



Australian Government
Department of Industry,
Innovation and Science

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

**Interim
Provisional
Certificate of Approval
NMI P5/6B/229**

VALID FOR VERIFICATION PURPOSES UNTIL 20 JANUARY 2021

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

Halo Go Model HG-MFD-001 Liquid-Measuring System

submitted by Halo Go Pty Ltd
PO Box 1055
Rozelle NSW 2039.

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.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern provisionally approved – interim certificate issued	09/10/19
1	Pattern amended – Field of operation (#3) changed to (#1), Note to Verifiers changed – interim certificate issued	16/01/20
2	Extended verification date - interim certificate issued	07/07/20

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI P5/6B/229' and only by persons authorised by the submitter. (Note: The 'P' in the approval number may be a temporary marking.)

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 Certificate No S1/0B.

Special Conditions of Approval: (Provisional Approval)

This approval is limited to Eight (8) trolleys, Two (2) flowmetering systems per trolley, serial numbers may be obtained from NMI.

The approval will remain provisional pending completion of satisfactory testing and evaluation.

In the event of unsatisfactory performance the approval may be cancelled (or altered).

The submitter must submit verification results for NMI's consideration.

The submitter shall implement such modifications as required by NMI. In the event that such modifications (if any are required by NMI) are not made to the satisfaction of NMI, this approval may be withdrawn.

Note to Verifiers:

Instruments shall be tested in accordance with any relevant tests specified in the applicable National Instrument Test Procedures.

1. Description of Pattern **provisionally approved on 09/10/19 amended on 16/01/20**

An Halo Go model HG-MFD-001 bulk flowmetering system incorporating a Flomec model OM025-A003-211QPN flowmeter, with an Armstrong model 11-AV air eliminator, with a Trimec model QP/00 pulse transmitter interfaced to an ACME model 6000 calculator/indicator for bulk metering of petroleum products other than LPG.

Approved products include various grades of liquid hydrocarbons including petrol/ethanol blends and pure ethanol ('E100') and various grades of pure biodiesel and biodiesel/distillate blends (to Australian government standard).

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

- Minimum measured quantity (V_{min}) 2 L
- Maximum flow rate (Q_{max}) 30 L/min
- Minimum flow rate (Q_{min}) 3 L/min
- Maximum pressure of the liquid (P_{max}) 110 kPa
- Minimum pressure of the liquid (P_{min}) 0.5 kPa (nominal) (#1)
- Range of liquids viscosity 0.4 to 20 mPa.s (at 20°C)
- Liquid temperature range -10°C to 50°C
- Ambient temperature range -25°C to 55°C
- Accuracy class 0.5
- Applications vehicle-mounted

(#1) Minimum pressure required for effective operation of the gas elimination

The measurement transducer is Flomec model OM025-A003-211QPN coupled with a Trimec model QP/00 pulse transmitter, with dual pick-off coils producing an electrical output signal proportional to volume throughput. The pick-off signal is conditioned by a dual signal pre-amplifier to produce a 0 to 5 V square wave output signal.

- Input supply voltage is 5 to 24 V DC
- Nominal k-factor for the turbine meter is 54 pulses/litre per channel
- Maximum pulse output is 135 Hz per channel (nominal)
- Cyclic volume is 0.075 L

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



Phillip Mitchell
A/g Manager
Policy and Regulatory Services

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