



EU Type Examination Certificate Number: **0120/SGS0305**

**F&F Filipowski s.j.**

Ul. Konstantinowska 79/81  
95-200 Pabianice  
Poland

Instrument Identification:  
**LE-01 Series**

Instrument Traceable Number  
**0120/SGS0305**

**Single phase, 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 11<sup>th</sup> October 2026  
Issue 1

Certification is based on report number(s) SHES1601000434001 dated 10<sup>th</sup> October 2016  
EMA228674  
EMA238979

Authorised Signature


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	EU-Type Examination Certificate Number:	
	<b>0120/SGS0305</b>	
	Issue Number: 1	Dated: 26 <sup>th</sup> May 2017

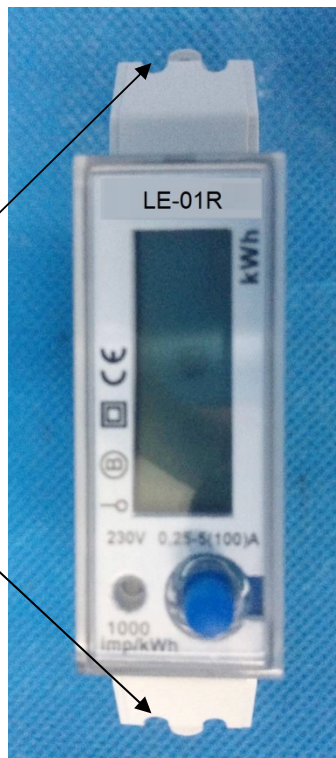
## 1. Technical Data

Manufacturer	F&F Filipowski s.j.
Meter Type(s)	LE-01R LE-01MR LE-01MW
Voltage Rating ( $U_n$ )	230V
Current Rating ( $I_{min} - I_{ref} (I_{max})$ )	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(60)A, 0.25-5(80)A, 0.25-5(100)A
Frequency ( $F_n$ )	50Hz
Active Accuracy Class ( $kWh$ )	B ( $kWh$ )
Type of circuit	1p2w
Temperature Range	-25°C to +55°C
Software Version No's.	LE-01R: V1.0 LE-01MR: V1.0 LE-01MW: V1.1
Identification Location	LCD & Nameplate
Bill Of Materials No.'s	LE-01R: D118018 LE-01MR: D118019 LE-01MW: D113022
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	100imp/kWh, 1000imp/kWh, 2000imp/kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp
Integrity of meter	Inaccessible without breaking seal
Intended Location of the Meter	Indoor
Type of Register	LCD
Location of Manufacturers Name & Address	Side of the meter and associated documentation


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## 2. Photographs of Meter and Sealing Plan

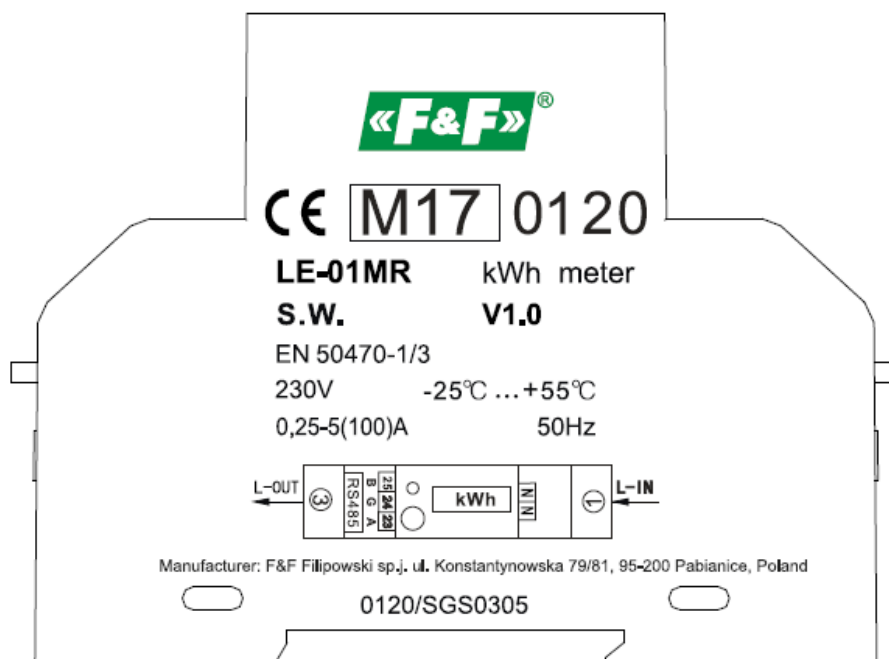
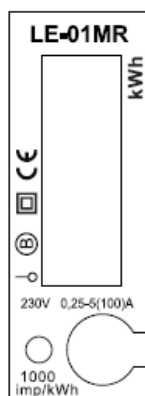
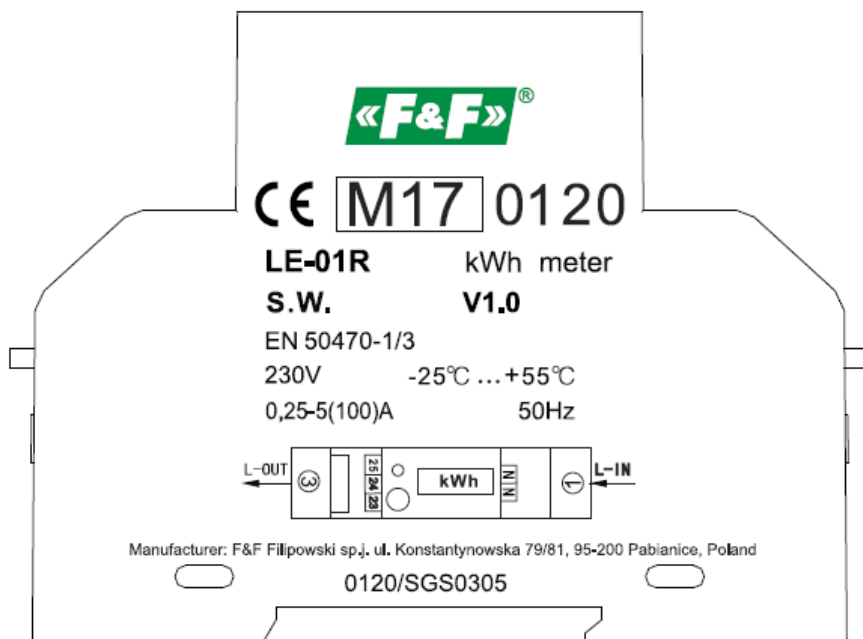
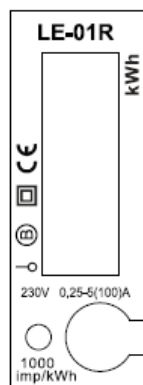
Terminal Cover  
Sealing Points




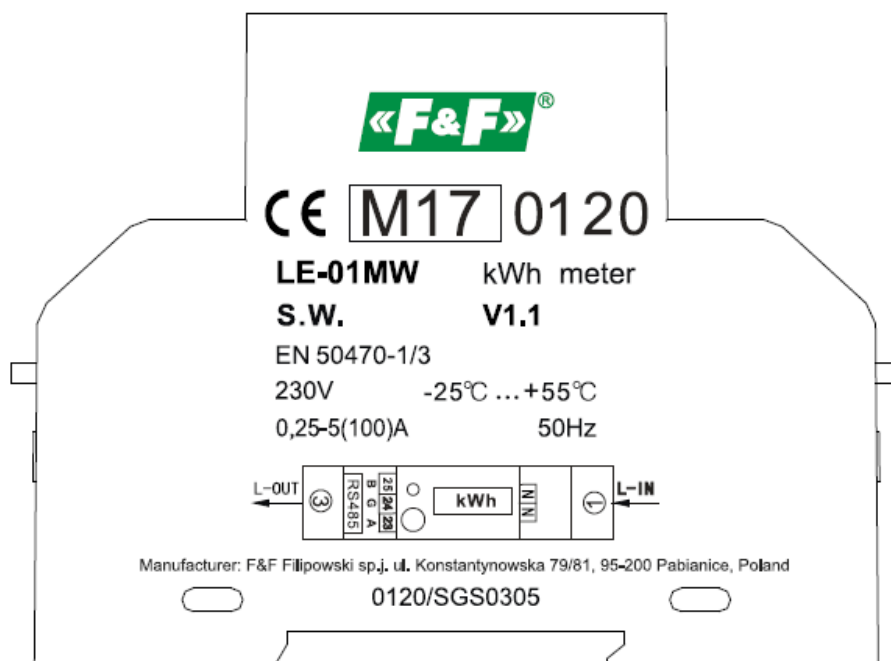
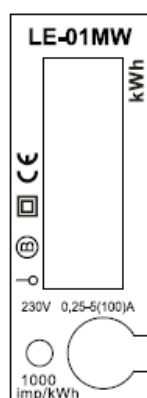
Main Cover  
Sealing Points


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### 3. Examples of Nameplates



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#### 4. Influence factors for temperature, frequency and voltage


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, Voltage & Frequency					
Current	PF Cos	-25 °C	-10 °C	5 °C	30 °C	40 °C	55 °C
I <sub>min</sub>	1.0	0.58	0.38	0.23	0.11	0.21	0.45
I <sub>tr</sub>	1.0	0.50	0.40	0.21	0.10	0.24	0.44
10I <sub>tr</sub>	1.0	0.52	0.37	0.23	0.09	0.23	0.43
I <sub>max</sub>	1.0	0.48	0.37	0.25	0.12	0.20	0.39
I <sub>tr</sub>	0.5ind	0.51	0.38	0.25	0.16	0.28	0.45
10I <sub>tr</sub>	0.5ind	0.53	0.39	0.23	0.13	0.25	0.44
I <sub>max</sub>	0.5ind	0.49	0.39	0.27	0.19	0.26	0.42
I <sub>tr</sub>	0.8cap	0.55	0.39	0.24	0.15	0.27	0.47
10I <sub>tr</sub>	0.8cap	0.52	0.38	0.24	0.15	0.24	0.46
I <sub>max</sub>	0.8cap	0.49	0.39	0.27	0.17	0.23	0.40


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## 5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
LE-01R	230V, 0.25-5(30)A - 0.25-5(100)A, 100imp/kWh, 1000imp/kWh, 2000imp/kWh, Single Tariff
LE-01MR	230V, 0.25-5(30)A - 0.25-5(100)A, 100imp/kWh, 1000imp/kWh, 2000imp/kWh, Single Tariff + Modbus Module
LE-01MW	230V, 0.25-5(30)A - 0.25-5(100)A, 100imp/kWh, 1000imp/kWh, 2000imp/kWh, Multi-rate + Modbus Module

Modifications to the meter(s) described according to approval No.**0120/SGS0305** 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	26/05/2017	Initial Issue

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