National Standards Commission

Supplementary Certificate of Approval

No S305

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

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

Email Model IDIS Indicator for Liquid-measuring Systems

submitted by Email Electronics
88-94 Canterbury Road
Kilsyth VIC 3137.

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.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1 December 1998.
This approval expires in respect of new instruments on 1 December 1999.

Instruments purporting to comply with this approval shall be marked NSC No S305 and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked NSC No S305 in addition to the approval number of the instrument.

..../2

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 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/A.

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

DESCRIPTIVE ADVICE

Pattern: approved 26 November 1993

- An Email model IDIS indicator for use in Commission-approved liquid-measuring systems.

Variant: approved 26 November 1993

1. For use with certain Commission-approved control consoles.

Variant: approved 30 March 1994

2. For use with Commission-approved Smith mass flowmeters.

Technical Schedule No S305 describes the pattern and variants 1 and 2.

Variants: approved 18 June 1994

3. With a volume conversion for temperature facility.

4. With a preset facility.

5. With a card-reader facility.

Technical Schedule No S305 Variation No 1 describes variants 3 to 5.

FILING ADVICE

Supplementary Certificate of Approval No S305 dated 25 April 1994 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

Supplementary Certificate of Approval No S305 dated 26 August 1994
Technical Schedule No S305 dated 25 April 1994 (incl. Table 1 and Test Procedure)
Technical Schedule No S305 Variation No 1 dated 26 August 1994
Figure 1 dated 25 April 1994

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

National Standards Commission

TECHNICAL SCHEDULE No S305

Pattern: Email Electronics Model IDIS Flowmeter Indicator.

Submittor: Email Electronics
88-94 Canterbury Road
Kilsyth VIC 3137.

1. Description of Pattern

An Email model IDIS indicator for use in Commission-approved liquid-measuring systems. The indicator may be as shown in Figure 1 or in alternative housings including with only 2 displays and without the preset keypad.

1.1 Signal Interface

The indicator shall be used with an Email model RT-86 pulse generator (as described in the documentation of NSC approval No 257) or any other compatible Commission-approved pulse generator. The indicator and pulse generator shall be interfaced in accordance with the manufacturers' recommendations .

1.2 Power Supply

The instrument operates with either AC mains supply or DC supply (10 to 35V). If the power is disconnected, the last volume delivered is retained in a non-volatile memory. (Note: In the event of a power failure the indicator will display a small 'p' after power has returned.)

1.3 Display

A display check is initiated when the instrument is reset.

The indicator has a volume display marked in 'Litres'. It also has one or two additional displays for management functions which are not in use for trade, including flow rate and temperature.

The indicator may be set (using the calibration function) to display one of a number of volume and totaliser ranges. The volume display has 6 digits and has increments of 0.01, 0.1 or 1 L. The optional electromechanical totaliser has 7 digits and will have increments which are 100 times the volume display increments.

1.4 Verification/Certification Provision

Provision is made for a verification/certification mark to be applied.

..../2

1.5 Marking

The instrument is clearly marked, either on a permanently attached nameplate or, as part of the instrument, with the following information:

Manufacturer's name or mark
Model number
Serial number
NSC approval number NSC No S305

1.6 Sealing Provision

Provision is made for sealing of the calibration adjustments located under the lockable flap shown in Figure 1. If an alternative housing is used, provision is made for sealing the 'CALIBRATE' key on the manager's keypad located inside the enclosure.

2. Description of Variants

2.1 Variant 1

For use with any combination of the following Commission-approved driveway flowmeter control systems, in which case the indicator will be configured to display unit price and total price, as well as volume. (Note that the appropriate NSC approval numbers appear in brackets.)

TABLE 1

EMAIL	Epitronic Mk II - (S234) Epitronic Mk III - (S227) System Marketer 2000 - (S261) Task - (S276)
KEYTRONIC	700 series - (S145A)
L & L	DCA - (S148 and S148A)
LPG ENGINEERING	Mini Console Mk2 - (S259)
PEC	8850 - (S278)
POSTEC	FCC - (S244)
SOLUTION TECHNOLOGY	ST1 - (S236)

..../3

2.2 Variant 2

For use with a Commission-approved Smith mass flowmeter, in which case the IDIS indicator displays units of mass, rather than volume.

TEST PROCEDURE

Instruments should be tested in accordance with any tests included in the approval documentation for the pattern to which the pattern is connected, 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.

National Standards Commission

TECHNICAL SCHEDULE No S305

VARIATION No 1

Pattern: Email Electronics Model IDIS Flowmeter Indicator.

Submittor: Email Electronics
88-94 Canterbury Road
Kilsyth VIC 3137.

1. Description of Variants

1.1 Variant 3

The pattern now fitted with an electronic volume conversion for temperature facility which is used to convert the measured volume to volume at 15°C, within the following ranges:

(a) When used with generalised petroleum products;

Density	654 kg/m^3 to 1044 kg/m^3
Liquid Temperature	-10°C to 50°C

(b) When used with liquefied petroleum gas (LPG);

Density	500 kg/m^3 to 580 kg/m^3
Liquid Temperature	-10°C to 50°C

The volume conversion is based on Table 54B (generalised products) of the API *Standard 2540*, or Table 54 (LPG) of the ASTM-IP *Petroleum Measurement Tables*, as appropriate.

Note: Volume conversion for temperature to 15°C is mandatory for LPG.

When the volume conversion for temperature facility is enabled, the indicator displays volume converted to 15°C, however the indicator has the facility to display unconverted volume and product density. These are accessed through the manager's keypad under the lockable flap shown in Figure 1 of Technical Schedule No S305 dated 25 April 1994 for the pattern.

..../2

In addition to the markings specified in cl. **1.5 Markings** of Technical Schedule No S305 dated 25 April 1994, instruments purporting to comply with this variant shall also be marked with the following:

Liquid density range	..... kg/m^3 to ..... kg/m^3
Liquid temperature range	-10°C to 50°C

When the volume conversion for temperature facility is activated the volume indicator (indicator facia) shall be marked 'Volume Delivered Converted to 15°C' or 'Reference Temperature 15°C'.

1.2 Variant 4

With a preset facility which consists of a preset display indicator and a 12 button keypad.

When the preset facility is fitted the indicator shall be interfaced with the flow control valve in a Commission-approved liquid-measuring system.

The preset indicator is marked 'Preset Indicator Not in Use For Trade'.

1.3 Variant 5

With a magnetic card-reader facility which may be used to authorise deliveries.

TEST PROCEDURE

Maximum Permissible Errors at Verification/Certification

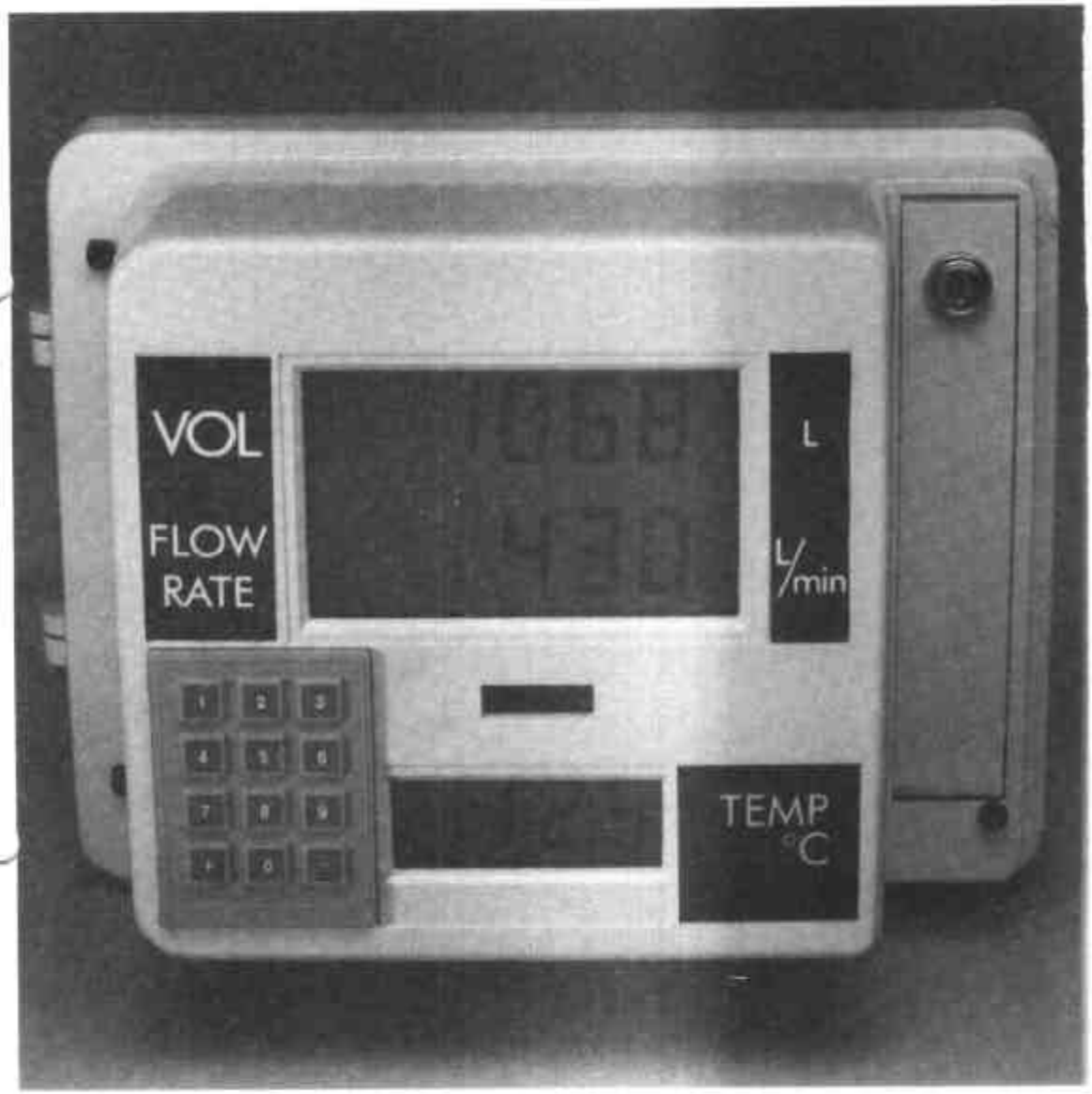
The maximum permissible errors applicable are those applicable to the system to which the instrument approved herein is fitted, as stated in the approval documentation for the system.

Instruments Fitted With a Volume Conversion for Temperature Facility

Where an instrument is fitted with a device to convert the indication of volume to volume at reference conditions, the maximum permissible error applicable is increased by 0.2% when the volume convertor is activated.

Reference conditions for petroleum liquids are specified in Australian Standard AS-2649 - 1983, *Petroleum Liquids and Gases - Standard Reference Conditions.*

FIGURE S305 - 1



Email Model IDIS Indicator