



Australian Government  
Department of Industry,  
Science and Resources

## National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

# Certificate of Approval

## NMI 14/2/67

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.

EDMI Model Mk7A Electricity Meter

submitted by EDM I Pty Ltd  
162 South Pine Road  
Brendale QLD 4500

**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.

For the pattern, variant 1, variant 2, variant 4, and variant 5 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. For the variant 3, 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 & variant 1 approved – certificate issued	6/09/13
1	Pattern & variant 1 reviewed and variant 2 approved – certificate issued	14/06/18
2	Variant 3 approved – certificate issued	25/05/22
3	Variant 4 approved – certificate issued	04/07/24
4	Variant 5 approved – certificate issued	22/11/24

## CONDITIONS OF APPROVAL

### General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 14/2/67' 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 14/2/67

**1. Description of Pattern**

**approved on 06/09/13**

An EDM1 model Mk7A (\*) electronic single phase direct connect static watt hour meter (Figure 1) used to measure electrical energy.

(\* - the full model number may have additional alphanumeric characters, e.g. the full model number may be in the form '7A11-A344-29-F211-7L02-6011'. This number may also have a '2000-' prefix.)

**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 or 3
- Reference frequency 50 or 60 Hz
- Reference ambient temperature ranges:
  - specified range of operation -25 to 60 °C
  - limit range of operation -40 to 70 °C
- Rated voltage 240 V AC
- Rated currents:
 

Rated current, $I_n$	5 or 10 A
Maximum current, $I_{max}$	100 A
- Meter constant 1 Wh/imp
- Accuracy class 1

**1.2 Features/Functions**

- One (1) element
- ANSI Type 2 optical interface
- Liquid crystal digital indicator having a maximum display of 9999999.9 kW h
- Measurement in both positive and negative directions (export and import)
- Eight (8) time of use registers
- Load profiling memory (log intervals of from 1 to 60 minutes)
- Internal battery
- High capacity modem power supply
- With synchronous and crystal clocks
- Bottom connect rectangular base

**1.3 Verification Provision**

Provision is made for the application of a verification mark.

**1.4 Sealing Provision**

Provision is made for the instrument to be sealed by the application of one or more mechanical seals (Figure 1).

**1.5 Descriptive Markings**

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

Manufacturer's mark, or name written in full	.....
Model designation	.....
Serial number	.....
Pattern approval mark	NMI 14/2/67
Number of phases	.....
Number of wires	.....
Reference frequency	..... Hz
Meter constant	.....
Rated voltage	..... AC
Rated currents:	$I_n$ ..... A
	$I_{max}$ ..... A
Accuracy class	...

## 1.6 Harmonics

For the pattern, variant 1, variant 2 and variant 4, instruments purporting to comply with this approval are suitable for use where the harmonics do not exceed those specified in NMI M 6-1:2022.

For variant 3, instruments purporting to comply with this approval are suitable for use where the harmonics do not exceed those specified in AS 62052.11:2018.

## 2. Description of Variant 1 approved on 06/09/13

An EDM1 model Mk7A electronic single phase direct connect static watt hour meter (Figure 1) used to measure electrical energy.

The variant has the same Field of Operation and Features and Functions as the pattern except for the following:

- Two (2) elements – 2<sup>nd</sup> element has a maximum current rating,  $I_{max}$  of 40 A
- Flag protocol and port
- 100 A disconnect relay
- 60 A load control relay
- Two 2 A relays
- RS 232 or RS 485 communications
- Two input channels and one input/output channel (S0 when configured as output)
- “K type” relays with “V type” current transformers

## 3. Description of Variant 2 approved on 14/06/18

An EDM1 model Mk7A electronic single phase direct connect static watt hour meter (Figure 2) used to measure electrical energy.

The variant has the same Field of Operation and Features and Functions as the pattern except for the following:

- Reference frequency 50 Hz
- Rated voltage 220 to 240 V AC
- One (1) or Two (2) elements
- Optional 100 A supply relay and/or 40 A load control relay
- ANSI or Flag optical interface
- IO options including 2 A relay output, inputs and RS232/RS485 communications.

- Extended capacity modem power supply
- Direct relay drive circuitry
- First four (4) characters of the model number – ‘7A13’
- “K type” relays with “V type” current transformers

#### **4. Description of Variant 3**

**approved on 25/05/22**

An EDM1 model Mk7A electronic single phase direct connect static watt hour meter (Figure 2) used to measure electrical energy.

The variant has the same Field of Operation and Features and Functions as the pattern and variants 1 & 2 except for the following:

- “K type” relays with “H type” current transformers

#### **5. Description of Variant 4**

**approved on 04/07/24**

An EDM1 model Mk7A electronic single phase direct connect static watt hour meter used to measure electrical energy.

The variant has the same Field of Operation and Features and Functions as variant 3 except for the following:

- “W type” relays with “Z type” current transformers

#### **6. Description of Variant 5**

**approved on 22/11/24**

An EDM1 model Mk7A electronic single phase direct connect static watt hour meter used to measure electrical energy.

This variant has the same Field of Operation and features as variant 2, variant 3 or variant 4 except as listed below:

- Changed R32 2M0 T/H resistor to R94/R95/R96/R97 470k SMD resistors.

### **TEST PROCEDURE No 14/2/67**

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).

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 14/2/67 – 1



EDMI Model Mk7A Class 1 Electricity Meter  
(Including Typical Mechanical Sealing)

FIGURE 14/2/67 – 2



Variant 2 of the EDM I Model Mk7A Class 1 Electricity Meter

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