

APS

ELECTRONIC WEIGHING INDICATOR

OPERATION MANUAL

PLEASE READ THIS MANUAL VERY CAREFULLY BEFORE
ATTEMPT TO OPERATE THIS INDICATOR

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JUNE 2003 REV 2

Specifications subject to change without prior notice

1. INSTALLATION

Because of metrological legislation, installation/some metrological parameter settings are limited to be done by authorized personnel only. Do not attempt to change any of the built-in parameters. Contact your dealer for installation and technical assistance.

CAUTION:

This unit is legal for trade only when it is sealed (and/or stamped) and bearing a serial number. Do not attempt to break the seal (or stamp) affixed to this indicator or remove the serial number. Contact your dealer for more information and after sales service.

For most accurate weighing result, do not use the indicator in where or when the environment condition falls beyond as those listed on **SPECIFICATIONS**.

Do not attempt to open this unit or conduct any trouble shootings other than those listed on **TROUBLE SHOOTING**.

2. SPECIFICATIONS

| | |
|---|---|
| Model No. | APS INDICATOR |
| Max. | USER DEFINED |
| n_{max} | 3000 (NOTE 1) |
| Tare Range | 1/3 Max. \pm e (NOTE 2) |
| Power-on Zero Range | \pm 0.10% Max. |
| Zero Range | \pm 0.2% Max. |
| Min. Load | 20e (NOTE 3) |
| Max. measuring range | 9.0mV |
| Min. signal voltage per verification scale interval | 1.5 V |
| Power voltage requirements | 6.0 VDC (BY EXTERNAL POWER ADAPTOR OR RECHARGEABLE BATTERY) |
| Minimum battery voltage | 5.5 VDC |
| Load cell Excitation voltage | 5 VDC |
| Minimal load cell impedance | 85 |
| Maximal load cell impedance | 1000 |
| Load cell connection | 4 wires |
| Operation Environment | 0°~40°C Non-condensed. R.H. \leq 85% |

Specifications subject to change without notice.

NOTE 1:

The recommend division when application is legal for trade (OIML mode) is 3000 and 6000 to 7500 when application is not legal for trade (normal mode). The maximum display division under OIML mode when Extended Display function engaged is 30000, the same as under non-OIML mode.

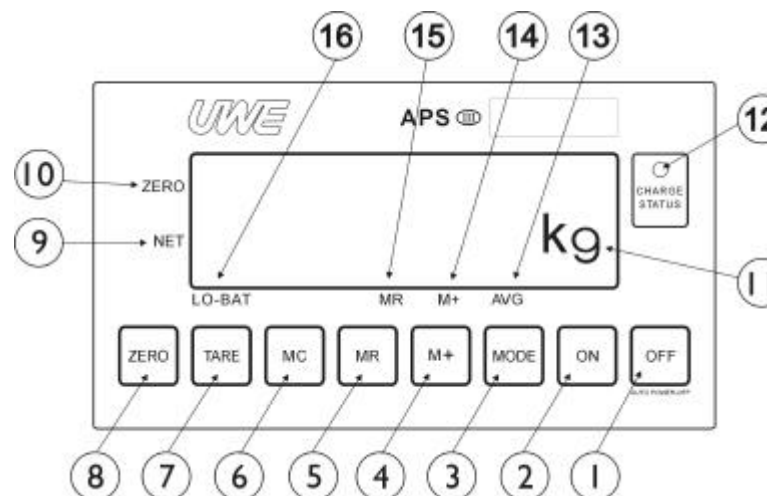
NOTE 2:

When under OIML mode, for Multi range or interval, change e to e_1 . When under non-OIML mode, the default setting is full tare range.

NOTE 3:

For Multi range or interval, change e to e_1 .

3. KEYBOARD LAYOUT AND DESCRIPTION



1. OFF KEY

Press this key to turn indicator off.

2. ON KEY

Press this key to turn indicator on.

3. MODE KEY

Press this key to shift among different weight units and/or turn backlight on/off.

4. M+ KEY

Press this key to accumulate current weight to memory.

5. MR KEY

Press this key to recall the total accumulated weight from memory.

6. MC KEY

Press this key to clear weight from memory.

7. TARE KEY

Press this key to tare off the weight of a container.

8. ZERO KEY

Press this key to set weight displayed to zero.

9. NET INDICATOR

This indicator appears to indicate the tare function is in operation and weight shown is net weight.

10. ZERO INDICATOR

This indicator appears to indicate zero weight status.

11. WEIGHT UNIT INDICATOR

█\$kg█ indicates the metric unit is being employed.

█\$lb█ indicates the avoirdupois unit is being employed.

12. IN-CHARGE INDICATOR

Red color: Recharging on process

Green color: Charging completed

13. AVERAGE INDICATOR

This indicator flashes to indicate the digital motion filtering function is being employed.

14. M+ INDICATOR

This indicator appears to indicate memory contains of stored data.

15. MR INDICATOR

This indicator appears to indicate the value shown is the total accumulated weight stored.

16. LO-BAT INDICATOR

This indicator appears when input voltage is below the lowest input limit. Check the power supplied to the indicator.

4. INITIAL SETUP

4.1 PLACING THE SCALE

In order to obtain an accurate weighing result, the complete weighing instrument (hereinafter referred as the scale) must be placed on a strong and level surface.

4.2 INTERNAL SETTING

4.2.1 Display Segment Check

User can enter this function to check to see if the display and backlight (if purchased) are functioning properly.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON**
- c. Scale displays **F.1**
- d. Press **TARE** once to **F.2**
- e. Press **MODE** and all segments will light up to allow user to check the condition of display
- f. Press any key to exit and **TARE** for next function setup or **ZERO** to restart the scale

4.2.2 Select Auto Power Off Setting

The scale is equipped with **Auto Power Off Function**. The scale will power off automatically if it is not used for 4 minutes. Follow the below steps to enable/disable **Auto Power Off Function**.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON**
- c. Scale displays **F.1**
- d. Press **TARE** three times to **F.4**
- e. Press **MODE** to shift between **0._OFF** or **4._OFF**
 - To enable **Auto Power Off Function**, press **TARE** when **4._OFF** appears
 - To disable **Auto Power Off Function**, press **TARE** when **0._OFF** appears
- f. Press **ZERO** to restart the scale or **TARE** for next function setup

4.2.3 Select RS-232 Baud Rate & Protocol

This scale is equipped with 3 RS232C output baud rate and 2 transmission protocol settings for user to select.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON**
- c. Scale displays **F.1**
- d. Press **TARE** four times to **F.5**
- e. Press **MODE** to enter
- f. Press **M+** to select baud rate of 4800, 9600 or 19200
- g. Press **MODE** again to enter transmission protocol setup
- h. Press **M+** to select protocol of P=N81 or P=E71

- i. When the preferred transmission protocol shows on display, press **TARE** to confirm and proceed to the next selection or **ZERO** to restart the scale

NOTE:

The default data output format of the scale is

Baud Rate = 9600

Data Bit = 8

Stop Bit = 1

Parity = None

4.2.4 Select Digital Motion Filtering Function

This indicator equipped with animal weighing function that enables user to select when the indicator is using for weighing livestock.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON**
- c. Indicator displays **F.1**
- d. Press **TARE** five times to **F.6**
- e. Press **MODE** to shift between Filt.0 or Filt.1
 - To enable **Animal Weighing Function**, press **TARE** when display shows **Filt.1**
 - To disable **Animal Weighing Function**, press **TARE**

when display shows **Filt.0**

- f. After **TARE** is pressed, indicator display **F.7**
- g. Press **MODE** to enter next set up or **ZERO** to restart the scale

4.2.5 Select Serial Output Mode

There are two selectable transmission formats to choose according to end user preference. For which FORMAT 1 is continuous transmission when weight is stabilized and FORMAT 2 sends data in table form when press **M+**.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON**
- c. Scale displays **F.1**
- d. Press **TARE** six times to **F.7**
- e. Press **MODE** to shift between Ser.0 or Ser.1
 - For of continuous sending, press **TARE** when display shows **Ser. 1**
 - For manual sending, press **TARE** when display shows **Ser. 2**
- f. After **TARE** is pressed, indicator display **F.8**
- g. Press **MODE** to enter next set up or **ZERO** to restart the scale

4.2.6 Select Auto Tare Function

This scale is equipped with auto tare function which tares off the initial weight automatically when this function is engaged. The tare weight is automatically cleared when everything is removed from platter.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON**
- c. Scale displays **F.1**
- d. Press **TARE** eight times
- e. Scale displays **F.9**
- f. Press **MODE** to select between Tr_on or TroFF
 - To enable **Auto Tare Function**, press **TARE** when **Tr_on** appears
 - To disable **Auto Tare Function**, press **TARE** when **TroFF** appears
- g. After **TARE** is pressed, scale display **F.1**
- h. Press **MODE** to enter next set up or **ZERO** to restart the scale

5. INSTRUCTION FOR USE

5.1 BEFORE WEIGHING

Make sure that:

- a. Connect the load cell signal and power to the indicator properly.
- b. Place the scale on a level and strong surface.
- c. The indicator is turned on.
- d. The **ZERO INDICATOR** is on. If not, press **ZERO** to set display to zero.

5.2 WEIGHING

- a. Always place an object onto the scale gently. Excessive force applied to platter may cause damages to weight sensor.
- b. The weight of the object is displayed on the indicator automatically.
- c. It is a good practice to remove all loads from scale after weighing. It would prolong the lifetime of weight sensor.

5.3 SELECT WEIGHT UNIT

Press **MODE** to shift between metric or avoirdupois weight units. The weight unit used before power off would be employed when the scale is turned on again.

NOTE:

To comply with the law of certain countries and certain approval requirements, the avoirdupois weight units may be disabled. Contact your dealer for more information.

5.4 TURN BACKLIGHT (OPTIONAL) ON/OFF

Follow the below steps to turn on and off backlight (if purchased).

- a. Scale is on
- b. Press and hold **ZERO** until backlight is activated; or press **MODE** to shift between metric and avoirdupois weight to turn on and off backlight

Even though the backlight function is employed, backlight will be automatically turned off when a stable weight remained for 25 seconds or a zero weight is detected and remains stable for 10 seconds

Backlight will be automatically turned on again when a new weight is detected or when any key is pressed.

5.5 SET DISPLAYED VALUE TO ZERO WHEN UNLOADED

By pressing **ZERO**, weight displayed will be set to zero and **ZERO INDICATOR** appears.

Refer to **SPECIFICATIONS** for maximum zero range.

NOTE:

-When scale is set at OIML and application is legal for trade. User only needs to press **ZERO** once when setting the value to zero. The re-zero function will take place when reading is stabled

-When scale is set at Normal and application is not legal for trade. User can set the value to zero at anytime when pressing **ZERO**

5.6 TARE OFF THE WEIGHT OF A CONTAINER

When a container is used, follow the below steps to manually tare off the weight of container and get the net weight.

- a. Remove all loads away from platter
- b. Make sure that the **ZERO INDICATOR** is on.
- c. Place the container on the platter.
- d. Press **TARE**.

After **TARE** is pressed, the **NET INDICATOR** would appear.

Refer to **5.2** for weighing procedures. Weight displayed under is the net weight of the subject matter. Refer to **SPECIFICATIONS** for maximum tare range.

NOTE:

- When scale is set at OIML and application is legal for trade. User only needs to press **TARE** once when tare off a weight. The tare function will take place when reading is stabled
- When scale is set at Normal and application is not legal for trade. User can tare off the weight anytime when pressing **TARE**

5.7 CLEAR THE TARE FUNCTION

- a. Remove all loads from platter
- b. The tare effect will be cancelled:
 - Automatically if automatic tare function is employed, or
 - By pressing **TARE**
- c. After **TARE** is pressed, the **NET INDICATOR** would disappear

5.8 MEMORY FUNCTION

5.8.1 Accumulate a Transaction To Memory

- a. Refer to 5.2 for weighing producers
- b. Press **M+** to save and accumulate data of current transaction to memory
- c. Indicator displays ;**P. X**;" and **M+ INDICATOR** appears

to indicate that memory contains of stored data

NOTE: ;**P. X**;" means the total number of transactions accumulated to memory.

- d. Indicator returns to normal display status after 2 seconds
- e. Repeat **a** to **c** for subsequent transactions

NOTE:

- When scale is set at OIML and application is legal for trade. User only needs to press **M+** once when trying to store a value to memory. The weight accumulation function will take place when reading is stabled
- When scale is set at Normal and application is not legal for trade. User can save the shown value to memory at anytime when pressing **M+**

5.8.2 Memory Recall

Press **MR** to recall total accumulated weight from memory. After **MR** is pressed, indicator displays **P. X** (**X** Means the number of transactions accumulated) follow by a value. The value is the total accumulated weight stored in memory.

When the total accumulated weight is being displayed, **MR INDICATOR** appears to indicator that the value being

displayed is the total accumulated weight. Indicator will return to normal display status after 3 seconds.

5.8.3 Memory Clear

All transactions stored in memory by pressing **MC**.

CAUTION: All data stored will be erased when the indicator is turned/powerd off.

5.9 EXTENDED DISPLAY

This indicator is equipped with extended display for reference when it is operating under OIML mode. Press and hold **MODE** for 2 seconds and display will show the extended digit for 5 seconds before return to normal.

5.10 RECHARGE SCALE

The indicator is equipped with a built-in rechargeable battery. When the **LO-BAT INDICATOR** appears, recharge the scale immediately. Failure to do so may cause unrecoverable damage to the rechargeable battery. Charging is completed when the color of the **IN-CHARGE INDICATOR** turns green.

6. TROUBLE SHOOTING

| | |
|-----------------|---|
| Syndrome | Indicator cannot be turned on |
| Check: | Is the indicator powered properly? |
| Action: | Check power supply to indicator. |
| Syndrome | Indicator turned off automatically |
| Check | Is Auto Power Off Function employed? |
| Action | Refer to 4.2.2 to disable Auto Power Off Function . |
| Check | Is the LO-BAT INDICATOR on? |
| Action | Check power supply. |
| Syndrome | Rated capacity cannot be reached |
| Check | Is the NET INDICATOR on? |
| Action: | Turn the indicator off. Remove all loads and turn on again. |
| Check | Is there anything obstructing the scale? |
| Action | Remove all obstacles. |
| Syndrome | Blank display with only "kg" or "lb" |
| Check | Is the load applied to scale excess the rated capacity? |
| Action | Remove all loads and try again. |

Syndrome **Indicator displays -----**

Check Is the load cell signal cables connected to the indicator properly?

Action Recheck signal cable connections.

Check Is load cell working properly?

Action Check load cell input/output.

Syndrome **Display shows 00000 after counting down**

Check Is the load applied to platter excess the rated capacity of scale?

Action Remove all loads from platter and try again.

Syndrome **Weighing result is not accurate**

Check Is the scale placed in a level condition?

Action Obtain a level condition.

Check Is the scale affected by airflow, vibration or RFI?

Action: Place the scale away from all disturbances.

Check Is the indicator calibrated correctly?

Action Contact your dealer.

7. DAILY CARE AND MAINTENANCE

- 7.1 Clean the indicator with a soft and damp cloth. If necessary, apply a mild detergent.
- 7.2 Do not use any harsh, abrasive material, acetone, volatile solvent, thinner or alcohol for cleaning.
- 7.3 Verify the accuracy of indicator periodically. Re-calibrate the indicator if necessary.
- NOTE:** In some countries, calibration requires authorized/qualified agent. Contact your dealer for more information.
- 7.4 Store indicator scale in a dry and clean place.



KONFORMITÄTSERKLARUNG

Declaration of conformity

Declaration de conformite

Die ichtselbsttatigen Waage



The non-automatic weighing instrument

L'instrument de pesage a fonctionnement non automatique

| | |
|--|---|
| Hersteller: <i>Manufacturer:</i> Fabricant | Universal Weight Enterprise Co., Ltd. |
| Typ/Modell: <i>Type/Model:</i> Type/modele: | APS |
| Nr. der EG-Bauartzulassung (gegebenen falls): <i>No of the EC type-approval certificate (where applicable):</i> Nodu certificat d'approbation CE de type (le cas echeant): | T6126 |

entspricht dem in der Bescheinigung uber die Bauartzulassung beschriebenen Baumuster, sowie den Anforderungen der EG-Richtlinie 90/384/EWG in der jeweils geltenden Fassung und den Anforderungen folgender EG-Richtlinien:

corresponds to the production model described in the EC type-approval certificate and to the requirements of the Council Directive 90/384/EEC as amended and to the requirements of the following EC directives:

correspond au modele decrit dans le certificat d'approbation CE de type, aux exigences de la directive 90/384/CEE modifiee et aux exigences des directives CE suivantes:

*Diese Erklarung gilt nur in Verbindung mit einer Konformitatsbescheinigung einer benannten Stelle.

**This Declaration of conformity is only valid with a certificate of conformity issued by a notified body*

*Cette declaration est valide seulement avec une aattestation de conformite d'un organisme notlfle.

Anmerkung 1: Der mit * gekennzeichnete Satz entfällt, wenn die nichtselbsttatige Waage vom Hersteller geeicht wurde.

*Note 1: The sentence marked with * does not apply, if the non-automatic weighing instrument was verified by the manufacturer.*

Note 1: La phrase marquee avec * ne s'applique pas au cas ou l'instrument de pesage a fonctionnement non automatique a eie vaifie par ie fabricant.

Unterschrift

Signature

Signature

Datum

Date

Date

Apr. 23. 2003