

EC Type Examination Certificate Number: 0120/ SGS0169

**F&F Filipowski sp.j.**

ul. Konstantynowska 79/81  
Pabianice  
Poland  
95-200

Instrument Identification:  
**LE-02d MID**

**Poly Phase, Active Import Indoor Electricity Meter**

Instrument Traceable Number  
**0120/ SGS0169**

has been assessed and certified as meeting the requirements of

**EC Directive 2004/22/EC**

**on 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 until 18<sup>th</sup> September 2024  
Issue 1

Certification is based on report number(s)  
SHES140600277301 Issued 18<sup>th</sup> September 2014

Authorised Signature

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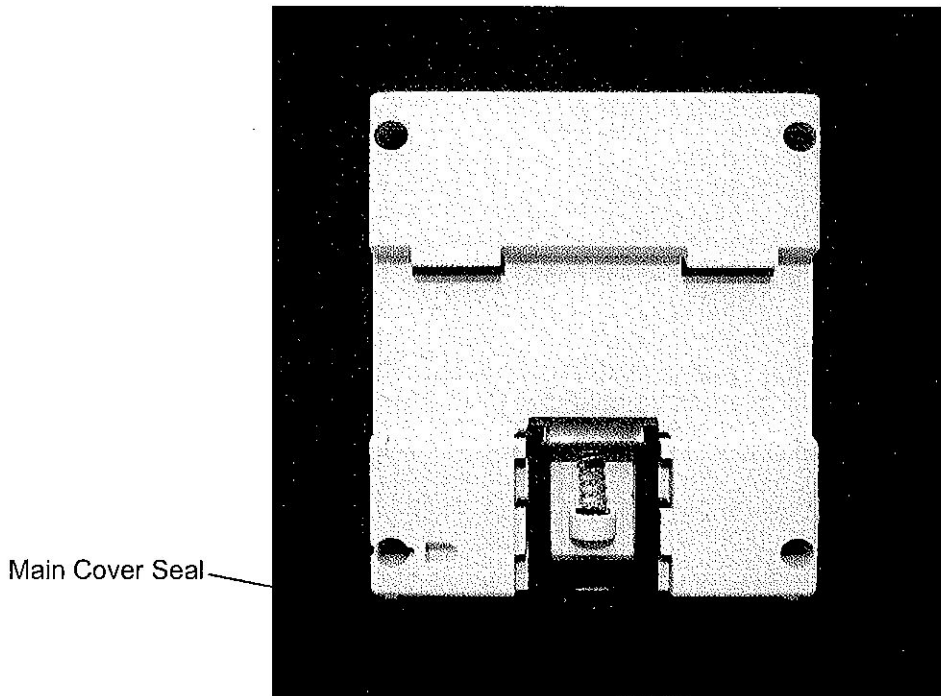
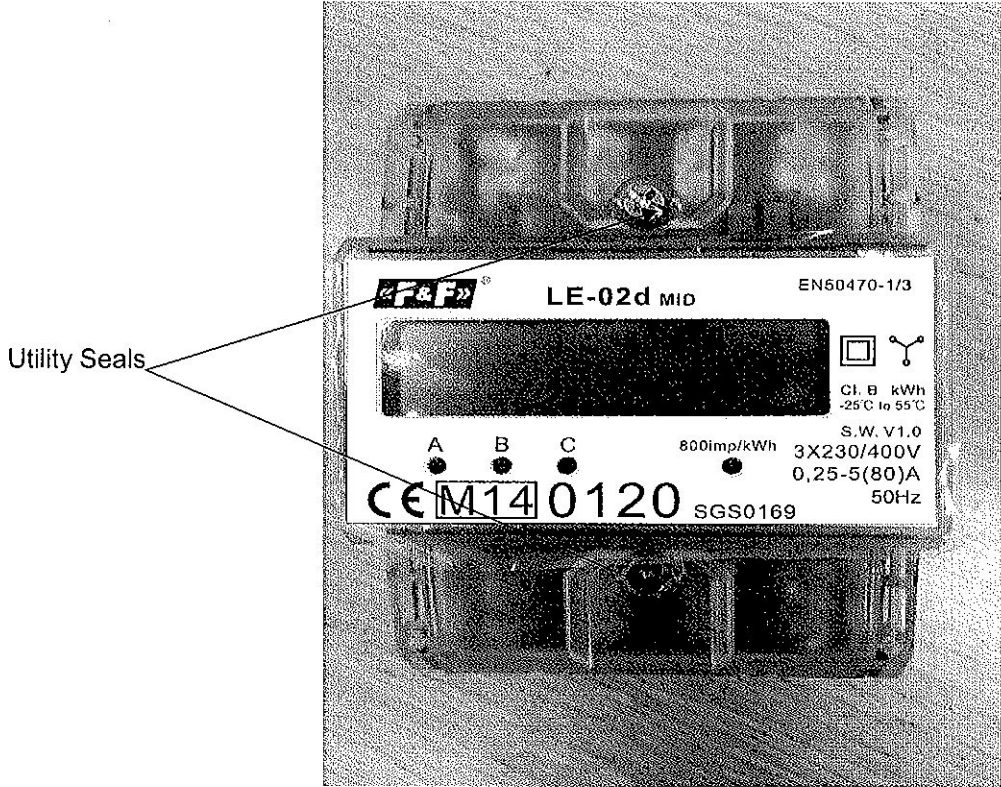
	EC-Type Examination Certificate Number:	
	<b>0120/ SGS0169</b>	
	Issue Number: 1	Dated: 09 <sup>th</sup> October 2014


## 1. Technical Data

Manufacturer	F+F Filipowski sp.j
Meter Type	LE-02d MID
Voltage Rating ( $U_n$ )	3x230/400V
Current Rating ( $I_{min}$ – $I_{ref}$ ( $I_{max}$ ))	0,25-5(80)A
Frequency ( $F_n$ )	50Hz
Active Accuracy Class ( $kWh$ )	A or B ( $kWh$ )
Type of circuit	3p4w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No	R52
Identification Location	Nameplate
Bill Of Materials Number	BD-JS-YJ007 0/A
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	800 imp/ $kWh$
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp
Terminal 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)	BS

<b>SGS</b>	EC-Type Examination Certificate Number:	
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**2. Photographs of Meter Sealing Points**



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### 3. 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 presents 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



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		Influence Factors for Temperature. Frequency & Voltage					
Current	PF Cos	-25°C	-10°C	5°C	30°C	40°C	55°C
I <sub>min</sub>	1.0	0.65	0.60	0.25	0.16	0.31	0.36
I <sub>tr</sub>	1.0	0.59	0.46	0.42	0.42	0.48	0.60
10I <sub>tr</sub>	1.0	0.68	0.54	0.42	0.39	0.50	0.68
I <sub>max</sub>	1.0	0.67	0.53	0.44	0.49	0.61	0.83
I <sub>tr</sub>	0.5ind	0.43	0.37	0.29	0.06	0.15	0.31
10I <sub>tr</sub>	0.5ind	0.48	0.41	0.38	0.45	0.60	0.77
I <sub>max</sub>	0.5ind	0.45	0.34	0.26	0.34	0.47	0.65
I <sub>tr</sub>	0.8cap	0.60	0.45	0.30	0.27	0.40	0.52
10I <sub>tr</sub>	0.8cap	1.27	1.17	1.00	0.67	0.60	0.56
I <sub>max</sub>	0.8cap	0.68	0.47	0.37	0.39	0.48	0.69
L1							
I <sub>tr</sub>	1.0	1.02	0.89	0.56	0.20	0.32	0.60
10I <sub>tr</sub>	1.0	1.01	0.77	0.51	0.17	0.34	0.64
I <sub>max</sub>	1.0	1.04	0.76	0.48	0.16	0.33	0.64
I <sub>tr</sub>	0.5ind	1.12	0.68	0.44	0.25	0.39	0.56
10I <sub>tr</sub>	0.5ind	1.01	0.59	0.42	0.21	0.41	0.67
I <sub>max</sub>	0.5ind	0.77	0.52	0.27	0.24	0.42	0.69
L2							
I <sub>tr</sub>	1.0	0.62	0.47	0.35	0.16	0.14	0.21
10I <sub>tr</sub>	1.0	0.49	0.40	0.31	0.12	0.13	0.25
I <sub>max</sub>	1.0	0.44	0.32	0.18	0.11	0.20	0.38
I <sub>tr</sub>	0.5ind	0.37	0.35	0.24	0.12	0.13	0.17
10I <sub>tr</sub>	0.5ind	0.25	0.32	0.36	0.23	0.18	0.28
I <sub>max</sub>	0.5ind	0.28	0.19	0.15	0.12	0.20	0.32
L3							
I <sub>tr</sub>	1.0	0.80	0.66	0.41	0.29	0.25	0.42
10I <sub>tr</sub>	1.0	0.82	0.67	0.46	0.20	0.24	0.42
I <sub>max</sub>	1.0	0.68	0.49	0.30	0.15	0.29	0.55
I <sub>tr</sub>	0.5ind	0.33	0.33	0.23	0.22	0.22	0.46
10I <sub>tr</sub>	0.5ind	0.52	0.22	0.12	0.28	0.24	0.45
I <sub>max</sub>	0.5ind	0.42	0.31	0.19	0.19	0.36	0.58

**4. Annex of Variants**

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Product Variant Identification Details:

**Type Designation**

**Description of meter**

LE-02d MID

0,25-5(80)A - Poly Phase, Active Import, Electricity Meter

Modifications to the meter(s) described according to approval No.**0120/ SGS0169** 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	09/10/2014	Initial Issue