



EC Type Examination Certificate Number: **0120/SGS0214**

F&F Filipowski sp.j.

Ul. Konstantynowska 79/81
Pabianice
Poland

Instrument Identification:
LE-01 Series

Instrument Traceable Number
0120/SGS0214

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

has been assessed and certified as meeting the requirements of

EC Directive 2004/22/EC

Measuring Instruments Annex 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 MI-003 of EC Directive 2004/22/EC

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


This certificate is valid from 17th December 2015 to 15th April 2025
Issue 1

Certification is based on report number(s) SHES141200649301 dated 16th April 2015
EMA202963 dated 16th April 2015
EMA 217856 dated 17th December 2015

Authorised Signature


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1. Technical Data


Manufacturer	F&F Filipowski sp.j.
Meter Type(s)	LE-01M-T LE-01MQ LE-01MB LE-01Q
Voltage Rating (<i>Un</i>)	230V
Current Rating (<i>I_{min}</i> – <i>I_{ref}</i> (<i>I_{max}</i>))	0.25-5(100)A, 0.25-10(100)A
Frequency (<i>Fn</i>)	50Hz
Active Accuracy Class (<i>kWh</i>)	A or B (kWh)
Type of circuit	1p2w
Temperature Range	-25°C to +55°C
Software Version No.	V1.2
Identification Location	Nameplate
Bill Of Materials No.'s	20151210LE-01M-T 20151210LE-01MQ 20151210LE-01MB 20151210LE-01Q
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	4 clips one of which is ultrasonic welded
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD

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2. Photograph of Meter and Sealing Plan




Photograph of LE-01M-T

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Photograph of LE-01MQ

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Photograph of LE-01MB

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Photograph of LE-01Q

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3. Influence factors for temperature, frequency and voltage


Current	PF Cos	-25	-10	5	30	40	55
I _{min}	1.0	0.30	0.28	0.25	0.23	0.24	0.23
I _{tr}	1.0	0.17	0.15	0.16	0.13	0.13	0.13
10I _{tr}	1.0	0.07	0.08	0.08	0.05	0.07	0.10
I _{max}	1.0	0.13	0.11	0.05	0.04	0.04	0.04
I _{tr}	0.5ind	0.27	0.24	0.24	0.21	0.21	0.23
10I _{tr}	0.5ind	0.16	0.16	0.17	0.16	0.16	0.17
I _{max}	0.5ind	0.06	0.04	0.05	0.11	0.11	0.09
I _{tr}	0.8cap	0.24	0.24	0.22	0.19	0.19	0.19
10I _{tr}	0.8cap	0.06	0.07	0.07	0.05	0.07	0.08
I _{max}	0.8cap	0.13	0.09	0.04	0.03	0.03	0.03

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:-

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

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

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4. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
LE-01M-T:	Multi tariff, single phase, multi function, RS485 Modbus
LE-01MQ:	Single tariff, single phase, multi function, RS485 Modbus
LE-01MB:	Single tariff, single phase, multi function, Mbus
LE-01Q:	Single tariff, single phase, multi function, pulse

Modifications to the meter(s) described according to approval No.**0120/ SGS0214** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

5. Document Revision History

Issue	Date	Comments
1	17/12/2015	Initial Issue