



EC Type Examination Certificate Number: **0120/SGS0139**

## Rayleigh Instruments Ltd

Raytel House  
Brook Road  
Rayleigh  
Essex  
SS6 7XH  
United Kingdom

Instrument Identification:

**RI-76-100-P**

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

Instrument Traceable Number

**0120/SGS0139**

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 18<sup>th</sup> November 2013 until 26<sup>th</sup> November 2022  
Issue 1


Certification is based on report number(s)  
SHES1207001818MI Issued 27<sup>th</sup> November 2012

Authorised Signature

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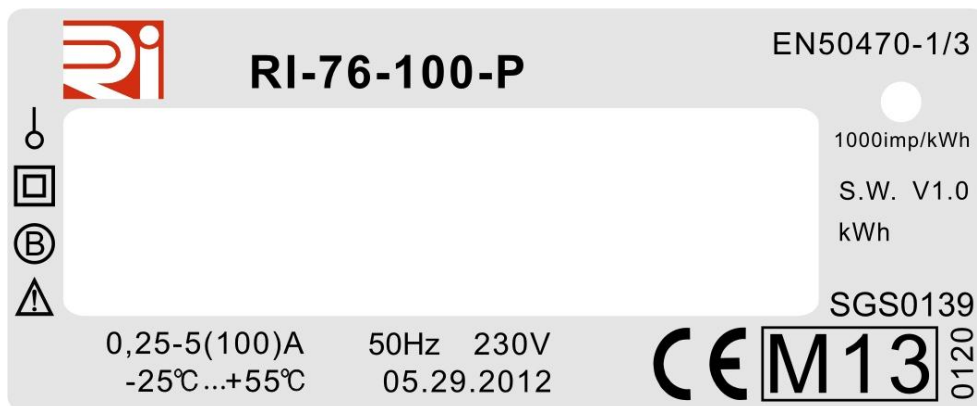
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	Issue Number: 1	Dated: 18 <sup>th</sup> November 2013


## 1. Technical Data

<b>Manufacturer</b>	Rayleigh Instruments Ltd
<b>Meter Type</b>	RI-76-100-P
<b>Voltage Rating (<math>U_n</math>)</b>	230V
<b>Current Rating (<math>I_{min} - I_{ref} (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>	1p2w
<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>	DDS353E 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>	DIN

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**2. Nameplate & Photograph of Meter**



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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	-10	5	30	40	55
				%MPE	%MPE	%MPE	%MPE	%MPE	%MPE
Imin	1.0	0.21	-0.14	<b>0.62</b>	<b>0.39</b>	<b>0.27</b>	<b>0.18</b>	<b>0.17</b>	<b>0.28</b>
Itr	1.0	-0.06	0.09	<b>0.47</b>	<b>0.22</b>	<b>0.18</b>	<b>0.09</b>	<b>0.14</b>	<b>0.22</b>
10ltr	1.0	0.00	-0.05	<b>0.19</b>	<b>0.14</b>	<b>0.08</b>	<b>0.04</b>	<b>0.08</b>	<b>0.11</b>
Imax	1.0	-0.03	-0.08	<b>0.31</b>	<b>0.23</b>	<b>0.18</b>	<b>0.15</b>	<b>0.16</b>	<b>0.20</b>
Itr	0.5ind	-0.24	-0.17	<b>0.97</b>	<b>0.64</b>	<b>0.55</b>	<b>0.35</b>	<b>0.29</b>	<b>0.32</b>
10ltr	0.5ind	0.02	0.14	<b>0.41</b>	<b>0.31</b>	<b>0.25</b>	<b>0.27</b>	<b>0.28</b>	<b>0.37</b>
Imax	0.5ind	-0.11	-0.19	<b>0.51</b>	<b>0.37</b>	<b>0.25</b>	<b>0.08</b>	<b>0.06</b>	<b>0.14</b>
Itr	0.8cap	0.10	-0.10	<b>0.33</b>	<b>0.21</b>	<b>0.13</b>	<b>0.05</b>	<b>0.04</b>	<b>0.08</b>
10ltr	0.8cap	-0.02	-0.04	<b>0.19</b>	<b>0.16</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>	<b>0.15</b>
Imax	0.8cap	-0.10	-0.12	<b>0.40</b>	<b>0.35</b>	<b>0.32</b>	<b>0.30</b>	<b>0.29</b>	<b>0.29</b>

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#### 4. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
RI-76-100-P	0,25-5(100)A - Single Phase, Active Import/Export, Electricity Meter

Modifications to the meter(s) described according to approval No.**0120/SGS0139** 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	18/11/2013	Initial Issue