SIEMENS

Data sheet 3UF7120-1AA01-0



current/voltage measuring module for dry-running protection of centrifugal pumps in hazardous areas, current setting 0.3...4 A, voltage measurement up to 690 V, width 45 mm, straight-through transformer

product brand name	SIMOCODE
product designation	Current/voltage measuring module
product type designation	IUM
General technical data	
measuring procedure	RMS value measurement
size of the circuit-breaker	S00, S0
product function	
● current measurement	Yes
● voltage measurement	Yes
● active power measurement	Yes
● energy measurement	Yes
● frequency measurement	Yes
● active power monitoring for pump dry-run according to Ignition protection type Ex b	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 line conductors at AC maximum rated value	690 V
product component	
● input for thermistor connection	No
consumed active power	0.5 W
insulation voltage	
● with degree of pollution 3 at AC rated value	690 V
● for wires of main circuit according to IEC 60947-1 rated value	6 kV
surge voltage resistance rated value	6 000 V
shock resistance according to IEC 60068-2-27	15 g / 11 ms; with basic unit snapped on
vibration resistance	1 … 6 Hz / 15 mm; 6 … 500 Hz / 2 g; with basic unit snapped on: 1 g
Substance Prohibitance (day/month/year)	05/28/2009
SVHC substance name	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1
Net Weight	0.188 kg
Electromagnetic compatibility	
EMC emitted interference according to IEC 60947-1	class A
EMC immunity according to IEC 60947-1	corresponds to degree of severity 3
conducted interference	

Subject to change without notice
© Copyright Siemens

● due to burst according to IEC 61000-4-4	2 kV
● due to conductor-earth surge according to IEC 61000-4-5	2 kV
● due to conductor-conductor surge according to IEC 61000-4-5	1 kV
field-based interference according 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
trip class	CLASS 5E, 7E, 10E, 15E, 20E, 25E, 30E, 35E and 40E adjustable
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
● 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
● for active power 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 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
● for energy 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 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
● for apparent power measurement 1	+/- 3%, 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 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
fastening method	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 inlet opening	7.5 mm
diameter of inlet opening for current measurement	7.5 mm
Connections/ Terminals	
type of electrical connection	
● for main current circuit	straight-through transformers
● for auxiliary and control circuit	screw-type terminals

Subject to change without notice
© Copyright Siemens

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)
● for AWG cables solid	1x (24 ... 14), 2x (24 ... 18)
● for AWG cables 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
test voltage for isolation test note	For insulation tests, it is recommended to disconnect the voltage terminals; this is mandatory for DC test voltages.
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
● during storage	-40 ... +80 °C
● during transport	-40 ... +80 °C
environmental category	
● during operation according 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 according 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 according to IEC 60721	2K2, 2C1, 2S1, 2M2
relative humidity during operation	10 ... 95 %
Short-circuit protection	
product function short circuit protection	No
IEC 61508	
Safety Integrity Level (SIL) according to IEC 61508	1
ATEX	
certificate of suitability	
● IECEx	Yes; IECEx PTB 18.0004X
● according to ATEX directive 2014/34/EU	BVS 06 ATEX F001, PTB 18 ATEX 5003 X
● according to UKCA	ITS21UKEX0464, ITS21UKEX0455X
explosion device group and category according to ATEX directive 2014/34/EU	II (2) G, II (2) D, I (M2) / I (M2), II (1/2) G, II (1G/2D)
Galvanic isolation	
(electrically) protective separation according 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 current response value current of the current-dependent overload release	0.3 ... 4 A
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
Approvals Certificates	
Environment	**General Product Approval**

Subject to change without notice
© Copyright Siemens

Environmental Confirmations

General Product Approval	EMV	For use in hazardous locations

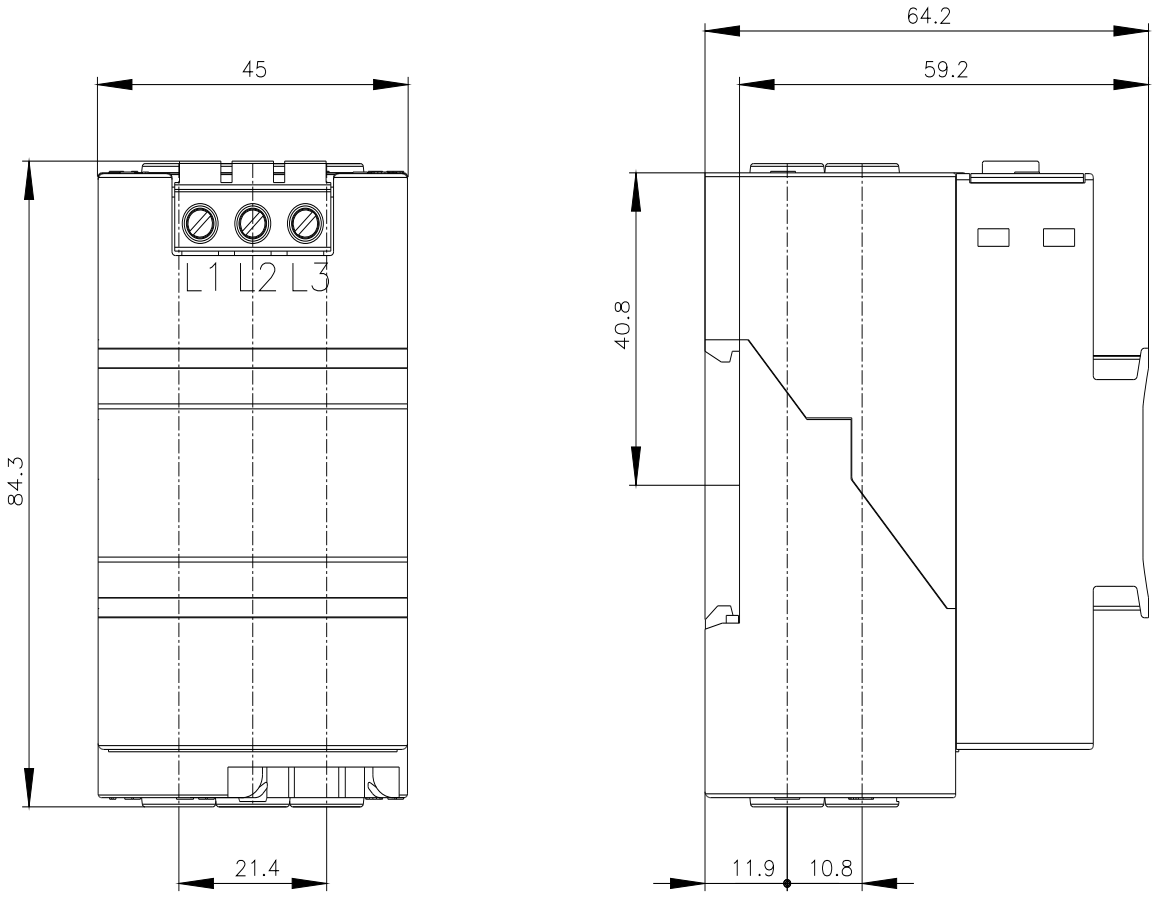
For use in hazardous locations		Test Certificates		
Miscellaneous		Special Test Certificate	Type Test Certificates/Test Report	Special Test Certificate

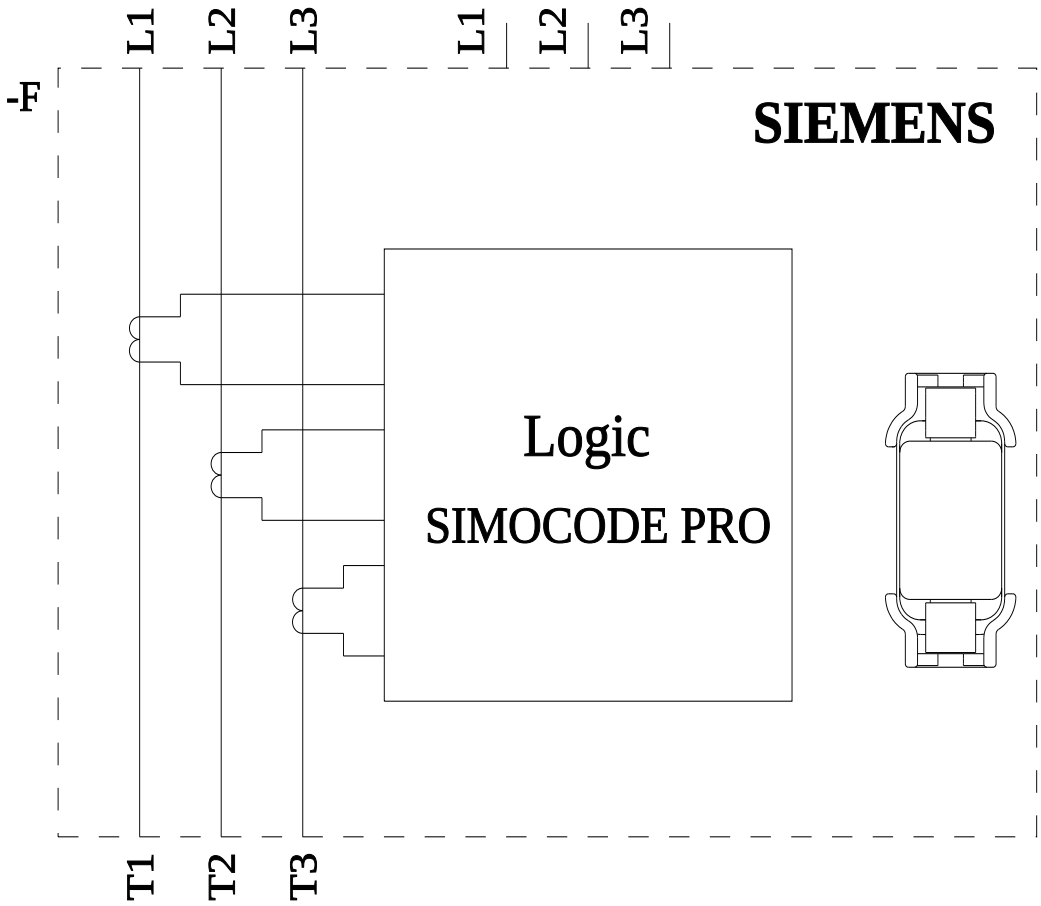
Maritime application			other		Industrial Communication
			Confirmation		

Further information

Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875
Information for data generation and storage
https://support.industry.siemens.com/cs/ww/en/view/109995012
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=3UF7120-1AA01-0
Cax online generator
https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF7120-1AA01-0
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3UF7120-1AA01-0
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF7120-1AA01-0&lang=en

© Copyright Siemens





last modified: 7/24/2026

Subject to change without notice
© Copyright Siemens

Subject to change without notice
© Copyright Siemens