



# SGS

EU Type Examination Certificate Number: **0120/SGS0323**

## ZAMEL Sp. z o.o.

Zielona 27  
43-200 Pszczyna  
Poland

Instrument Identification:  
**LEM-30M, LEM-30RM, LEM-40M**

**Poly phase, Active Import/Export (kWh), Electricity Meter**

Instrument Traceable Number  
**0120/SGS0323**

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 20<sup>th</sup> April 2026  
Issue 1

Certification is based on report number(s) SHES151000648101 dated 19<sup>th</sup> April 2016  
EMA242784

Authorised Signature

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 Limited, Units 12A & 12B, 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)



This document is issued, on the Client's behalf, by the Company under its General Conditions of Service printed overleaf. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.


DU CST-ME-002 Rev.1

EU Type Examination Cert.

SGSPAPER

18104624



	EU-Type Examination Certificate Number:	
	<b>0120/SGS0323</b>	
	Issue Number: 1	Dated: 2 <sup>nd</sup> October 2017

## 1. Technical Data

<b>Manufacturer</b>	ZAMEL Sp. z o.o.
<b>Meter Type</b>	LEM-30M, LEM-30RM, LEM-40M
<b>Voltage Rating (<math>U_n</math>)</b>	3 x 230/400V
<b>Current Rating (<math>I_{min} - I_{ref} (I_{max})</math>)</b>	0,5-10(100)A
<b>Frequency (<math>F_n</math>)</b>	50Hz
<b>Active Accuracy Class (<math>kWh</math>)</b>	B ( $kWh$ )
<b>Type of circuit</b>	3p4w
<b>Temperature Range</b>	-25°C to +55°C
<b>Software/ Firmware Version No</b>	1.1
<b>CRC Checksum</b>	LEM-30M : 0x001134D7 LEM-30RM : 0x001134D9 LEM-40M : 0x001516EC
<b>Identification Location</b>	LCD
<b>Bill Of Materials Number</b>	LEM-30M : SDM72D V1.1 LEM-30RM : SDM72D V1.1 LEM-40M : SDM72D V1.1
<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 on terminal cover Meter case sealed with screws
<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
<b>Location of Manufacturers Address</b>	Side of meter

<b>SGS</b>	EU-Type Examination Certificate Number:	
	<b>0120/SGS0323</b>	
	Issue Number: 1	Dated: 2 <sup>nd</sup> October 2017

**2. Photograph of Meters and Sealing Plans**



**Photograph of LEM-30M**



**Photograph of LEM-30RM**

<b>SGS</b>	EU-Type Examination Certificate Number:	
	<b>0120/SGS0323</b>	
	Issue Number: 1	Dated: 2 <sup>nd</sup> October 2017



**Photograph of LEM-40M**

	EU-Type Examination Certificate Number:	
	<b>0120/SGS0323</b>	
	Issue Number: 1	Dated: 2 <sup>nd</sup> October 2017

3. Examples of Nameplates

**zameL**      **LEM-30M**

0120/  
 SGS0323  

M17

 0120

3x 230/400VAC 50Hz 3K6      Imp    Exp  
 0,5-10(100)A     $\Lambda$ :1000 imp/kWh  
 EN50470-1/3 Cl.B SW V1.1 2017  
[www.zamel.com](http://www.zamel.com)

**zameL**      **LEM-30RM**

0120/  
 SGS0323  

M17

 0120

3x230/400V 50Hz      Imp    Exp  
 0,5-10(100)A 3K6  
 $\Lambda$ :1000imp/kWh SW V1.1  
 EN50470-1/3 Cl.B 2017  
 3S to reset kWh [www.zamel.com](http://www.zamel.com)


**zameL**      **LEM-40M**

0120/  
 SGS0323  

M17

 0120

3x230/400V 50Hz      Imp    Exp  
 0,5-10(100)A 3K6  
 $\Lambda$ :1000imp/kWh SW V1.1  
 EN50470-1/3 Cl.B 2017  
 3S to reset kWh [www.zamel.com](http://www.zamel.com)

	EU-Type Examination Certificate Number:	
	<b>0120/SGS0323</b>	
	Issue Number: 1	Dated: 2 <sup>nd</sup> October 2017

#### 4. 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 represents the sum of the square values per load, determined via the following formula:-

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

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




EU-Type Examination Certificate Number:

**0120/SGS0323**

Issue Number: 1

Dated: 2<sup>nd</sup> October 2017

		<b>Influence Factors for Temperature, Frequency &amp; Voltage</b>					
<b>Current</b>	<b>PF Cos</b>	<b>-25°C</b>	<b>-10°C</b>	<b>5°C</b>	<b>30°C</b>	<b>40°C</b>	<b>55°C</b>
<i>I</i> <sub>min</sub>	1.0	<b>0.32</b>	<b>0.24</b>	<b>0.15</b>	<b>0.12</b>	<b>0.15</b>	<b>0.26</b>
<i>I</i> <sub>tr</sub>	1.0	<b>0.34</b>	<b>0.24</b>	<b>0.15</b>	<b>0.10</b>	<b>0.15</b>	<b>0.30</b>
10 <i>I</i> <sub>tr</sub>	1.0	<b>0.37</b>	<b>0.28</b>	<b>0.17</b>	<b>0.10</b>	<b>0.15</b>	<b>0.28</b>
<i>I</i> <sub>max</sub>	1.0	<b>0.30</b>	<b>0.24</b>	<b>0.19</b>	<b>0.15</b>	<b>0.17</b>	<b>0.24</b>
<i>I</i> <sub>tr</sub>	0.5ind	<b>0.51</b>	<b>0.45</b>	<b>0.37</b>	<b>0.30</b>	<b>0.30</b>	<b>0.36</b>
10 <i>I</i> <sub>tr</sub>	0.5ind	<b>0.40</b>	<b>0.32</b>	<b>0.25</b>	<b>0.18</b>	<b>0.22</b>	<b>0.32</b>
<i>I</i> <sub>max</sub>	0.5ind	<b>0.66</b>	<b>0.62</b>	<b>0.58</b>	<b>0.52</b>	<b>0.51</b>	<b>0.50</b>
<i>I</i> <sub>tr</sub>	0.8cap	<b>0.44</b>	<b>0.34</b>	<b>0.26</b>	<b>0.16</b>	<b>0.17</b>	<b>0.24</b>
10 <i>I</i> <sub>tr</sub>	0.8cap	<b>0.37</b>	<b>0.25</b>	<b>0.15</b>	<b>0.09</b>	<b>0.15</b>	<b>0.27</b>
<i>I</i> <sub>max</sub>	0.8cap	<b>0.48</b>	<b>0.42</b>	<b>0.38</b>	<b>0.33</b>	<b>0.31</b>	<b>0.32</b>
L1							
<i>I</i> <sub>tr</sub>	1.0	<b>0.37</b>	<b>0.33</b>	<b>0.29</b>	<b>0.26</b>	<b>0.28</b>	<b>0.38</b>
10 <i>I</i> <sub>tr</sub>	1.0	<b>0.30</b>	<b>0.21</b>	<b>0.15</b>	<b>0.10</b>	<b>0.17</b>	<b>0.29</b>
<i>I</i> <sub>max</sub>	1.0	<b>0.23</b>	<b>0.18</b>	<b>0.17</b>	<b>0.11</b>	<b>0.14</b>	<b>0.23</b>
<i>I</i> <sub>tr</sub>	0.5ind	<b>0.44</b>	<b>0.38</b>	<b>0.35</b>	<b>0.34</b>	<b>0.38</b>	<b>0.44</b>
10 <i>I</i> <sub>tr</sub>	0.5ind	<b>0.31</b>	<b>0.24</b>	<b>0.22</b>	<b>0.19</b>	<b>0.26</b>	<b>0.38</b>
<i>I</i> <sub>max</sub>	0.5ind	<b>0.29</b>	<b>0.26</b>	<b>0.25</b>	<b>0.22</b>	<b>0.24</b>	<b>0.34</b>
L2							
<i>I</i> <sub>tr</sub>	1.0	<b>0.61</b>	<b>0.61</b>	<b>0.61</b>	<b>0.61</b>	<b>0.61</b>	<b>0.61</b>
10 <i>I</i> <sub>tr</sub>	1.0	<b>0.19</b>	<b>0.19</b>	<b>0.19</b>	<b>0.19</b>	<b>0.19</b>	<b>0.20</b>
<i>I</i> <sub>max</sub>	1.0	<b>0.16</b>	<b>0.14</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>
<i>I</i> <sub>tr</sub>	0.5ind	<b>0.76</b>	<b>0.77</b>	<b>0.77</b>	<b>0.76</b>	<b>0.77</b>	<b>0.77</b>
10 <i>I</i> <sub>tr</sub>	0.5ind	<b>0.31</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.31</b>	<b>0.32</b>
<i>I</i> <sub>max</sub>	0.5ind	<b>0.30</b>	<b>0.28</b>	<b>0.27</b>	<b>0.27</b>	<b>0.27</b>	<b>0.27</b>
L3							
<i>I</i> <sub>tr</sub>	1.0	<b>0.80</b>	<b>0.52</b>	<b>0.38</b>	<b>0.27</b>	<b>0.37</b>	<b>0.54</b>
10 <i>I</i> <sub>tr</sub>	1.0	<b>0.86</b>	<b>0.64</b>	<b>0.50</b>	<b>0.42</b>	<b>0.48</b>	<b>0.63</b>
<i>I</i> <sub>max</sub>	1.0	<b>1.09</b>	<b>0.97</b>	<b>0.90</b>	<b>0.87</b>	<b>0.89</b>	<b>0.95</b>
<i>I</i> <sub>tr</sub>	0.5ind	<b>1.04</b>	<b>0.92</b>	<b>0.82</b>	<b>0.79</b>	<b>0.82</b>	<b>0.92</b>
10 <i>I</i> <sub>tr</sub>	0.5ind	<b>1.03</b>	<b>0.88</b>	<b>0.78</b>	<b>0.74</b>	<b>0.78</b>	<b>0.88</b>
<i>I</i> <sub>max</sub>	0.5ind	<b>1.02</b>	<b>0.92</b>	<b>0.92</b>	<b>0.83</b>	<b>0.87</b>	<b>0.94</b>

	EU-Type Examination Certificate Number:	
	<b>0120/SGS0323</b>	
	Issue Number: 1	Dated: 2 <sup>nd</sup> October 2017


## 5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
LEM-30M	3x230/400V, 0.5-10(100)A, 1000imp/kWh Shows only total active energy, without resettable kWh
LEM-30RM	3x230/400V, 0.5-10(100)A, 1000imp/kWh Shows total active energy, resettable kWh, total active power
LEM-40M	3x230/400V, 0.5-10(100)A, 1000imp/kWh Shows total active energy, total active power, import and export energy, resettable import and export energy

Modifications to the meter(s) described according to approval No.**0120/SGS0323** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).



	EU-Type Examination Certificate Number:	
	<b>0120/SGS0323</b>	
	Issue Number: 1	Dated: 2 <sup>nd</sup> October 2017

## 6. Document Revision History

Issue	Date	Comments
1	02/10/2017	Initial Issue

This document is issued by the Company subject to its General Conditions for Certification Services, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested *and such sample(s) are retained for 28 days only*.

**END OF CERTIFICATE**