EU Type Examination Certificate Number: **0120/SGS0342**

Smart Metering Solutions (Changsha) Co., Ltd

No.468 West Tongzipo Road
High-Tech Industrial Development Zone
410205
Changsha City
Hunan Province
China

Instrument Identification:
IM150

Single Phase, Active Import/Export (kWh), Electricity Meter

Instrument Traceable Number
0120/SGS0342

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 21st March 2028
Issue 3

Certification is based on report number(s) SHES171201205401 dated 15th March 2018
SHES190902294501 dated 25th October 2019
EMA251157/1
EMA251191/1

Authorised Signature

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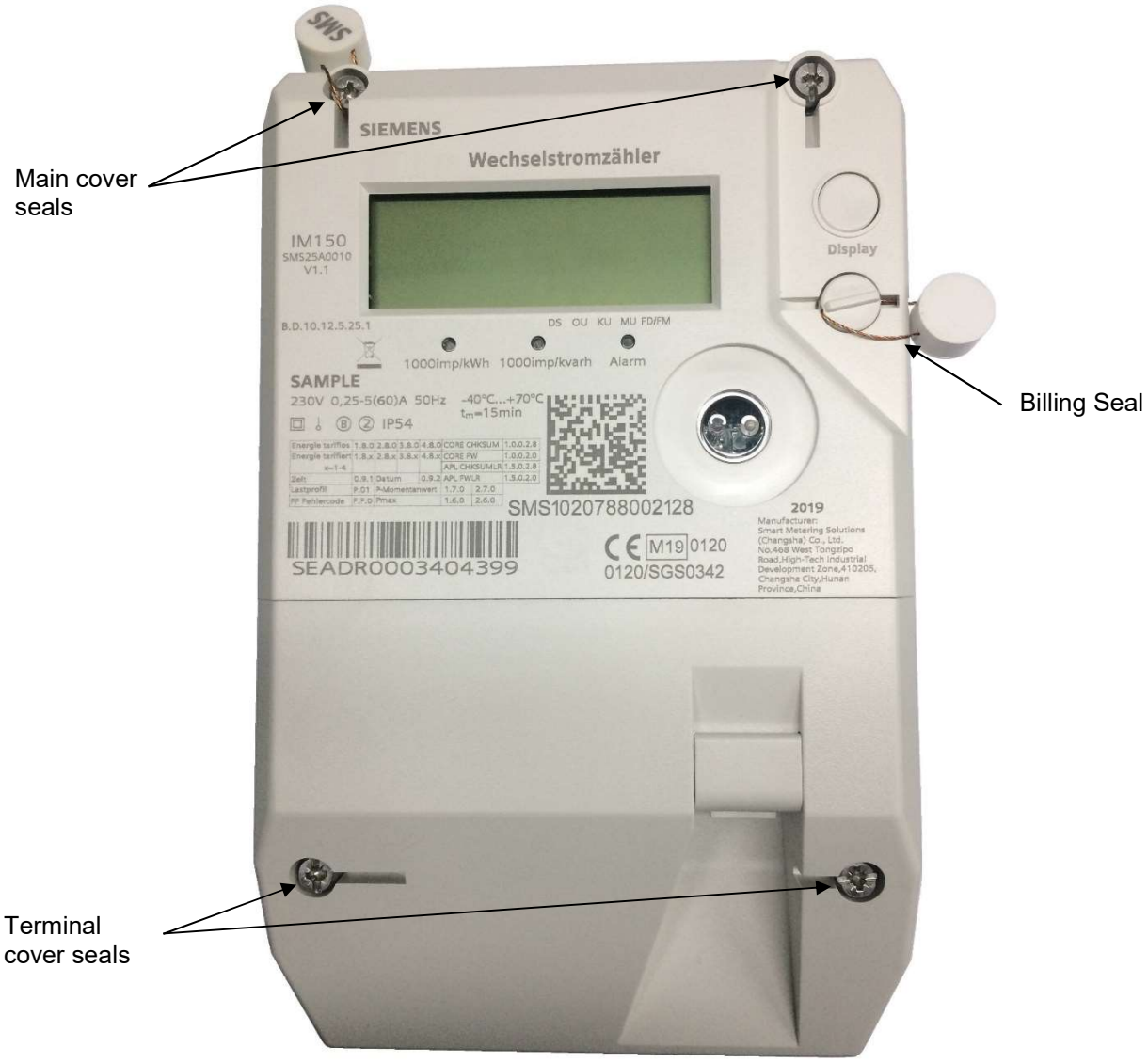
1. Technical Data

Manufacturer	Smart Metering Solutions (Changsha) Co., Ltd
Meter Type	IM150
Voltage Rating *(Un)*	110V-240V
Current Rating *(Imin – Iref (Imax))*	0.25-5(40)A, 0.25-5(60)A
Frequency *(Fn)*	50 Hz
Active Accuracy Class *(kWh)*	A or B (kWh)
Type of circuit	1p2w
Temperature Range	-40°C to +70°C
Software/ Firmware Version No **CRC Checksum** **Identification Location**	WSE150EL04020010 04703557EC7184FC264E7D880ACC1 FEF30A21DE72A89BE15CAF94552A3 AEF30A2E88949EE5B652C633C814C 63058A687B38878608537BF34ADEA4 309E57D7456 LCD & Communication Interface
Bill Of Materials No's	aMeter150V1.1, aMeter150V1.1.1, aMeter150V1.1.2
IP Rating	IP54
Insulation Protective Class	Class II
LED Pulse Constant	1000imp/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)	DIN
Location of Manufacturers Address	Nameplate

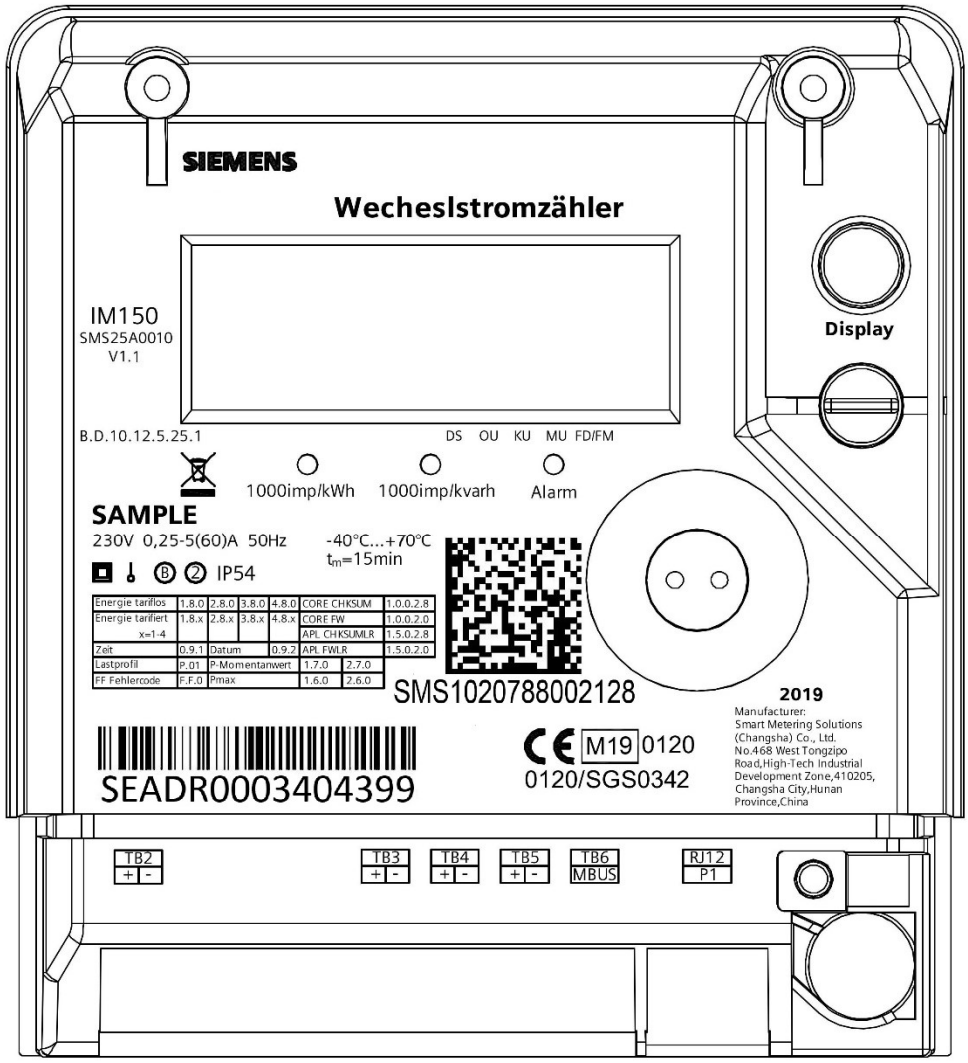
- The structure of the software of the meter is divided into two parts according to Welmec 7.2 software separation.
- The meter provides the possibility to update firmware (legally and non legally relevant parts).
- The meter provides following energy registers and tariff registers includes:

  Active energy (|+A|+|-A|) total and 4 tariff register
  Active energy import (+A) total and 4 tariff register
  Active energy export (−A) total and 4 tariff register
  Reactive energy import (+R) total and 4 tariff register, Reactive energy export (-R) total and 4 tariff register
  Reactive energy QI (+Ri) register, Reactive energy QII (+Rc) register, Reactive energy QIII (-Ri) register, Reactive energy QIV (-Rc) register.
- The meter provides one phase bi-stable break which can be optional.
- The meter provides Pulse outputs (A, R, 15min) which can be optional.
- The meter provides one relay outputs which can be optional.
- The meter provides following Communication interfaces: G3 PLC interface, Consumer interface, optical service interface, MBUS interface.
- The meter provides two push buttons.

2. Photograph of Meter and Sealing Plan



3. Example of Nameplate



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:-

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

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, frequency and voltage							
Current	**PF Cos**	-40°C	-25°C	-10°C	5°C	30°C	40°C	55°C	70°C
Imin	1.0	0.54	0.44	0.34	0.22	0.14	0.20	0.32	0.50
Itr	1.0	0.48	0.38	0.29	0.16	0.10	0.19	0.32	0.49
10Itr	1.0	0.46	0.36	0.26	0.13	0.08	0.19	0.33	0.48
Imax	1.0	0.30	0.24	0.18	0.09	0.08	0.17	0.29	0.43
Itr	0.5ind	0.45	0.37	0.28	0.17	0.11	0.20	0.33	0.51
10Itr	0.5ind	0.41	0.31	0.23	0.12	0.09	0.20	0.35	0.52
Imax	0.5ind	0.26	0.21	0.16	0.09	0.07	0.17	0.30	0.45
Itr	0.8cap	0.52	0.41	0.31	0.20	0.13	0.20	0.34	0.47
10Itr	0.8cap	0.48	0.37	0.26	0.14	0.09	0.19	0.34	0.48
Imax	0.8cap	0.33	0.27	0.20	0.11	0.07	0.16	0.29	0.41

All the test values of Imax can be taken in case of Imax smaller than or equal to certified and the Imax at least 5 times higher than the reference current.

5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
IM150	110-240V, 0.25-5(60)A, 50Hz. Round terminals (BOM: aMeter150V1.1) or Square terminals (BOM: aMeter150V1.1.1) 110-240V, 0.25-5(40)A, 50Hz. Round terminals (BOM: aMeter150V1.1) or Square terminals (BOM: aMeter150V1.1.1)

Modifications to the meter(s) described according to approval No.**0120/SGS0342** 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	27/04/2018	Initial Issue
2	18/05/2018	New variant with square terminals (BOM: aMeter150V1.1.1) added to approval
3	14/02/2020	Non metrology component change. New BOM aMeter150V1.1.2.

END OF CERTIFICATE