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Data sheet 3UF8112-1AA00-0

Siemens EcoTech

current/voltage measuring module current setting 63 - 630 A, voltage detection up to 690 V, straight-through transformer, optional rail mounting set



product brand name	SIMOCODE
product designation	Current/voltage measuring module
product type designation	M-CP
General technical data	
measuring procedure	RMS value measurement
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	No
measuring procedure for current measurement	TRMS
current measuring range extension with external current transformers	No
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
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
vibration resistance	1 … 6 Hz / 15 mm; 6 … 500 Hz / 2 g; with rail mounting kit 6 g / 11 ms
reference code according to IEC 81346-2	F
Substance Prohibitance (day/month/year)	01/01/2024
SVHC substance name	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8
Net Weight	0.883 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	

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● 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 %, 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
● for current measurement 1	+/- 1.5 %, in range 47 A ... 1260 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	+/- 5%, in range 1260 A ... 5040 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	+/- 3%, 47 A ... 1260 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos-phi (0.4...1), 50/60 Hz, 25 °C
● at cos phi-measurement 2	+/- 5%, 1260 A ... 5040 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos-phi (0.4...1), 50/60 Hz, 25 °C
● for active power measurement 1	+/- 5%, 47 A ... 1260 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos-phi (0.4...1), 50/60 Hz, 25 °C
● for active power measurement 2	+/- 10 %, 1260 A ... 5040 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos-phi (0.4...1), 50/60 Hz, 25 °C
● for energy measurement 1	+/- 5%, 47 A ... 1260 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos-phi (0.4...1), 50/60 Hz, 25 °C
● for energy measurement 2	+/- 10 %, 1260 A ... 5040 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos-phi (0.4...1), 50/60 Hz, 25 °C
● for apparent power measurement 1	+/- 3%, 47 A ... 1260 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos-phi (0.4...1), 50/60 Hz, 25 °C
● for apparent power measurement 2	+/- 5%, 1260 A ... 5040 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos-phi (0.4...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	Reference temperature: 25°C
measured variable frequency	45 ... 65 Hz
Installation/ mounting/ dimensions	
mounting position	any
height	104.1 mm
width	145 mm
depth	101.8 mm
required spacing	
● top	30 mm
● bottom	30 mm
● left	0 mm
● right	0 mm
diameter of inlet opening	26 mm
diameter of inlet opening for current measurement	26 mm
Connections/ Terminals	
width of connection bar	25 mm
thickness of connection bar	6 mm
diameter of holes	26 mm
number of holes	3

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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)
● 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
type of connectable conductor cross-sections at the measurement inputs for current	
● solid with core end processing	50 mm² ... 185 mm²
● stranded with core end processing	25 mm² ... 185 mm²
● for AWG cables	4/0 kcmil ... 350 kcmil
design of the thread of the connection screw at the measurement inputs for current	M8 x 25 / M10 x 30
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	3K24 (condensation occasionally, no precipitation, no water, no ice formation, relative humidity 10 ... 95%), 3C3 (no salt mist), 3B2, 3S5 (sand must not enter the device), 3M6
● during storage according to IEC 60721	1K22 (condensation occasionally, no precipitation, no water, no ice formation, relative humidity 10 ... 95%), 1C2 (no salt mist), 1B2, 1S10 (sand must not enter the device), 1M4
● during transport according to IEC 60721	2K12 (no condensation, no thermal shock), 2C1 (no salt mist), 2B2, 2S1, 2M2
relative humidity during operation	5 ... 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 BVS 25.0051 X
● according to ATEX directive 2014/34/EU	BVS 25 ATEX F001 X
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 clearances and creepage distances)
Main circuit	
number of poles for main current circuit	3
adjustable current response value current of the current-dependent overload release	63 ... 630 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	6 300 A; 10 x Io
Approvals Certificates	

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Environment	General Product Approval
Environmental Confirmations	

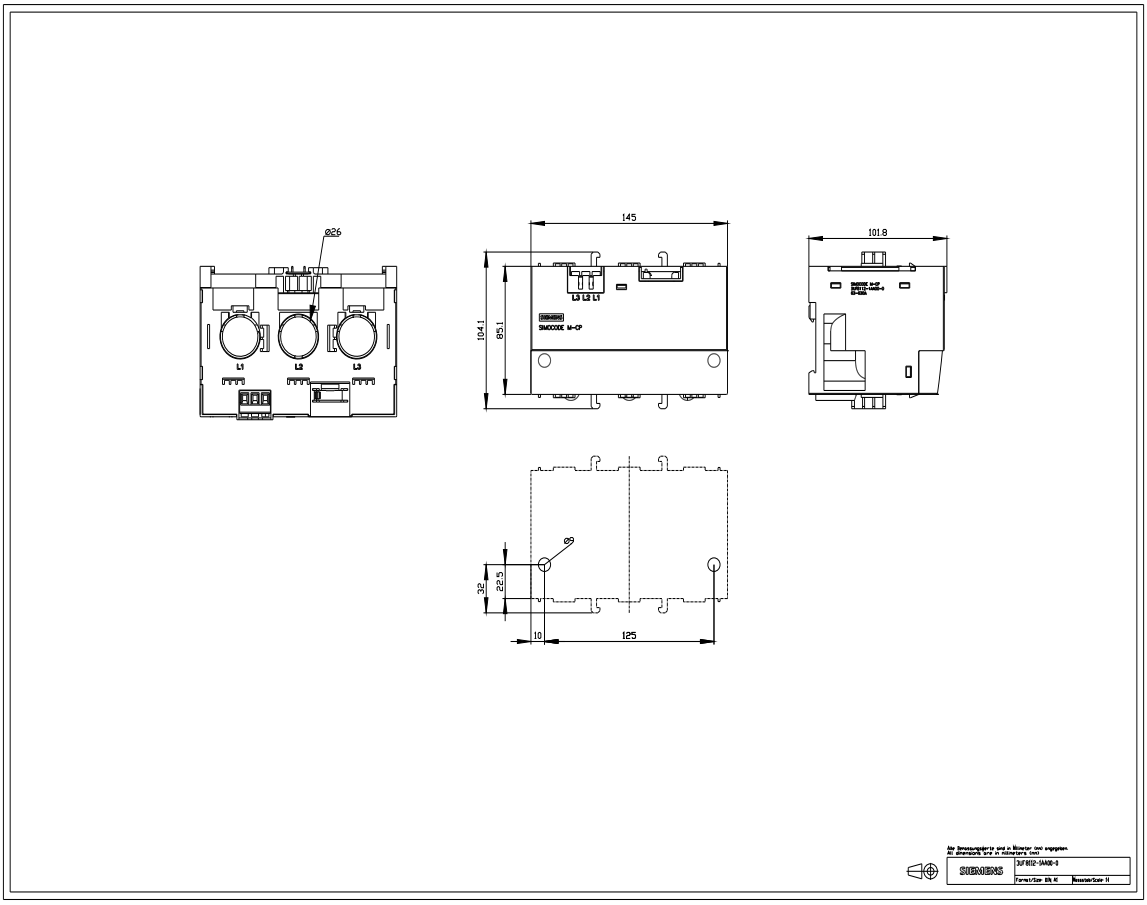
General Product Approval	EMV	For use in hazardous locations

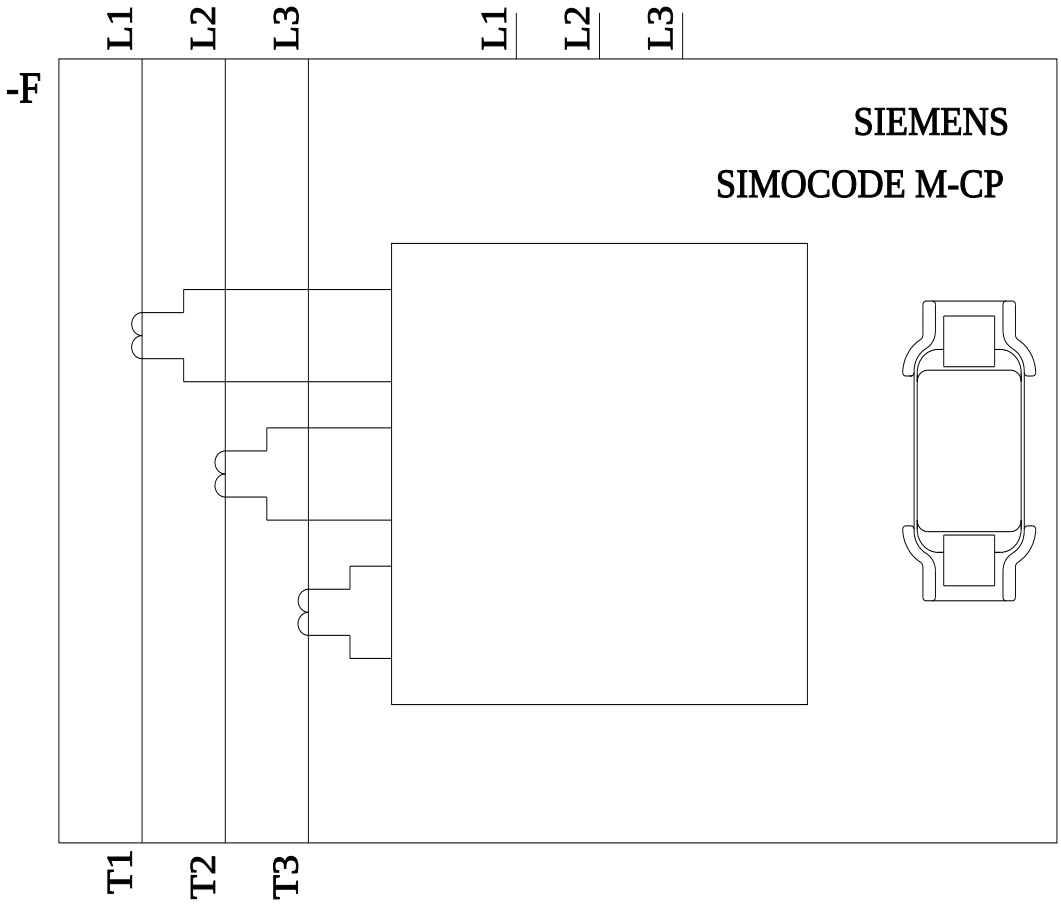
Test Certificates	Maritime application	other	Industrial Communication
Type Test Certificates/Test Report Special Test Certificate		Confirmation	

Further information

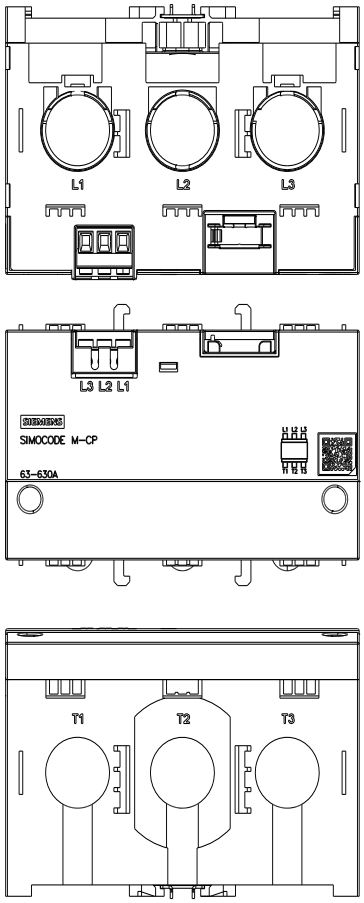
Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875
Information for data generation and storage
https://support.industry.siemens.com/cs/ww/en/view/109995012
Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3UF8112-1AA00-0
Cax online generator
https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF8112-1AA00-0
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3UF8112-1AA00-0
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF8112-1AA00-0&lang=en

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