

EC Type Examination Certificate Number: **0120/ SGS0119**

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

ul. Konatantynowska 79/81  
pabaince  
Poland  
95-200

Instrument Identification:

**LE-03d MID**

**Poly Phase, Active Import/Export, Electricity Meter**

Instrument Traceable Number

**0120/ SGS0119**

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 from 27<sup>th</sup> November 2012 until 26<sup>th</sup> November 2022  
Issue 1

Certification is based on report number(s)  
SHES1207001819MI Issued 27<sup>th</sup> November 2012


Authorised Signature

Jan Saunders




SGS United Kingdom Limited, Notified Body 0120  
Unit 202B Worle Parkway, Weston-super-Mare, BS22 6WA UK  
t +44 (0)1934 522917 f +44 (0)1934 522137 [www.sgs.com](http://www.sgs.com)

Contact Address  
SGS United Kingdom Ltd, Unit 10, South Industrial Estate, Bowburn, Durham, DH6 5AD UK  
t +44 (0)191 377 2000 f +44 (0)191 377 2020 [www.sgs.com](http://www.sgs.com)

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	<b>0120/ SGS0119</b>	
	Issue Number: 1	Dated: 22 <sup>nd</sup> May 2013


## 1. Technical Data

<b>Manufacturer</b>	F&F Filipowski
<b>Meter Type</b>	LE-03d MID
<b>Voltage Rating (<math>U_n</math>)</b>	3x230/400V
<b>Current Rating (<math>I_{min}</math> – <math>I_{ref}</math> (<math>I_{max}</math>))</b>	0,25-5(100)A
<b>Frequency (<math>F_n</math>)</b>	50Hz
<b>Active Accuracy Class (<math>kWh</math>)</b>	A or B ( $kWh$ )
<b>Type of circuit</b>	3p4w
<b>Temperature Range</b>	-25°C to +55°C
<b>Software/ Firmware Version No Identification Location</b>	V1.0 Nameplate
<b>Bill Of Materials Number</b>	DTS353 BOM Rev 1
<b>IP Rating</b>	IP51
<b>Insulation Protective Class</b>	Class II
<b>LED Pulse Constant</b>	1000 imp/ kWh
<b>Impulse Voltage Rating</b>	6kV
<b>AC Voltage Rating</b>	4kV
<b>Main Cover Sealing Type</b>	Wire & Crimp
<b>Integrity of meter</b>	Inaccessible without breaking seals
<b>Intended Location of the Meter</b>	Indoor
<b>Type of Register</b>	LCD
<b>Terminal Arrangement(s)</b>	BS

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**2. Photograph of Meter and Sealing Plan**



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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:-

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

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

Current	PF Cos	e(U cos)	e(f cos)	-25°C	-10°C	5°C	30°C	40°C	55°C
				%MPE	%MPE	%MPE	%MPE	%MPE	%MPE
I <sub>min</sub>	1.0	0.01	-0.10	<b>0.33</b>	<b>0.31</b>	<b>0.16</b>	<b>0.04</b>	<b>0.03</b>	<b>0.04</b>
I <sub>tr</sub>	1.0	-0.08	-0.17	<b>0.26</b>	<b>0.24</b>	<b>0.14</b>	<b>0.06</b>	<b>0.05</b>	<b>0.06</b>
10I <sub>tr</sub>	1.0	0.06	0.07	<b>0.25</b>	<b>0.19</b>	<b>0.07</b>	<b>0.05</b>	<b>0.08</b>	<b>0.18</b>
I <sub>max</sub>	1.0	-0.05	-0.08	<b>0.41</b>	<b>0.30</b>	<b>0.21</b>	<b>0.15</b>	<b>0.16</b>	<b>0.22</b>
I <sub>tr</sub>	0.5ind	0.01	0.02	<b>0.33</b>	<b>0.25</b>	<b>0.22</b>	<b>0.16</b>	<b>0.23</b>	<b>0.20</b>
10I <sub>tr</sub>	0.5ind	-0.01	0.11	<b>0.32</b>	<b>0.25</b>	<b>0.17</b>	<b>0.14</b>	<b>0.18</b>	<b>0.28</b>
I <sub>max</sub>	0.5ind	-0.04	-0.11	<b>0.53</b>	<b>0.44</b>	<b>0.37</b>	<b>0.33</b>	<b>0.35</b>	<b>0.40</b>
I <sub>tr</sub>	0.8cap	0.06	0.07	<b>0.33</b>	<b>0.23</b>	<b>0.07</b>	<b>0.07</b>	<b>0.06</b>	<b>0.08</b>
10I <sub>tr</sub>	0.8cap	-0.01	0.04	<b>0.22</b>	<b>0.15</b>	<b>0.07</b>	<b>0.04</b>	<b>0.07</b>	<b>0.16</b>
I <sub>max</sub>	0.8cap	-0.03	-0.04	<b>0.34</b>	<b>0.23</b>	<b>0.13</b>	<b>0.06</b>	<b>0.09</b>	<b>0.17</b>




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Current	PF Cos	e(Ulcos)	e(filcos)	-25°C	-10°C	5°C	30°C	40°C	55°C
				%MPE	%MPE	%MPE	%MPE	%MPE	%MPE
Line 1									
ltr	1.0	0.04	0.12	<b>0.54</b>	<b>0.53</b>	<b>0.21</b>	<b>0.15</b>	<b>0.15</b>	<b>0.27</b>
10ltr	1.0	-0.05	-0.07	<b>0.53</b>	<b>0.36</b>	<b>0.19</b>	<b>0.06</b>	<b>0.14</b>	<b>0.26</b>
lmax	1.0	-0.05	-0.09	<b>0.59</b>	<b>0.40</b>	<b>0.22</b>	<b>0.04</b>	<b>0.11</b>	<b>0.26</b>
ltr	0.5ind	-0.11	-0.27	<b>0.56</b>	<b>0.26</b>	<b>0.23</b>	<b>0.04</b>	<b>0.15</b>	<b>0.32</b>
10ltr	0.5ind	0.04	0.13	<b>0.53</b>	<b>0.36</b>	<b>0.14</b>	<b>0.11</b>	<b>0.20</b>	<b>0.34</b>
lmax	0.5ind	-0.04	-0.13	<b>0.68</b>	<b>0.51</b>	<b>0.34</b>	<b>0.23</b>	<b>0.27</b>	<b>0.38</b>
Line 2									
ltr	1.0	-0.13	-0.12	<b>0.16</b>	<b>0.12</b>	<b>0.16</b>	<b>0.04</b>	<b>0.05</b>	<b>0.05</b>
10ltr	1.0	0.02	0.08	<b>0.10</b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>	<b>0.09</b>
lmax	1.0	-0.05	-0.06	<b>0.16</b>	<b>0.10</b>	<b>0.05</b>	<b>0.01</b>	<b>0.02</b>	<b>0.07</b>
ltr	0.5ind	-0.09	0.29	<b>0.27</b>	<b>0.05</b>	<b>0.18</b>	<b>0.03</b>	<b>0.15</b>	<b>0.05</b>
10ltr	0.5ind	-0.06	-0.13	<b>0.07</b>	<b>0.09</b>	<b>0.03</b>	<b>0.02</b>	<b>0.05</b>	<b>0.06</b>
lmax	0.5ind	-0.06	-0.12	<b>0.23</b>	<b>0.18</b>	<b>0.13</b>	<b>0.10</b>	<b>0.11</b>	<b>0.13</b>
Line 3									
ltr	1.0	0.14	-0.09	<b>0.26</b>	<b>0.16</b>	<b>0.14</b>	<b>0.10</b>	<b>0.14</b>	<b>0.11</b>
10ltr	1.0	0.04	0.07	<b>0.25</b>	<b>0.18</b>	<b>0.14</b>	<b>0.14</b>	<b>0.17</b>	<b>0.25</b>
lmax	1.0	-0.02	-0.06	<b>0.34</b>	<b>0.23</b>	<b>0.12</b>	<b>0.02</b>	<b>0.09</b>	<b>0.19</b>
ltr	0.5ind	-0.25	0.07	<b>0.35</b>	<b>0.36</b>	<b>0.21</b>	<b>0.09</b>	<b>0.07</b>	<b>0.12</b>
10ltr	0.5ind	0.05	0.12	<b>0.27</b>	<b>0.22</b>	<b>0.13</b>	<b>0.09</b>	<b>0.17</b>	<b>0.25</b>
lmax	0.5ind	-0.04	-0.11	<b>0.45</b>	<b>0.32</b>	<b>0.33</b>	<b>0.15</b>	<b>0.19</b>	<b>0.28</b>

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#### 4. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
LE-03d MID	0,25-5(100)A - Poly Phase, Active Import/Export, Electricity Meter

Modifications to the meter(s) described according to approval No.**0120/ SGS0119** 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	22/05/2013	Initial Issue