



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval NMI 6/14G/31

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.

DIGI model LI-700D Automatic Catchweighing Instrument

submitted by W W Wedderburn Pty Ltd
101 Williamson road
Ingleburn NSW 2565

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 51, *Automatic Catchweighing Instruments*, dated August 2009.

This approval becomes subject to review on 1/02/24, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern and variant 1 to 5 approved – certificate issued	30/01/19

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/14G/31' and only by persons authorised by the submittor.

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 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.

This approval shall NOT be used in conjunction with General Certificate No 6B/0.

Special

Certain aspects of this instrument (in particular label printing formats) are able to be configured by the user. Whilst NMI believes that acceptable formats can be achieved for typical basic sales modes, it is also possible for the instrument to be configured to produce unacceptable formats, and use of some formats may be inappropriate for different sales modes. It is the responsibility of the user to ensure that acceptable and appropriate formats are used in any particular situation.

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



Darryl Hines
Manager
Pattern Approval, Policy and
Licensing Section

TECHNICAL SCHEDULE No 6/14G/31

1. Description of Pattern

approved on 30/01/19

A DIGI model LI-700D class Y(a) automatic catchweighing instrument (Figure 1) which is approved for use to weigh objects while in motion.

A static non-automatic weighing mode is also available when the conveyors are not in motion. This non-automatic weighing mode is not approved for trade use.

Instruments are not for trading direct with the public, and so are marked.

1.1 Details

The pattern is a single interval class Y(a) automatic catchweighing instrument with a maximum capacity of 6 kg, a verification scale interval of 0.001 kg and a minimum capacity of 0.050 kg.

Instruments are approved for use over a temperature range of 0 °C to +30 °C and must be so marked.

The instrument operates dynamically (package in motion on the weighing receptor). The maximum belt speed of the weighing conveyor is 0.667 m/s (40 m/min).

The throughput (packs per minute) is variable and depends on several factors, e.g. size of label, size and weight of pack.

The instrument has facilities to detect errors and provide error messages for situations close to and outside the limits.

Instruments may be fitted with sockets (output interfacing capability) for the connection of peripheral and/or auxiliary devices, and for the external programming of PLU and labelling data.

The pattern comprises:

- A terminal/indicator with an LCD touch screen display;
- A weighing unit and conveyor system with associated controller; and
- One or more printing units.

1.2 Zero

The instrument has a semi-automatic zero-setting device and automatic zero-setting device with a nominal range of not more than 4% of the maximum capacity of the instrument, capable of setting zero to within $\pm 0.25e$.

The automatic zero-setting device must be active and operate at least once every 15 minutes during automatic operation.

The instrument has a zero-tracking device. This device may operate whilst the conveyors are operating.

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

1.3 Tare

A semi-automatic subtractive taring device of up to 3 kg capacity may be fitted. This device may only be activated (tare obtained) whilst the conveyors are stationary,

however the value obtained may continue to be used when the instrument is set into automatic or continuous mode (conveyors operating).

The instrument has a pre-set subtractive taring device of up to 3 kg capacity.

Pre-set tare values are stored in association with product-look-up (PLU) items.

1.4 Operation

An object to be weighed moves from the infeed and separator conveyors onto the weighing receptor conveyor and is weighed dynamically. After weighing, the object continues onto the outfeed conveyor where a label is then printed and applied to the object.

If the instrument is unable to obtain an acceptable weight reading, error messages are displayed and a label is not printed.

1.5 Terminal/Indicator

The terminal/indicator is fitted with an Apex Technology combined PC and LCD display type AHM-6127A (Figure 2), a Teraoka DSP A/D conversion PCB and conveyor control electronics. This unit controls the system and stores data such as system parameters (e.g. printing unit position and label format).

It displays the weight (in kg).

Instruments have unit price to \$9999.99/kg, a product-look-up (PLU) facility and a separate 'tare' display.

1.6 Weighing Unit and Conveyor

The weighing unit which uses an HBM model PW15 C3 load cell of 15 kg capacity supporting a load receptor which has a split belt conveyor of 285 x 470 mm.

The conveyor system comprises an infeed and separator conveyor, the weighing unit/conveyor and an outfeed conveyor, with an associated electric motor and drive arrangement for each conveyor.

Optical sensors are located along the conveyor path. The infeed conveyors space the objects to be weighed, the side guides are manually adjusted to suit the pack size.

Instruments may be configured for the conveyors to operate in either left to right or right to left movement direction.

1.7 Printing Unit

The printing unit is comprised of a thermal printer and a compressed air unit used to apply the label to the weighed object.

Instruments may be fitted with up to 2 Digi DEL labellers, above and/or below the conveyor.

Please note the Special Condition of Approval regarding printing formats.

1.8 Interfaces

The instrument may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 4.2.4 of document NMI R51 (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 (e.g. printing) shall only be used for trade in compliance with Supplementary Certificate No S1/0B (in particular in regard to the data and its format).

1.9 Levelling

Where instruments are not installed in a permanently fixed location they are provided with adjustable feet and a level indicator.

The instrument is to be used in a level condition as indicated by the level indicator.

1.10 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Digi Europe Ltd
Name or mark of manufacturer's agent	WEDDERBURN
Indication of accuracy class	Y(a)
Pattern approval mark for the instrument	NMI 6/14G/31
Maximum capacity	Max/..... g or kg #1
Minimum capacity	Min g or kg #1
Verification scale interval	e =/..... g or kg #1
Maximum subtractive tare	T = - g or kg #2
Serial number of the instrument
Special Temperature limits	0 °C to 30 °C
Maximum weighing conveyor speed	40 m/minute

Instruments are marked 'NOT FOR TRADING DIRECT WITH THE PUBLIC' (or similar wording).

- #1 These markings are also shown near the display of the result if they are not already located there.
- #2 This marking is required if *T* is not equal to *Max*.

1.11 Sealing Provision

Provision is made for the metrological settings and calibration to be sealed by setting the SPAN switch on the A/D board to an ON position, and then preventing access within the A/D unit housing. Access to the switch is prevented by the use of destructible adhesive labels placed over the opposition sides of a joins of in the A/D unit (Figure 5a).

It is possible to determine that the SPAN switch is in the 'ON' position as follows (starting from the normal weighing mode):

- Enter the MAIN MENU, and then the SERVICE MENU.
- Select the SCALE.
- If the switch is in the 'ON' position, the instrument will display the 'Error - Security switch' error message (Figure 5c). In this case the calibration and configuration are protected. The instrument may be verified.
- Otherwise the instrument should not be verified until the switch has been correctly located in the 'ON' position.

1.12 Software

The software is designated 2.xx.xx.xxxx (with x reflecting non-legally relevant changes).

The software version number appears on screen in the power up display sequence.

1.13 Verification Provision

Provision is made for the application of a verification mark.

2. Description of Variant 1

approved on 30/01/19

The pattern or variants as single interval instruments of certain other capacities and load cells as listed in Table 1 below (the pattern is shown in **bold**).

Table 1

Maximum Capacity (<i>Max</i>)	Verification Scale Interval (<i>e</i>)	Minimum capacity (<i>Min</i>)	Maximum Subtractive Tare Capacity (<i>T</i> = - ...)	Load cell used
6 kg	1g	50 g	3 kg	HBM PW15 15 kg
10 kg	2 g	50 g	5 kg	HBM PW15 30 kg

3 Description of Variant 2

approved on 30/01/19

The Digi model LIW-700D which is similar to the pattern and variant 1 but having a load receptor with belt conveyor of 400 x 470 mm.

4 Description of Variant 3

approved on 30/01/19

The pattern and variants 1 to 2 having an Apex Technology combined PC and LCD display type ARCHMI-812(P).

5 Description of Variant 4

approved on 30/01/19

DIGI model LI-700E (Figure 3) is similar to the pattern except the following differences.

- The instrument is fitted with an HBM model SP4M C3MR load cell and a Teraoka TPB-03484 A/D converter.
- The instrument operates statically (with the item being stationary on the platform during weighing).
- Instruments are approved for use over a temperature range of 0 °C to +40 °C and must be so marked.
- The instrument may be in 2 conveyors (without the infeed conveyor).
- The maximum belt speed of the weighing conveyor is 0.75 m/s (45 m/min), and must be so marked.

Model LI-700E instruments as single interval instruments of certain capacities and load cells as listed in Table 2.

Table 2

Maximum Capacity (Max)	Verification Scale Interval (e)	Minimum capacity (Min)	Maximum Subtractive Tare Capacity (T = - ...)	Load cell used
3 kg	2 g	40 g	1.5 kg	HBM SP4M C3MR 15 kg
6 kg	2 g	40 g	3 kg	
10 kg	5 g	100 g	5 kg	HBM SP4M C3MR 20 kg

5.1 Sealing Provision

Provision is made for sealing of the A/D unit SPAN switch cover by use of a destructible adhesive label over the switch cover to the A/D unit (Figure 5b), to secure the housing against any opening.

6 Description of Variant 5

approved on 30/01/19

The pattern and variants with modified software designated World View software (Figure 4). The legally relevant software is contained within two dll files, identified as follows during the power-up sequence:

HeaderDisplay.dll	Version 1.0.0.10
HI710.dll	Version 1.0.0.29 (LI-700D)
HI710.dll	Version 1.0.0.79 (LI-700E)

The dll files can only be accessed and modified via the secured switch on the A/D board. The files are protected by a checksum, any modification in the dll files will result in a change in the checksum value and an error being detected.

Access to the Windows operating system is password-protected; the weighing mode is inactive when accessed.

TEST PROCEDURE No 6/14G/31

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

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

Tests

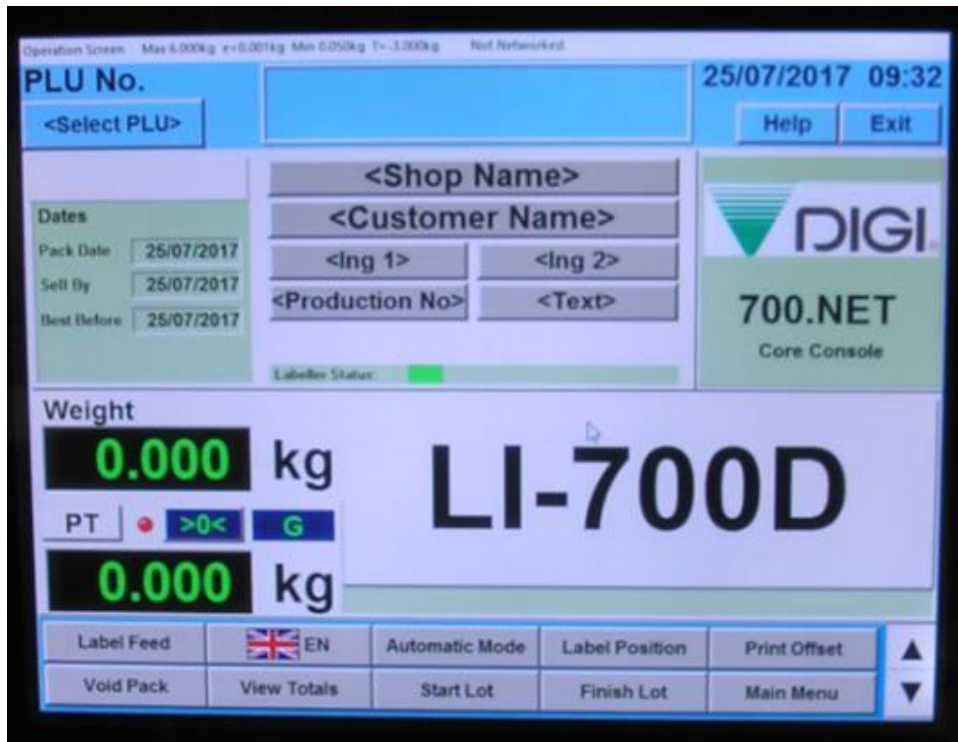
Ensure that instruments are only being used within the special temperature limits stated elsewhere in this Technical Schedule.

FIGURE 6/14G/31 – 1



DIGI Model LI-700D - 3 section conveyor (Pattern)

FIGURE 6/14G/31 – 2



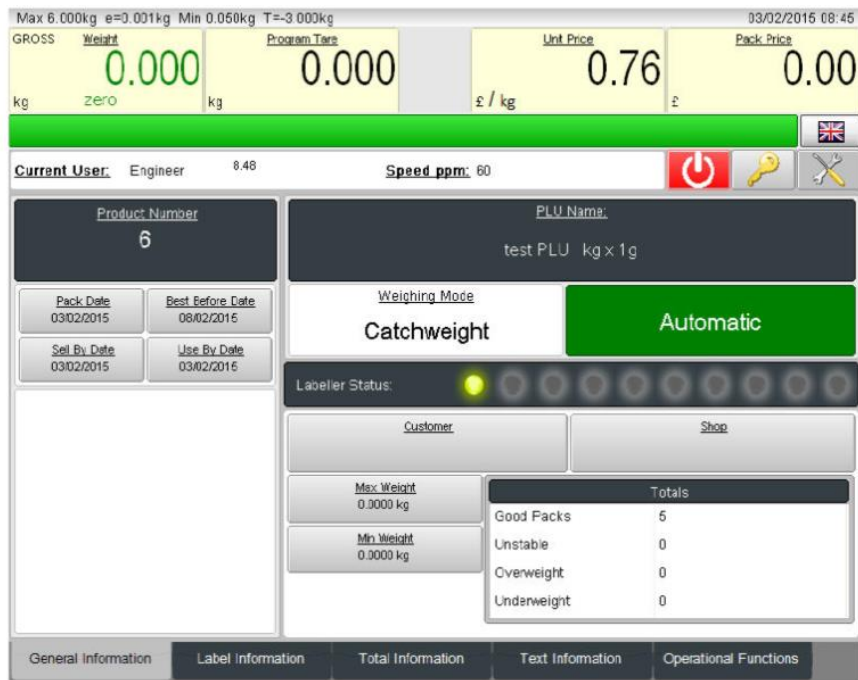
LI-700D Operation Screen

FIGURE 6/14G/31 – 3



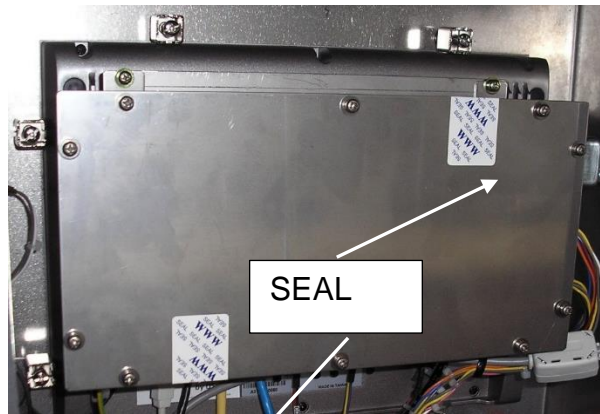
DIGI Model LI-700E (Variant 4)

FIGURE 6/14G/31 – 4

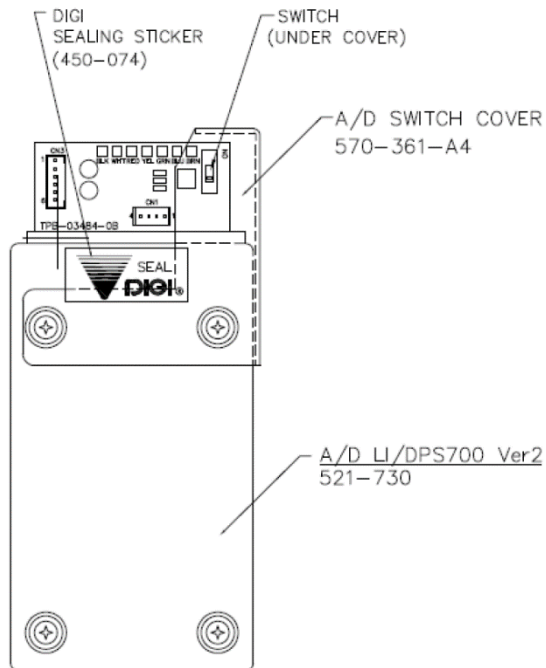


World View software - Operation Screen (Variant 5)

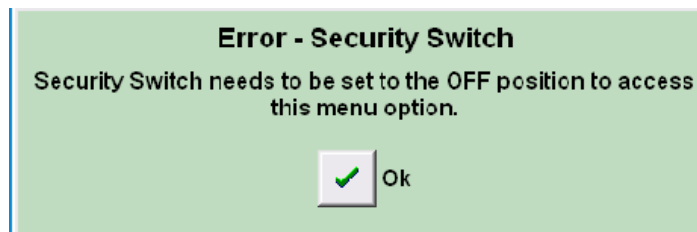
FIGURE 6/14G/31 – 5



(a) LI-700D A/D board sealing method



(b) LI-700E A/D board sealing method



(c) Span Switch Error Message

Typical Sealing Arrangements

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