EC Type Examination Certificate Number: **0120/SGS0163**

Holley Metering Ltd

No. 181 Wuchang Avenue
Yuhang District
Hangzhou 310023
China

Instrument Identification:

Instrument Traceable Number
0120/SGS0163

Single Phase, Active Import/Export, Indoor, Electricity Meter

has been assessed and certified as meeting the requirements of

EC Directive 2004/22/EC

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 from 23rd January 2015 to 22nd January 2025
Issue 1

Certification is based on report number(s) SHES1312005106MI dated 14th January 2015

Authorised Signature

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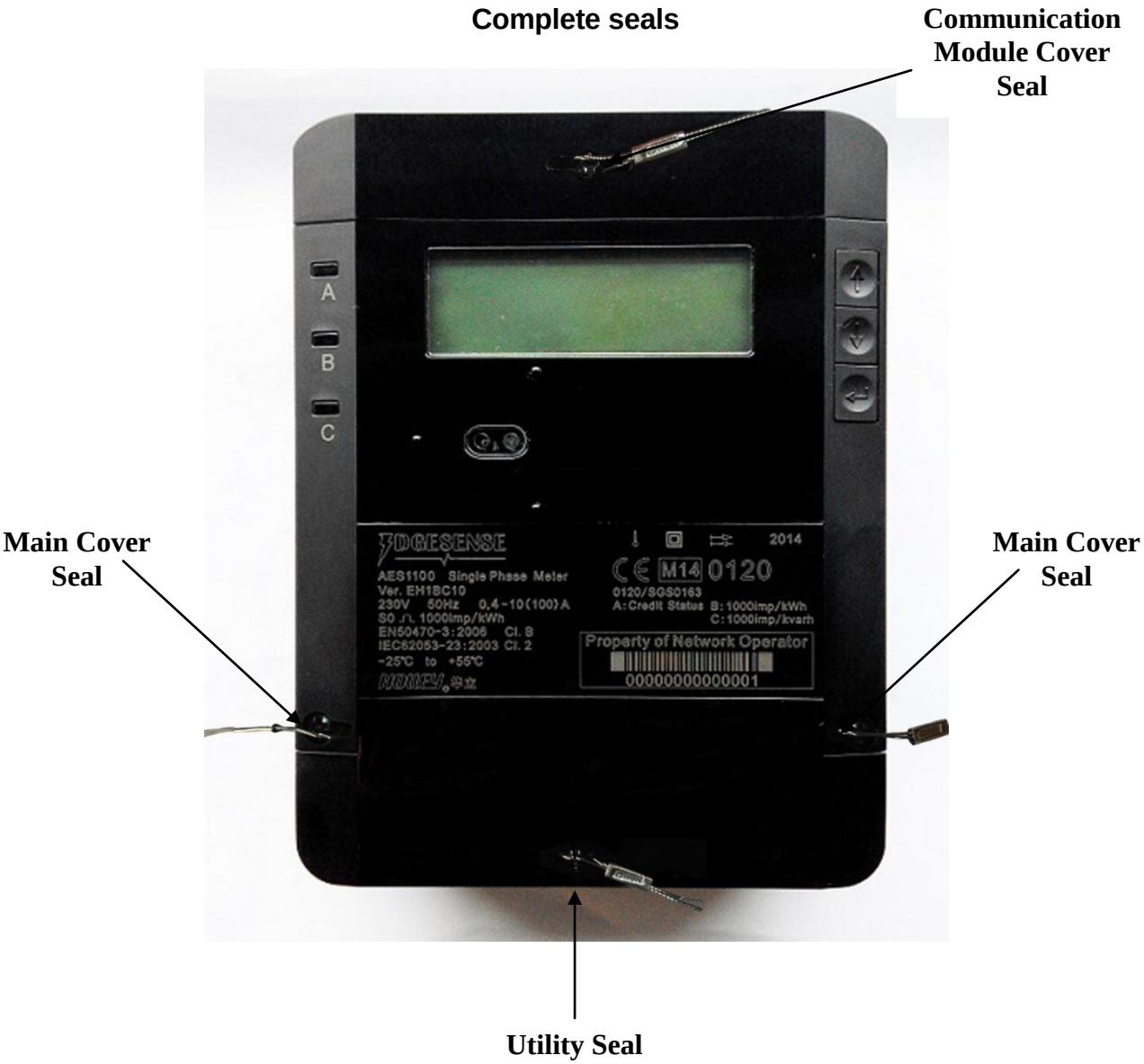
1. Technical Data

Manufacturer	Holley Metering Ltd
Meter Types	AES1100, AES1120, AES1220
Voltage Rating *(Un)*	230V
Current Rating *(Imin – Iref (Imax))*	0,4-10(100)A
Starting current I_{st}	0.04Itr (0.04A)
I_{tr}	0.1Iref (1)A
Frequency *(Fn)*	50Hz
Active Accuracy Class *(kWh)*	A or B (kWh)
Type of circuit	1p2w
Temperature Range	-25°C to +55°C
Ambient Humidity	95% non-condensing
Software Version No. **Software Checksum** **Identification Location**	EH1BC10 69B10CFF Nameplate
Mechanical Environment	M1
Electromagnetic environment	E2
Bill Of Materials No.'s	AES1100_BOM V1.1 AES1120_BOM V1.1 AES1220_BOM V1.1
IP Rating	IP53
Insulation Protective Class	Class II
Pulse Output	1000imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	2x Wire & Crimp
Terminal Cover Sealing Type	1x Wire & Crimp
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	BS

2. Photograph of Meter and Sealing Plan



Photograph of Meter and Sealing Plan (cont)

Example of damaged seals

4. Influence factors for temperature, frequency and voltage

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

		Influence Factors for Temperature, Voltage & Frequency					
Current	**PF Cos**	-25	-10	5	30	40	55
Imin	1.0	0.08	0.06	0.06	0.16	0.14	0.09
Itr	1.0	0.11	0.09	0.04	0.09	0.09	0.05
10Itr	1.0	0.10	0.15	0.08	0.10	0.10	0.08
Imax	1.0	0.17	0.17	0.10	0.10	0.10	0.10
Itr	0.5ind	0.07	0.02	0.02	0.16	0.11	0.05
10Itr	0.5ind	0.11	0.13	0.09	0.11	0.09	0.06
Imax	0.5ind	0.13	0.13	0.10	0.21	0.16	0.10
Itr	0.8cap	0.12	0.10	0.06	0.12	0.09	0.10
10Itr	0.8cap	0.18	0.14	0.10	0.12	0.09	0.09
Imax	0.8cap	0.17	0.11	0.13	0.23	0.15	0.13

5. Reproducibility of metrological performance

The application of the same measurement in a different location or by a different user, all other conditions being the same, shall result in the close agreement of successive measurements. The difference between the measurement results shall be small when compared with the MPE.

	Intrinsic error															
	COSφ=1.0						COSφ =0.5ind					COSφ=0.8cap				
Current	Imax	Iref	0.5Irf	0.2Iref	0.1Iref	0.05Iref	Imax	Iref	0.5Iref	0.2Iref	0.1Iref	Imax	Iref	0.5 Iref	0.2 Iref	0.1Iref
Pulse output	16	4	4	4	1	1	16	4	4	4	1	16	4	4	4	1

5. Product Variant Identification Details

AES 1100 – Single measuring element, import/export (kWh), import/export (kvarh) single auxiliary relay
AES 1120 – Single measuring element, import/export (kWh), import/export (kvarh), two auxiliary relays
AES 1220 – Two measuring elements, import/export (kWh), import/export (kvarh), two auxiliary relays

Modifications to the meter(s) described according to approval No.**0120/ SGS0163** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

6. Document Revision History

Issue	Date	Comments
1	23/01/2015	Initial Issue