

National Standards Commission



Supplementary Certificate of Approval

No S178A

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

Smith Model Accuload Flowmetering System Controller

submitted by Email Electronics
Cnr Canterbury and Liverpool Roads
Kilsyth VIC 3070.

This Certificate is issued upon completion of a review of NSC approval No S178.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/10/97.
This approval expires in respect of new instruments on 1/10/98.

Instruments purporting to comply with this approval shall be marked NSC No S178A and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked NSC No S178A in addition to the approval number of the instrument.

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

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.

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

DESCRIPTIVE ADVICE

Pattern: approved 24/9/92

- A Smith model Accuload flowmeter indicator and system controller for use in bulk flowmetering systems.

Variants: approved 24/9/92

1. With remote logic controller.
2. Model Accuload II dual indicator.

Technical Schedule No S178A describes the pattern and variants 1 and 2.

FILING ADVICE

The documentation for this approval comprises:

Supplementary Certificate of Approval No S178A dated 17/11/92
Technical Schedule No S178A dated 17/11/92 (incl. Test Procedure)
Figures 1 to 4 dated 17/11/92

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 S178A

Pattern: Smith Model Accuload Flowmetering System Controller.

Submitter: Email Electronics
Cnr Canterbury and Liverpool Roads
Kilsyth VIC 3070.

1. Description of Pattern

A Smith model Accuload flowmeter indicator and system controller (Figure 1) which is interfaced with:

- (a) a Commission-approved turbine or positive displacement flowmeter fitted with a compatible Commission-approved pulse generator (Figure 2);
- (b) a 100 ohm platinum resistance probe; and
- (c) a Smith digital control valve (Figure 3).

Signals from the flowmeter pulse generator are accepted by the instrument, which digitally indicates the volume delivered, the preset volume remaining and the preset batch volume. The instrument also provides control signals to the flowmetering system.

The volume indicator has one of the following formats:

99999 LITRES in 1 L increments
999.99 KILOLITRES in 10 L increments
9999.9 KILOLITRES in 100 L increments

A prominent notice states the units for which the display is set.

1.1 Pulse Generator

The maximum flow rate (L/min) of the flowmeter shall be less than the equivalent of 120 000 pulses per minute produced by the pulse generator divided by the number of pulses per unit volume

1.2 Linearisation Facility

A multi-point linearisation facility is incorporated and is in the form of four meter factors which may be assigned for correcting the meter calibration as a function of flow rate.

1.3 Temperature Conversion

Electronic temperature conversion is incorporated and may be used to indicate the volume at 15 °C of petroleum products at temperatures between -15 °C and +50 °C.

The temperature conversion is based on Table 54 (LPG) or Table 54B (other petroleum products) of the ASTM-IP Petroleum Measurement Tables.

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 S178A

In addition:

- (i) The preset indications shall be marked "Not For Trade Use"; and
- (ii) When programmed for temperature conversion:
 - (a) The volume indicator shall be marked "Volume delivered compensated to 15°C", or "Litres (or Kilolitres) at 15°C", or "Reference temperature 15°C"; and
 - (b) The instrument nameplate(s) shall include the following:

Liquid temperature range	-15°C to +50°C
Density for which temperature convertor is set kg/L

1.5 Verification/Certification Provision

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

2. Description of Variants

2.1 Variant 1

With a remote programmable logic controller or computer for data input to the Accuload system controller.

2.2 Variant 2

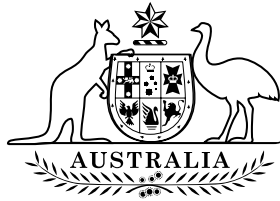
The model Accuload II (Figure 4) with dual electronics in a single enclosure to control two Commission-approved flowmeters.

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.



National Standards Commission
Notification of Change
Supplementary Certificate of Approval No S178A
Change No 1

The following change is made to the approval documentation for the

Smith Model Accuload Flowmetering System Controller

submitted by Email Electronics
Cnr Canterbury and Liverpool Roads
Kilsyth VIC 3137.

In Supplementary Certificate of Approval No S178A and its Technical Schedule, both dated 17 November 1992, all references to the submitter should be amended to read;

Diamond Key International Pty Limited
110 Henderson Road
Rowville VIC 3178.

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.

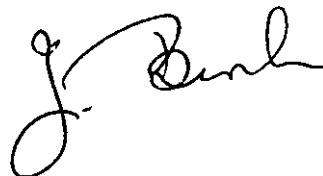


FIGURE S178A - 1



Smith Model Accuload Flowmetering System Controller

FIGURE S178A - 2

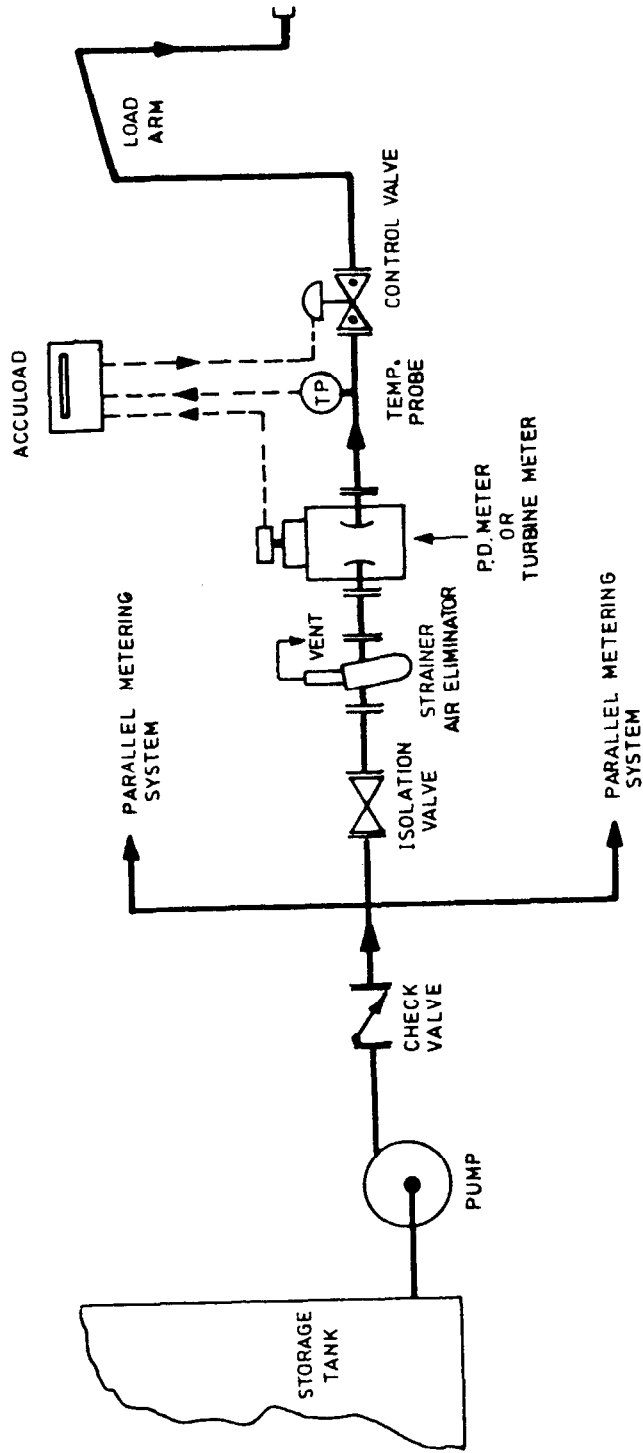
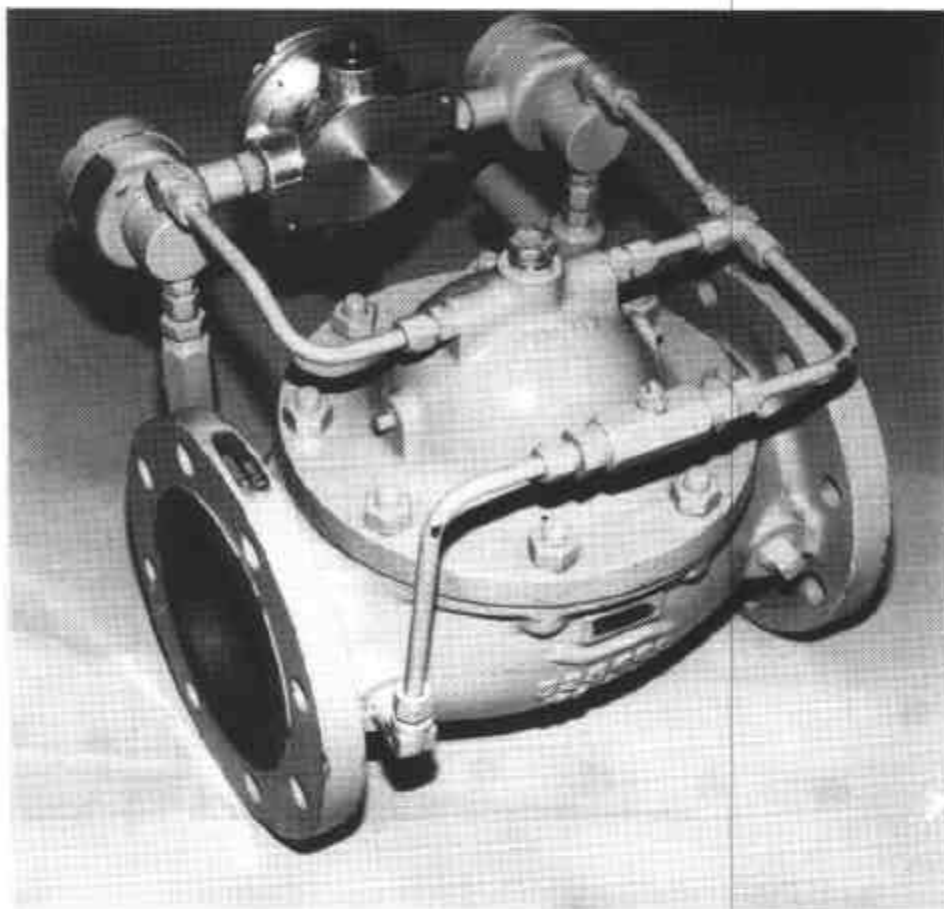
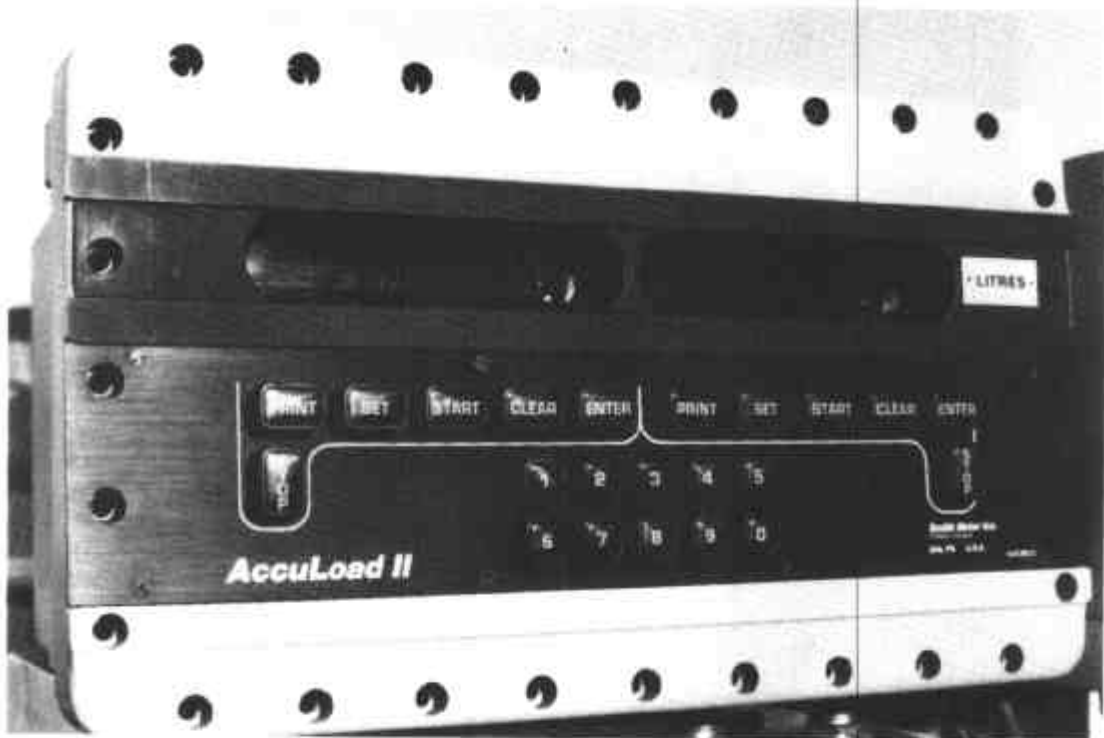


FIGURE S178A - 3



Typical Smith Digital Control Valve

FIGURE S178A - 4



Smith Model AccuLoad II