



Australian Government
Department of Industry,
Science and Resources

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval
NMI 14/2/86

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

Secure Model i-Credit 510 Class 1 Electricity Meter

submitted by Secure Meters (Australia) Pty Ltd
39-41 Fennell Street
Port Melbourne VIC 3207

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to Pathway 1 in the document NMI M 6-1 *Electricity Meters. Part 1: Metrological and Technical Requirements*, July 2020.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	3/06/15
1	Pattern amended (validity) – interim certificate issued	3/12/15
2	Pattern approved – certificate issued	11/04/16
3	Variant 2 approved – certificate issued	9/01/17
4	Variant 3 approved – certificate issued	24/06/22
5	Address updated – certificate issued	07/01/25

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 14/2/86' and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.



Darryl Hines
Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 14/2/86

1. Description of Pattern **approved on 3/06/15**

A Secure model i-Credit 510 single phase class 1 direct connect static watt hour meter (Figures 1 and 2) used to measure electrical energy.

1.1 Field of Operation

The field of operation of the measuring system is determined by the following characteristics:

- Number of phases 1
- Number of wires 2
- Reference frequency 50 Hz
- Reference ambient temperature ranges:
 - specified range of operation -10 to 60 °C
 - limit range of operation -20 to 70 °C
- Rated voltage 230 V AC
- Rated currents:
 - Basic current, I_b 10 A
 - Maximum current, I_{max} 100 A
- Meter constant 1 Wh/imp
- Accuracy class 1

1.2 Features/Functions

- Two (2) elements
- Electronic (LCD) digital indicator
- ANSI optical port
- Two pulse output LEDs for Wh and Varh
- Bottom connect rectangular base
- Internal synchronous and crystal clock
- Measurement in both positive and negative directions (export and import)

1.3 Descriptive Markings

Instruments are marked with the following data, together in one location, in the form shown at right:

Manufacturer's name or mark	...
Model designation	...
Serial number	...
Pattern approval mark	NMI 14/2/86
Number of phases	...
Number of wires	...
Reference frequency	... Hz
Meter constant	...
Rated voltage	... AC
Rated currents:	I_b ... A
	I_{max} ... A
Accuracy class	Class 1

1.4 Verification Provision

Provision is made for the application of a verification mark.

1.5 Sealing Provision

The meter is sealed during manufacture. Provision is made for the terminal cover to be sealed by the application of one or more mechanical seals (Figure 2).

1.6 Harmonics

Instruments purporting to comply with this approval are suitable for use where the harmonics do not exceed those specified in Pathway 1 of the document NMI M 6-1 *Electricity Meters. Part 1: Metrological and Technical Requirements*, July 2020.

2. Description of Variant 1 approved on 11/04/16

Similar to the pattern but having some, or all, of the following features/functions.

- One (1) element
- Optional integrated 100 A mains supply contactor
- Optional integrated load control relays (2 A, 31.5 A or 60 A)
- Optional integrated ripple control receiver
- Field replaceable AMI communication module

3. Description of Variant 2 approved on 9/01/17

A Secure model i-Credit 511 electronic single phase class 1 direct connect static watt hour meter used to measure electrical energy. This variant has the same Field of Operation and Features as the pattern except:

- 1 or 2 elements
- Optional fitted cellular communication module

4. Description of Variant 3 approved on 24/06/22

This variant has the same Field of Operations and Features/Functions as the pattern, or variant 1, except for the following:

- Rated voltage 240 V AC

TEST PROCEDURE No 14/2/86

Instruments tested for initial verification shall comply with the certificate of approval and technical schedule, and the maximum permissible errors for verifications at the operating conditions in effect at the time of verification.

The maximum permissible errors are specified in the *National Trade Measurement Regulations 2009 (Cth)*.

Electricity meters shall be verified in accordance with the following National Instrument Test Procedures:

- NITP 14.0 – Utility Meters – general requirements
- NITP 14.2 – Utility Meters – electricity meters

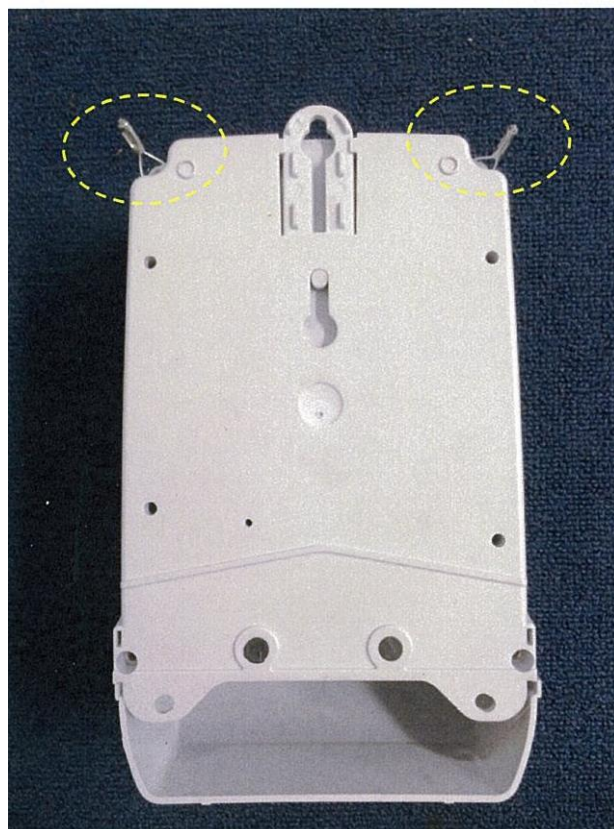
NOTE: NMI reserves the right to vary this procedure. Any such variation shall be notified in writing by NMI.

FIGURE 14/2/86 – 1



Secure Model i-Credit 510 Electricity Meter (The Pattern)

FIGURE 14/2/86 – 2



Model i-Credit 510 Showing Typical Mechanical Sealing (The Pattern)

FIGURE 14/2/86 – 3



Secure Model i-Credit 511 Electricity Meter (Variant 2)

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