



United Kingdom of Great Britain and Northern Ireland

Certificate of EC type-approval of a measuring instrument

Number: UK 2669 Revision 1

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

In accordance with the requirements of the Non-automatic Weighing Regulations 2000 (SI 2000/3236) which implement, in the United Kingdom, Council Directive 90/384/EEC, this certificate of EC type-approval has been issued to:

Intercomp
14465 23rd Avenue North
Minneapolis
MN 55447
USA

in respect of a non-automatic weighing instrument, designated the AC30 series.

Class	III		
Model	AC30 10K	AC30 30K	AC30 60K
Maximum capacity	≤ 18144 kg		≤ 45360 kg
Minimum capacity	≥ 320 kg		≥ 2200 kg
Scale interval (e)	5 kg ≤ e ≤ 20 kg		10 kg ≤ e ≤ 50 kg
Number of scale divisions (n)	500 ≤ n ≤ 3000		

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: M A Bokota
for Chief Executive
National Weights & Measures Laboratory
Department of Trade and Industry
Stanton Avenue
Teddington
Middlesex TW11 0JZ
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Date: 7 November 2006
Valid Until: 3 February 2013
Reference No: T1128/0008

Descriptive Annex

1 INTRODUCTION

The AC30 is a battery operated non automatic weighing instrument with a digital indicating device (Figure 1). The instrument may be fitted with Ni-Cad batteries in which case the instrument may be supplied with a transformer/battery charger module. The AC30 is designed to weigh the load applied, by the wheels of aircraft.

2 DESCRIPTION

2.1 Devices:

- Semi-automatic zero setting device
- Zero-tracking device
- Zero / Tare weighing device
- Display test device
- Low battery indicating device
- Altitude/Latitude setting
- Auto shut-off
- Angle sensor

2.2 Construction

The platform of the weighing instrument is supported by strain gauge double cantilever loadcells mounted within the aluminium framework. The indicator is housed within the framework of the platform. A calibration enable button is situated on the front of the framework and is accessed by removing a securing screw. The setup button is situated inside the battery compartment. Access to the battery compartment is gained via the panel on the front of the enclosure (Figure 2).

The indicator weight display consists of a 5 digit, 7 segment LCD. A light sensor, mounted next to the display, automatically turns on the backlight in low light conditions.

The unit has 4 function keys, mounted around the display, which control the following functions:

- On
- Off
- Zero
- Lb/Kg

2.3 Functions

The primary functions are detailed below:

2.3.1 The Lb/Kg key function is disabled so that the instrument will only operate in metric units.

2.3.2 Power ON/Power OFF

On power up, the weight indicator performs a self test, turning on all the display segments. After the display test the altitude/latitude settings are displayed followed by the firmware

version number, before the current weight value using the previously established zero reference is displayed.

2.3.3 Display range

The indicator will display a weight value up to Max +9e, no values will be displayed to the operator for any weights above this.

2.3.4 Zero-setting

Pressing the ZERO key causes a new zero reference to be established, zero setting can only be successfully completed when the weight display is stable.

Zero-setting range is $\leq 4\%$ of Max.

2.3.5 Zero-tracking

Zero tracking operates when the indication is at zero, when the weight display is stable and at a rate of $\leq 0.5d/s$ within 4% Max.

2.3.6 Altitude/latitude setting

The Altitude/Latitude setting mode is enable by pressing the Zero & Lb/Kg buttons simultaneously. The Altitude/Latitude values correct for the variations in local gravity. The settings can be changed in 5° steps for Latitude, and in 1000 ft (308.4 m) steps for Altitude settings.

2.3.7 Angle sensor

The instrument is fitted with a dual axis angle sensor PCB. The instrument automatically corrects the weighing result for slopes of up to 1.2°.

2.4 Electronics

The AC30 10K indicator uses three printed circuit boards; an A/D and display/keyboard PCB, a 4 channel summing PCB and a Dual axis angle sensor PCB. The A/D and display/keyboard PCB contains all of the main instrument circuitry. All calibration and metrological set-up data is contained in non-volatile memory.

The power supply is provided from six internal “D” cell (4 Amp-hour) re-chargeable batteries, the minimum battery operating voltage is 6.5 VDC.

The batteries may be re-charged using a mains powered re-charger module, The indicator may be powered by the module during re-charging of the batteries, a lamp situated next to the charging point illuminates when the charger is connected.

2.5 Load cells

There are 4 load cells are mounted within the aluminium framework, which support the load receptor. The load cells are Scentroidronics model 65023C, with a capacity of 4536 kg.

3 TECHNICAL CHARACTERISTICS

3.1 Technical data

Power supply	6 internal "D" cell (4 Amp-hour) batteries: 1.5 VDC alkaline, or 1.2 VDC re-chargeable Ni-Cad.
Maximum number of scale intervals	3000
Operating temperature range	0°C to +40°C

4 INTERFACES

4.1 The front of the instrument housing has the following protected interfaces:

- 12/20 VDC power input
- I/O connection

4.2 The load cells are connected onto a summing board, which is then connected to the main A/D board.

4.3 Peripheral devices

Any simple recipient peripheral device may be used if:

- it bears the CE marking of conformity to the EMC Directive 89/336/EEC;
- it is not capable of transmitting any data or instructions into the instrument other than to release a printout or to check for correct data transmission;
- it prints or indicates weighing results and other data as received from the instrument without any modification or further processing; and
- complies with the applicable requirements of EN45501, i.e. 4.2, 4.4, 4.5, 4.6 and 4.7,

5 APPROVAL CONDITIONS

This certificate is issued subject to the following conditions:

5.1 Legends

5.1.1 The instrument shall bear the following legends near the display:

Max
Min
e =

5.1.2 The instrument shall also bear the following legends:

Class III
CE marking
Green M
Verification mark

Manufacturer's mark or name
 EC type approval certificate number
 Serial number
 Special temperature limits (0° to +40°C)

The CE and verification mark shall be affixed to the instrument and distinctly grouped together. It shall be impossible to remove the CE marking without damaging it. The data plate shall be impossible to remove without it being destroyed.

The markings and inscriptions shall fulfil the requirements of Paragraph 1 of Annex IV of the Directive 90/384/EEC.

5.2 This instrument is approved for the weighing of aircraft only. It is not approved for the determination of mass for other commercial transactions.

6 LOCATION OF SEALS, VERIFICATION MARKS AND CE MARKING

6.1 Access to the calibration button is prevented by a screwed plug which is secured by an official mark of a verification officer.

6.2 Access to the calibration button connection on the A/D PCB, and to the load cell cable connections on the summing PCB, is prevented by the use of a wire and lead seal through the drilled heads of the retaining screws of the facia securing plate. Certain variants have a flush mounted indicator to allow the fitting of a protective cover plate. In these cases the unit may be sealed with an adhesive label installed as shown in Figure 6.

Components that may not be dismantled or adjusted by the user will be secured by a wire and lead seal or a 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.

6.3 The data plate will be mounted on the indicator in such a manner that it is easily accessible and clearly visible in its regular operating position.

6.4 The CE and verification mark shall be affixed to the instrument and distinctly grouped together. It shall be impossible to remove the CE mark without damaging it. It shall also be impossible to remove the data plate without it being destroyed.

The markings and inscriptions shall fulfil the requirements of Paragraph 1 of Annex IV of the Directive 90/384/EEC.

7 ALTERNATIVES

7.1 Having alternative model designations and configurations as described below:

Model	AC30 10K	AC30 30K	AC30 60K
Maximum capacity	≤ 18144 kg		≤ 45360 kg
Minimum capacity	≥ 320 kg		≥ 2200 kg
Scale interval (e)	5 kg ≤ e ≤ 20 kg		10 kg ≤ e ≤ 50 kg
Number of scale divisions (n)	500 ≤ n ≤ 3000		

Load cells		
Manufacturer:	Sensortronics Inc.	Intercomp
Model:	65023C	603053-AC
Capacity:	10K / 4536 kg	25K / 11340 kg
Number off:	4	

7.2 Having the AC30 with a universal mains power supply and having an RF transceiver.

7.2.1 Technical data

Power supply	85-265 VAC, 47-440 Hz
Radio frequency	2.4 GHz, FHSS, 50mW output power

7.3 Having a PC based remote indicator using “Aircraft Weighing Software”

7.3.1 The Aircraft Weighing Software produced by Intercomp is designated “ACWeigh-Airbus” and may be installed on any CE marked PC. Communication between the PC and the scale is through a wireless network. The wireless hardware used consists of radio modules embedded in the scales, as well as a host radio connected to the PC through the USB port. The model of the radio used is Aerocomm AC4424.

The software allows the user to weigh several types of aircraft using a separate platform scale under each wheel. The software displays the indicated weight from each scale in its current position relative to the aircraft landing gear configuration. A typical representation of the display is shown in Figure 4.

Note: This approval only covers the primary indication and not the printing and storage of data.

7.3.2 The software is distributed as a fully compiled executable (ACWeigh-AirbusDelivery.exe) with a version number, and cannot be changed with a standard text editor without causing damage to the executable. The software is written in Microsoft Visual Basic 6.0. The software is designed to run on any PC running Windows 2000 or Windows XP operating systems.

The version number is 1.1.X where X may be any number. A checksum routine is run each time the program runs and when the About screen is opened. The splash screen and About screen (Figure 5) both display this checksum value and version number when they are opened. The checksum number is 171245.

8 ILLUSTRATIONS

- Figure 1 AC30
- Figure 2 AC30 battery compartment showing the setup button
- Figure 3 AC30 with mains power supply and RF transceiver
- Figure 4 Typical remote indicator display
- Figure 5 Remote indicator software About screen showing the version number and checksum number
- Figure 6 Alternative sealing arrangement

ISSUE NO.	DATE	DESCRIPTION
UK2669	4 February 2003	Type approval first issued
UK2669 Revision 1	7 November 2006	Alternative model designations added to front page. Reference to loading area in section 1 removed. Alternative sealing arrangement added to section 6.2 Creation of section 7.2 and 7.3.



Figure 1 AC30 - Plan view



Figure 2 AC30 battery compartment, showing the setup button



Figure 3 AC30 with mains power supply and RF transceiver

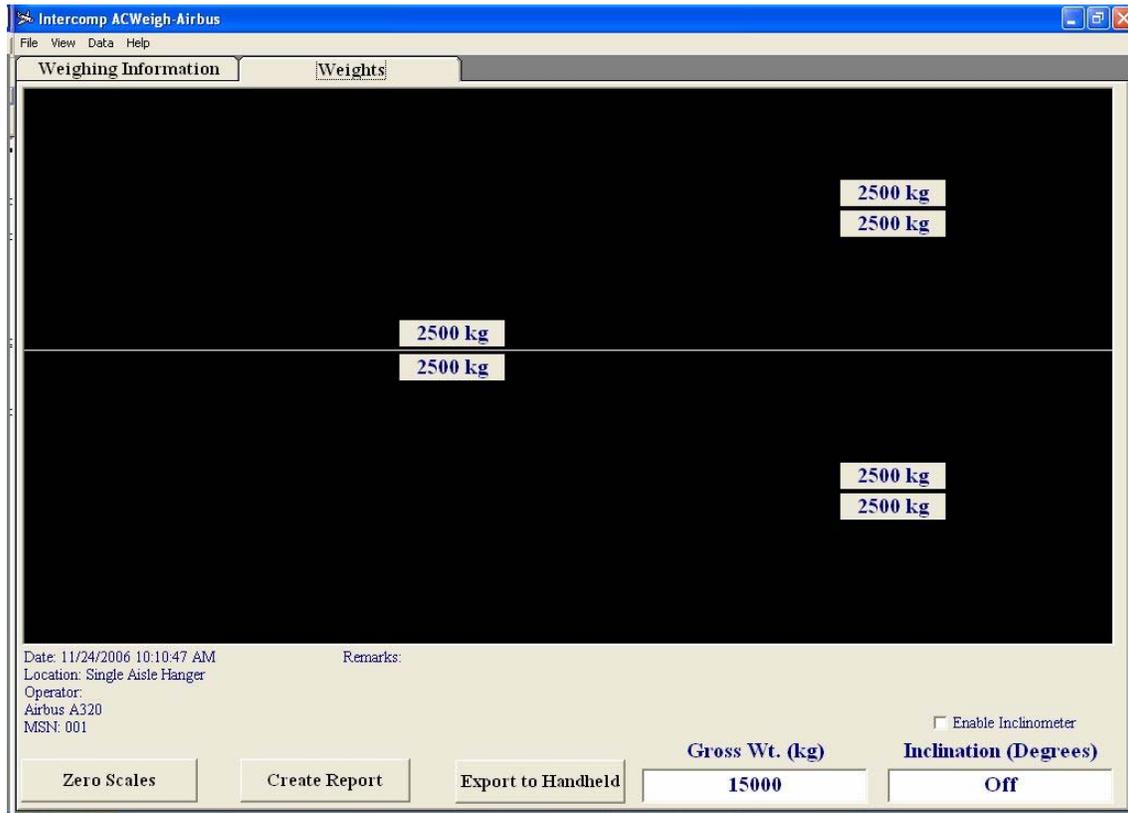


Figure 4 Typical remote indicator display



Figure 5 Remote indicator software About screen showing the version number and checksum number



Figure 6 **Alternative sealing arrangement**