



EU Type Examination Certificate Number: **0120/ SGS0315**

Shanghai Fangqiu Electric Co., Ltd.

Room 1903
No1958 North Zhongshan Road
Putuo District
Shanghai
China

Instrument Identification:
EM115-Mod

Single Phase, Active Import/Export (kWh), Electricity Meter

Instrument Traceable Number
0120/ SGS0315

has been assessed and certified as meeting the requirements of

EU Directive 2014/32/EU **on Measuring Instruments Annex II, Module B**

It is certified that the manufacturer's technical design and specimen for the above instrument has been examined and, based on the evidence submitted, it is considered that the instrument conforms to the requirements of Annex V of EU Directive 2014/32/EU

This certificate must be used in conjunction with a certificate covering the product verification as required in Annex II, Module D or Annex II, Module F

This certificate is valid for 10 years from 26th September 2017 until 25th September 2027
Issue 1


Certification is based on report number(s) EMA244344/1 dated 26th September 2017, SHES170600509001 dated 26th September 2017

Authorised Signature

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	Issue Number: 1	Dated: 26 th September 2017

1. Technical Data

Manufacturer	Shanghai Fangqiu Electric Co., Ltd
Meter Type	EM115-Mod
Voltage Rating (U_n)	230V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	1-20(100)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	B (kWh)
Type of circuit	1p2w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No	0115.1.1
CRC Checksum	D8159C09
Identification Location	LCD
Bill Of Materials Number	FQ-JS-001-062
IP Rating	IP51 Must be installed in a suitable IP rated enclosure
Insulation Protective Class	Class II
LED Pulse Constant	1000imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Terminal covers are wire & crimp. Main cover clipped in place and sealed with tamper proof sealing tape
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	DIN
Location of Manufacturers Address	Associated Documents

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2. Photograph of Meter and Sealing Plan

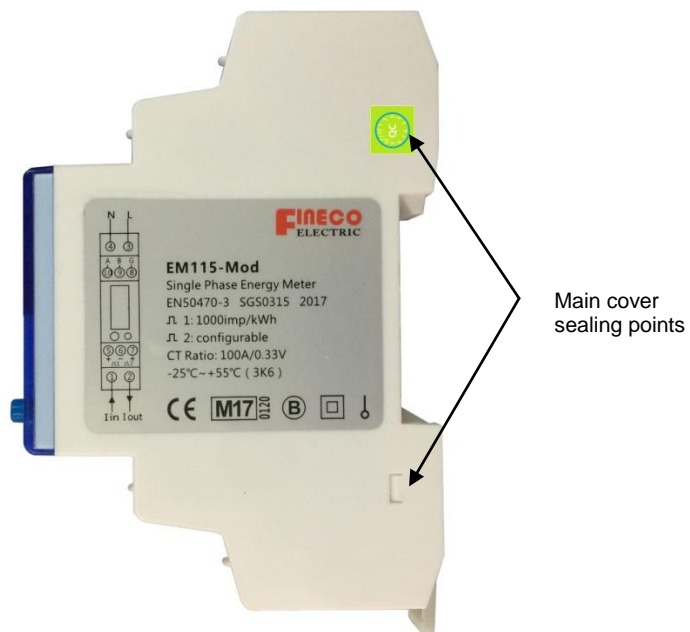



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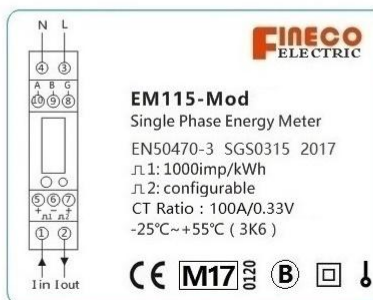
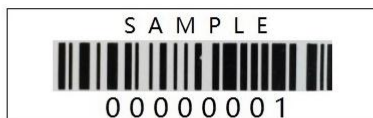
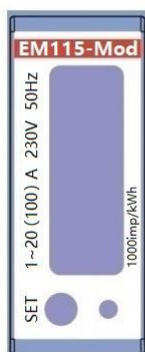
Dated: 26th September 2017



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3. Nameplates

METER :



CT :



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4. Calculation of the composite error/ MPE

During the type approval examination the influence factors for temperature, frequency and voltage are determined per load point. The table below represents the sum of the square values per load, determined via the following formula:-

$$\delta e(T, U, f) = \sqrt{(\delta e^2(T, I, \cos\phi) + \delta e^2(U, I, \cos\phi) + \delta e^2(f, I, \cos\phi))}$$


where

$\delta e(T, I, \cos\phi) =$ Additional error due to variation of the temperature at the same load

$\delta e(U, I, \cos\phi) =$ Additional error due to variation of the voltage at the same load

$\delta e(f, I, \cos\phi) =$ Additional error due to variation of the frequency at the same load

		Influence Factors for temperature, frequency and voltage					
Current	PF Cos	-25	-10	5	30	40	55
I _{min}	1.0	0.60	0.56	0.13	0.45	0.48	0.79
I _{tr}	1.0	0.67	0.58	0.07	0.28	0.46	0.75
10I _{tr}	1.0	0.70	0.58	0.10	0.13	0.44	0.77
I _{max}	1.0	0.78	0.61	0.14	0.09	0.41	0.69
I _{tr}	0.5ind	0.51	0.43	0.23	0.60	0.63	0.92
10I _{tr}	0.5ind	0.44	0.36	0.14	0.38	0.67	0.97
I _{max}	0.5ind	0.55	0.36	0.10	0.33	0.64	0.95
I _{tr}	0.8cap	1.03	0.81	0.39	0.36	0.44	0.67
10I _{tr}	0.8cap	0.95	0.77	0.37	0.31	0.45	0.69
I _{max}	0.8cap	0.91	0.80	0.42	0.34	0.46	0.69

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5. Annex of Variants

Product Variant Identification Details:


Type Designation

Description of meter

EM115-Mod

230V, 1-20(100)A, 50Hz, RS485 communication

Modifications to the meter(s) described according to approval No. **0120/ SGS0315** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

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6. Document Revision History

Issue	Date	Comments
1	26/09/2017	Initial Issue

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