



EU Type Examination Certificate Number: **0120/SGS0406**

## **Secure Meters (UK) Ltd**

Moorside Road  
Winnall  
Winchester  
SO23 7RX

Instrument Identification:  
**Liberty 160 E1D0B8**

**Single Phase, Active/Import (kWh), Pre-payment, Electricity Meter**

Instrument Traceable Number  
**0120/ SGS0406**

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 for 10 years from 6<sup>th</sup> March 2019 until 5<sup>th</sup> March 2029  
Issue 1

Certification is based on report number(s) EMA262941/1 dated 21<sup>st</sup> February 2019  
EMA262941/1/TR50579 dated 21<sup>st</sup> February 2019

Authorised Signature


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## 1. Technical Data

Manufacturer	Secure Meters (UK) Ltd
Meter Type	Liberty 160 E1D0B8
Voltage Rating ( $U_n$ )	230V
Current Rating ( $I_{min} - I_{ref} (I_{max})$ )	0.5-10(80)A
Frequency ( $F_n$ )	50Hz
Active Accuracy Class ( $kWh$ )	A or B( $kWh$ )
Type of circuit	1P2W
Temperature Range	-25°C to +55°C
Software Version No.	B501
Checksum No.	0x70979AB8
Identification Location	LCD
Mechanical Environment	M1
Electromagnetic environment	E2
Bill Of Materials No.	E1D0B8-Z02
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	3200imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	BS
Location of Manufacturers Address	Associated Documents


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## 2. Photograph of Meter and Sealing Plan



Main Cover Sealing Points



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### 3. Example of Nameplate

Type Code : E1D0B8

1Ph, 2Wire, 230V, CI B, 50Hz

0.5-10(80)A, -25°C to 55°C

Constant : 3200 imp/ kWh

LED1: SSSS, LED2: KKKKK

EN50470-1 EN50470-3 UK / 0120 / SGS0406



Sr. No.: XXXXXXXXXXXXX




0120



Mfd:YYYY

Property of: XX

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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

		Influence Factors for Temperature, Frequency & Voltage					
Current	PF Cos	-25 °C	-10 °C	5 °C	30 °C	40 °C	55 °C
I <sub>min</sub>	1.0	0.25	0.14	0.11	0.10	0.12	0.14
I <sub>tr</sub>	1.0	0.28	0.18	0.10	0.05	0.07	0.11
10I <sub>tr</sub>	1.0	0.36	0.20	0.16	0.04	0.03	0.11
I <sub>max</sub>	1.0	0.27	0.21	0.11	0.10	0.10	0.12
		0.00					
I <sub>tr</sub>	0.5ind	0.23	0.16	0.10	0.07	0.07	0.10
10I <sub>tr</sub>	0.5ind	0.26	0.19	0.10	0.08	0.08	0.10
I <sub>max</sub>	0.5ind	0.22	0.14	0.12	0.11	0.11	0.10
		0.00					
I <sub>tr</sub>	0.8cap	0.27	0.17	0.08	0.05	0.08	0.15
10I <sub>tr</sub>	0.8cap	0.35	0.22	0.09	0.06	0.07	0.13
I <sub>max</sub>	0.8cap	0.22	0.12	0.08	0.09	0.06	0.12

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## 5. Product Variant Identification Details

### CODIFICATION FOR SINGLE PHASE PRE-PAYMENT

XXX denotes Model BOM

E	1	D	0	B	8	-	Z	X	X
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**Accuracy Class**


02	Class 0.2
05	Class 0.5
10	Class 1.0
20	Class 2.0
0A	Class A (MID)
0B	Class B (MID)
0C	Class C (MID)

**Current Range (I<sub>b</sub>/I<sub>m</sub>)**

1	5/30A
2	10/50A
3	10/60A
4	20/80A
5	5/20A
6	10/40
7	20/100A
8	10/80A
9	5/100A

TABLE 1 (for MODEL BOM)		
FEATURE CATCODE		
PROCESSOR		
NOMINAL VOLTAGE		
RTC BACKUP		
FREEDOM UNIT		
KEYPAD		
MEMORY SIZE		
INGRESS PROTECTION		
ENHANCED MAGNETIC IMMUNITY		
MEASURING ELEMENT		
CAGE CLAMP		
NO. OF ELEMENTS		
PRIORITY		
RJ11		
FIELD REPLACABLE BATTERY		
BUZZER		
FREQUENCY (Hz)		
BACKLIGHT		
LOAD CONTROL SWITCH		
CUSTOMER SPECIFIC		
HARMONISED MARKING		
EXTERNAL IP LINK		
PULSE I/P		
PULSE O/P		
EVENT DETECTION		
MAGNET SENSOR		
TBC		
RATING PLATE		
PACKING		
SPARK		
Ultrasonic welding		
Sealing Screws		

Modifications to the meter(s) described according to approval No. **0120/ SGS0406** 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	06/03/2019	Initial Issue

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**END OF CERTIFICATE**