Australian Government
Department of Industry, Science and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 14/2/117

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 Meters Limited model Apex 540 Class 0.2 S 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 document NMI M 13-1 *Active-energy electricity meters (a.c.) Part 1: Metrological and technical requirements*, June 2022.

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 – certificate issued	19/09/24

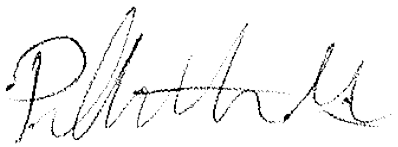
CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number ‘NMI 14/2/117’ 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*.



Phillip Mitchell
Acting Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 14/2/117

1. Description of Pattern approved on 19/09/24

A Secure Meters Limited model Apex 540 three phase class 0.2 S transformer operated static watt hour meter (Figure 1) 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 3
- Number of wires 3 or 4
- Reference frequency 50 Hz
- Reference temperature 27 °C
- Reference voltage 2 x 100 to 120 V AC (3P3W) or 3 x 57.7 to 240 V AC (3P4W)
- Rated current, I_n 1 A or 5 A
- Maximum current, I_{max} 2 A or 10 A
- Meter constant 81 to 162498 (configurable)
- Accuracy class 0.2 S

1.2 Features/Functions

- Liquid crystal digital indicators having a maximum display of 99999.999 kWh.
- Internal crystal clock
- Measurement in both positive and negative directions (import and export).
- Optional communications (wired and cellular)

1.3 Verification Provision

Provision is made for the application of a verification mark.

1.4 Sealing Provision

Provision is made for the sealing devices and parameters that have a metrologically significant effect and that determine the measurement result by the application of mechanical seals (Figure 2) and solid state sealing.

1.5 Descriptive Markings

Instruments are clearly and permanently marked with the following data, in the vicinity of the indicating device (Figure 2), in the form shown right:

Manufacturer's mark, or name written in full	……..
Model designation	……..
Serial number	……..
Pattern approval mark	NMI 14/2/117
Number of phases	……..
Number or wires	……..
Reference frequency	…….. Hz
Reference temperature (if different from 23 °C)	…….. °C
Transformer ratios	……..
Meter constant	……..
Reference voltage	…….. AC
Rated currents	I_n …… A
	I_{max} ……. A
Accuracy class	0.2 S
Environment	Indoor meter or IM

The meter constant, reference voltage and rated currents are viewed via the display. The relevant procedure to access this information is included in the operator's manual (Figure 3).

1.6 Harmonics

Instruments purporting to comply with this approval are suitable for use where the harmonics do not exceed those specified in AS 62053.22 (2018).

TEST PROCEDURE No 14/2/117

Instruments tested for 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). The applicable maximum permissible errors for class 0.2 S are the same as those specified for class 0.2.

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 14/2/117 – 1

Secure Meters Limited model Apex 540 electricity meter (the pattern)

FIGURE 14/2/117 – 2

Secure Meters Limited model Apex 540 electricity meter (example of required markings/typical mechanical sealing)

FIGURE 14/2/117 – 3

6.4 Menu example screens

Default display sequence

Select the Default Display Sequence from the top line menu. The following screens will be displayed:

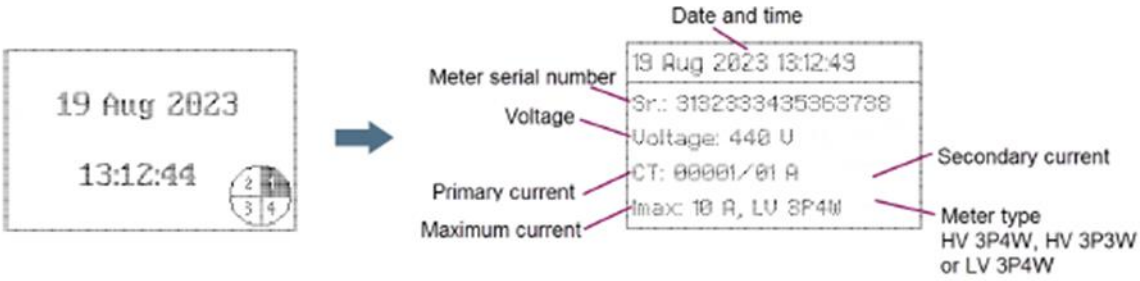


Figure 10: Default display sequence

The default display sequence is shown below.

Note: The illustrations shown below may vary from those of your product, depending on the meter configuration.

19 Aug 2023 13:12:44	19 Aug 2023 13:12:43 Sr.: 3132333435363738 Voltage: 440 V CT: 00001/01 A Imax: 10 A, LV 3P4W	19 Aug 2023 13:12:53 Calib LED Constant: Primary (Impulse / Unit) L1 0030000 /kWh(T) I+E L2 0030000 /kvarh I+E
This display shows the date, time and active quadrant information as per IEC 62053-23.	This display shows the date and time; meter serial number, primary and secondary values for voltage and current; maximum current and meter type (HV 3P4W, HV 3P3W or LV 3P4W).	

Operator's Manual extract – Accessing relevant information from the display

~ End of Document ~