SIEMENS

Data sheet 3UF7114-1BA01-0

Current/voltage measuring module V2; Set current 63...630 A, Voltage measurement up to 690 V, Overall width 145 mm, Busbar connection 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	No
measuring procedure for voltage measurement	TRMS
measurable supply voltage between the line conductors at AC maximum rated value	690 V
line conductors and neutral conductors internal resistance for voltage measurement	1 MΩ; RC-based voltage divider
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
protection class IP	IP00
shock resistance according 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 according to IEC 81346-2	F
Substance Prohibitance (Date)	05/28/2009
certificate of suitability	
● according to ATEX directive 2014/34/EU	BVS 06 ATEX F001
● according to UKCA	ITS21UKEX0464
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 according to IEC 60947-1	class A
EMC immunity according to IEC 60947-1	corresponds to degree of severity 3
conducted interference	
● 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	1 kV

61000-4-5	
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
product function	
● current detection	Yes
● overload protection	Yes
Precision	
measuring precision	
● of frequency measurement	+/- 1.5 %, 47 A ... 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	+/- 1.5 %, 47 A ... 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
● 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 (0.5...1), 50/60 Hz, 25 °C
● at active power 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
● at 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 (0.5...1), 50/60 Hz, 25 °C
● at energy 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
● at energy measurement 2	+/- 10%, 1260 A ... 5040 A, 0.85 x 110 V ... 1.1 x 690 V (line-to-line voltages), cos-phi (0.5...1), 50/60 Hz, 25 °C
● at 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 (0.5...1), 50/60 Hz, 25 °C
● at 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 (0.5...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	0.01 %/°C; Reference temperature: 25°C
measured variable frequency	45 ... 65 Hz
Installation/ mounting/ dimensions	
mounting position	any
fastening method	direct mounting / stand-alone installation
height	147 mm
width	145 mm
depth	149 mm
required spacing	
● top	30 mm
● bottom	30 mm
● left	0 mm
● right	0 mm
Connections/ Terminals	
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 (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
● solid	1x (0.5 ... 4 mm²), 2x (0.5 ... 2.5 mm²)
● for AWG cables solid	1x (20 ... 12), 2x (20 ... 14)
● for AWG cables stranded	1x (20 ... 14), 2x (20 ... 16)
tightening torque at the measurement inputs for voltage	0.8 ... 1.2 N·m
tightening torque [lbf·in] at the measurement inputs for	7 ... 10.3 lbf·in

voltage	
type of connectable conductor cross-sections at the measurement inputs for current	
• solid with core end processing	50 mm² ... 240 mm²
• stranded with core end processing	70 mm² ... 240 mm²
• for AWG cables	1/0 kcmil ... 500 kcmil
design of the thread of the connection screw at the measurement inputs for current	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	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
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	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
Certificates/ approvals	

General Product Approval					EMC
CSA	Confirmation	CCC	UL	EAC	RCM

For use in hazardous locations			Declaration of Conformity		Test Certificates
IECEx	ATEX	Explosion Protection Certificate	EG-Konf.	UKCA	Special Test Certific-ate

Test Certificates	Marine / Shipping

Type Test Certific-ates/Test Report | Special Test Certific-ate | ABS | LRS | RMRS | DNV·GL

other

Confirmation | Profibus | PROFINET-Certifica-tion

Further information

Siemens has decided to exit the Russian market (see here).
https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.
Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875

Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10

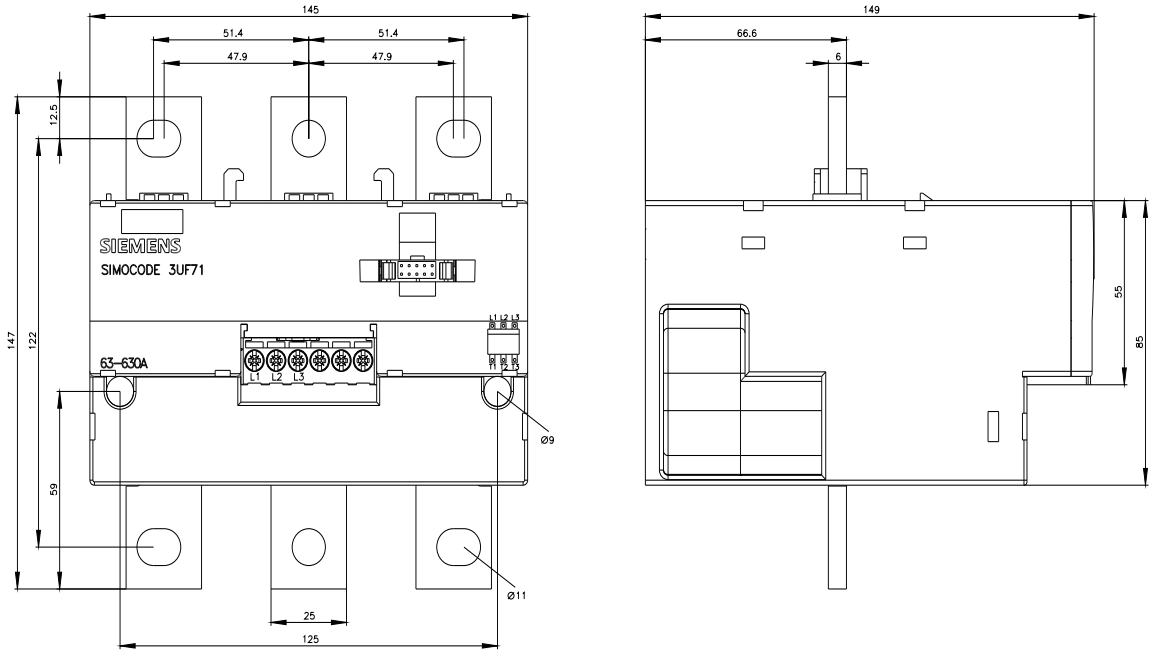
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3UF7114-1BA01-0

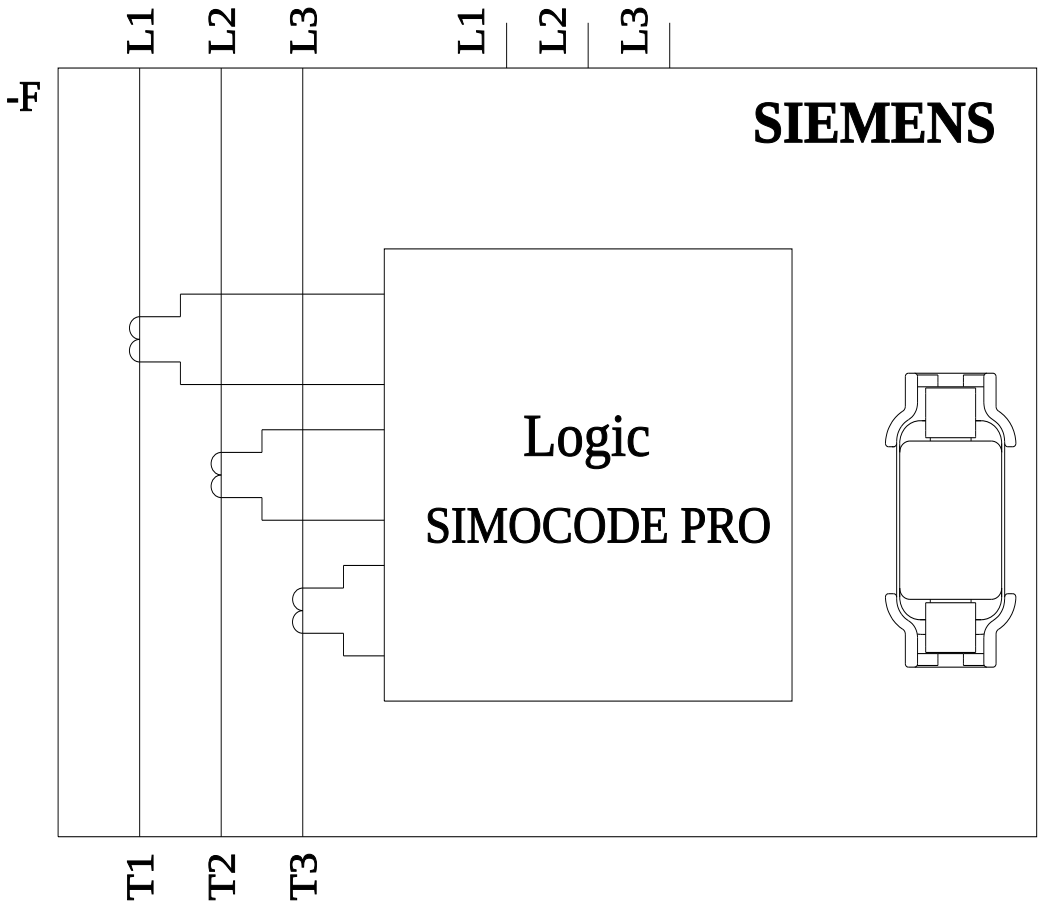
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF7114-1BA01-0

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3UF7114-1BA01-0

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF7114-1BA01-0&lang=en

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





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