United Kingdom of Great Britain and Northern Ireland

Certificate of EC type-examination of a measuring instrument
Number: UK/0126/0003 Revision 1

issued by the Secretary of State for Innovation, Universities & 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:

Pitney Bowes Ltd
The Pinnacles
Elizabeth Way
Harlow
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United Kingdom

in respect of an automatic catchweighing instrument designated the DM1000 for the determination of postal tariffs and having the following characteristics:

Maximum capacity	Max	=	500 g
Minimum capacity	Min	=	5 g
Scale interval	e	=	1 g
Accuracy class	Y(a)		

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 previous versions of this certificate.

Signatory: P R Dixon
for Chief Executive
National Weights & Measures Laboratory
Department for Innovation, Universities & Skills
Stanton Avenue
Teddington
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United Kingdom

Issue Date: 1 February 2008
Valid Until: 13 March 2017
Reference No: T1110/0008

Descriptive Annex

1 INTRODUCTION

This pattern of a 230 V a.c. / 50 Hz mains-operated automatic catchweighing instrument, designated the DM1000 (Figure 1), comprises a base unit and user control panel (or user interface controller: UIC). The base unit comprises a load transport system incorporating a weighing system, and a printing mechanism. The weighing system comprises a load receptor supported on a 15 kg single point load cell manufactured by Tedea-Huntleigh, an A/D converter and weighing control system.

The DM1000 has a maximum capacity of 500 g, a minimum load of 5 g, with a scale interval of 1 g. The instrument is designed to be used for the determination of postal tariffs.

2 FUNCTIONAL DESCRIPTION

2.1 Mechanical

2.1.1 An envelope stacking system is provided at the extreme left of the base unit (Figure 2) and is provided with a guide device to ensure that the envelopes are correctly located. A transport system is provided to transport envelopes, one at a time, to the load receptor. The load receptor comprises a number of elements all of which are supported on a 15 kg load cell type 1041. A printing mechanism is located at the end of the load receptor and is used for the application of the postal tariff onto the envelope. A lid is provided over the load transport system, load receptor and ink-jet printer. This lid can be lifted to allow access to these elements. An interlock prevents the instrument from operating when the lid is lifted.

2.1.2 Envelopes are weighed statically on the load receptor. The weight information is sent to the UIC for determination and application of the correct postal tariff. The postal tariff information is either printed directly onto the envelope or can be printed onto a label (tape) which is then applied to the envelope.

2.2 Electrical

2.2.1 The machine is supplied by a single phase 230 V a.c. / 50 Hz mains input to the base unit. The base unit supplies the UIC with power via the connector. The UIC is provided with a separate DC power input to enable it to be powered as a stand-alone unit for data downloads.

2.2.2 The weighing controller circuit board is located behind a removable cover. It controls the operation of the load transport system and takes signals from the load cell and weight band information from the UIC to determine the weight of the envelope.

2.2.3 The UIC (Figure 3) provides the user interface to the instrument and is detachable from the base unit. The UIC comprises an LCD display (Figure 4), an alpha-numeric keyboard and various function keys. It permits selection of the weighing mode along with relevant postal tariff information. The postal tariff selected will determine the weight band information sent to the weighing controller. The postal tariffs are downloaded to the UIC.

2.2.4 The UIC also provides access to the calibration and configuration of the weighing controller, with unauthorised access protected by a password.

2.3 Devices

2.3.1 The instrument is provided with the following devices:

- Automatic zero-setting device (at start of automatic operation then every 4 min)
- Device to determine when stability criteria are fulfilled
- Static calibration not accessible to user

2.4 Operation

2.4.1 Power-on

Following power-on the instrument goes through an initialisation routine during which the UIC Product Code and Software version numbers are displayed. Following the power-up sequence the operator screen is displayed which enables the required operating mode to be selected.

2.4.2 Weigh On the Way weighing mode (WOW)

2.4.2.1 With this mode selected the operator selects the applicable class of postage required. The class of postage and the relevant print information is shown, along with the value of the first weight band value, on the operator display (Figure 4). The operator then presses start and the load receptor is zeroed automatically. Following a successful zero-setting operation the first envelope is transported to the load receptor where it is weighed statically.

2.4.2.2 The length of time that the envelope remains stationary is determined by the proximity of the weight value to one of the weight bands. If the weight is determined to be within +/- 3 g of a weight band, the weighing operation is extended to ensure that the correct weight band, and hence tariff, is selected. If the weight is determined to be outside of +/- 3 g of a weight band, the weighing operation is terminated and the applicable postal tariff determined. Therefore, the throughput of the instrument will vary depending upon the proximity of the envelope weight to a weight band.

2.4.2.3 The instrument rounds 0.9 and below downwards so that an incorrect tariff is not selected for an envelope that is just below the weight band value. The instrument will continue to weigh envelopes until the instrument is stopped by the operator or no more envelopes are available to be weighed. The instrument will automatically stop every four minutes to perform an automatic zero-setting operation.

2.4.3 Other operating modes

2.4.3.1 Key in postage

This mode enables the operator to select a postage rate. The instrument will then automatically label envelopes with this postage rate. The weighing system is disabled in this mode of operation.

2.4.3.2 Weigh first piece

When the instrument is to be used for a number of envelopes of the same weight, this mode allows the first envelope to be weighed and the postal tariff to be determined. All subsequent envelopes with this mode selected are then labelled with this tariff. After weighing the first envelope, the weighing system is disabled in this mode of operation.

2.4.3.3 Manual weight entry

With this mode of operation, the known weight of an envelope can be entered into the system in order to determine the postal tariff. The weighing system is disabled in this mode of operation.

3 TECHNICAL DATA

3.1 The DM1000 has the following technical characteristics:

Maximum capacity (Max)	: 500 g
Scale interval (e)	: 1 g
Minimum capacity (Min)	: 5 g
Load cell model	: Tedea-Huntleigh type 1041
Load cell rated capacity	: 15 kg
Climatic environment	: 4 °C to 40 °C Non-condensing (closed)
Electromagnetic environment	: E1
Power supply	: 230 V a.c. / 50 Hz
Operating rate	: 130 pieces/min (Weigh on the Way mode) : 260 pieces/min (non-Weigh on the Way mode)
Display/keyboard location	: UIC
Accuracy class	: Y(a)

3.2 Documentation and drawings

Operating Guide	SADC436D
Service guide	SV60916 Rev E
Concept of operations	DPP000292
Parts list	SV60459-PL Rev F
UIC logic board	0120-4680
Mother board diagrams	DW92053

3.3 Software

3.3.1 The software on the base unit controls the weighing process and the determination of the weight value. The version number is 8.xx, and can be displayed by pressing the Reports button on the UIC, then selecting System Set Up and Software Versions (displayed as MMC Software).

3.3.2 The software on the UIC controls the operator interface and setting of the postal tariffs. The software is split into a Product Code: 1Dxx or 1Cxx where xx denotes the country of use, and a Version number: yy.zz, where yy denotes the application specific version of the software (which can be any number between 9 and 16) and zz the country of use. The Product Code can be displayed by pressing the Reports button on the UIC, then selecting System Set Up and Serial Numbers. The Software Version is displayed at power-on or after the sequence: pressing the Reports button on the UIC, then selecting System Set Up and Software Versions.

3.3.3 The software download history can be accessed by pressing the Reports key on the UIC, then Page Down to option 6-View Download Log. It is then possible to move through the software history by using the navigation buttons.

3.3.4 Calibration and configuration of the instrument is effected via the LCD panel and keyboard on the UIC. Password protection is provided to prevent unauthorised access to these facilities. An “audit trail” number is updated each time the instrument is calibrated.

3.3.5 The instrument rounds 0.9 and below downwards so that an incorrect tariff is not selected for an envelope that is just below the weight band value.

4 PERIPHERAL DEVICES AND INTERFACES

4.1 Interfaces

4.1.1 The base unit and UIC are both provided with the following interfaces:

- USB
- Modem

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 Directive 2004/22/EC Paragraph 8.1 of Annex I.

5 APPROVAL CONDITIONS

The certificate is issued subject to the following conditions:

5.1 Legends and inscriptions

5.1.1 The following legends are durably and legibly marked on a rating plate fixed at the back of the instrument (Figure 5):

'CE' marking
Supplementary metrology marking
Notified body identification number
Accuracy class
Serial number
Manufacturers mark or name
Certificate number

Although this approval certificate is restricted to 230 Vac – 50 Hz power supplied instruments, the rating plate can bear the indication "100-240 Vac – 50/60 Hz" as it is a generic component.

5.1.2 The UIC is durably and legibly marked with the same Serial number and Certificate number as the base unit.

5.1.3 The following text is located on the console near to the display:

"FOR THE DETERMINATION OF POSTAL TARIFFS ONLY"

5.2 Guidance for verification

The instrument should be considered and tested/verified as a standard catchweigher, with the following exceptions:

5.2.1 When performing a standard operational test to check the weighing performance, the instrument shall be set into "precision mode" and the following test shall be performed in automatic operation. Select four different loads of known conventional true value, with the test loads including values close to Min and Max and values close to, but not above, two critical points in-between Min and Max. Enable the test loads to be weighed 10 times each and record the weight indications. The individual errors shall be within the maximum permissible error for each load.

5.2.2 To check that the weight bands are selected correctly, the instrument shall be set to its normal automatic operational mode (Weigh On the Way), and 5 weighing operations shall be performed at four different test loads. The test loads should be of known conventional true value, and should include loads no more than 3 grams above and below a weight band limit(s).

6 LOCATION OF SEALS AND VERIFICATION MARKS

6.1 The CE mark shall be impossible to remove without damaging it. The rating plate shall be impossible to remove without it being destroyed.

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

6.2 Each time the instrument is calibrated an "audit trail" number, which can be accessed via the UIC, is updated and recorded on a "tamper-evident" label on the UIC.

7 ALTERNATIVES

There are currently no alternatives.

8 ILLUSTRATIONS

Figure 1 DM1000
Figure 2 Base unit (cover open)
Figure 3 UIC
Figure 4 Operator display (Weigh on the Way mode)
Figure 5 Rating plate

9 CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
UK/0126/0003 Rev 1	01 February 2008	Sections 2.4 and 5.2 added.
UK/0126/0003	14 March 2007	Type examination certificate first issued.

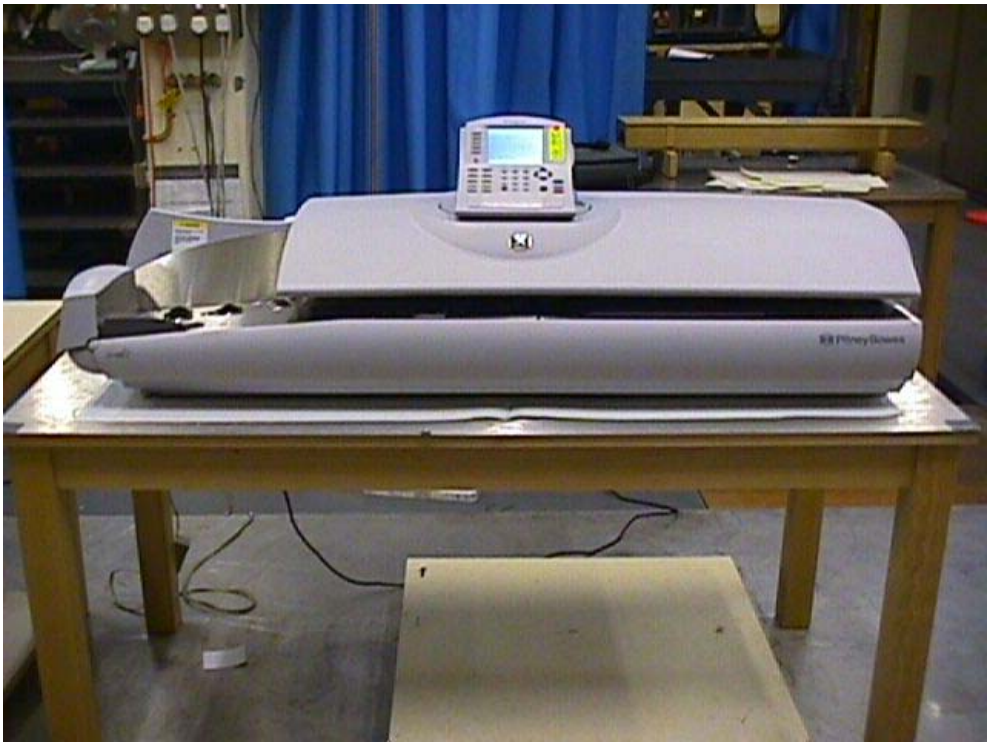

Figure 1 DM1000

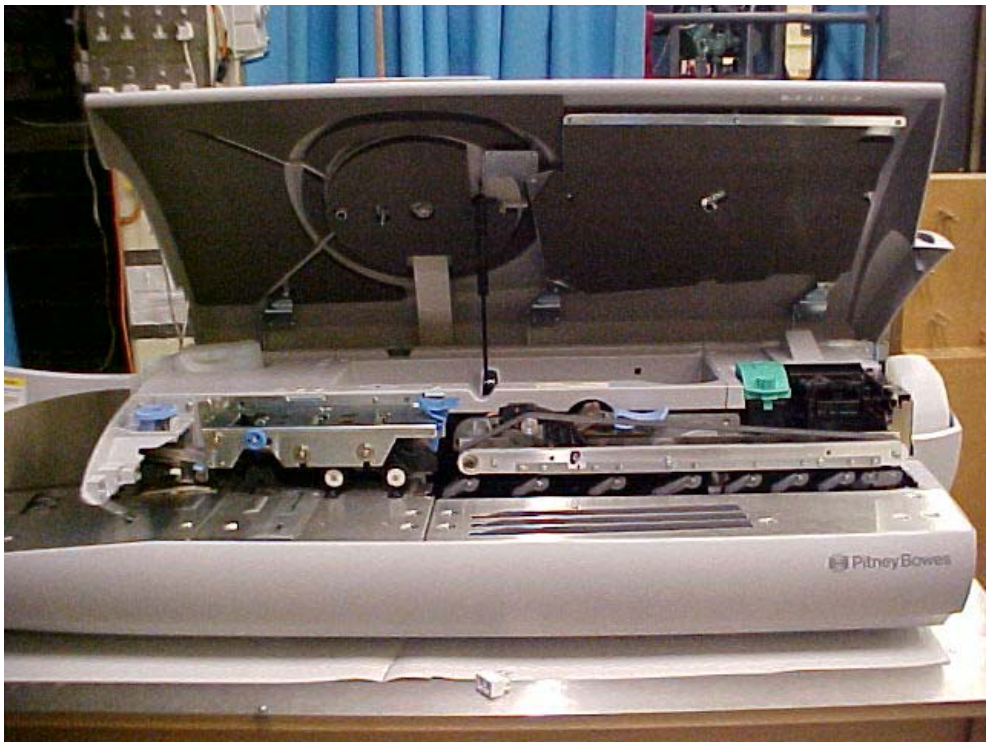

Figure 2 Base unit (cover open)

Figure 3 UIC

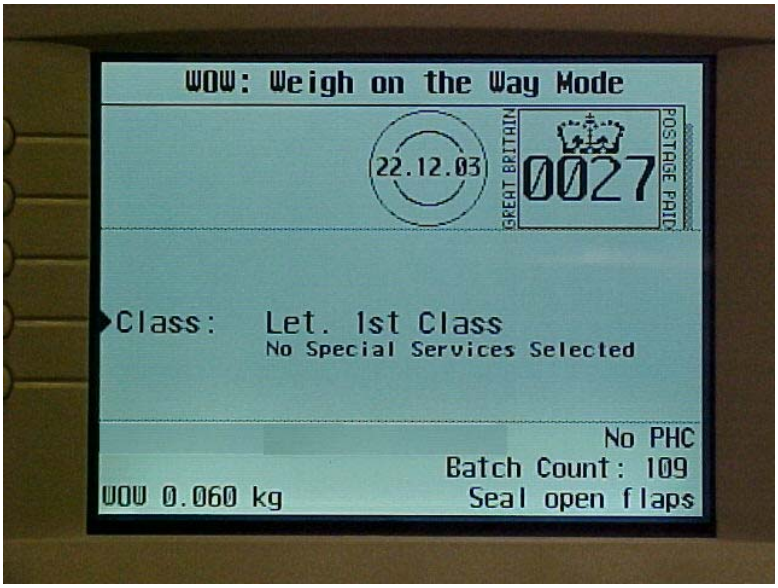

Figure 4 Operator display (Weigh on the Way mode)

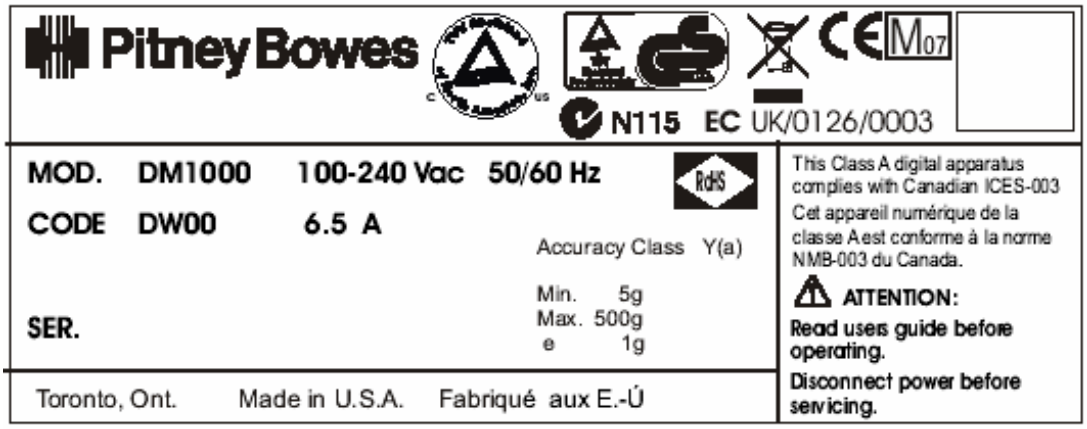

Figure 5 Rating plate

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