



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Supplementary Certificate of Approval NMI S479

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.

Pumpmate Model 4NPP-1 Control System for Liquid-measuring Systems

submitted by Protek Electronics Pty Ltd
(formerly submitted by Metric Australia Pty Ltd)
Unit 3, 14 Jersey Street
Jolimont WA 6014

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 R 117 Measuring Systems for Liquids Other than Water, dated June 2011.

This approval becomes subject to review on **1/11/21**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – interim certificate issued	26/10/06
1	Pattern & variant 1 approved – certificate issued	8/11/06
2	Pattern amended ('liquid-measuring systems') – notification of change issued	22/01/07
3	Pattern & variant 1 reviewed & amended ('control system' & submittor) – certificate issued	13/10/16

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S479' and only by persons authorised by the submitter.

It is the submitter'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.

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

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.



Dr A Rawlinson

TECHNICAL SCHEDULE No S479

1. Description of Pattern

approved on 26/10/06

A Pumpmate model 4NPP-1 unattended self-service control system (Figures 1 and 2) for use with compatible (#) NMI-approved liquid-measuring systems.

(#) 'Compatible' is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system.

Field of Operation

The field of operation of the measuring system is determined by the following characteristics:

- Ambient temperature range -10°C to 55°C (class N)
- Liquid temperature range -10°C to 50°C
- Power supply 240 V (nominal) AC mains supply
Range 204 V to 264 V
- Maximum input frequency 600 pulses/second
- Accuracy class Class 0.5
- For use by registered clients

1.2 Features/Functions

The Pumpmate model 4NPP-1 flowmetering control system has a single 18 mm six-digit integrated liquid-crystal display (LCD) for indicating the measured volume of a flowmeter. The controller operates using Protek version V8-304 software, refer to Test Procedure for instructions on how to view the version number.

The instrument's additional features include:

- (i) A card-reader.
- (ii) A numeric keypad.
- (iii) A 20 character x 2 line alphanumeric liquid-crystal display (LCD) for user prompts and error messages.
- (iv) A facility to display and store in a non-volatile memory the non-resettable total litres for each card up to a maximum of 2400 cards, in increments of 1 L up to a maximum value of 99999 litres.
- (v) A management facility for viewing all transaction data which may also be printed if an optional compatible printer or computer is interfaced.

The delivery operation is authorised by the user presenting their card to the card reader and entering an optional personal identification number. A non-resettable volume totaliser is displayed on the alphanumeric LCD.

A remote volume display (similar to that shown in Figure 3) may also be fitted to repeat the volume shown on the primary display, and shall comply with the requirements of General Supplementary Certificates No S1/0/A or No S1/0B.

The delivery operation is completed when the front panel stop button is pressed or a defined timeout period expires.

1.3 Checking Facilities

- (i) An automatic segment test for the volume display is performed at the start of each delivery.
- (ii) The controller monitors the presence and correct transmission of signal from the measurement transducer and to the volume display. In the event of detecting a fault the instrument indicates an error message and has provision to stop the delivery and prevents further deliveries until the fault is corrected.
- (iii) When the battery backup is disconnected or uncharged the indication will display "BATTERY FAULT" and deliveries will be prevented from starting.
- (iv) In the event of a power failure while a delivery is in progress, the delivery will stop and the system will finalise the transaction. Further deliveries cannot be authorised.

1.4 Pulse Generator

The controller/indicator is approved for use with a Liquip model ERP100 pulse generator as described in the documentation of approval NSC S351, or any other compatible (#) approved measurement transducer.

- (#) 'Compatible' is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system.

1.5 Verification Provision

Provision is made for the application of a verification mark

1.6 Descriptive Markings

Instruments shall be marked with the following data, either grouped or distributed on the casing, the indicating device dial or an identification plate:

Manufacturer's name or mark	Protek Electronics Pty Ltd
Model number	4NPP-1
Serial number
Pattern approval mark	NMI S479
Year of manufacture
Environmental class	Class N

The minimum measured quantity specified for the fuel dispenser is marked on the face of the indicator in the form 'Minimum Delivery 2 L'

2. Description of Variant 1

approved on 26/10/06

The Pumpmate model 4NPP-2 which is similar to the pattern but allows control of two flowmeters with the addition of a second pulse generator and an externally mounted stop button and LCD display for indication of the measured volume from the second flowmeter.

TEST PROCEDURE

Instruments shall be tested in conjunction with any tests specified in the approval documentation for the instruments to which the pattern is connected, as appropriate, and in accordance with any relevant tests specified in the National Instrument Test Procedures.

The maximum permissible shaft revolutions 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, and in accordance with any relevant tests.

Maximum Permissible Errors

The maximum permissible errors applicable are those applicable to the fuel dispensers to which the instrument approved herein is fitted, as stated in the approval documentation for the fuel dispensers or in Schedule 1 of the *National Trade Measurement Regulations 2009*.

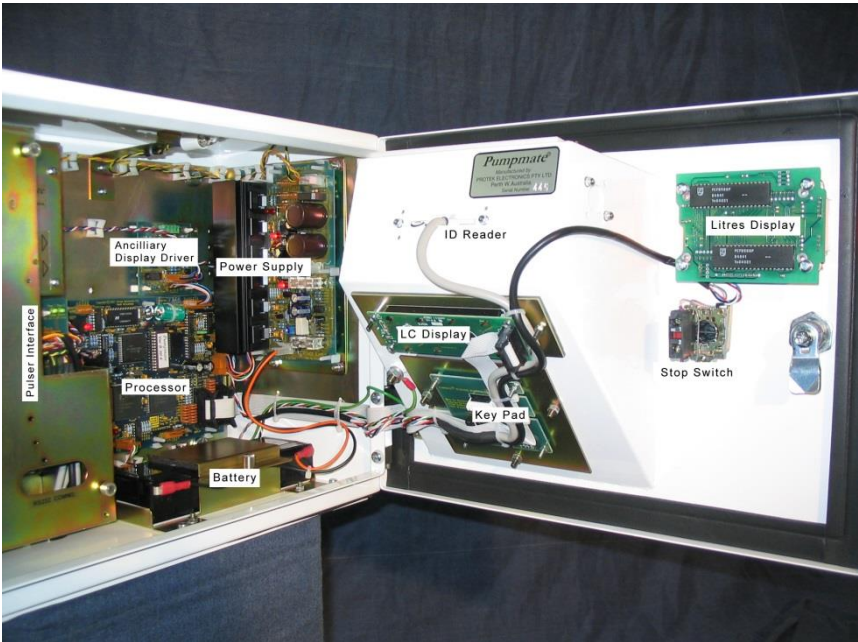
Tests

To view the software version number perform the following procedure:

1. Use either the Installation, Manager or Office card, and then access 'Menu 971'.
2. The 20x2 display will show the CPU serial number followed by the software version number.
3. Press 'AC' twice to exit.

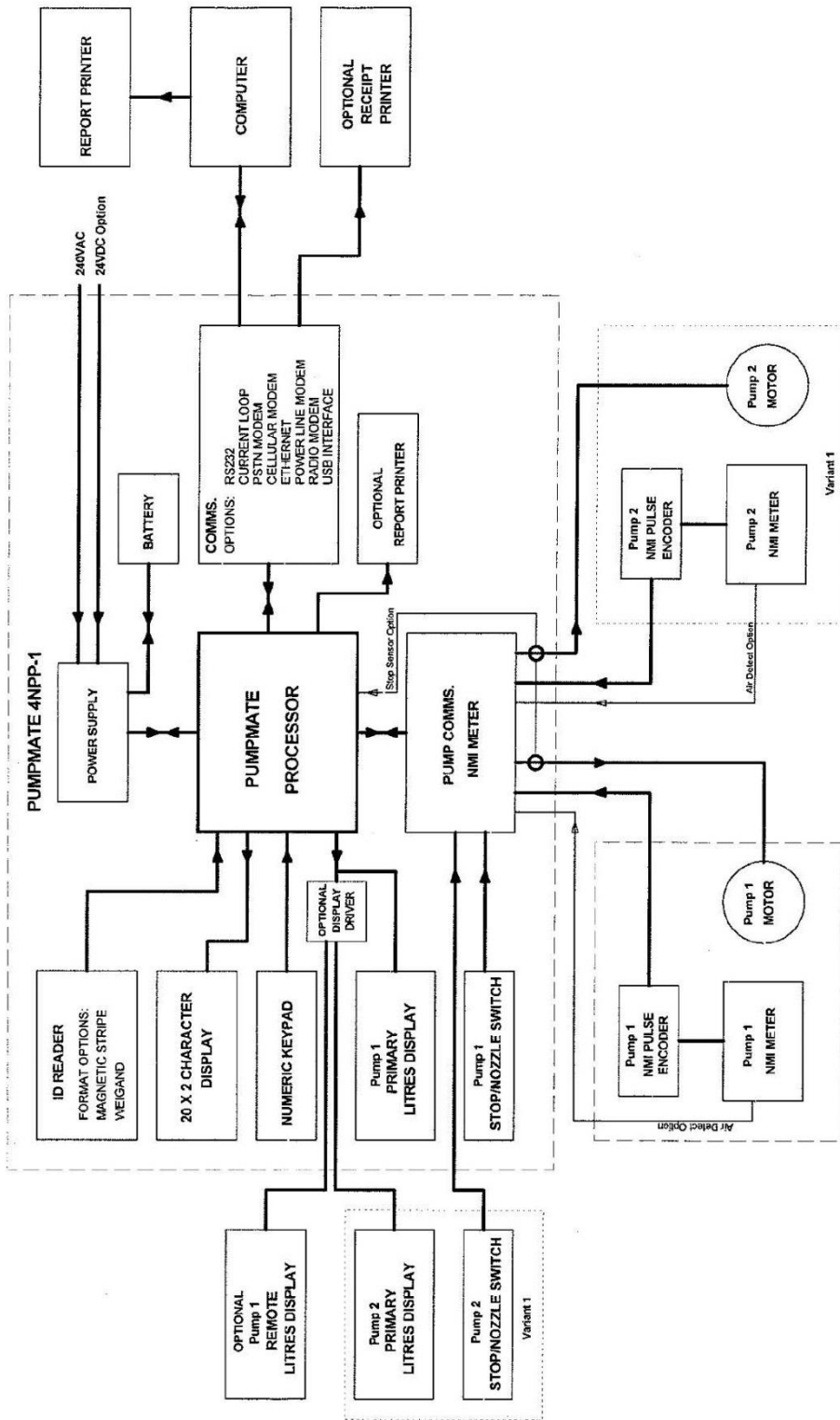
NOTE: NMI reserves the right to vary this procedure. Any such variation shall be notified in writing by NMI.

FIGURE S479 – 1



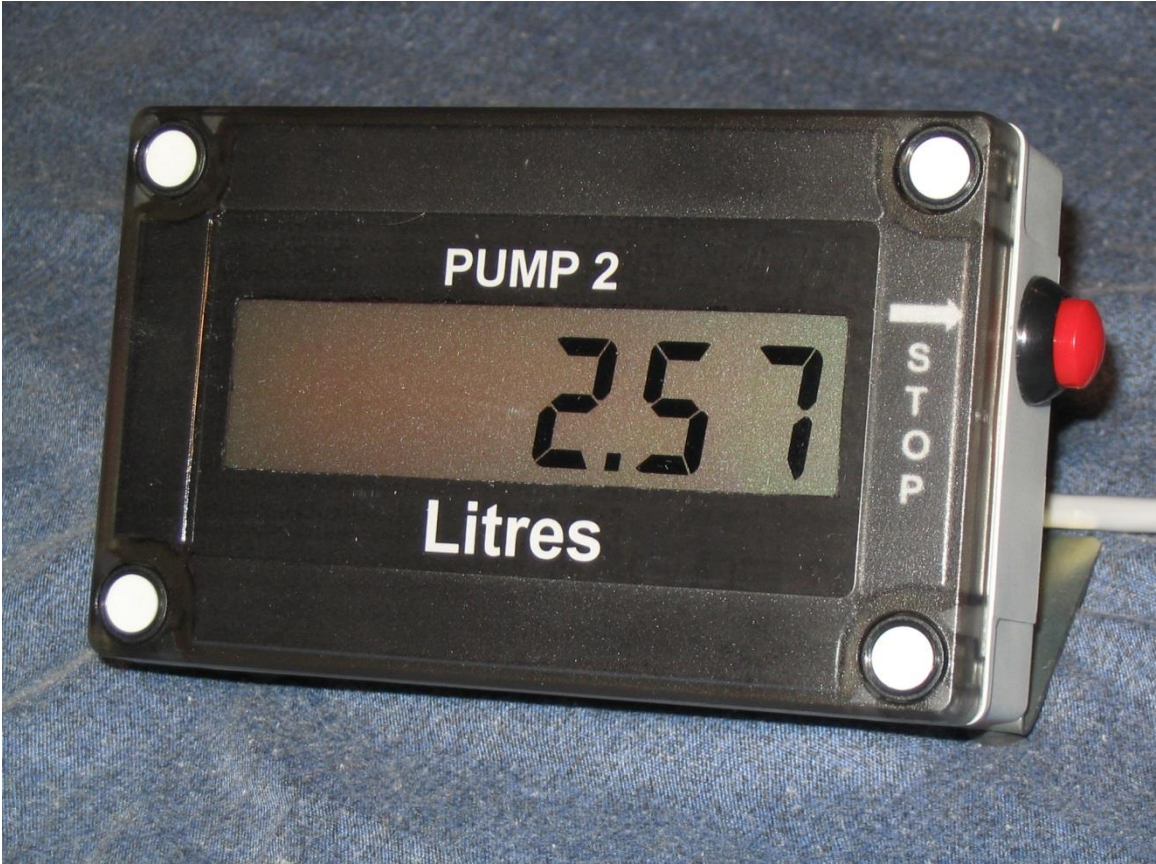
Pumpmate Model 4NPP-1 Control System for Liquid-measuring Systems

FIGURE S479 – 2



Typical System Overview

FIGURE S479 – 3



Remote Volume Display

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