



EU Type Examination Certificate Number: **0120/SGS0372**

Biscuit Labs Inc.

399 Fremont St.
#2904 San Francisco
California 94105
United States of America

Instrument Identification:
BUI-0095-X

**Polyphase, Active Import/Export (kWh), Indoor, Transformer Operated, Multi-function,
Electricity Meter**

Instrument Traceable Number
0120/SGS0372

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 23rd April 2027
Issue 1

Certification is based on report number(s) EMA234440/2 dated 24th April 2017
EMA256543

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

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

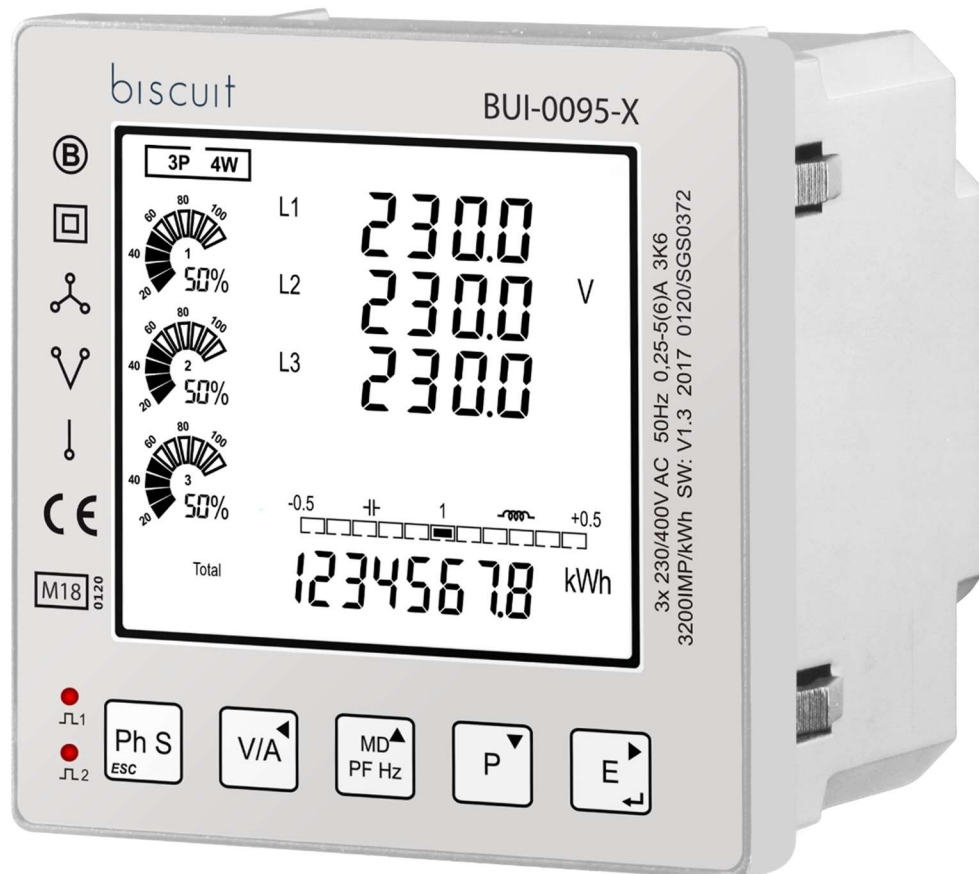
	EU-Type Examination Certificate Number:	
	0120/SGS0372	
	Issue Number: 1	Dated: 8 th August 2018


1. Technical Data

Manufacturer	Biscuit Labs Inc.
Meter Type	BUI-0095-X
Voltage Rating (U_n)	1P2W: 230V 3P3W: 3x230V 3P4W: 3 x 230/400V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0.25-5(6)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	B or C (kWh)
Type of circuit	1p2w, 3p3w, 3p4w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No	V1.3
CRC Checksum	0x0059DD5E
Identification Location	LCD
Bill Of Materials Number	DH-JS-160010-1.3
IP Rating	IP51 Front Display Meter body not rated. Must be installed in a suitable IP rated enclosure
Insulation Protective Class	Class I / Class II
LED Pulse Constant	3200imp/kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Laser Welded
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	Associated Documents

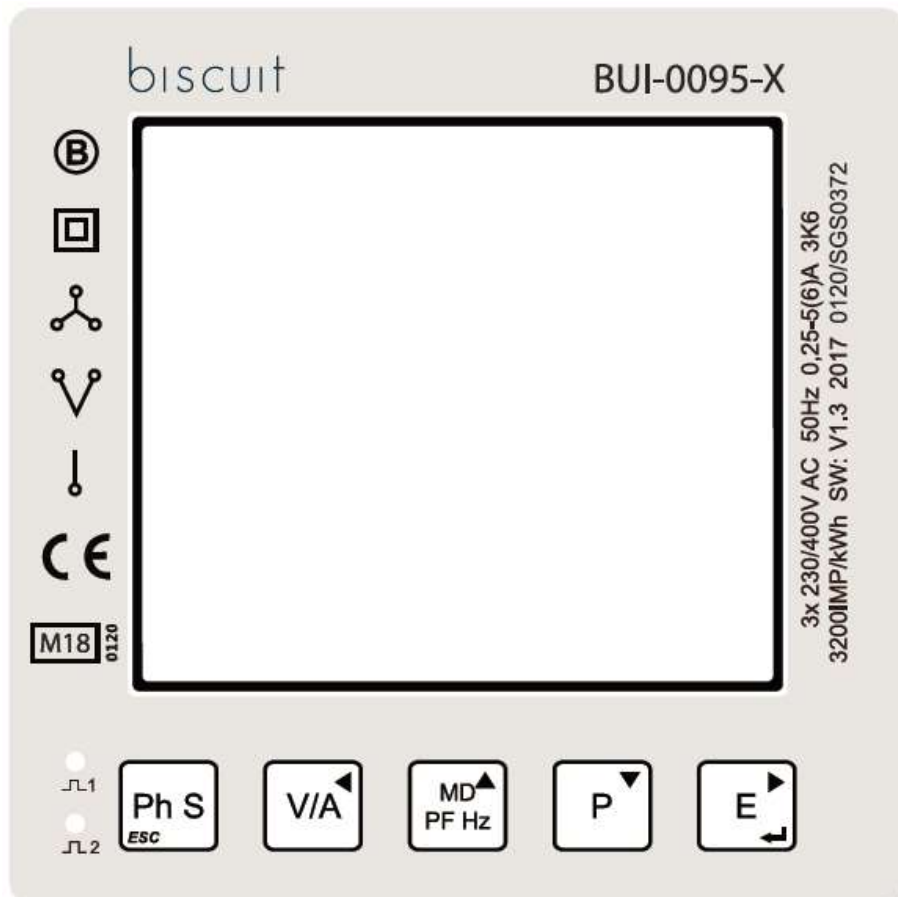
	EU-Type Examination Certificate Number:	
	0120/SGS0372	
	Issue Number: 1	Dated: 8 th August 2018


2. Photograph of Meter and Sealing Plan



	EU-Type Examination Certificate Number:	
	0120/SGS0372	
	Issue Number: 1	Dated: 8 th August 2018

3. Example of Nameplate



	EU-Type Examination Certificate Number:	
	0120/SGS0372	
	Issue Number: 1	Dated: 8 th August 2018


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

	EU-Type Examination Certificate Number:	
	0120/SGS0372	
	Issue Number: 1	Dated: 8 th August 2018

		Influence Factors for Temperature. Frequency & Voltage					
Current	PF Cos	-25°C	-10°C	5°C	30°C	40°C	55°C
I _{min}	1.0	0.21	0.20	0.14	0.07	0.19	0.39
I _{tr}	1.0	0.25	0.24	0.20	0.10	0.17	0.37
10I _{tr}	1.0	0.24	0.23	0.19	0.10	0.20	0.39
I _{max}	1.0	0.24	0.24	0.18	0.10	0.18	0.39
I _{tr}	0.5ind	0.25	0.25	0.21	0.10	0.19	0.44
10I _{tr}	0.5ind	0.20	0.06	0.11	0.31	0.56	0.70
I _{max}	0.5ind	0.23	0.19	0.10	0.36	0.51	0.51
I _{tr}	0.8cap	0.25	0.25	0.20	0.12	0.18	0.37
10I _{tr}	0.8cap	0.35	0.30	0.23	0.09	0.11	0.33
I _{max}	0.8cap	0.33	0.29	0.27	0.16	0.18	0.30
L1							
I _{tr}	1.0	0.19	0.17	0.11	0.08	0.19	0.40
10I _{tr}	1.0	0.18	0.17	0.11	0.10	0.20	0.41
I _{max}	1.0	0.18	0.16	0.10	0.10	0.20	0.40
I _{tr}	0.5ind	0.21	0.19	0.13	0.07	0.20	0.45
10I _{tr}	0.5ind	0.23	0.22	0.17	0.12	0.18	0.39
I _{max}	0.5ind	0.19	0.17	0.13	0.09	0.19	0.41
L2							
I _{tr}	1.0	0.35	0.35	0.31	0.19	0.21	0.40
10I _{tr}	1.0	0.29	0.30	0.25	0.16	0.22	0.47
I _{max}	1.0	0.30	0.30	0.27	0.15	0.20	0.43
I _{tr}	0.5ind	0.31	0.32	0.28	0.16	0.16	0.35
10I _{tr}	0.5ind	0.74	0.14	0.33	0.77	0.46	0.92
I _{max}	0.5ind	0.33	0.34	0.37	0.63	0.47	1.19
L3							
I _{tr}	1.0	0.16	0.15	0.10	0.08	0.19	0.40
10I _{tr}	1.0	0.18	0.16	0.10	0.10	0.20	0.41
I _{max}	1.0	0.17	0.16	0.10	0.11	0.21	0.41
I _{tr}	0.5ind	0.17	0.20	0.17	0.12	0.26	0.58
10I _{tr}	0.5ind	0.18	0.18	0.11	0.36	0.40	0.62
I _{max}	0.5ind	0.17	0.15	0.08	0.62	0.37	0.57


	EU-Type Examination Certificate Number:	
	0120/SGS0372	
	Issue Number: 1	Dated: 8 th August 2018

5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
BUI-0095-X	Active Import/Export (kWh), 3x230/400V, 5(6)A, Transformer operated, Multifunction, RS485 Modbus RTU

Modifications to the meter(s) described according to approval No.**0120/SGS0372** 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:	
	0120/SGS0372	
	Issue Number: 1	Dated: 8 th August 2018

6. Document Revision History

Issue	Date	Comments
1	08/08/2018	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