



Australian Government

Department of Industry,
Science and Resources

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval
NMI 14/2/94

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.

Microstar Model P2000-D Class 1 Electricity Meter

submitted by Microstar Australia Pty Ltd
6/167, Princes Highway
Hallam VIC 3803

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 6-1 *Active-energy electricity meters (a.c.). Part 1: Metrological and technical requirements*, June 2022.

The approval for Variant 1 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	22/03/16
1	Certificate amended to include bi-directional measurement, change in address and update review date	30/03/21
2	Variant 1 approved, certificate updated (reference to current standard) – certificate issued	26/09/25

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 14/2/94' and only by persons authorised by the submitter.

It is the submitter'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.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0B.

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

A handwritten signature in black ink, appearing to read 'Phillip Mitchell', written in a cursive style.

Phillip Mitchell
Acting Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 14/2/94

1. Description of Pattern

approved on 22/03/16

A Microstar model P2000-D polyphase class 1 direct connect 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 4
- Reference frequency 50 Hz
- Reference ambient temperature ranges:
 - specified range of operation -20 to 60 °C
 - limit range of operation -25 to 75 °C
- Rated voltage 3×240/415 V AC
- Rated currents:
 - Basic current, I_b 10 A
 - Maximum current, I_{max} 100 A
- Meter constant 400 imp/kWh
- Accuracy class 1

1.2 Features/Functions

- Three (3) elements
- Electronic (LCD) digital indicator
- Bottom connect rectangular base
- Internal crystal clock
- Measurement in positive and negative direction

1.3 Verification Provision

Provision is made for the application of a verification mark.

1.4 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 1).

1.5 Descriptive Markings

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

Manufacturer's name or mark	Microstar Electric Co Ltd
Model designation	...
Serial number	...
Pattern approval mark	NMI 14/2/94
Number of phases	...
Number of wires	...
Reference frequency	... Hz
Meter constant	...
Rated voltage	... AC
Rated currents:	I_b ... A
	I_{max} ... A
Accuracy index	Class 1

2. Description of Variant 1

approved on 26/09/25

A Microstar model P2000-D polyphase class 1 direct connect static watt hour meter used to measure electrical energy.

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

- Reference ambient temperature ranges:
 - specified range of operation -25 to 70 °C
 - limit range of operation -35 to 70 °C
- Meter constant 1000 imp/kWh

2.1 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 and solid state sealing.

2.2 Descriptive Markings

This variant has the same descriptive markings as the pattern except for the following (as seen in Figure 2):

- Environment Indoor meter or IM

TEST PROCEDURE No 14/2/94

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).

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

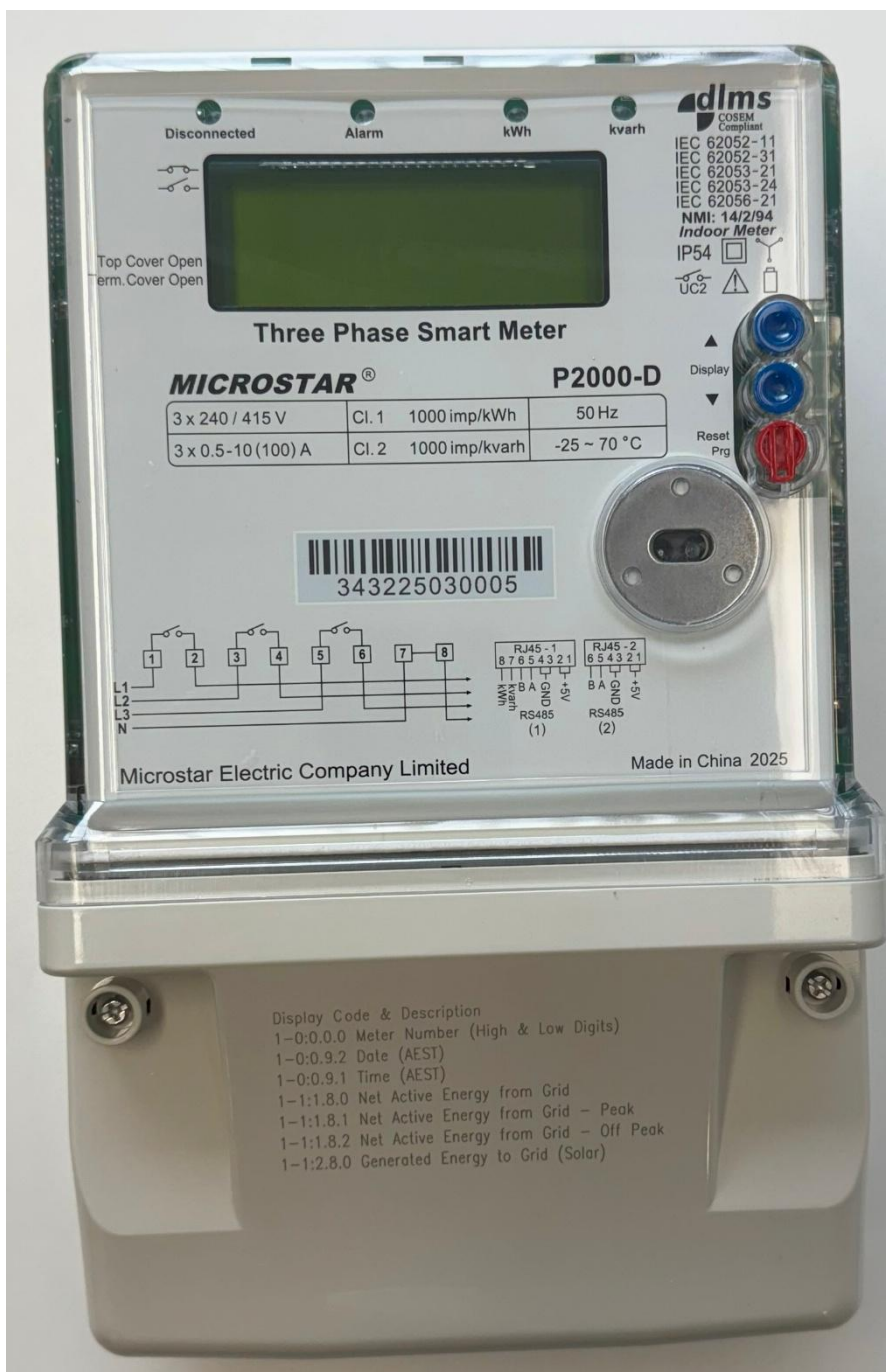
NOTE: NMI reserves the right to vary this procedure. Any such variation shall be notified in writing by NMI.

FIGURE 14/2/94 – 1



Microstar Model P2000-D (Including Typical Mechanical Sealing)

FIGURE 14/2/94 – 2



Microstar Model P2000-D Variant 1

~ End of Document ~