



**EC Type-Approval Certificate
UK 2677 Revision 9**

issued by:

**The National Measurement Office
Notified Body Number 0126**

In accordance with the requirements of the Non-automatic Weighing Instruments Regulations 2000 (SI 2000/3236) which implement, in the United Kingdom, Council Directive 2009/23/EC, this EC Type-Approval Certificate has been issued to:

**Ian Fellows Ltd
The Old Tannery
Lower Keyford
Frome
Somerset, BA11 4AR
United Kingdom**

in respect of an Class III non-automatic weighing instrument designated the LUCI-CPI, LUCI-CSW or LUCI-CSW (5002) indicating device connected to a platform and having the following characteristics:

$n \leq 10000$ for Class III instruments with single interval
 $n \leq 1000$ for Class III instruments with single interval

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 the certificate.

**Issue Date: 17 August 2011
Valid Until: 27 April 2013
Reference No: T1128/0183**

**Signatory: G E Stones
for Chief Executive**

Descriptive Annex

1 INTRODUCTION

This pattern of a class III non-automatic weighing instrument utilises the Ian Fellows digital indicating devices designated the LUCI-CPI (Figure 1), LUCI-CSW (Figure 2) or LUCI-CSW (5002) (Figure 3) connected to a load receptor.

2 FUNCTIONAL DESCRIPTION

2.1 The Ian Fellows digital weight indicators types LUCI-CPI, LUCI-CSW and LUCI-CSW (5002) have the following devices:

- self test sequence and display check during power-up;
- determination stability of equilibrium;
- calibration / set-up access via keyboard with traceable access number (TAN);
- linearity compensation (maximum 6 points including zero);
- initial zero-setting, overall effect $\leq 20\%$;
- semi-automatic zero-setting;
- automatic zero-setting;
- zero-tracking;
- zero indicator;
- indication of stable equilibrium via motion indicator;
- semi-automatic tare balancing;
- automatic tare balancing;
- preset tare;
- gross indicator;
- net indicator;
- weighing of unstable samples;
- extended indicating, resolution $1/10 e$ during pressing a key or activated via an interface (ET1), the maximum duration after software activation will be 5 seconds;
- memory storage device.

2.2 Construction

2.2.1 LUCI-CPI

2.2.1.1 The display and the operator function keys are located on the front of the housing, with the connections and ports located at the rear. The LUCI-CPI is designed to be panel mounted in an enclosure. Figure 4 shows a typical example of the panel mounting arrangement.

2.2.2 LUCI-CSW

2.2.2.1 The display and the operator function keys are located on the front of the housing, with the connections and ports located at the bottom of the housing.

2.2.3 LUCI-CSW (5002)

2.2.3.1 The display and the operator function keys are located on the front of the housing, with the connections and ports located at the rear of the housing.

2.3 Drawings

Drawing No.	Description
30-M-1166	13-E-1131 Key Component Locations
30-M-1167	13-E-1131 ADC Components
30-M-1168	13-E-1155 Key Component Locations
30-M-1169	13-E-1155 ADC Components
30-M-1225	13-E-789 Key Component Locations
30-E-1217	5001/LUCI-CPI Block Diagram
30-E-1218	5002/LUCI-CSW Block Diagram
30-M-1163	LUCI-CSW Assembly
30-M-1164	LUCI-CSW (5002) Assembly
30-M-1220	LUCI-CPI Assembly

3 TECHNICAL CHARACTERISTICS

3.1 The LUCI-CSW and LUCI-CSW (5002) indicators have a power supply of 110 – 120 V or 220 - 240 V AC 50/60 Hz. The LUCI-CPI indicator is powered by 12 – 28 V DC.

3.2 Technical data

3.2.1 The indicators have the following characteristics:

Input voltage per scale interval	≥	1 μV/e
Excitation voltage	=	5 V DC
Fraction of maximum permissible error (P _i)	=	0.5

Table 1

Class	Maximum number of scale intervals	Minimum load cell input impedance (Ω)	Maximum cable length between the indicator and the junction box or load cells (m/mm ²)
III	10000	43	150
IIII	1000	43	150

Note: 6-wire load cells and the indicator sense system must be utilised in order to achieve the characteristics listed in Table 1.

3.3 Load cells

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 2009/23/EC.
- 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 3, 2000, 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 load cell.
- 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 load cell transmission must conform to one of the examples shown in the WELMEC Guide 2.4, "Guide for Load cells".

4 PERIPHERAL DEVICES AND INTERFACES

4.1 Interfaces

The instrument may have the following protected interfaces:

- RS232 communications port
- RS485 communications port
- RS232 printer port
- Analogue Output (optional)
- Control I/O interface

4.2 The following peripheral devices may be connected to the interfaces provided:

- (i) Peripheral devices that have been issued with a test certificate by a Notified Body responsible for type approval under Directive 2009/23/EC; or
- (ii) Peripheral devices without a test certificate under the following conditions:
 - it bears the CE marking for conformity to the EMC Directive;
 - 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;
 - it complies with the applicable requirements of EN45501, i.e. 4.2, 4.4, 4.6 and 4.7.

A printing device may print additional information such as date or number to identify the printed weighing result(s) or sets of weighing results.

4.3 Having a computer or other logical device(s) connected to the indicator for controlling the zero setting devices and optional devices used to control the position of vehicles on a weighbridge for the purpose of providing driver operated weighbridge facilities.

In which case:

- (i) A ticket is issued to the driver.
- (ii) A weight indicating device is available to the driver.

Adequate instructions are clearly visible to the driver together with a contact point in the event of problems. Where the weight is below the minimum load or above the maximum capacity of the instrument, a ticket indicating "Invalid Weight", or equivalent wording, is issued or printed is inhibited with alternative instructions available to the driver.

Interlocks may be provided so that when a vehicle is not correctly positioned on the weighbridge no ticket is issued.

4.4 PC terminals

4.4.1 The indicator may be incorporated into one of the following terminals:

- PARCEL MASTER
- DATA MASTER
- LABEL MASTER
- CHECK MASTER

These terminals are all steel or stainless steel based, and incorporate a PC, a 15-inch TFT screen, a keyboard, and the indicator. The type of terminal is identified on the keyboard and on the side identification plate.

4.4.2 The indicator may be incorporated into a T.S. 8100 Terminal. This terminal is stainless steel cased and incorporates a TFT colour screen, resistive touch screen, PC and the indicator. The type is identified on the display and identification plate.

5 SOFTWARE

The software of the indicating devices has the identification number PO6_xxx. The identification number is displayed at power-up along with the traceable access number (TAN).

6 APPROVAL CONDITIONS

This certificate is issued subject to the following conditions:

6.1 Legends and inscriptions

6.1.1 The instrument shall bear the following legends near the display of the weighing result:

- Max
- Min
- e =

6.1.2 The instrument shall bear the following legends

CE mark
Green M
Class III
Serial number
Manufacturer's mark or name
Certificate number
Temperature range

7 LOCATION OF SEALS AND VERIFICATION MARKS

7.1 The data plate is secured either by a sealing arrangement or by being destroyed when removed (Figures 5, 6 and 7).

7.2 Components that may not be dismantled or adjusted by the user must be secured by a suitable mark placed over the securing screws of the cabinet or by the use of tamper evident labels. The securing mark may be either:

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

8 LOCATION OF CE MARKING

8.1 The CE marking and metrological "M" mark are applied to the front of the instrument.

8.2 Figures 5, 6 and 7 show the location of the data plate on the indicators.

9 ALTERNATIVES

9.1 Having the indicator designated the LUCID CB-K. The CB-K has an alternative housing with an alternative display and operator keyboard (Figure 8). Figure 9 shows the location of the data plate, seals and verification marks.

9.2 Having the indicator designated the LUCID CSW-20. The CSW-20 has an alternative display as shown in Figure 10. Figure 11 shows the location of the data plate, seals and verification marks.

9.3 Having the CSW-20 fitted with an internal Electronic Tally Record (ETR) data storage device (DSD). The ETR is implemented using Flash Memory in the form of a plug-in module (PCB IFE1232). The capacity of the storage will be adapted to meet national requirements and the needs of the user.

9.3.1 When the indicator is connected to a PC, weight data for Article 1.2.(a) applications is stored in the DSD 'alibi' memory and is assigned a unique identification number. This unique identification number is transmitted along with the weight data to the PC.

9.3.2 The ETR stores all of the necessary information against the unique identification number to enable the weighing to be reconstructed. The integrity of stored data is maintained by checksum. The stored data can be viewed/read from memory. The integrity of transmitted data is ensured either by using a parity check and/or checksum.

9.4 Having the indicator designed and configured to operate as a checkweigher. It has an alternative housing and is provided with a weight display, an LCD display, a “lightbar load guide” and an operator keyboard. The LCD display is used to show status messages and information regarding the product being packed. The “lightbar load guide” comprises a row of LEDs and is used to denote if the pack weight is acceptable, or whether the weight is above or below the acceptable weight for the product being packed. Various operating modes are provided to suit the checkweighing function being performed. The instrument may be connected to a PC for the storage of results.

The Linemaster series is a designated version of this indicator. An example of the Linemaster PLUS+ is shown in Figure 12a.

9.4.1 Having an alternative version of the Linemaster series designated the Linemaster IV (Figure 12b)

9.5 Having the indicator designated the TS8XXX Series.

9.5.1 It comprises the CSW-20 processor board mounted into a terminal (Figure 13). A serial link is provided between the CSW-20 processor board and the terminal processor board. Power is supplied to the CSW-20 processor board directly from the terminal PSU. The CSW-20 display and keyboard is replaced by the terminal touch screen display. The display replicates the CSW-20 display and keyboard and is split into three areas, with an area for the function keys (menu, contrast adjustment, etc.), an area for the application software and a controlled area which incorporates the weight display and the Max, Min and e markings. The controlled area is permanently displayed and includes a zero key. The tare key is provided by a remote input.

9.5.2 The software version number of the CSW-20 processor board is PO6_XXX and can be accessed via:
CMDI>>Utilitymenu>>CSWCONFIG>>CSWVersionNumber.

The traceable access number (TAN) can be displayed upon request by using the “Restart CSW (TAN Number)” command.

9.5.3 The data plate and verification marks are located on the left-hand side of the terminal. The CSW-20 baseboard is secured by a tamper evident label.

9.6 Having the instrument designated the CSX series.

9.6.1 The CSX series has an alternative weight display with auxiliary LCD display, and operator keyboard (Figure 14). It comprises the same motherboard, processor, ADC and power supply as the CSW-20 series. The display board is similar to the one used in the Linemaster series. The devices are as listed in section 2.1.; the peripherals and interfaces are as listed in section 4. The instrument bear the legends listed in section 6 and is sealed according to section 7.

9.6.2 The software version number of the CSX processor board is PO7_XXX and is displayed at power up or can be accessed via “Engineering Menu >> S/W version Number”. The traceable access number (TAN) is displayed at power up.

9.6.3 Having the CSX series fitted with an internal Electronic Tally Record (ETR) data storage device (DSD) as described in section 9.3. The ETR is implemented using Flash Memory in the form of a plug-in module (PCB IFE1232). The capacity of the storage will be adapted to meet national requirements and the needs of the user.

10 ILLUSTRATIONS

- Figure 1 LUCI-CPI
- Figure 2 LUCI-CSW
- Figure 3 LUCI-CSW (5002)
- Figure 4 LUCI-CPI panel mounting
- Figure 5 LUCI-CPI seals and labels
- Figure 6 LUCI-CSW seals and labels
- Figure 7 LUCI-CSW (5002) seals and labels
- Figure 8 LUCID CB-K
- Figure 9 LUCID CB-K seals and labels
- Figure 10 LUCID CSW-20
- Figure 11 LUCID CSW-20 seals and labels
- Figure 12a & b Linemaster series
- Figure 13 TS8XXX series indicator
- Figure 14 CSX series indicator

CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
UK 2677	28 April 2003	Type approval first issued
UK 2677 Revision 1	8 May 2003	Revision 1 issued, creation of Section 9.1.
UK 2677 Revision 2	15 December 2003	Revision 2 issued, creation of Section 9.2.
UK 2677 Revision 3	30 June 2004	Revision 3 issued, creation of Section 9.3.
UK 2677 Revision 4	25 October 2005	Revision 4 issued, creation of Section 4.4.
UK 2677 Revision 5	01 June 2006	Revision 5 issued, creation of Section 4.4.2.
UK 2677 Revision 6	20 October 2006	Revision 6 issued, creation of Section 9.4.
UK 2677 Revision 7	19 November 2008	Revision 7 issued, creation of Section 9.5.
UK 2677 Revision 8	09 January 2009	Revision 8 issued, creation of Section 9.6.
UK 2677 Revision 9	17 August 2011	Revision 9 issued Amendment to wording in Section 9.4 “ <i>The Linemaster series Figure 12 is a designated version of this indicator.</i> ” has been replaced as shown. Figure 12 renamed as Figure 12a Addition of Section 9.4.1. and Figure 12b



Figure 1 LUCI-CPI



Figure 2 LUCI-CSW



Figure 3 LUCI-CSW (5002)



Figure 4 LUCI-CPI panel mounting

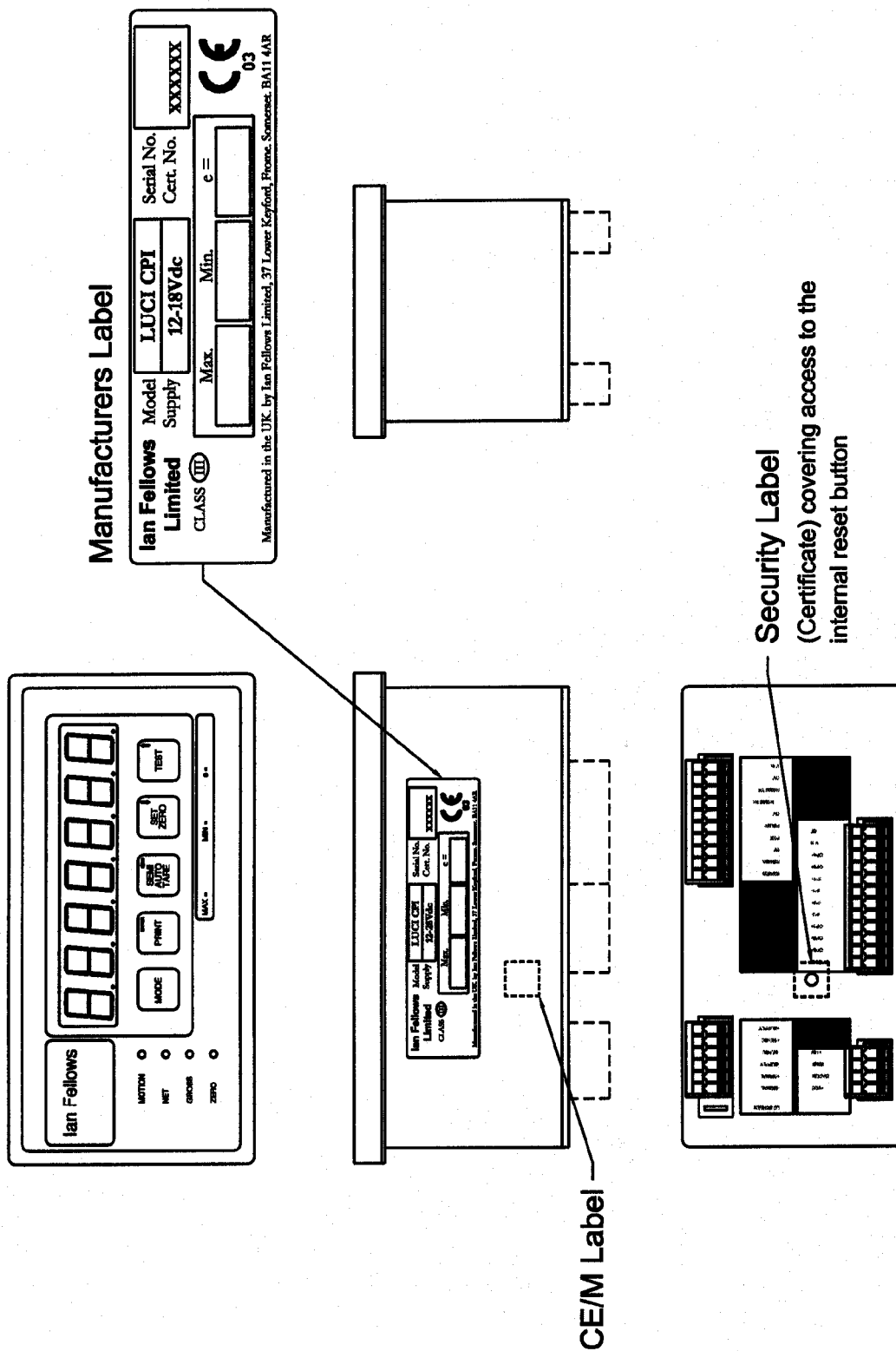


Figure 5 LUCI-CPI seals and labels

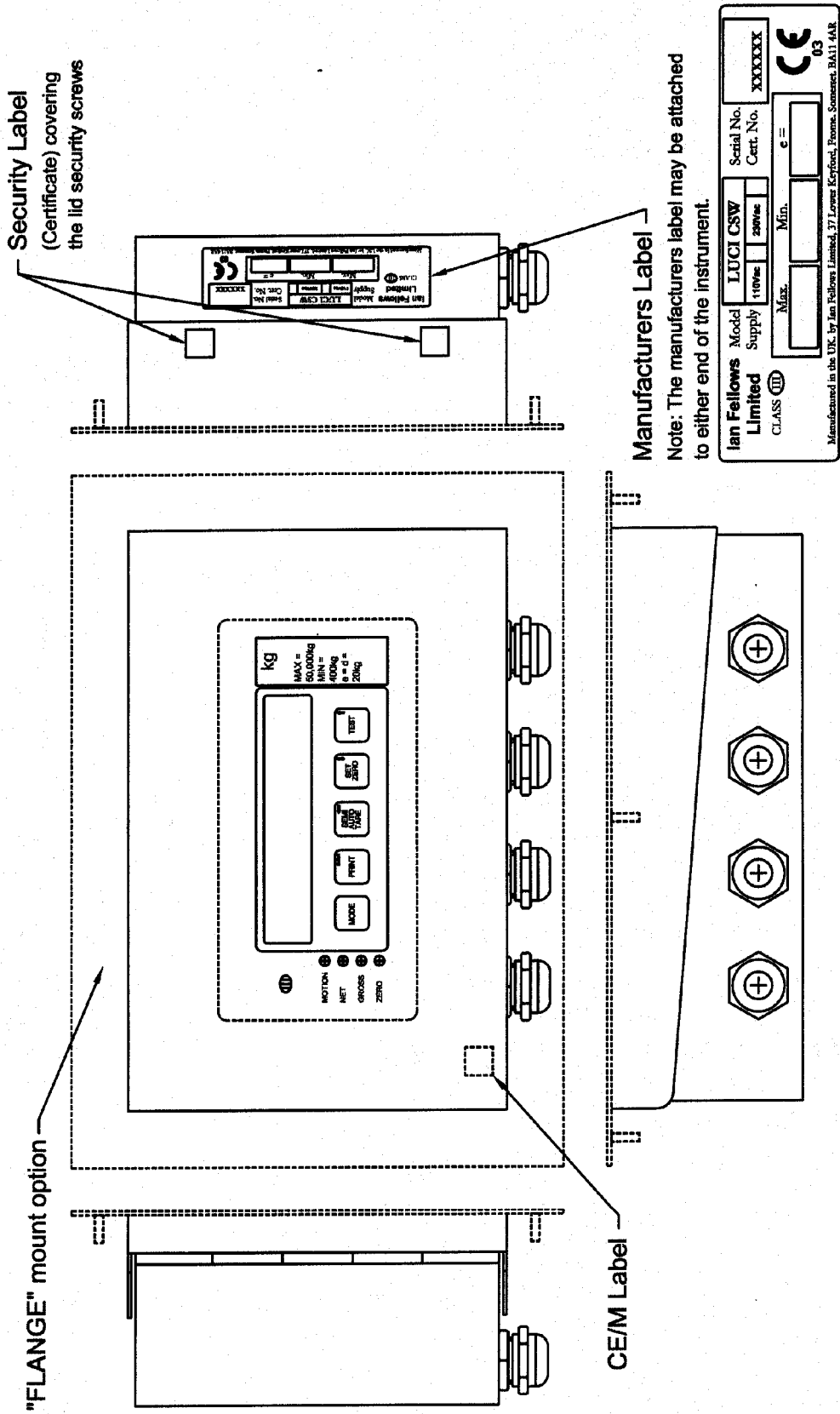


Figure 6 LUCI-CSW seals and labels

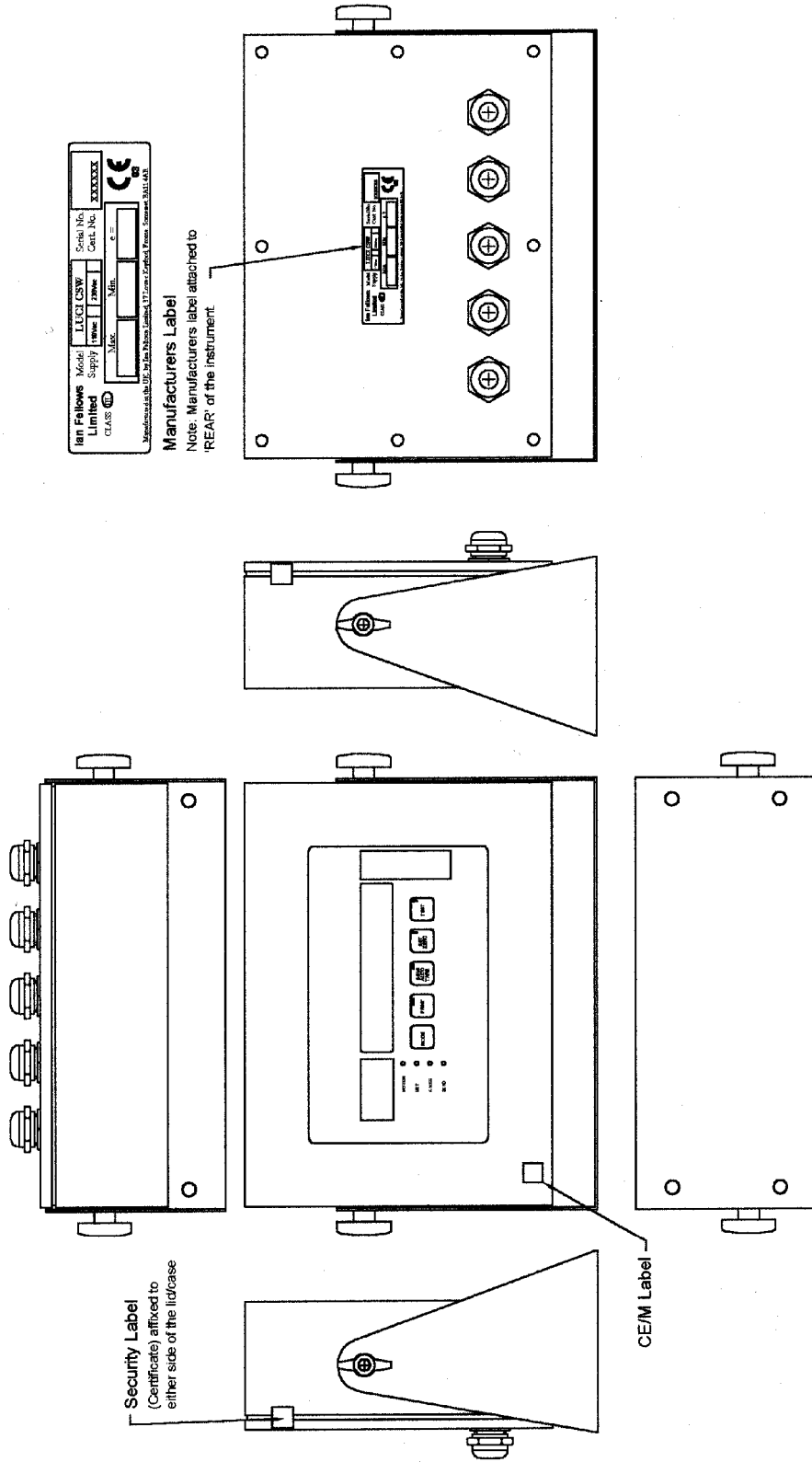


Figure 7 LUCI-CSW (5002) seals and labels



Figure 8 LUCID CB-K



Figure 10 LUCID CSW-20

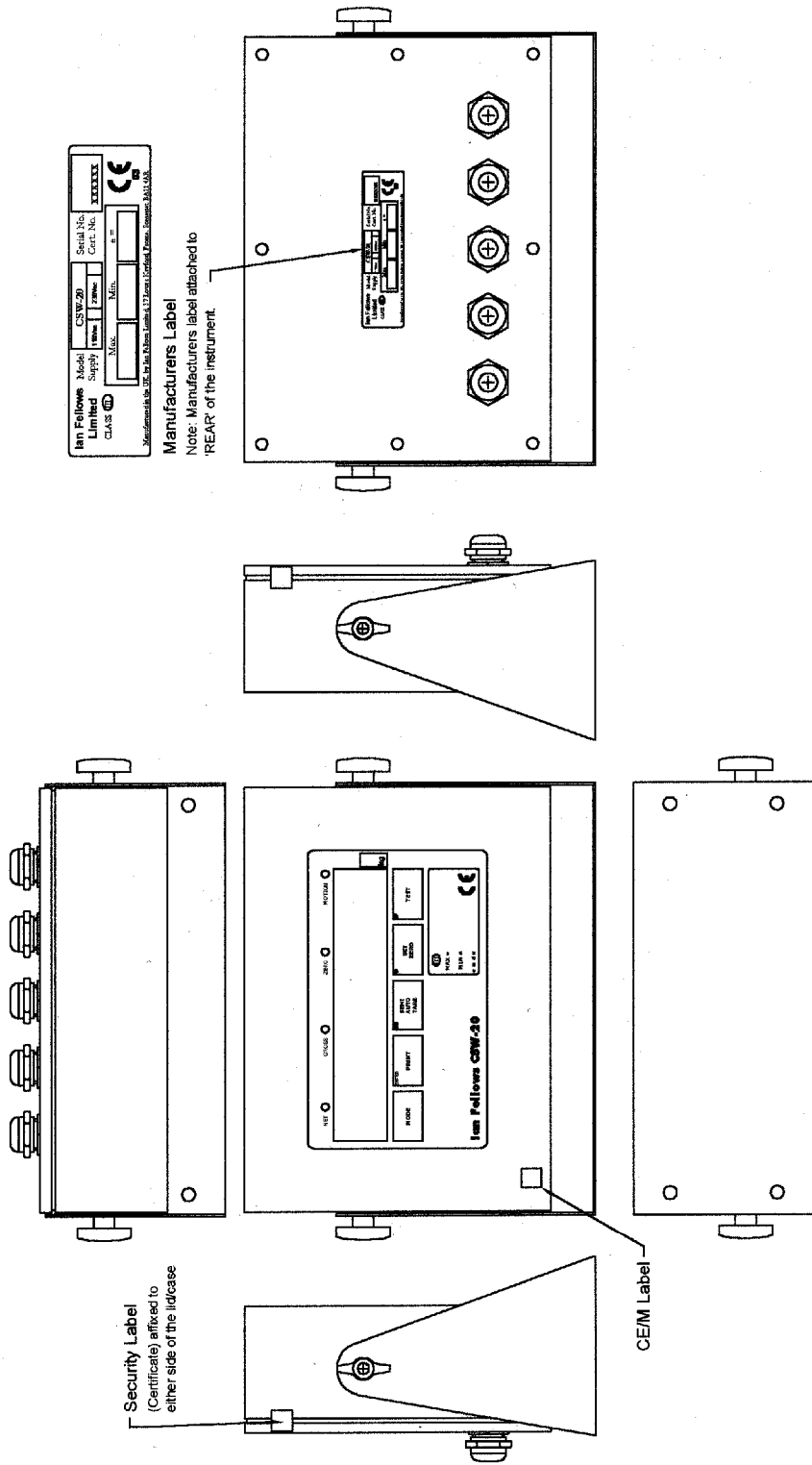


Figure 11 LUCID CSW-20 seals and labels



Figure 12a Linemaster PLUS+



Figure 12b Linemaster IV



Figure 13 TS8XXX series indicator



Figure 14 CSX series indicator