



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Supplementary Certificate of Approval

NMI S720

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.

Ian Fellows Model CHECKMASTER Digital Indicator

submitted by Ian Fellows Ltd
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Warminster Wiltshire BA12 8BT
UNITED KINGDOM

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 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated October 2015.

This approval becomes subject to review on 1/08/21, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – certificate issued	12/07/16

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S720' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S720' 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*.



Dr A Rawlinson

TECHNICAL SCHEDULE No S720

1. Description of Pattern **approved on 12/07/16**

An Ian Fellows model CHECKMASTER digital mass indicator (Figure 1 and Table 1) which may be configured to form part of:

- A class III weighing instrument with a single weighing range of up to 10 000 verification scale intervals; or
- A class II weighing instrument with a single weighing range of up to 1000 verification scale intervals.

The instrument has a stainless steel enclosure with a LCD display for display of the weight value.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see clause 1.5 below).

The instrument operates from mains AC power (100-240 V AC, 50/60 Hz).

TABLE 1 – Specifications

Maximum number of verification scale intervals	10 000 (class III)
	1000 (class II)
Minimum sensitivity	0.5 μV / scale interval
Excitation voltage	5 V DC
Maximum excitation current	116 mA
Fraction of maximum permissible error	$p_i = 0.5$
Minimum load cell impedance	43 Ω
Maximum load cell impedance	1100 Ω
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	20 mV
Maximum tare range	-100% Max
Operating temperature range	-10°C to +40°C
Maximum value of load cell cable	30m (6-wire)
Load cell connection	4-wire or 6-wire shielded

This approval does not include the use of the indicator as an automatic weighing instrument, unless specifically mentioned in a certificate of approval for such an instrument.

1.1 Zero

A zero-tracking device may be fitted.

The initial zero-setting device has a nominal range of not more than 20% of the maximum capacity of the instrument.

The instrument has automatic and semi-automatic zero-setting devices with a nominal range of not more than 4% of the maximum capacity of the instrument. The automatic zero-setting device operates only when the instrument has been stable below zero for at least 5 seconds.

1.2 Tare

A semi-automatic subtractive tare device of up to the maximum capacity of the instrument may be fitted.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Additional Features

Instruments may be fitted with a lightbar (Below/OK/Above), setpoint and check functions (LOW/PASS/HIGH). The additional functions (other than the indications of measured mass, i.e. gross, tare, net, totals, displayed either on the indicator or on an auxiliary or peripheral device) are not approved for trade use.

Instruments may also be fitted with a negative weight function ('Takeaway' or 'Trendmaster Takeaway'). This function shall not be used for trade use.

Note: In particular circumstances (e.g. in regard to weighbridge or public weighbridge operation), Trade Measurement legislation or other NMI Certificates of Approval may impose requirements in regard to specific features, methods of operation, or records to be provided (and in what form).

Certain features of this instrument are able to be configured by the installer or user. Whilst NMI believes that an acceptable configuration can be achieved for typical basic modes of operation, it may also be possible for the instrument to be configured to produce unacceptable configurations, and use of some configurations may be inappropriate in different situations. It is the responsibility of the installer and user to ensure that the configuration is acceptable and meets relevant requirements for any particular situation.

1.5 Interfaces

The indicator may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 5.3.6 of document NMI R76 (the basic intent of which is that it shall not be possible to alter weighing results via the interfaces).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with NMI General Supplementary Certificate No S1/0B (in particular in regard to the data and its format).

Indications other than the indications of measured mass (i.e. gross, tare, net, totals) displayed either on the indicator or on an auxiliary or peripheral device, are not for trade use.

Instruments may be fitted with RS-232 serial data interfaces, Wifi, RFID and programmed inputs/outputs.

1.6 Linearisation Facility

Instruments are fitted with a linearisation correction facility having four correction points.

1.7 Verification Provision

Provision is made for the application of a verification mark.

1.8 Sealing Provision

The indicator is sealed by recording the audit trail counter on verification.

Access to allow changing of set-up parameters including calibration parameters must be protected by a passcode.

The indicator automatically increments a configuration or calibration value (audit trail number) each time the indicator is re-configured or calibrated.

The value of calibration event counter can be seen in the switch-on display sequence (when the power is first applied to the instrument) and may be recorded on a destructible adhesive label attached to the instrument (as TAN followed by a number).

Any subsequent alteration to the calibration or configuration will be evident as the recorded values and the current counter values will differ.



1.9 Software

The software is designated MC8_xxxW and DX8_xxxW, where 'xxx' refers to the identification of non-legally relevant software.

The software version and number can be seen in the switch-on display sequence (when the power is first applied to the instrument).

1.10 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Ian Fellows Ltd
Indication of accuracy class	 or 
Maximum capacity (for each range)	<i>Max</i> kg #1
Minimum capacity (for each range)	<i>Min</i> kg #1
Verification scale interval (for each range)	<i>e</i> = kg #1
Maximum subtractive tare	<i>T</i> = - kg #2
Serial number of the instrument
Pattern approval number for the indicator	NMI No S720
Pattern approval number for other components	#3

#1 These markings are shown near the display of the result.

#2 This marking is required if *T* is not equal to *Max*.

#3 May be located separately from the other markings.

In addition, instruments not greater than 100 kg capacity carry a notice stating NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

2. Description of Variant 1

approved on 12/07/16

The Ian Fellows model LINEMASTER V (Figure 2) which is similar to the pattern but having a modified enclosure and keyboard.

TEST PROCEDURE No S720

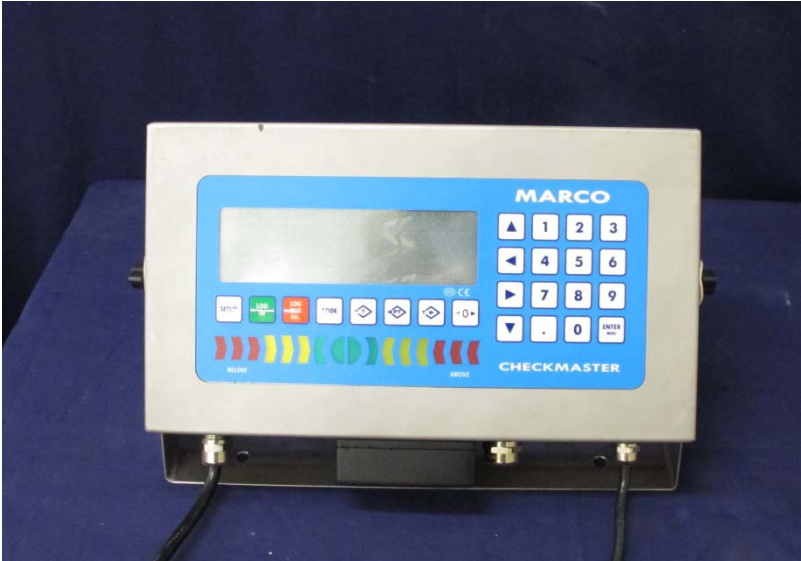
Instruments should be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

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 are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

FIGURE S720 – 1



Ian Fellows Model CHECKMASTER Digital Indicator (Pattern)

FIGURE S720 – 2



Ian Fellows Model LINEMASTER V Digital Indicator (Variant 1)

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