EU Type Examination Certificate Number: **0120/SGS0306**

F&F Filipowski s.j.

Ul. Konstantynowska 79/81
95-200 Pabianice
Poland

Instrument Identification:
LE-03 Series

Instrument Traceable Number
0120/SGS0306

Polyphase, Active Import/Export (kWh), Electricity Meter

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 until 14th March 2027
Issue 1

Certification is based on report number(s) SHES151200818401 Dated 17th March 2017
EMA234429/1
EMA238979

Authorised Signature

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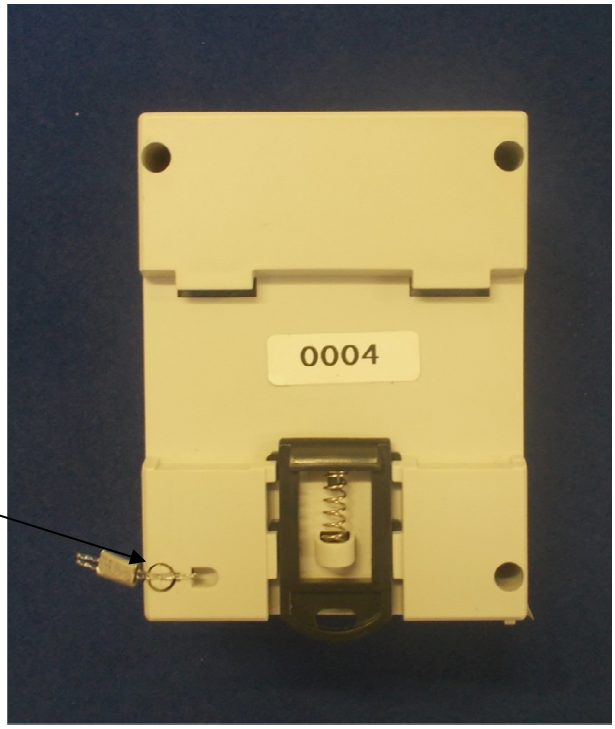
	EU-Type Examination Certificate Number:	
	0120/SGS0306	
	Issue Number: 1	Dated: 26th May 2017

1. Technical Data

Manufacturer	F&F Filipowski s.j.
Meter Type(s)	LE-03R LE-03M LE-03MW
Voltage Rating *(Un)*	3x230/400V
Current Rating *(Imin – Iref (Imax))*	0.25-5(30)A, 0.25-5(32)A, 0.25-5(40)A, 0.25-5(45)A, 0.25-5(50)A, 0.25-5(80)A,
Frequency *(Fn)*	50Hz
Active Accuracy Class *(kWh)*	A or B (kWh)
Type of circuit	3P4W
Temperature Range	-25°C to +55°C
Software Version No's. **Checksum** **Identification Location**	LE-03R – V1.01 LE-03M – V1.01 LE-03MW – V1.01 91E4 LCD & Nameplate
Bill Of Materials No.'s	LE-03R: D519032 LE-03M: D519033 LE-03MW: D519024
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	1000imp/kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	DIN
Location of Manufacturers Name & Address	User Manual

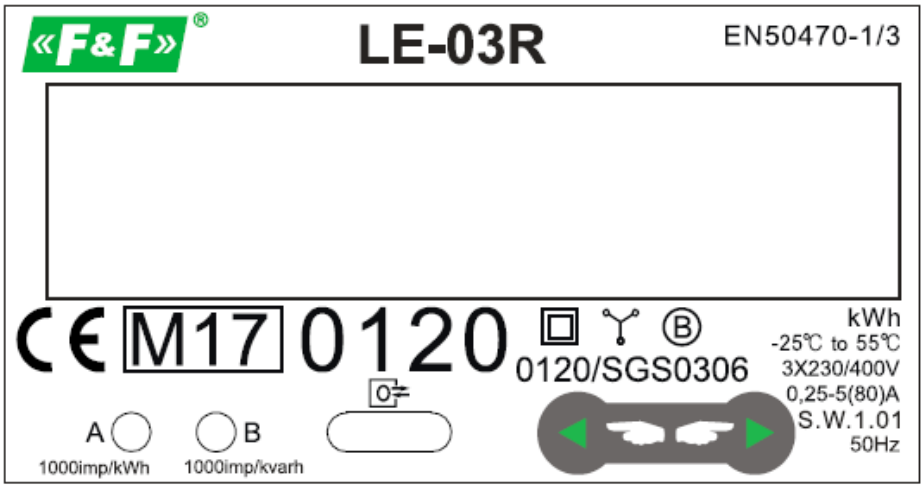
2. Photographs of Meter and Sealing Plan

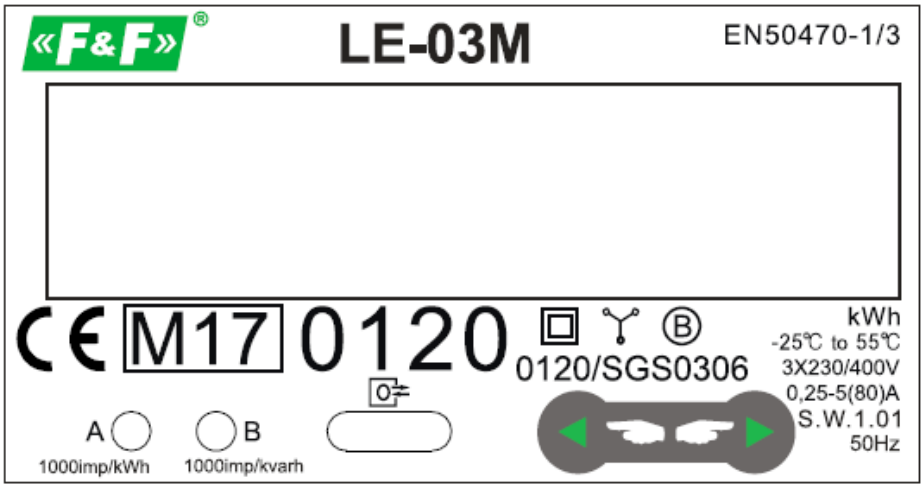
Terminal cover seals

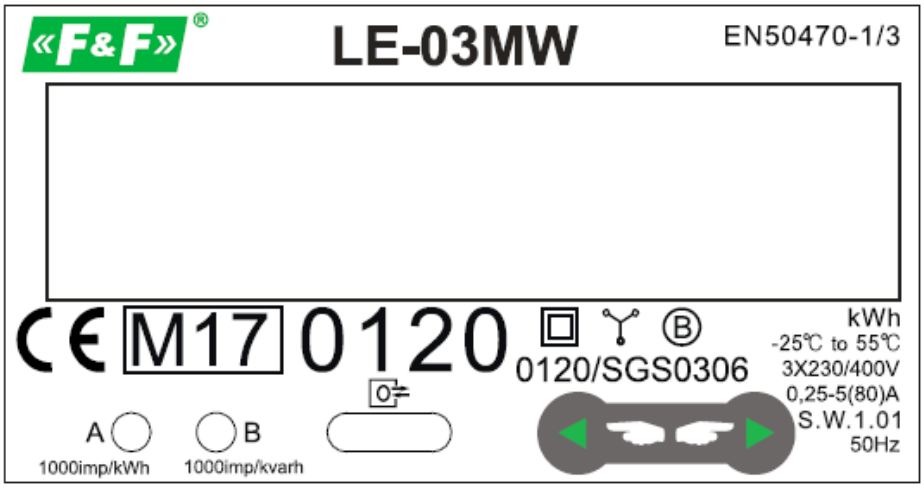


Main cover seal

3. Examples of Nameplates







4. Influence factors for temperature, frequency and voltage

		Influence Factors for Temperature. Frequency & Voltage					
Current	**PF Cos**	-25℃	-10℃	5℃	30℃	40℃	55℃
Imin	1.0	0.38	0.25	0.13	0.08	0.17	0.29
Itr	1.0	0.38	0.27	0.14	0.07	0.16	0.31
10Itr	1.0	0.37	0.25	0.13	0.08	0.18	0.33
Imax	1.0	0.32	0.22	0.16	0.06	0.15	0.28
Itr	0.5ind	0.38	0.27	0.13	0.06	0.14	0.31
10Itr	0.5ind	0.36	0.24	0.11	0.09	0.19	0.35
Imax	0.5ind	0.30	0.21	0.14	0.05	0.15	0.31
Itr	0.8cap	0.37	0.26	0.14	0.07	0.17	0.33
10Itr	0.8cap	0.35	0.23	0.11	0.11	0.20	0.36
Imax	0.8cap	0.30	0.21	0.13	0.07	0.16	0.31
					0.00	0.00	0.00
L1							
Itr	1.0	0.39	0.26	0.12	0.07	0.17	0.26
10Itr	1.0	0.39	0.25	0.11	0.09	0.18	0.29
Imax	1.0	0.30	0.21	0.13	0.06	0.15	0.26
Itr	0.5ind	0.39	0.26	0.12	0.09	0.15	0.30
10Itr	0.5ind	0.38	0.25	0.11	0.10	0.19	0.33
Imax	0.5ind	0.30	0.21	0.13	0.06	0.15	0.28
L2							
Itr	1.0	0.52	0.37	0.20	0.10	0.24	0.46
10Itr	1.0	0.51	0.35	0.17	0.12	0.26	0.49
Imax	1.0	0.45	0.33	0.21	0.08	0.21	0.42
Itr	0.5ind	0.54	0.36	0.20	0.08	0.22	0.44
10Itr	0.5ind	0.51	0.35	0.17	0.11	0.25	0.47
Imax	0.5ind	0.47	0.34	0.22	0.08	0.20	0.41
L3							
Itr	1.0	0.17	0.12	0.08	0.07	0.12	0.28
10Itr	1.0	0.15	0.12	0.06	0.05	0.13	0.27
Imax	1.0	0.09	0.09	0.07	0.04	0.10	0.23
Itr	0.5ind	0.16	0.12	0.06	0.05	0.09	0.26
10Itr	0.5ind	0.12	0.11	0.06	0.08	0.13	0.28
Imax	0.5ind	0.06	0.08	0.02	0.05	0.11	0.24

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

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

where

$\delta e(T, I, \cos\varphi)$	=	Additional error due to variation of the temperature at the same load
$\delta e(U, I, \cos\varphi)$	=	Additional error due to variation of the voltage at the same load
$\delta e(f, I, \cos\varphi)$	=	Additional error due to variation of the frequency at the same load

5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
LE-03R	3x230/400V, 0.25-5(x), energy measurement(kWh & kVarh), IR
LE-03M	3x230/400V, 0.25-5(x), energy measurement(kWh & kVarh), IR, RS485(Modbus Protocol)
LE-03MW	3x230/400V, 0.25-5(x), energy measurement(kWh & kVarh), IR, RS485(Modbus Protocol), Multi Tariff

Modifications to the meter(s) described according to approval No.**0120/SGS0306** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

6. Document Revision History

Issue	Date	Comments
1	26/05/2017	Initial Issue

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