

National Standards Commission



Supplementary Certificate of Approval

No S275

Issued under Regulation 9
of the
National Measurement (Patterns of Instruments) Regulations

This is to certify that an approval for use for trade has been granted in respect of the

Emco Wheaton Model Selectronic Pulse Generator/Indicator for Liquid-measuring Systems

submitted by Emco Wheaton Australia Pty Ltd
145 Heidelberg Road
Northcote VIC 3070.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

A handwritten signature in black ink, appearing to read 'J. Birch'.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/6/96.

This approval expires in respect of new instruments on 1/6/97.

Instruments purporting to comply with this approval shall be marked NSC No S275 and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked NSC No S275 in addition to the approval number of the instrument.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the drawings and specifications lodged with the Commission 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 the Commission's Document 106.

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

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

DESCRIPTIVE ADVICE

Pattern: approved 8/5/91

- An Emco Wheaton model Selectronic pulse generator/indicator for use in Commission-approved liquid-measuring systems incorporating any compatible Commission-approved positive displacement flowmeter.

Technical Schedule No S275 describes the pattern.

FILING ADVICE

The documentation for this approval comprises:

Supplementary Certificate of Approval No S275 dated 14/6/91
Technical Schedule No S275 dated 14/6/91 (incl. Test Procedure)
Figure 1 dated 14/6/91



National Standards Commission

TECHNICAL SCHEDULE No S275

Pattern: Emco Wheaton Model Selectronic Pulse Generator/Indicator for Liquid-measuring Systems.

Submitter: Emco Wheaton Australia Pty Ltd
145 Heidelberg Road
Northcote VIC 3070.

1. Description of Pattern

An Emco Wheaton model Selectronic pulse generator/indicator (Figure 1) for use in Commission-approved liquid-measuring systems incorporating any compatible Commission-approved positive displacement flowmeter.

1.1 Indicator

The indicator has an 8 digit liquid crystal display (LCD) and a 16 key keyboard for data entry.

1.1.1 Operational Functions

Through the keyboard various operational functions may be displayed including:

- . Volume delivered (with or without the temperature convertor activated) refer to paragraph 1.1.2
- . Temperature of product
- . Accumulated totals
- . Flow rate
- . Supply voltage

1.1.2 Calibration Functions

Access to the calibration functions, which include calibration, preset amount and activation of temperature conversion, is via the switch located behind the sealed access plate at the rear of the indicator.

1.1.3 Power Supply

Either a 12 or 24 volt DC line power supply unit is used which includes a battery for indicator backup in the event of a power failure.

1.1.4 Temperature Conversion

Instruments incorporate an electronic temperature conversion device for indicating the volume at 15°C of petroleum products of density between 0.500 kg/L and 0.850 kg/L at temperatures between 0°C and 45°C. The conversion device is set via the sealed calibration function button on the rear of the instrument.

For products with densities between 0.500 kg/L and 0.580 kg/L (LPG), the value of the measured density of the product (rounded to the nearest 0.005 kg/L) is selected and the temperature conversion is based on Table 54 ASTM-IP Petroleum Measurement Tables; for products with densities above 0.580 kg/L, the conversion factor entered is the coefficient of expansion (in the range 0.0014/°C to 0.0008/°C) for the product being used.

1.1.5 Linearisation Facility

The pattern is equipped with a linearisation facility for correcting the meter calibration as a function of flow rate up to $\pm 0.99\%$.

Up to 6 meter correction factors over the flow rate range may be entered using the calibration function.

1.2 Pulse Generator

The pattern contains a bi-directional pulse generator which can be internally connected to the indicator board to which it provides information on direction and speed of rotation. The pulse generator may be mounted remotely up to 10 metres.

The pulse generator specifications are:

| | |
|--------------------------------------|------------------------|
| Pulses per shaft revolution: | 50 pulses/revolution |
| Maximum pulse generator shaft speed: | 600 revolutions/minute |

1.3 Verification Provision and Sealing

Provision is made for a verification mark to be applied.

The calibration function button on the rear of the instrument is sealed.

For remote operation, the meter-mounted pulse generator cover is sealed.

1.4 Markings

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

| | |
|--|---------------------|
| Manufacturer's name or mark | |
| Model number | |
| Serial number | |
| Approval number | NSC No S275 |
| Liquid density range | 0.500 to 0.850 kg/L |
| Liquid temperature range | 0°C to 45°C |
| Density for which temperature convertor is set | kg/L |
| Operating (air) temperature range | -10°C to +45°C |

The indicator reading face shall be marked with the unit of volume used (viz. Litres or Decalitres). In addition, when the instrument is used with the temperature convertor activated, the indicator reading face shall be marked "Reference temperature 15°C" or "Litres (or Decalitres) at 15°C".

TEST PROCEDURE

The maximum permissible shaft revolution of the pulse generator and the maximum flow rate of the flowmetering system shall be considered in conjunction with any tests specified in the approval documentation for the instrument to which the pattern is connected, as appropriate, and in accordance with any relevant tests specified in the Inspector's Handbook.

Maximum Permissible Errors at Verification/Certification

The maximum permissible errors applicable are those applicable to the system to which the instrument approved herein is fitted, as stated in the approval documentation for the system.

FIGURE S275 - 1



Emco Wheaton Model Selectronic Pulse Generator/Indicator