

(UK/0126/0033)



MI-006

United Kingdom of Great Britain and Northern Ireland

Certificate of EC type-examination of a measuring instrument

Number: UK/0126/0033

issued by the Secretary of State for Trade and Industry
Notified Body Number 0126

In accordance with the requirements of the Measuring Instruments (Automatic Gravimetric Filling Instruments) Regulations 2006 (SI 2006/1258) and the Measuring Instruments (Non-Prescribed Instruments) Regulations 2006 which implement, in the United Kingdom, Council Directive 2004/22/EC, this certificate of EC type-examination has been issued to:

WEITEK Industrial Controls s.r.l.
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44047 - Sant'Agostino
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Italy

in respect of an automatic gravimetric filling instrument, comprising a material feed device, a weighing unit supported by strain-gauge load cell(s), an electronic indicator and a touch screen operator display panel and having the following characteristics:

<i>Reference accuracy class:</i>	<i>Ref(0.5)</i>
<i>Maximum capacity:</i>	<i>Dependant upon load cell(s) specification</i>
<i>Minimum load:</i>	<i>≥ 50 g for accuracy class (0.5)</i> <i>≥ 20 g for accuracy class (1)</i>
<i>Scale interval:</i>	<i>≥ 0.1 g</i>
<i>Number of scale intervals</i>	<i>≤ 4000</i>

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.

A handwritten signature in black ink, appearing to read 'P R Dixon', is positioned above the printed name of the signatory.

Signatory: P R Dixon
for Chief Executive
National Weights & Measures Laboratory
Department of Trade and Industry
Stanton Avenue
Teddington
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United Kingdom

Issue Date: 13th June 2008
Valid Until: 12th June 2018
Reference No: T1105/0022

Descriptive Annex

1 INTRODUCTION

This pattern of an automatic weighing machine of the gravimetric filling type for dispensing predetermined loads consists of a material feed device, a weighing unit supported by strain gauge load cell(s), an electronic indicator designated MX1 incorporating a microprocessor and a touch screen operator display panel. The operator selects the required 'recipe', which contains the parameters for the fill, and other operational inputs via the touch screen operator display panel. The microprocessor operates the weigher in response to signals from the load cell(s) and plant sensors.

The weigher may be configured with different software versions for the following modes of operation:

IMXA = standard weighing software
IMXB = for weighers with brushless motor dosing gate
IMXD = for double head weighers
IMXE = for weighers with item counting software
IMXF = for weighers with batch counting software
IMXS = subtractive weighing software
IMXW = for weighers calculating flow rate

2 FUNCTIONAL DESCRIPTION

2.1. Material feed device

2.1.1 The feed device may be any one of the following:

- i) Gravity feeder (GF)
- ii) Gravity feeder with main feed limiter (GFL)
- iii) Vibratory feeder (VF)
- iv) Screw feeder (SF)
- v) Belt feeder (BF)

2.1.2 Combinations of the different feed devices are permitted depending upon the application of the system, as listed below:

- i) GF + VF or SF or BF
- ii) GFL + VF or SF or BF
- iii) VF + SF or BF
- iv) SF + BF

2.2 Weighing unit

2.2.1 Net weigher

For a net weigher the weighing unit is a load receptor (weigh hopper) incorporating a discharge device for weighing of target weights in the weigh hopper. The system can utilise the following weighing units:

- i) Single weigh hopper
- ii) Double weigh hopper (one is for the final weighing)
- iii) Two or more systems in parallel
- iv) Two-way discharge (trouser-leg chute with diverter)
- v) Multiple discharge into a single container

2.2.2 Gross weigher

For a gross weigher the weighing unit is a load receptor without a discharge device for weighing of target weights directly into bags.

2.3 Load cell(s)

2.3.1 The MX1 is provided with 2 load cell channels, with a maximum of 2 load cells connected to each channel. Each load cell has a separate excitation supply.

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

- i) 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.
- ii) 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, section 11), and any particular installation requirements. A load cell marked NH is allowed only if humidity testing to EN45501 has been conducted on this load cell.
- iii) The compatibility of load cells and indicator is established by the manufacturer by means of the compatibility of modules form, contained in the above WELMEC 2 document.
- iv) The load transmission conforms to one of the examples detailed in WELMEC 4 Guide for Load Cells.

2.4 MX1 electronic indicator

2.4.1 Figure 1 shows a schematic diagram of the MX1 electronic indicator which comprises:

- i) Main board (ESA2017604)
- ii) Power supply unit (ESA2017704)
- iii) Remote operator panel

2.4.2 Elements i) and ii) are located within a housing (Figure 2), with the remote operator panel located up to 20 metres from the MX1 housing. Figure 3 shows the MX1 housing and operator panel.

2.4.3 Connections to the Serial ports, (RS232/422/485) and (CAN bus type), may only be made using shielded cables with an earth connection on the shield.

2.5 Remote operator display panel

2.5.1 The remote operator display panel is a Pro-Face touch-screen 320x240 or 800x600 or 1024x768 pixel graphics panel which is connected to the serial interface of the MX1. The operator display panel displays weight data, status information and alarms, and enables the operator to select the 'recipe' and to control (start/stop) the weighing process. The operator display panel permits calibration of the MX1, configuration of the weighing parameters and programming of the 'recipes'.

2.5.2 A programming socket is provided on the remote operator display panel to download the MX1 display software from a PC using a specialist software program. No processing of the weight data or control of the weighing process takes place within the remote operator panel software.

2.6 Devices

The instrument is provided with the following devices:

- semi-automatic zero-setting
- automatic zero-setting with time interval ≤ 9 mins (≤ 7 mins for Min < 50 g)
- automatic subtractive tare (range $\leq 20\%$ of Max)
- gross/net changeover
- batch counter for multiple fills into a single container
- processing of weight signals and control of digital I/O
- transmission of weight data and status information to remote display
- master/slave configuration with 1 master and up to 15 slaves

3 TECHNICAL DATA

3.1 The MX1 has the following technical characteristics:

Reference accuracy class	Ref(x) \geq 0.5
Power supply	110/230 V ac 50/60 Hz
Maximum subtractive tare (gross weigher only)	\leq 20 %
Maximum capacity	Dependent upon load cell(s) specification
Minimum load	\geq 50 g for accuracy class (0.5) \geq 20 g for accuracy class (1.0)
Scale interval	\geq 0.1g
Maximum number of scale intervals	\leq 4000
Load cell excitation voltage	5 V dc
Load cell impedance range	\geq 350 Ω
Load cell connection	4 or 6 wire system
Minimum input voltage per scale interval	\geq 1.0 μ V/d
Modules	P _i = 0.5 for the indicator P _i = 0.7 for the load cell
Warm-up time after switch-on	15 minutes
Operating temperature range	-10 °C to + 40 °C
Climatic environment	Closed, non-condensing
EM Classification	E1

3.2 Documentation and drawings

MX1 Operating Manual from IMXx 06.yy Software
MX1 electronic circuit diagrams

CODE: DMA2009204
ESA2017604 Rev.ESA2018304

3.3 Software

The software version number is stored within the software which is loaded on to the MX1 flash EPROM. The legally relevant software version number is IMXx 06.yy which is displayed on the operator panel screen at power up.

In the version number yy may be any number and x represents the following modes of operation:

IMXA = standard weighing software
IMXB = for weighers with brushless motor dosing gate
IMXD = for double head weighers
IMXE = for weighers with item counting software
IMXF = for weighers with batch counting software
IMXS = subtractive weighing software
IMXW = for weighers calculating flow rate

4 PERIPHERAL DEVICES AND INTERFACES

4.1 Interfaces

The instrument is provided with the following interfaces:

- programming socket
- serial port (RS232/422/485) connection to remote operator panel
- Fieldbus port (CAN bus type) for master/slave operation
- 16 digital inputs (24 V dc, opto-isolated)
- 8 digital outputs (24 V dc, 0.2 A, opto-isolated)
- 8 x relay outputs (Normally open contact, 3 A)
- optional serial port (RS232/422/485)
- optional analogue output card
- optional vibrating feeders control card

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 type approval 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.

4.3 The printout of individual weight readings is for information purposes only, except for preset values and the number of weighments.

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
- Serial number
- Manufacturers mark or name
- Certificate number
- Operating temperature range

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 or configured, an "audit trail" number is updated and recorded on a "tamper-evident" label on the controller.

6.4 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.

The instrument is sealed, as appropriate, in the following positions:

- The front cover of the MX1 housing to prevent unauthorised access to the load cell connections and the programming socket.
- Load cell junction boxes, if present.
- The interface to the MX1 electronic indicator and the programming socket on the remote operator panel.

6.5 Software

Password protection is provided at three levels on the MX1. A supervisor level password prevents unauthorised access to the 'recipe' programming facility. A system level password prevents unauthorised access to the system configuration. A calibration password prevents unauthorised access to the calibration functions.

7 ALTERNATIVES

7.1 Having the following alternative operator display panels:

- i) Hakko Electronics touch-screen, 320x240 or 800x600 or 1024x768 resolution
- ii) ESA Elettronica touch-screen, 320x240 or 800x600 or 1024x768 resolution
- iii) Siemens touch-screen, 320x240 or 800x600 or 1024x768 resolution

8 ILLUSTRATIONS

- Figure 1 Schematic diagram of MX1 electronic indicator
- Figure 2 MX1 electronics
- Figure 3 MX1 housing and operator panel
- Figure 4 "Main" display screen

9 CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
UK/0126/0033	13 th June 2008	Type approval first issued.

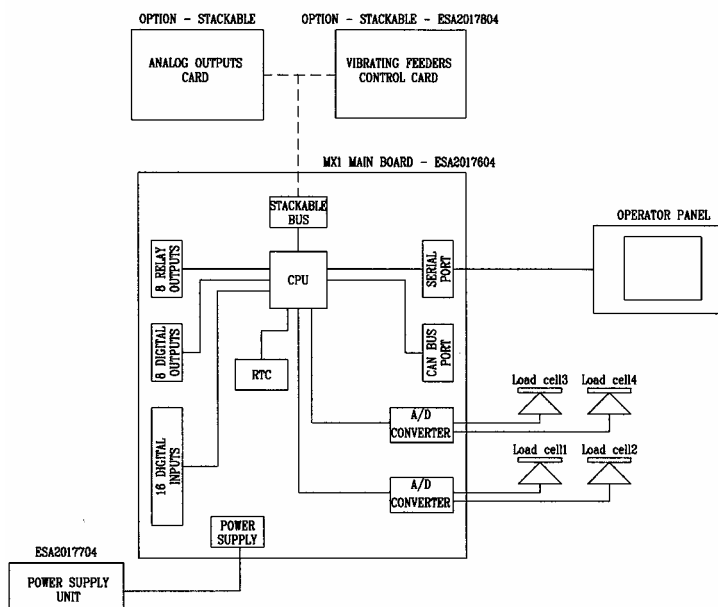


Figure 1 Schematic diagram of MX1 electronic indicator

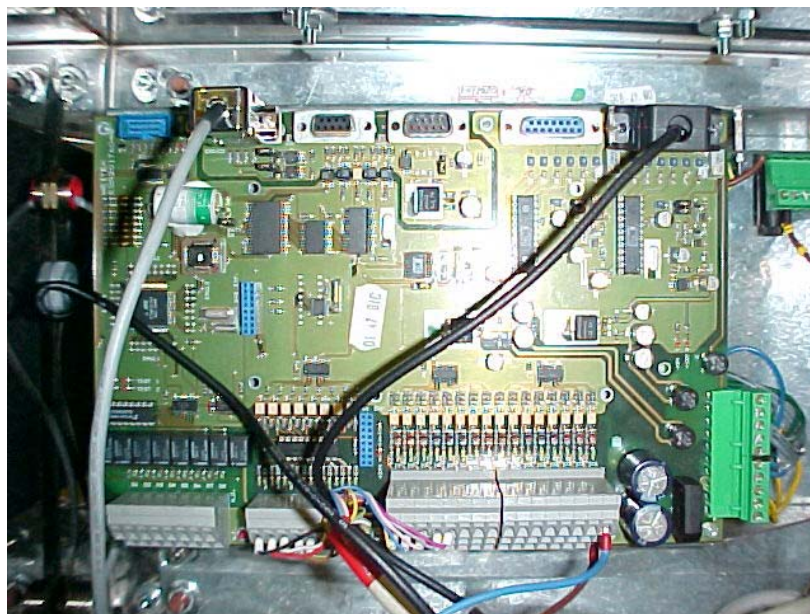


Figure 2 MX1 electronics



Figure 3 MX1 housing and operator panel

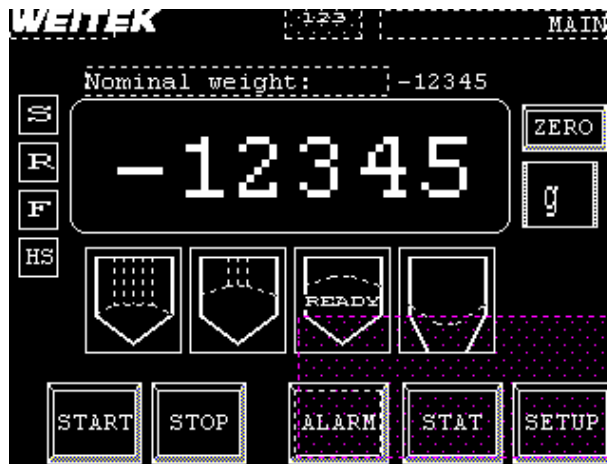


Figure 4 "Main" display screen

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Department of Innovation, Universities and Skills