m
<b>tightening torque [lbf·in] at the measurement inputs for voltage</b>	7 ... 10.3 lbf·in

### 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; max. +50 °C (no protective separation) 4 000 m; max. +40 °C (no protective separation)
<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
relative humidity during operation	10 ... 95 %

### Short-circuit protection

<b>product function short circuit protection</b>	No
--	----

### Galvanic isolation

<b>(electrically) protective separation acc. to IEC 60947-1</b>	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

<b>number of poles for main current circuit</b>	3
<b>adjustable current response value current of the current-dependent overload release</b>	20 ... 200 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

<b>type of voltage</b>	AC
<b>inrush current maximum</b>	2 000 A; 10 x I <sub>o</sub>

### Certificates/ approvals

<b>General Product Approval</b>	<b>EMC</b>	<b>For use in hazardous locations</b>
---------------------------------	------------	---------------------------------------



<b>For use in hazardous locations</b>	<b>Declaration of Conformity</b>	<b>Test Certificates</b>
---------------------------------------	----------------------------------	--------------------------



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

<b>Test Certificates</b>	<b>Marine / Shipping</b>	<b>other</b>
--------------------------	--------------------------	--------------

[Special Test Certificate](#)



[Confirmation](#)

other

[PROFINET-Certification](#)



### Further information

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=3UF7123-1AA01-0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF7123-1AA01-0>

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

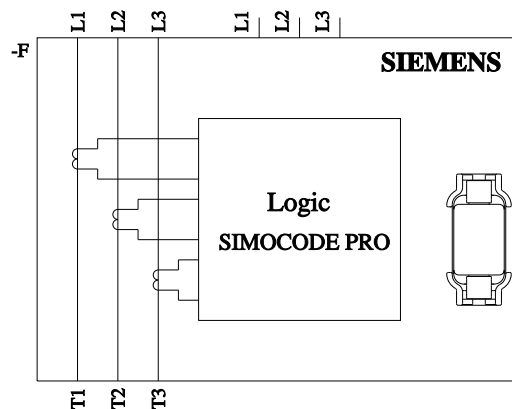
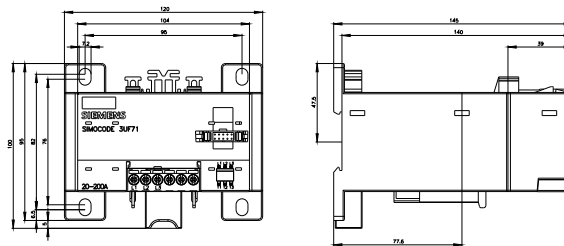
<https://support.industry.siemens.com/cs/ww/en/ps/3UF7123-1AA01-0>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3UF7123-1AA01-0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF7123-1AA01-0&lang=en)

Test report No. A0258, protective separation

<https://support.industry.siemens.com/cs/ww/en/view/109748152>



last modified:

1/18/2021