

EC Type Examination Certificate Number: **0120/ SGS0084**

Secure Meters (UK) Ltd

Secure House
Moorside Road
Winnall
Winchester
SO23 7RX

Instrument Identification:

E1D0*4-7**

Single Phase, Credit, Active Import, Multi-rate, Pre-payment, Electricity Meter

Instrument Traceable Number

0120/ SGS0084

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 for 10 years from 18th August 2011 until 17th August 2021

Issue 3

Certification is based on report number(s)

EMA149310 dated 17th August 2011

EMA155507 dated 3rd February 2012


Authorised Signature

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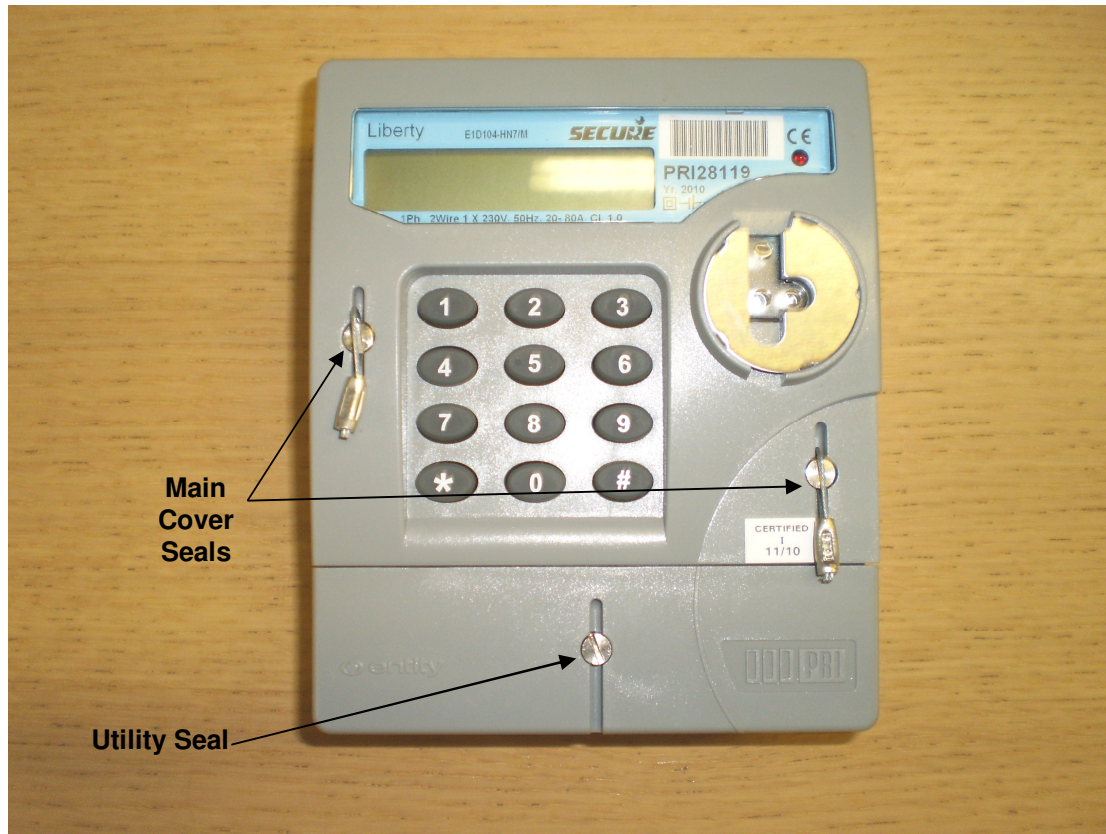
	EC-Type Examination Certificate Number:	
	0120/ SGS0084	
	Issue Number: 3	Dated: 3 rd February 2012


1. Technical Data

Manufacturer	Secure Meters (UK) Limited
Meter Type(s)	E1D0*4-**7
Voltage Rating (<i>Un</i>)	230V
Current Rating (<i>I_{min}</i> – <i>I_{ref}</i> (<i>I_{max}</i>))	1-20(80)A
Frequency (<i>Fn</i>)	50Hz
Active Accuracy Class (<i>kWh</i>)	A or B (kWh)
Type of circuit	1p2w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No Identification Location	D00402 Nameplate or D60003 LCD
Bill Of Materials Number(s)	001 DCO13472 002 DCO1537
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	1600 imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp x 2
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD

	EC-Type Examination Certificate Number:	
	0120/ SGS0084	
	Issue Number: 3	Dated: 3 rd February 2012

2. Photograph of Meter and Sealing Plan



	EC-Type Examination Certificate Number:	
	0120/ SGS0084	
	Issue Number: 3	Dated: 3 rd February 2012

3. Calculation of the composite error/ MPE

In addition to the accuracy requirements the composite error e_c of the meter is shown below

The composite error at a certain load is calculated from the following formula:


$$e_c = \sqrt{e^2(l.\cos\theta) + e^2(T.l.\cos\theta) + e^2(U.l.\cos\theta) + e^2(f.l.\cos\theta)}$$

where

$e^2(l.\cos\theta)$	=	Intrinsic error of meter at a certain load
$e^2(T.l.\cos\theta)$	=	Additional error due to variation of the temperature at the same load
$e^2(U.l.\cos\theta)$	=	Additional error due to variation of the voltage at the same load
$e^2(f.l.\cos\theta)$	=	Additional error due to variation of the frequency at the same load

Ambient Temperature Range 5 to 30 Degrees C						
Current	PF Cos	e(lcos)	e(Tlcos)	e(Ulcos)	e(flcos)	%MPE
Imin	1.0	0.02	-0.12	-0.08	-0.17	0.22
Itr	1.0	0.07	0.10	0.03	0.06	0.14
10Itr	1.0	0.02	0.10	-0.01	0.03	0.11
Imax	1.0	0.04	0.13	0.01	0.04	0.14
Itr	0.5ind	-0.12	0.42	-0.12	0.15	0.48
10Itr	0.5ind	-0.18	0.39	0.02	0.19	0.47
Imax	0.5ind	0.02	0.40	0.01	0.15	0.43
Itr	0.8cap	0.17	-0.24	-0.03	-0.04	0.30
10Itr	0.8cap	0.13	-0.22	0.02	-0.01	0.26
Imax	0.8cap	0.03	-0.22	0.01	-0.02	0.22

Ambient Temperature Range -10 to 40 Degrees C						
Current	PF Cos	e(lcos)	e(Tlcos)	e(Ulcos)	e(flcos)	%MPE
Imin	1.0	0.02	-0.16	-0.08	-0.17	0.25
Itr	1.0	0.07	0.19	0.03	0.06	0.21
10Itr	1.0	0.02	0.16	-0.01	0.03	0.16
Imax	1.0	0.04	0.15	0.01	0.04	0.16
Itr	0.5ind	-0.12	0.64	-0.12	0.15	0.68
10Itr	0.5ind	-0.18	0.58	0.02	0.19	0.64
Imax	0.5ind	0.02	0.59	0.01	0.15	0.61
Itr	0.8cap	0.17	-0.46	-0.03	-0.04	0.49
10Itr	0.8cap	0.13	-0.42	0.02	-0.01	0.44
Imax	0.8cap	0.03	-0.43	0.01	-0.02	0.43

	EC-Type Examination Certificate Number:	
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Ambient Temperature Range -25 to 55 Degrees C						
Current	PF Cos	e(lcos)	e(Tlcos)	e(Ulcos)	e(flcos)	%MPE
lmin	1.0	0.02	-0.28	-0.08	-0.17	0.34
ltr	1.0	0.07	0.25	0.03	0.06	0.27
10ltr	1.0	0.02	-0.24	-0.01	0.03	0.24
lmax	1.0	0.04	0.24	0.01	0.04	0.25
ltr	0.5ind	-0.12	0.82	-0.12	0.15	0.85
10ltr	0.5ind	-0.18	0.80	0.02	0.19	0.84
lmax	0.5ind	0.02	0.80	0.01	0.15	0.81
ltr	0.8cap	0.17	-0.56	-0.03	-0.04	0.59
10ltr	0.8cap	0.13	-0.50	0.02	-0.01	0.52
lmax	0.8cap	0.03	-0.53	0.01	-0.02	0.53

Results taken from:-

Report: EMA149310

Dated: 17th August 2011

Sample: PRI28119

	EC-Type Examination Certificate Number:	
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4. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
Meter Type E1D Liberty 1E wiring type 1ph 2 wire, 230V	
Accuracy Class 0A Class A (class 2) 0B Class B (class 1)	
Current Range 4 1-20(80)A	
	Comms Options HN7 communications port for communications hub or direct to wired freedom HQ7 communications port for DLC communications to DLC freedom LN7 new LCD variant, com port for coms hub or direct to wired freedom NH7 new LCD variant, com port for DLC communications to DLC freedom

Modifications to the meter(s) described according to approval No. **0120/ SGS0084** 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	18/08/2011	Initial Issue
2	28/09/2011	Typo: Current Range is 1-20(80)A
3	03/02/2012	New LCD, minor mod to hardware and firmware, variants LN7 and NH7