

EC Type-Approval Certificate UK 2847 Revision 3

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:

**CAS Corporation
#262, Geurugogae-ro
Gwangjeok-myeon
Yangju-si
Gyeonggi-do
Republic of Korea**

In respect of the EBI, DBI and DDI weighing indicators connected to a compatible load receptor to form the dual-interval, Class III, non-automatic instruments designated the EBI, DBI and DDI and having the following characteristics:

$n \leq 6000$ for class III instruments (per partial weighing range)

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 this certificate.

**Issue Date: 11 December 2013
Valid Until: 04 February 2020
Reference No: T1128/0198**


**Signatory: P R Dixon
for Chief Executive**

Descriptive Annex

1 NAME AND TYPE OF INSTRUMENT

The EBI, DBI and DDI are Class III, self-indicating, dual-interval, non-automatic weighing instruments which utilise the EBI, DBI and DDI indicators. All three NAWI's may be used for direct sales to the public.

2 DESCRIPTION

2.1 Construction

2.1.1 Mechanical

Main features:

- Steel construction
- Operator's keypad
- Stainless steel load receptor
- Pole-mounted display
- Level indicator

2.1.2 Devices

- Initial zero setting device ($\leq 20\%$ of Max)
- Semi-automatic zero setting device ($\leq 4\%$ of Max)
- Zero tracking device ($\leq 4\%$ of Max)
- Zero indicator
- Net indicator
- Semi-automatic subtractive tare balancing device
- Gravity compensation
- Counting / check weighing / weighing unstable samples modes (DBI Model)
- Price-computing (EBI Model)

2.1.3 Load cell

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 5, 2009, 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".

2.1.4 Technical characteristics

The EBI, DBI and DDI weighing indicators (Figures 1 and 2) have the following technical characteristics:

Maximum number of scale intervals	3000	6000
Load cell excitation voltage	5 V DC	5 V DC
Minimum load cell impedance	350 Ω	350 Ω
Maximum load cell impedance	1000 Ω	1000 Ω
Minimum input voltage per verification scale interval	1.2 μ V	1.2 μ V
Measuring range minimum voltage	3.6 mV	7.2 mV
Measuring range maximum voltage	10 mV	10 mV
Fraction of maximum permissible error	0.5	0.5
Operating temperature range	-10°C ~ 40°C	-10°C ~ 40°C
Load cell cable length (junction box to indicator)	3 m	3 m

2.1.5 Power supply

Model	EBI/DDI		DBI	
Capacities	All		All	
Display	LCD	LCD	LED	VFD
Voltage	12 V DC *	12 V DC *	12 V DC *	230 V AC
Battery	Integrated rechargeable 6 V 3.6 Ah	Integrated rechargeable 6 V 3.6 Ah	Integrated rechargeable 6 V 3.6 Ah	No

*: Any compatible CE-marked mains adaptor may be used.

2.2 Operation

2.2.1 Switch-on

At switch-on, a display test is performed to ensure that all segments are active.

2.2.2 Zero-tracking

Zero tracking operates provided that the instrument is within range of not more than 4% of its capacity.

2.2.3 Semi-automatic zero setting

The zero button operates provided that the instrument is within range of not more than 4% of its capacity.

2.2.4 Over-range and under-range

If the load is less than gross zero, then the display shows a “-” sign before the value.

The instrument may be set to display weight up to nine divisions above Max. At greater loads the display shows “ERR 03”.

2.2.5 Tare

Subtractive tare balancing can be performed.

2.3 Model variants

The DBI model can be fitted with an LCD, LED or VFD display, and is then designated DBI (LCD), DBI (LED) or DBI (VFD) respectively. The EBI and DDI models will only accommodate a double-sided LCD display.

3 TECHNICAL DATA

3.1 Power supply

The instruments operate directly on a 230 V AC supply or via a remote power supply (12 V DC), or directly on an integrated rechargeable battery (see 2.1.4). Any compatible CE-marked mains adaptor may be used.

4 PERIPHERAL DEVICES AND INTERFACES

4.1 Interfaces

The instrument may have the following interface type:

- RS232

4.2 Peripheral devices

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

- Peripheral devices that have been issued with a test certificate by a Notified Body responsible for type approval under Directive 2009/23/EC; or
- 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.

5 APPROVAL CONDITIONS

This certificate is issued subject to the following conditions:

5.1 Legends and inscriptions

5.1.1 The remote display bears the following legends on or near the display:

Max
Min
e =

5.1.2 The instrument shall bear the following legends:

Class III
CE marking
Green M
Serial number
Manufacturer's mark or name
Certificate number
T =

The markings and inscriptions shall fulfil the requirements of Paragraph 1 of Annex IV of the Directive 2009/23/EC.

6 SECURING AND VERIFICATION MARKS

6.1 The data plate is secured, either by sealing or by being of a form such that it is destroyed when removed.

6.2 Components that may not be dismantled or adjusted by the user must be secured by a wire and seal solution or by a suitable mark placed over the securing screws of the housing (Indicators: Figures 3 and 4). The securing mark may be either:

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

6.3 Verification marks, and the CE-marking, are located on, or adjacent to, the data plate situated at the back of the display.

7 ALTERNATIVES

7.1 Having the instruments manufactured by the following companies:

Shanghai CAS Electronics Co., Ltd,
Maixinroad 448, Xinqiaozhen, Songjiangqu,
Shanghai, China

CAS Elektronik San. Tic. A.S.
Yukari Dudulu, Bostanci Cad. Mevdudi Sokak No: 34
Umraniye-Istanbul / Turkey

CAS (Zhejiang) Electronics Co., Ltd
99# Changjiang Road
Jiashan County
Zhejiang Province
China

8 ILLUSTRATIONS

- Figure 1 EBI Indicator
Figure 2 DBI Indicator
Figure 3 Sealing methods for EBI Indicator
Figure 4 Sealing methods for DBI Indicator
Figure 5 DDI with twin display

CERTIFICATE HISTORY

Issue No	Date	Description
UK 2847	13 June 2008	Type approval first issued.
UK 2847 Revision 1	25 February 2009	DBI model with LED display added to certificate.
UK 2847 Revision 2	22March 2012	DDI model with twin display added to certificate. Direct sales to the public added to certificate.
UK 2847 Revision 3	11 December 2013	Applicant's address on the front page changed from: 19 Ganap-Ri, Gwangjuk-Myoun, Yangji-Si, Gyeonggi-Do 482-841, Republic of Korea Designation of EB and DB-II indicators changed to EBI and DBI CAS (Zhejiang) Electronics Co., Ltd added to section 7.1.



Figure 1 EBI Indicator



Figure 2 DBI Indicator

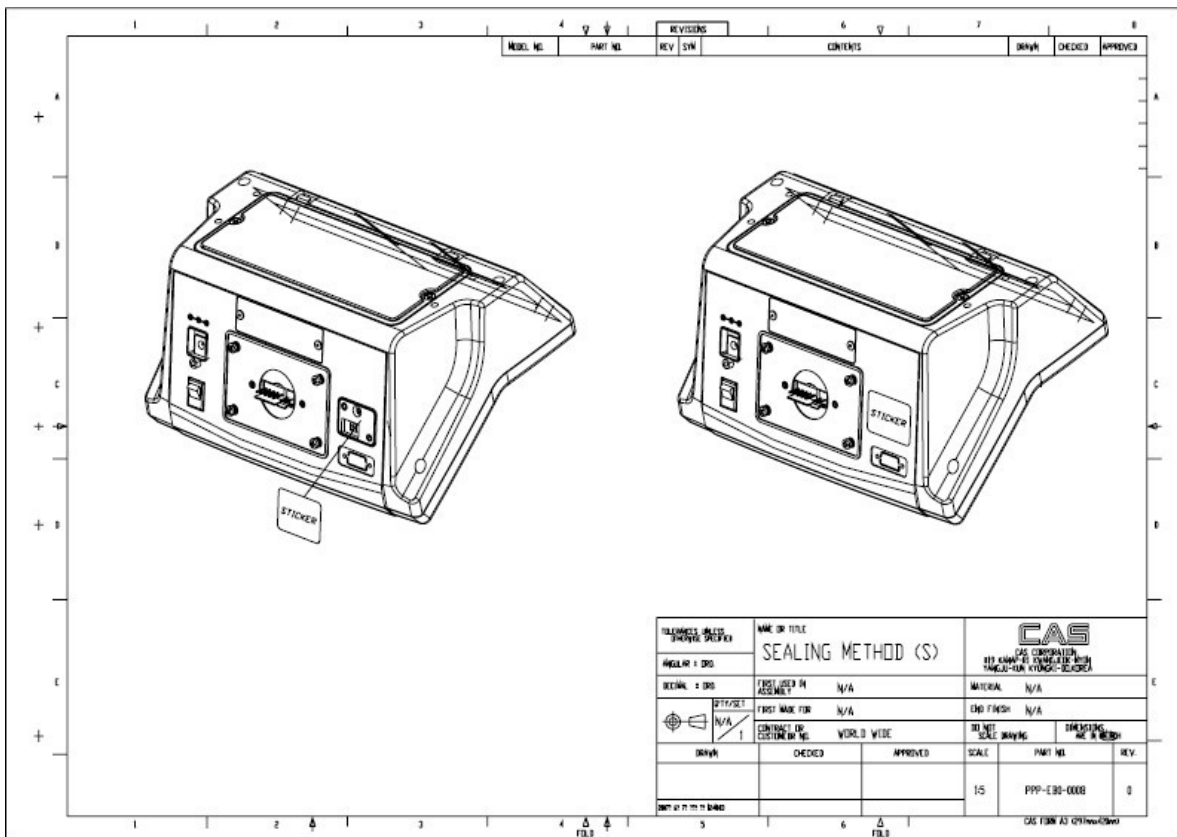
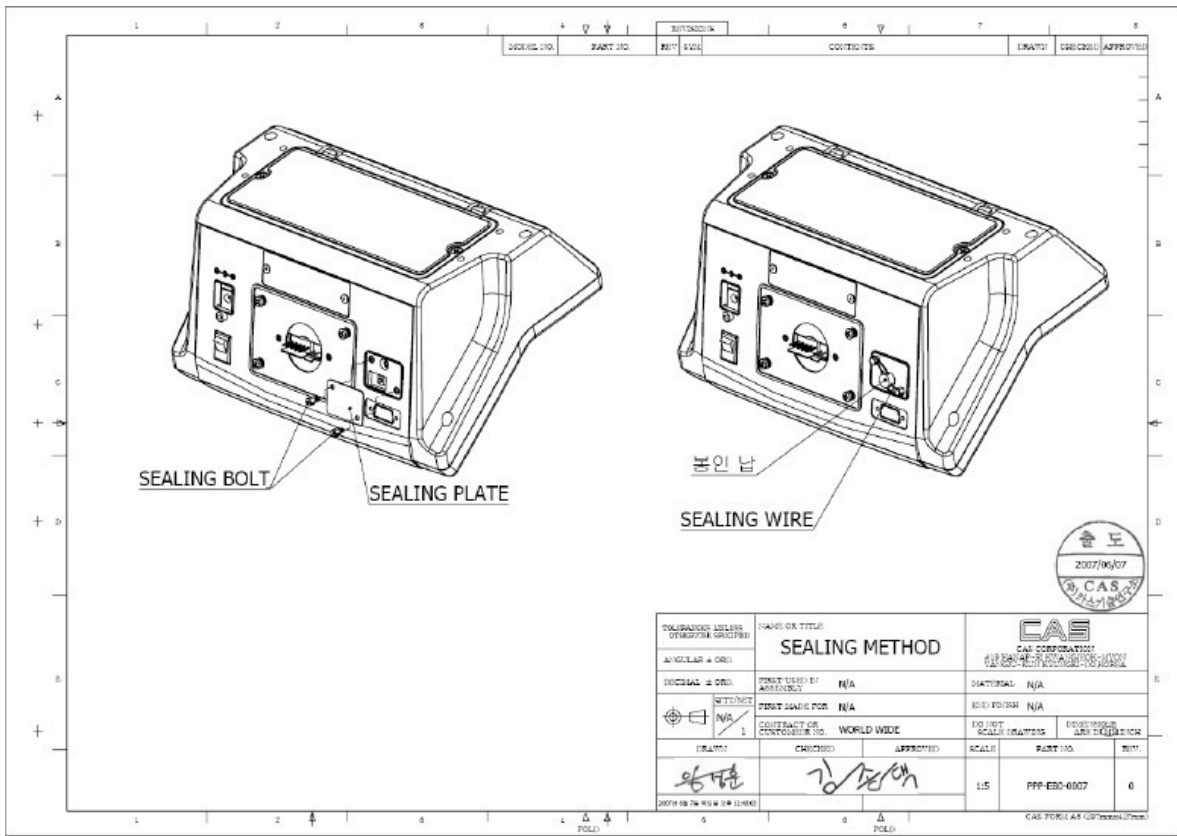


Figure 3 Sealing methods for EBI Indicator

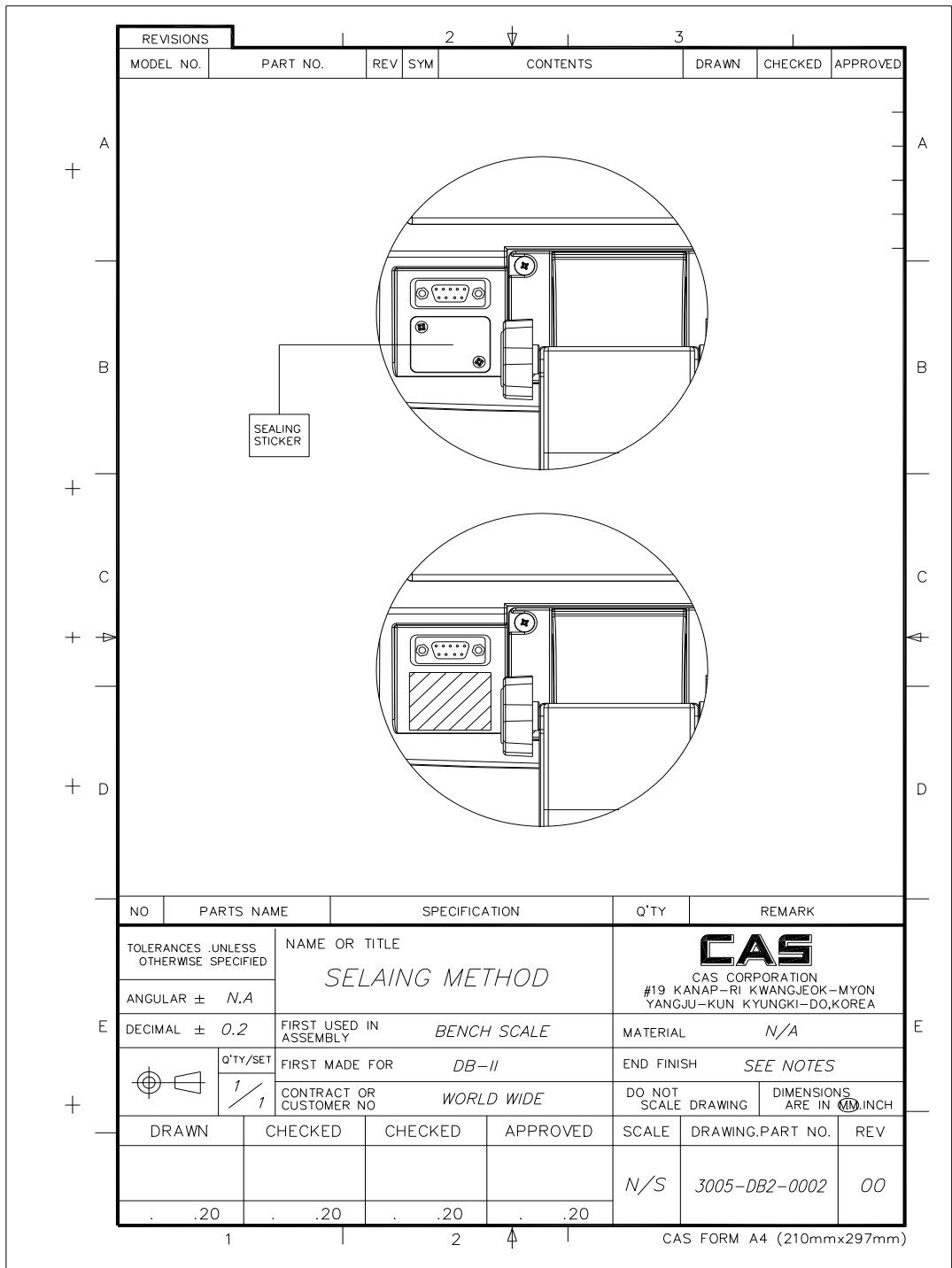


Figure 4 Sealing methods for DBI Indicator



Figure 5 **DDI with twin display**