



Australian Government
Department of Industry,
Science and Resources

**National
Measurement
Institute**

Certificate of Approval

NMI 14/2/97

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.

Carlo Gavazzi Controls Model EM24-DINAV5 Electricity Meter

submitted by Carlo Gavazzi Controls SPA
Via Safforze 8
Belluna, BL 32100
ITALY

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. 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	15/12/16
1	Variant 1 approved – certificate issued	23/10/23

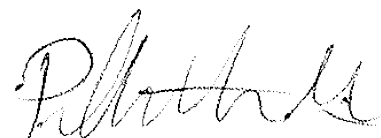
CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 14/2/97' 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*.



Dr Phillip Mitchell
A/g Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 14/2/97

1. Description of Pattern

approved on 15/12/16

A Carlo Gavazzi Controls model EM24-DINAV5 electronic polyphase Class 1 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 4
- Reference frequency 50 Hz
- Reference ambient temperature ranges:
 - specified range of operation -10 to 60 °C
 - limit range of operation -25 to 70 °C
- Rated voltage 3 × 230(400) V AC
- Rated currents:
 - Nominal current, I_n 5 A
 - Maximum current, I_{max} 10 A
- Meter constant up to 1000 imp/kWh (*)
- Accuracy class 1

(*) The meter constant (LED) is automatically set according to the programmed CT-ratio:

- CT-ratio ≤ 7: LED = 1000 imp/kWh
- 7 < CT-ratio ≤ 70: LED = 100 imp/kWh
- 70 < CT-ratio ≤ 700: LED = 10 imp/kWh
- 700 < CT-ratio ≤ 7000: LED = 1 imp/kWh

1.2 Features/Functions

- Liquid crystal digital indicator having a maximum display of 9999999 kWh (auto-range from 99999.99)
- pulsed output circuits (option "O2") or 3 digital inputs +RS485 (option "IS")
- DIN-rail mounting
- Measurement in positive direction only.

Note: The pattern is NOT fitted with an internal clock.

1.3 Conditions

The meter is approved for use when it is installed in a cabinet with a protection rating of IP 51 or better.

1.4 Verification Provision

Provision is made for the application of a verification mark.

1.5 Sealing Provision

Provision is made for the calibration adjustments to be sealed by the application of a mechanical seal (Figure 1).

1.6 Descriptive Markings

Instruments are marked with the following data, together in one location:

Manufacturer's mark, or name written in full
Model designation
Serial number
Pattern approval number	NMI 14/2/97
Number of phases
Number of wires
Reference frequency Hz
Temperature limits (if other than -10 to 60 °C)	... to ... °C
Meter constant
Rated voltage AC
Rated currents:	I_n A
	I_{max} A
Accuracy class

1.7 Harmonics

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.

2. Description of Variant 1

approved on 23/10/23

A Carlo Gavazzi Controls model EM24-DINAV5 (rev 1) electronic polyphase Class 1 transformer-operated static watt hour meter used to measure electrical energy.

This variant has an updated switching supply board and display board. It is identified by the inclusion of the marking 'HW:rev 1.' (see Figure 3).

This variant has the same Field of Operations and Features/Functions as the pattern.

TEST PROCEDURE No 14/2/97

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 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.

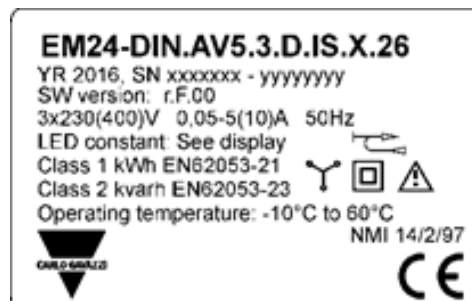
NOTE: NMI reserves the right to vary this procedure. Any such variation shall be notified in writing by NMI.

FIGURE 14/2/97 – 1



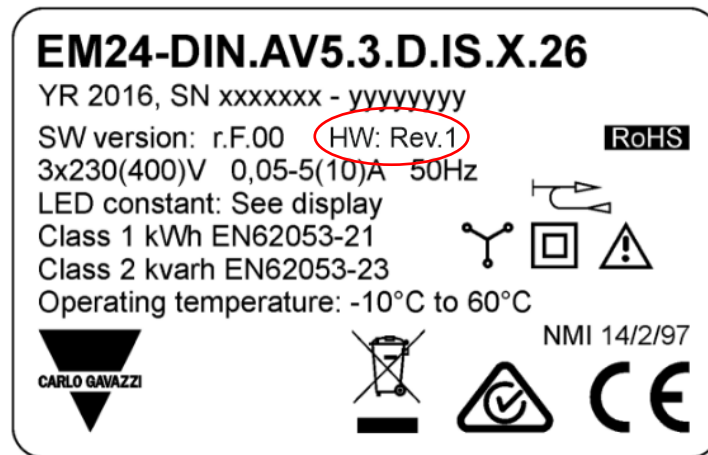
Carlo Gavazzi Controls Model EM24-DINAV5 Electricity Meter (Including Typical Mechanical Sealing)

FIGURE 14/2/97 – 2



Carlo Gavazzi Controls Model EM24-DINAV5 Electricity Meter Sample Markings

FIGURE 14/2/97 – 3



Carlo Gavazzi Controls Model EM24-DINAV5 (Variant 1) Electricity Meter Sample Markings

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