Australian Government
Department of Industry, Science and Resources
National Measurement Institute
36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 14/2/95

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 C2000 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.

The approval for the Pattern has been granted with reference to document NMI M 6-1 *Electricity Meters. Part 1: Metrological and Technical Requirements*, July 2012.

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

Rev	Reason/Details	Date
2	Pattern amended to include harmonics Variant 1 approved (NMI M 13-1) – certificate issued	13/06/24

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 14/2/95' 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 14/2/95

1. Description of Pattern approved on 22/03/16

A Microstar model C2000 single phase 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 1
- Number of wires 2
- Reference frequency 50 Hz
- Reference ambient temperature ranges:
  - specified range of operation −25 to 60 °C
  - limit range of operation −25 to 75 °C
- Rated voltage 240 V AC
- Rated currents: Basic current, I_b 10 A
  Maximum current, I_{max} 100 A
- Meter constant 500 imp/kWh
- Accuracy class 1

1.2 Features/Functions

- One (1) element
- 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 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 14/2/95
Number of phases	...
Number or wires	...
Reference frequency	... Hz
Meter constant	...
Rated voltage	... AC
Rated currents:	I_b ... A
	I_{max} ... A
Accuracy index	Class 1

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 1).

1.6 Harmonics

Instruments purporting to comply with this approval (the pattern) are suitable for use where the harmonics do not exceed those specified in NMI M 6-1:2012.

2. Description of Variant 1 approved on 13/06/24

A Microstar model C2000 single phase class 1 direct connect static watt hour meter (Figure 2) used to measure electrical energy.

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

- Basic current, I_b 5 A
- Meter constant 1000 imp/kWh

Note: Instruments purporting to comply with this approval as variant 1, are suitable for use where the harmonics do not exceed those specified in NMI M 13-1:2022.

TEST PROCEDURE No 14/2/95

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.

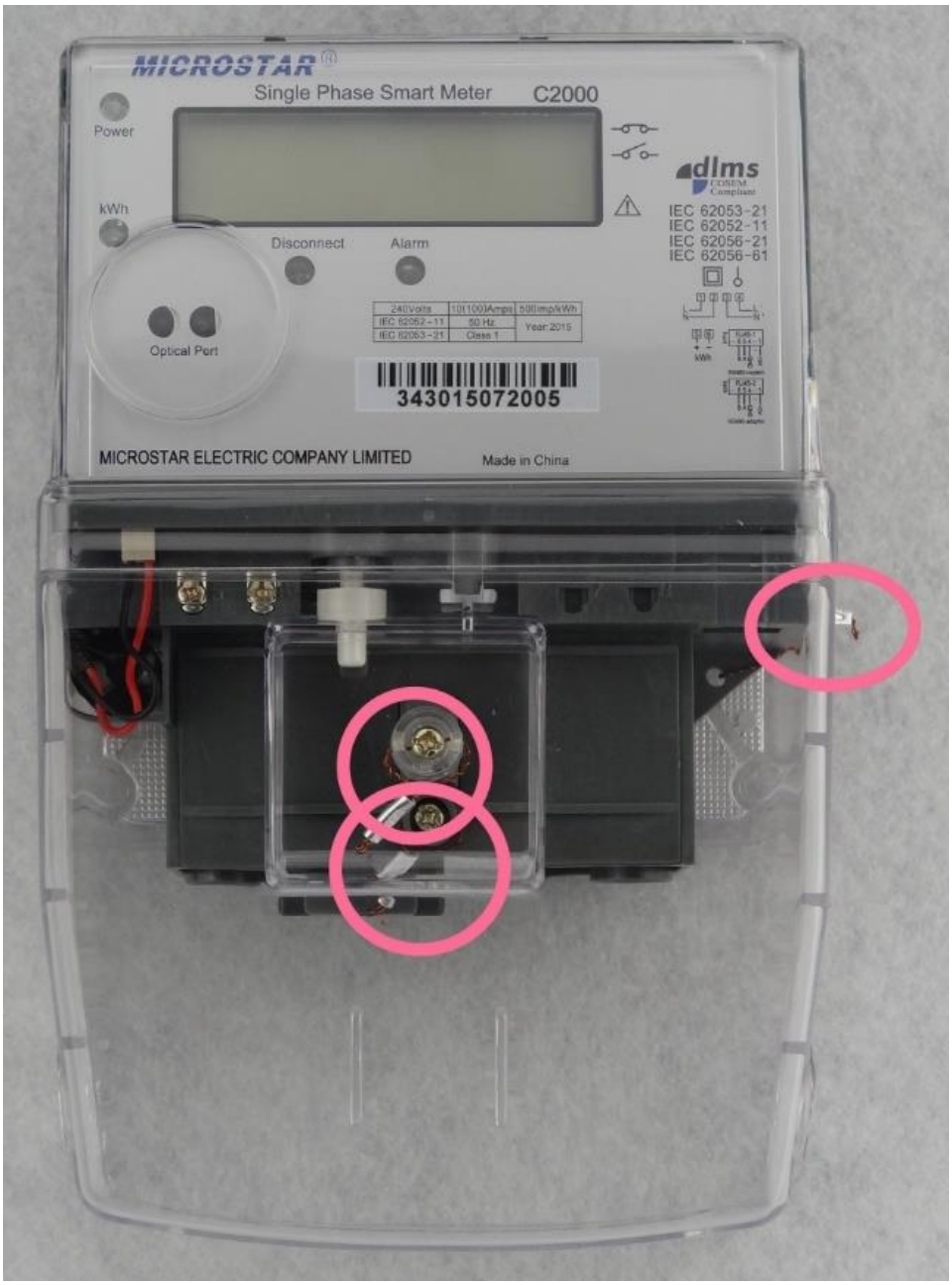
The maximum permissible errors are specified in the *National Trade Measurement Regulations 2009* (Cth).

Meters shall be verified in accordance with NITP 14 *National Instrument Test Procedures for Utility Meters*.

Evidence of verification shall be confirmed via the meter serial number and certificate of verification issued by a utility meter verifier in accordance with NITP 14.

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

FIGURE 14/2/95 – 1



Microstar Model C2000 (Including Typical Mechanical Sealing)

FIGURE 14/2/95 – 2

Microstar Model C2000 (Variant 1)

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