(UK/0126/0044) MI-006

NATIONAL WEIGHTS AND MEASURES LABORATORY

United Kingdom of Great Britain and Northern Ireland

Certificate of EC type-examination of a measuring instrument
Number: UK/0126/0044 revision 1

issued by the Secretary of State for Business, Innovation & Skills
Notified Body Number 0126

In accordance with the requirements of the Measuring Instruments (Automatic Catchweighers) Regulations 2006 (SI 2006/1257) and the Measuring Instruments (Non-Prescribed Instruments) Regulations 2006 (SI 2006/1270) which implement, in the United Kingdom, Council Directive 2004/22/EC, this certificate of EC type-examination has been issued to:

Digi Europe Ltd
Digi House
Rookwood Way
Haverhill
Suffolk, CB9 8DG
United Kingdom

in respect of an automatic catchweighing instrument designated the LI-700 (weight/weight-price labeller) or the CWL-700 (checkweigher), having the following characteristics:

Maximum capacity	Max	≤	10 kg
Minimum capacity	Min	≥	20 e
Scale interval	e	≥	2 g
Number of scale intervals	n	≤	3000
Accuracy class	Y(a) and XIII(1)		

The necessary data (principal characteristics, alterations, securing, functioning etc) for identification purposes and conditions (when applicable) are set out in the descriptive annex to this certificate.

This revision replaces earlier versions of the certificate.

Signatory:
for Chief Executive
National Weights & Measures Laboratory
(Part of National Measurement Office)
Department for Business, Innovation & Skills
Stanton Avenue
Teddington
Middlesex TW11 0JZ
United Kingdom

Issue Date: 20 October 2009
Valid Until: 23 November 2018
Reference No: T1108/0059

Descriptive Annex

1 INTRODUCTION

This pattern of an automatic catchweigher, designated the LI-700, operates as an automatic weight or weight/price labeller (Category Y). The instrument is designated the CWL-700 when configured to operate only as an automatic checkweigher (category X).

The instrument comprises a self-indicating and price-computing weighing machine with associated thermal label printer and mechanical handling facilities. It is designed to weigh packs statically, at a constant rate of operation.

Pricing, pack and labelling information is stored in files called PLUs selectable by the operator for the commodity or labels being processed. Labels are printed for the above transaction data and are applied to the packs automatically.

The instrument provides indications of:

- price per unit weight from £0.01 to £9999.99 per kg by £0.01 intervals
- price-to-pay from £0.01 to £9999.99 by £0.01 intervals (rounded to the nearest 1p, with 0.5p rounded up)

2 FUNCTIONAL DESCRIPTION

2.1 Mechanical

2.1.1 The LI-700 (Figure 1) comprises a weigher and a thermal label printer (labeller). The weigher and labeller are mounted on single fabricated floor standing stainless steel frame on adjustable stainless steel feet.

2.1.2 A level-indicator is provided on the front of the weigher scale conveyor unit. On the frame are mounted the in-feed conveyor, scale conveyor and outfeed conveyor. In-feed guides may be fitted which are adjustable. Two photocells are used for pack detection. They are located at the trailing edge of the in-feed and scale conveyors.

2.1.3 The control cabinet is located behind the conveyors, and houses the electronics and electrical control elements of the instrument. A display console is mounted on a support on top of the control cabinet. The display unit consists of a colour LCD touch screen and the PC main board (Figure 2).

2.1.4 The weighing system comprises a scale conveyor mounted on a load cell. When the pack triggers the scale conveyor sensor the scale conveyor stops and the pack weight is determined statically. Once a stable weight has been determined by the A/D unit the scale conveyor restarts automatically and the pack is transported on to the labelling conveyor. The operating speed of the conveyor is fixed by the manufacturer with a maximum speed of 40m/min.

2.1.5 The printer mechanism comprises the print head, label feed and applicator. The printer mechanism is mounted on the frame and located above the out-feed conveyor and has adjustable height, lateral and rotational position. It contains the hardware necessary to print, feed and apply self-adhesive labels from a reel. The label application is powered by pneumatics, with a pressure regulator mounted on the frame of the weigher. The label applicator contains a vacuum device which is used to hold the label in place on the applicator, the label is then placed onto the pack as it reaches the required position. The Instrument may

be configured for the conveyors to operate with either a left to right flow direction or a right to left flow direction.

2.1.6 Load cells

2.1.6.1 The load cell may be an HBM PW15, capacity 30 kg.

2.1.6.2 Any compatible load cell(s) may be used providing the following conditions are met:

- There is a respective OIML Certificate of Conformity (R60) or a test certificate (EN45501) issued for the load cell by a Notified Body responsible for type examination under Directive 90/384/EEC.
- The certificate contains the load cell types and the necessary load cell data required for the manufacturer's declaration of compatibility of modules (WELMEC 2, Issue 4, 2004, No 11), and any particular installation requirements. A load cell marked NH is allowed only if humidity testing to EN45501 has been conducted on this loadcell.
- The compatibility of the load cells and indicator is established by the manufacturer by means of the compatibility of modules calculation, contained in the above WELMEC 2 document, at the time of verification or declaration of EC conformity of type.
- The loadcell transmission must conform to one of the examples shown in the WELMEC Guide 2.4, "Guide for Load cells".

2.2 Electrical

2.2.1 The LI-700 weigher comprises the following:

- Teraoka TPB-2930 CPU
- Teraoka TPB-2786 A/D converter
- TRK – Z123 Power Supply Unit

2.3 Devices

2.3.1 The instrument is provided with the following devices:

- Initial zero-setting device (≤ 20 % of Max)
- Semi-automatic zero-setting device (≤ 4 % of Max)
- Automatic zero-setting after time interval (≤ 15 mins) or number of packs
- Zero-tracking device
- Preset tare device
- Semi-automatic tare device (subtractive)
- Zero indication
- Calibration not accessible to user
- Price computation

3 TECHNICAL DATA

3.1 The LI-700 has the following technical characteristics:

Maximum capacity (Max)	≤ 10 kg
Scale interval (e)	≥ 2 g
Minimum capacity (Min)	≥ 20 e
Tare (T)	≤ - 50% Max
Maximum operating rate	≤ 45 packs/min
Maximum conveyor speed	≤ 40.0 m/min
Climatic environment	: 0 to 40 °C Non-condensing (closed)
Electromagnetic environments	: E1
Power supply	: 100-240 V a.c. / 50-60 Hz single phase
Label applicator pneumatic pressure	: 4-6 bars
Display/keyboard location	: Colour LCD touch screen
Accuracy class	: Y(a) and XIII(1)

3.2 Documentation and drawings

TA-LI700GA-1-0	LI-700 General arrangement
TA-LI700GA-2-0	LI-700 Scale Base Assembly
TA-LI700GA-5-0	LI-700 Control Box Assembly Details
TA-LI700GA-6-0	LI-700 Block Diagrams (3 sheets)
TA-LI700GA-4-0	Rating/serial plate and its location
TA-LI700GA-3-0	Sealing of A/D assembly in control box
LI-700UM-01	LI-700 User Manual (Issue 1, 08/2008)
LI-700SM-01	LI-700 Service Manual (Issue 1, 11/2008)

3.3 Software

3.3.1 The software version number is 2.xx.xx which is displayed during the power-up sequence of the instrument. The legal metrological code is contained within a dll, DPS700.dll. The dll is protected by a checksum which is also displayed during the power-up sequence. Any modification in the dll will result in a change in the checksum value and an error being detected. Access to the Windows operating system is prevented by password protection.

3.3.2 In addition to the weight and weight-price labelling modes of operation, the instrument is provided with non-weighed items (fixed price and fixed weight) and average weight modes of operation.

3.3.3 The parameters (nominal weight and tolerance limits) used by the average weight mode are calculated by the system and cannot be modified. An average weight label contains the nominal weight with the associated units of measurement, the ‘e’ symbol, and a fixed price. Any pack that falls outside of the average weight limits is not labelled (i.e. rejected). The instrument is designated the CWL-700 when configured to operate only as a checkweigher.

4 PERIPHERAL DEVICES AND INTERFACES

4.1 Interfaces

The instrument may have the following interfaces:

- USB
- Serial (RS232)
- Ethernet

4.2 Peripheral devices

The instrument may be connected to any peripheral device that has been issued with a test certificate by a Notified Body responsible for Annex B (MI-006) under Directive 2004/22/EC in any Member State and bears the CE marking of conformity to the relevant directives; or

A peripheral device without a test certificate may be connected under the following conditions:

- it bears the CE marking for conformity to the EMC Directive 89/336/EEC;
- it is not capable of transmitting any data or instruction into the weighing instrument, other than to release a printout, checking for correct data transmission or validation;
- it prints weighing results and other data as received from the weighing instrument without any modification or further processing; and
- it complies with the applicable requirements of Paragraph 8.1 of Annex I.

5 APPROVAL CONDITIONS

The certificate is issued subject to the following conditions:

5.1 Legends and inscriptions

The instrument bears the following legends:

- 'CE' marking
- Supplementary metrology marking
- Notified body identification number
- Accuracy class
- Measuring range and verification scale interval
- Serial number
- Manufacturers mark or name
- Certificate number

5.2 Printing (weigh/weigh-price labeller)

Editing of the printed labels format is performed via the "Dr Label" program, its access is restricted to Manager or Supervisor levels. The labels must bear the weight, unit price and price to pay (when applicable), with associated units. Currency units must be in accordance with the country of use.

When tare or preset tare values are printed, they must be identified as such, and net and/or gross weights should be clearly identified when printed with a tare value. Net weights do not require such identification when the tare value is not printed.

Printing below Min is not allowed.

6 LOCATION OF SEALS AND VERIFICATION MARKS

6.1 The 'CE' marking, supplementary metrology marking and certificate number are located on the side of the control cabinet (Figures 3 and 4). The CE mark shall be impossible to remove without damaging it. The data plate shall be impossible to remove without it being destroyed.

6.2 The markings and inscriptions shall fulfil the requirements of Paragraph 9 of Annex I of the Directive 2004/22/EC.

6.3 Access to metrological settings is secured by a switch on the A/D board. The switch is protected by a metallic cover secured by a tamper-evident seal (Figure 5).

6.4 Access to the static and dynamic calibration facility is password protected. The instrument increments a calibration value (audit trail number) each time it is re-calibrated. The value is recorded on a tamper evident label on the outside of the metal case protecting the A/D board. The current audit trail number can be displayed on the instrument display.

6.5 Components that may not be dismantled or adjusted by the user will be secured by either a wire and seal or tamper evident label and securing mark. The securing mark may be either:

- a mark of the manufacturer and/or manufacturer's representative, or
- an official mark of a verification officer.

7 ALTERNATIVES

7.1 Having an alternative model type LIW-700, where W denotes an increased conveyor width.

7.2 Having the instrument fitted with the DEL type 700 series labeller (figure 6).

7.3 The instrument may be used in "Manual" mode, which is outside the scope of this approval. When the instrument is in "Manual" mode it is operating as a non-automatic weighing instrument and so must comply with the requirements of the Non-automatic Weighing Instruments Directive 90/384/EEC and bear the relevant conformity assessment markings. This mode of operation is fully described in EC Type Approval Certificate UK 2857.

7.4 Having a long scale option, in which case the length of both infeed and scale conveyors is 650 mm. The maximum conveyor speed remains 40 m/min and the throughput is reduced to 33 packs per minute.

8 ILLUSTRATIONS

9 CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
UK/0126/0044	24 November 2008	Type examination certificate first issued.
UK/0126/0044 revision 1	20 October 2009	Authorised alternative 7.4 added.

Figure 1 Photograph of LI-700

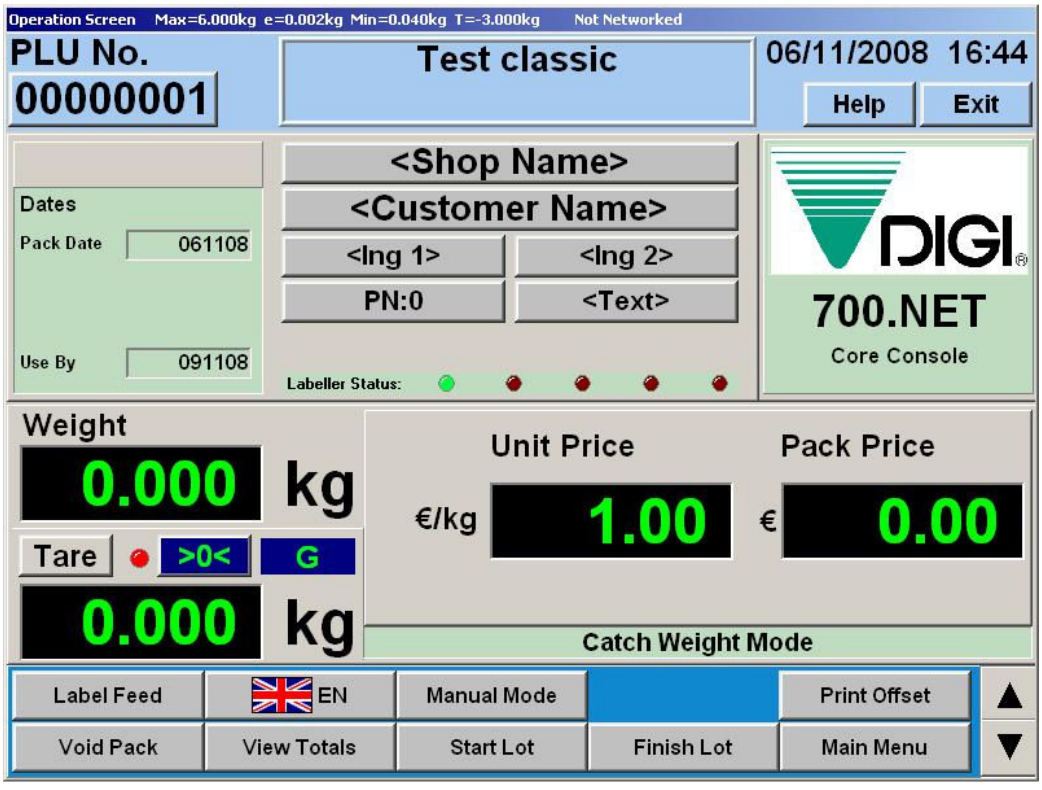

Figure 2 Operation touch screen display

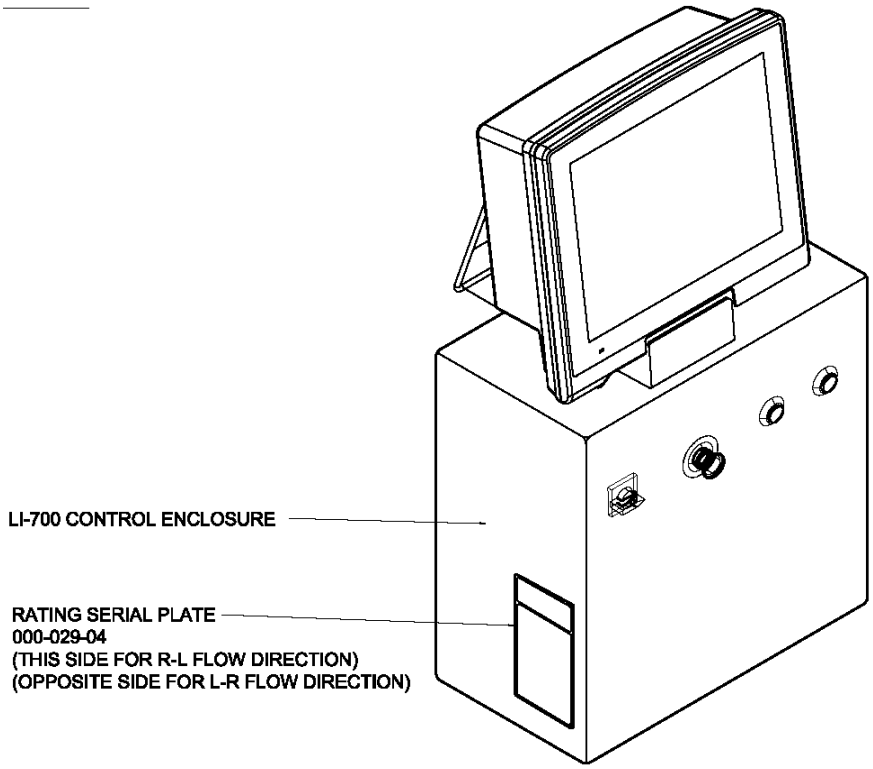

Figure 3 Rating plate location

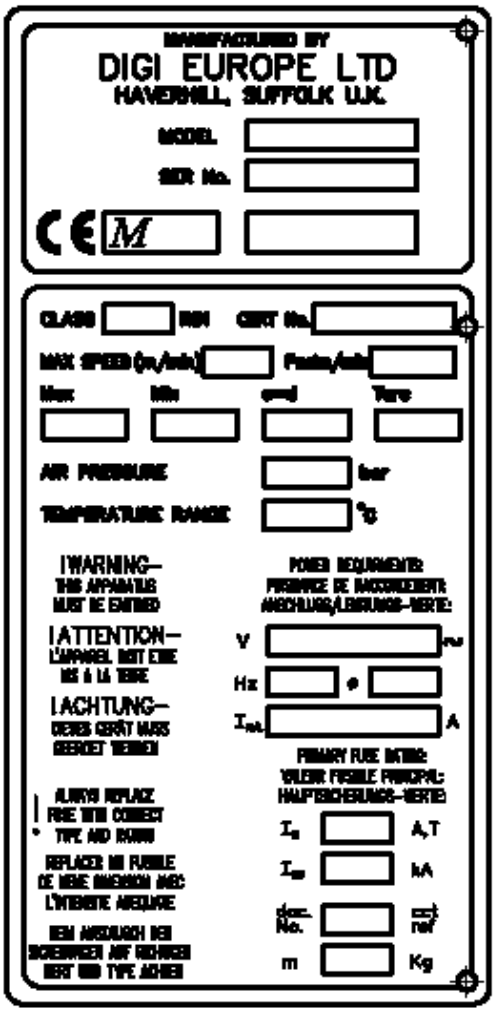

Figure 4 Rating plate

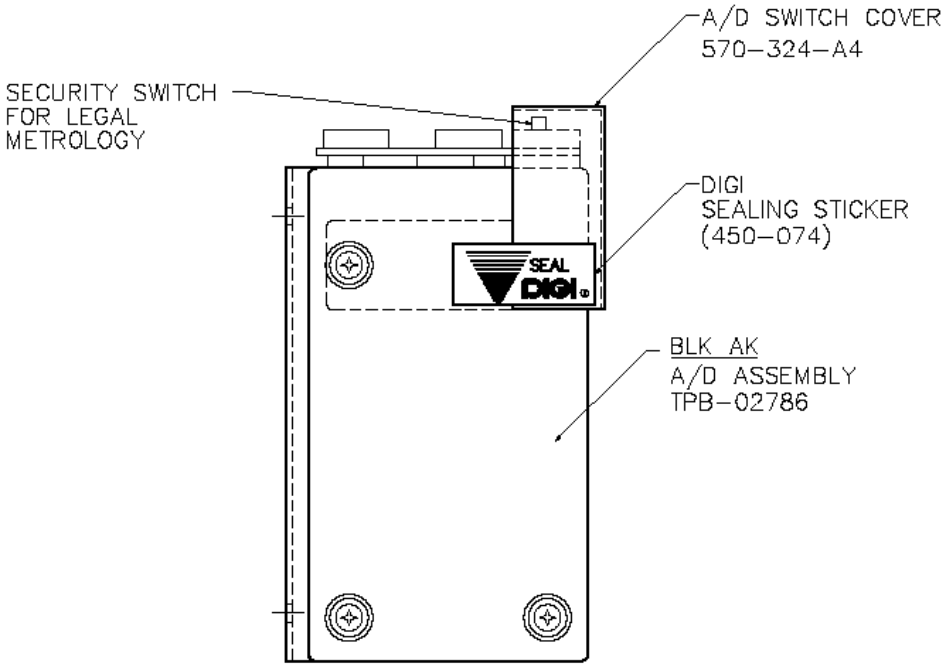

Figure 5 Cal/setup switch cover and sealing

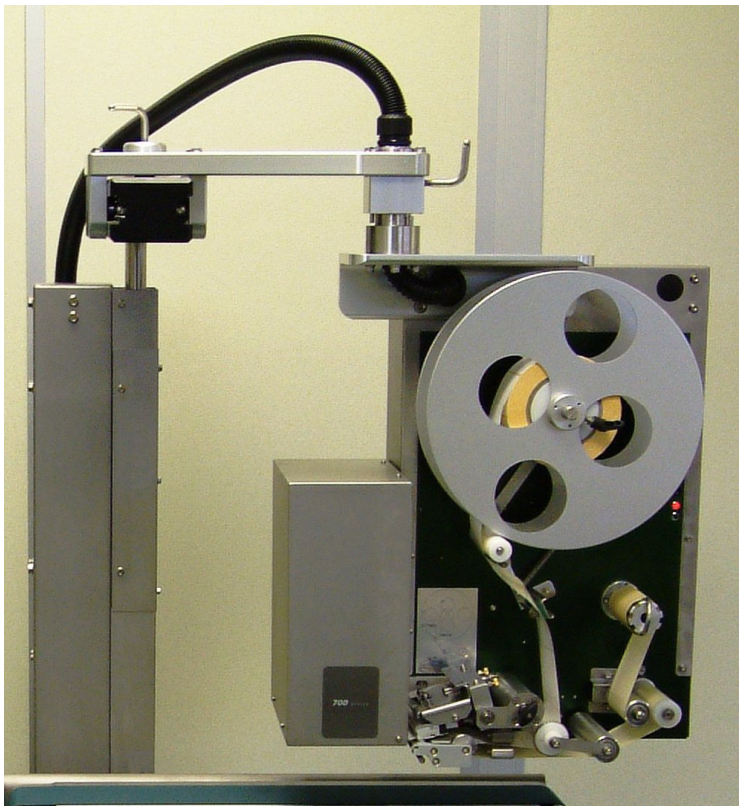

Figure 6 DEL type 700 series labeller