



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 20th April 2026
Issue 1

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

Authorised Signature


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	Issue Number: 1	Dated: 2 nd October 2017

1. Technical Data

Manufacturer	ZAMEL Sp. z o.o.
Meter Type	LEM-30M, LEM-30RM, LEM-40M
Voltage Rating (U_n)	3 x 230/400V
Current Rating (I_{min} – I_{ref} (I_{max}))	0,5-10(100)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	B (kWh)
Type of circuit	3p4w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No	1.1
CRC Checksum	LEM-30M : 0x001134D7 LEM-30RM : 0x001134D9 LEM-40M : 0x001516EC
Identification Location	LCD
Bill Of Materials Number	LEM-30M : SDM72D V1.1 LEM-30RM : SDM72D V1.1 LEM-40M : SDM72D V1.1
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	1000 imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp on terminal cover Meter case sealed with screws
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	DIN
Location of Manufacturers Address	Side of meter

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2. Photograph of Meters and Sealing Plans



Photograph of LEM-30M




Photograph of LEM-30RM


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Photograph of LEM-40M

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3. Examples of Nameplates


zamel **LEM-30M** 




0120/SGS0323
M17 0120


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






    


zamel **LEM-30RM** 

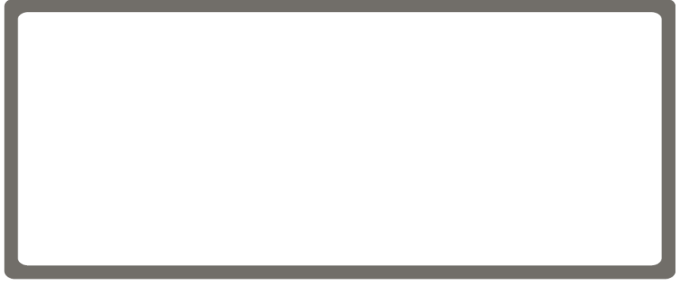


0120/SGS0323
M17 0120


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






    


zamel **LEM-40M** 



0120/SGS0323
M17 0120

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

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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:-


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

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


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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).

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6. Document Revision History

Issue	Date	Comments
1	02/10/2017	Initial Issue

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END OF CERTIFICATE