



Australian Government  
Department of Industry,  
Innovation and Science

## National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

# Supplementary Certificate of Approval NMI S773

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.

Alfons Haar model Countaster 4A Calculator/indicator for Use in Liquid-measuring Systems

submitted by            HAAR Australia Pty Ltd  
                                 1/2 East Circuit  
                                 Sunshine West    VIC    3020

**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 1/01/24, and then every 5 years thereafter.

### DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – certificate issued	18/12/18

## CONDITIONS OF APPROVAL

### General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S773' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S773' in addition to the approval number of the instrument, 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 Certificate 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.*



**Mario Zamora**  
Manager  
Pattern Approval, Policy and  
Licensing Section

TECHNICAL SCHEDULE No S773

**1. Description of Pattern** **approved on 18/12/18**

The pattern is a Alfons Haar model CountMaster 4A calculator/indicator (Figure 1) with an Alfons Haar model IGELZ pulse transmitter or any other NMI-approved measurement transducer generating compatible (#) pulse output proportional to volume throughput, for use in liquid-measuring systems incorporating compatible (#) NMI-approved vehicle-mounted flowmeters.

The CountMaster 4A calculator/indicator may also be known as the GuardMASTER or ARUMASTER.

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

**1.1 Field of Operation**

The field of operation of the pattern is determined by the following characteristics:

- Input pulse rate less than 5000 Hz/channel
- Input voltage 12 V DC to 24 V DC
- Liquid temperature range -10°C to 50°C
- Ambient temperature range -25°C to 55°C
- Accuracy classes 0.5

**1.2 Indicator**

The model CountMaster 4A (Figure 1) uses software version 4.02.XX (\*) and includes an alphanumeric liquid crystal display with the following maximum volume display:

- 99 999.9 L when the resolution is set to 0.1
- 9 999 999 L when the resolution is set to 1

The accumulated total is displayed up to 99 999 999 L before rolling over to 0.

(\*) The software version can be shown in setup menu.

**1.3 Features**

The instrument is configured via the keypad. 'Weights and Measures' parameters are locked out with a sealed cover over the calibration switch. The seal must be broken, the cover removed and the screw partially removed in order to interface with the 'Weights and Measures' parameters.

**1.4 Pulse Generator**

The calculator/indicator is interfaced to a Alfons Haar model IGELZ pulse transmitter or other compatible (#) NMI-approved dual channel (overlapping) pulse generator designed to produce pulses proportional to volume throughput, when fitted to any compatible (#) NMI-approved flowmeter.

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

### 1.4.1 Field of Operation

The field of operation of the pulse generator is determined by the following characteristics:

- Pulses per shaft revolution 17 pulses/revolution/channel
- Maximum pulser shaft speed 2500 revolutions/minute
- Output pulses Positive rectangular waveform
- Power supply range 24 V DC
- Environmental class  $-25^{\circ}\text{C}$  to  $55^{\circ}\text{C}$
- Accuracy class Same as calculator/indicator

### 1.5 Calibration

The Alfons Haar model CountMaster 4A calculator/indicator is configured for a single k-factor to define the relationship between the volume throughput and the pulses generated by the measurement transducer.

### 1.6 Checking Facilities

The instrument incorporates the following checking facilities:

- A segment check is performed on the display only at power up. An easily accessible power switch is located on the vehicle to enable the checking of the segments before each delivery, should this be required.
- A check of the presence and of the correct signal output from the measurement transducer.
- Outputs are provided to control the delivery process and if necessary prevent measurements when errors are detected.
- When configured for use with a printer, the COUNTMASTER 4A checks for the presence and correct operation of the printer.

### 1.7 Flow Control Valve

Any compatible solenoid-operated flow control valve, located downstream of the flowmeter, may be interfaced to the instrument for controlling the delivery process and to stop measurements in the event of errors detected by the checking facility.

### 1.9 Verification Provision

Provision is made for the application of a verification mark.

### 1.10 Sealing Provision

Access to the calibration parameters is via the calibration ('W&M') switch covered by a screw affixing the cover of the indicator (Figure 4), which has provision to be sealed using a wire lead seal, or similar.

### 1.11 Descriptive Markings and Notices

Instruments are marked with the following data, together in one location, in the form shown at right:

Manufacturer's mark, or name written in full	.....	
Model number	.....	
Serial number	.....	
Pattern approval number	NMI S773	
Year of manufacture	.....	
Accuracy class	0.3, 0.5 or 1.0	
Environmental class	I	(#1)
Liquid temperature range	.....°C to .....°C	(#2)

(#1) Environmental class for printers is class B

(#2) Required when the volume conversion for temperature facility is activated

For applications other than LPG, when the volume conversion facility is activated, the indicator reading face shall display or be marked 'Litres at 15°C' or 'Volume at 15°C'.

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

### TEST PROCEDURE

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

The instrument shall not be adjusted to anything other than as close as practical to zero error, even when these values are within the maximum permissible errors.

#### Maximum Permissible Errors

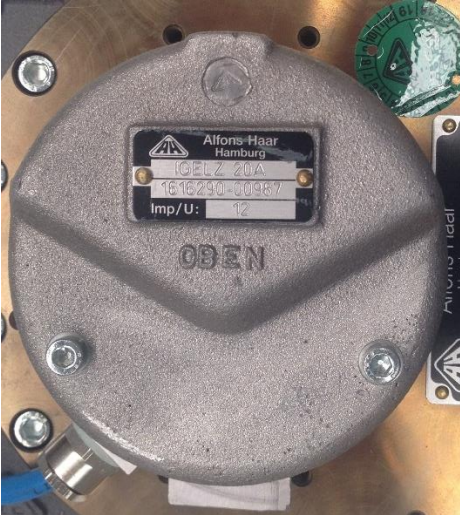
The maximum permissible errors those applicable to the fuel dispensers to which the instrument approved herein is fitted, as stated in the approval documentation for the fuel dispensers or in the *National Trade Measurement Regulations 2009*.

FIGURE S773 – 1



Alfons Haar Model CountMaster 4A Calculator/Indicator

FIGURE S773 – 2



TCS Model DMP100-\*A\* Pulse Generator

FIGURE S773 – 3



Epson Model TM-295 Printer

FIGURE S773 – 4



(Example for installed manipulation guard)



(a) Unsealed

(b) Sealed

Access to Calibration ('W&M') Switch Including Typical Sealing