

VFM/AFM

OPERATION MANUAL

PLEASE READ THIS MANUAL VERY CAREFULLY BEFORE OPERATING

**VFM/AFM
ELECTRONIC WEIGHING INDICATOR**

OPERATION MANUAL

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

JULY 2012

Specifications subject to change without prior notice

XOVFM030000

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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.	VFM/AFM (6-WIRE TYPE) ABM/ABM (4-WIRE TYPE) INDICATOR
Max.	USER DEFINED
n_{max}	10000 (NOTE 1)
Tare Range	1/3 Max. - e (NOTE 2)
Power-on Zero Range	SELECTABLE (NOTE 3)
Zero Range	$\pm 2\%$ Max.
Min. Load	20e (NOTE 4)
Max. measuring range	$\pm 20mV$
Min. signal voltage per verification scale interval	0.45 μV
Power voltage requirements	9.0 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 Ω
Maximal load cell impedance	1000 Ω
Load cell connection	4 or 6 wires
Operation Environment	-10 $^{\circ}$ ~40 $^{\circ}C$ 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 10,000 and 120,000 when application is not legal for trade (normal 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:

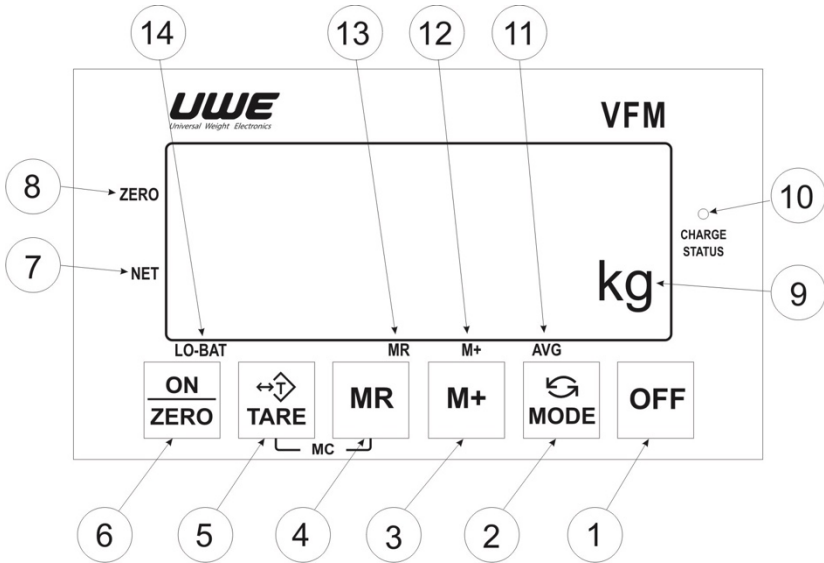
The power-on zero (initial zero) range can be selected with $\pm 2\%$, $\pm 5\%$, $\pm 10\%$, $\pm 15\%$, $\pm 20\%$, $\pm 30\%$, $\pm 40\%$ at **F3** function followed **CAP1.?** setting.

When under OIML mode, the default setting is $\pm 10\%$.

NOTE 4:

For Multi range or interval, change e to e_1 .

3. KEYBOARD LAYOUT AND DESCRIPTION



(MODEL SHOWN: VFM/AFM)

1. OFF KEY

Press this key to turn indicator off.

2. MODE KEY

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

3. M+ KEY

Press this key to accumulate current weight to memory.

4. MR KEY

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

5. TARE KEY

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

6. ON/ZERO KEY

Press this key to turn indicator on and/or set weight displayed to zero.

7. NET INDICATOR

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

8. ZERO INDICATOR

This indicator appears to indicate zero weight status.

9. WEIGHT UNIT INDICATOR

"kg" indicates the metric unit is being employed.

"lb" indicates the avoirdupois unit is being employed.

10. IN-CHARGE INDICATOR

Red color: Recharging on process

Green color: Charging completed

11. AVERAGE INDICATOR

This indicator flashes to indicate the digital motion filtering function is being employed when choosing **Filt.7** at **F6** internal function.

12. M+ INDICATOR

This indicator appears to indicate memory contains of stored data.

13. MR INDICATOR

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

14. 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 and see if the display and backlight (if purchased) are functioning properly.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON/ZERO**
- c. Scale displays **F1**
- d. Press **TARE** once to **F2**
- e. Press **MODE** and all segments will light up to allow user to check the condition of display
- f. Press any key to exit (scale displays **P=00** that can be ignored.) and press **TARE** for next function setup or **ON/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/ZERO**
- c. Scale displays **F1**
- d. Press **TARE** three times to **F4**
- 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 **TARE** to exit and press **ON/ZERO** to restart the scale

4.2.3 Select RS-232 Baud Rate & Protocol

This scale is equipped with 4 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/ZERO**
- c. Scale displays **F1**
- d. Press **TARE** four times to **F5**
- e. Press **MODE** to enter
- f. Press **M+** to select baud rate of 4800, 9600, 19200 or 38400

- 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 **ON/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/ZERO**
 - c. Indicator displays **F1**
 - d. Press **TARE** five times to **F6**
 - e. Press **MODE** to select filter strength of 0, 1, 2, 3, 4, 5, 6, 7
- To enable **Animal Weighing Function**, press **TARE**

when display shows **Filt.1~Filt.7.**

Select **Filt.7** will get strongest filter effect.

- To disable **Animal Weighing Function**, press **TARE** when display shows **Filt.0**

f. After **TARE** is pressed, indicator display **F7**

g. Press **MODE** to enter next set up or **ON/ZERO** to restart the scale

4.2.5 Select Serial Output Mode

There are four selectable transmission modes to choose according to end user preference. For which "**Conti**" is continuous transmission when weight is stabilized, "**Auto**" sends data once when weight is stabilized and "**P_Out**" sends data in table form when press **M+**. "**OFF**" disable Serial transmission

a. Scale is off

b. Press and hold **TARE**, then press **ON/ZERO**

c. Scale displays **F1**

d. Press **TARE** six times to **F7**

e. Press **MODE** to shift between **Conti**, **Auto**, **P_Out** or **OFF**

- For continuous sending, press **TARE** when display shows **Conti**

- For sending data once, press **TARE** when display

shows **Auto**

- For manual sending, press **TARE** when display shows **P_Out**
- Disable Serial output, press **TARE** when display shows **OFF**

f. After **TARE** is pressed, indicator display **F8**

g. Press **MODE** to enter next set up or **ON/ZERO** to restart the scale

4.2.6. Select Printer Output Mode

There are three selectable printout formats to choose according to end user preference. **Prnt.1** will only print the stabilized weight detects when press **M+** and **Prnt.2** will print in table form when press **M+**.

Choose **utP** will employ UTP thermal printer protocol.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON/ZERO**
- c. Scale displays **F1**
- d. Press **TARE** seven times to **F8**
- e. Press **MODE** to shift between **Prnt.1**, **Prnt.2** or **utP**
 - For simple printout result, press **TARE** when display shows **Prnt.1**
 - For detail printout result, press **TARE** when display shows **Prnt.2**

- For connecting to UTP printer, press **TARE** when display shows **utP** (When choosing utP, the setting of **F7** will change to **OFF**)
- f. After printout format is selected, will enter sub-menu for auto-printing or not.
Press **MODE** to shift between Auto or Nauto (non-auto)
- For autoprintout when weight is stabilized, press **TARE** when display shows **Auto**
 - For manual printout when pressing **M+**, press **TARE** when display shows **Nauto**
 - When choosing **utP**, form number from 0 to 9, Prnt.1 or Prnt.2 can be selected according to end user preference prior to auto printout setting.
- g. After **TARE** is pressed, scale display **F9**
- h. Press **MODE** to enter next set up or **ON/ZERO** to restart the scale

4.2.7 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/ZERO**

- c. Scale displays **F1**
- d. Press **TARE** eight times
- e. Scale displays **F9**
- 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 **F10**
- h. Press **MODE** to enter next set up or **ON/ZERO** to restart the scale

4.2.8 Select Original Calibrated Zero Function

This scale is equipped with original calibrated zero function that enables user to select if the original calibrated zero is required to utilize as the weighing base for initial power-on status.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON/ZERO**
- c. Scale displays **F1**
- d. Press **TARE** nine times
- e. Scale displays **F10**
- f. Press **MODE** to select between **AC_on** or **AC_oF**
 - To enable **Original Calibrated Zero Function**, press

TARE when **AC_on** appears

-To disable **Original Calibrated Zero Function**,
press **TARE** when **AC_oF** appears

- g. After **TARE** is pressed, scale display **F11**
- h. Press **MODE** to enter next set up or **ON/ZERO** to restart the scale

NOTE:

1. For **OIML** approval, this function would be prohibited.
2. Scale will perform **Initial Zero Range** setting after turn-on when choosing **AC_oF**.

4.2.9 Select Accumulation Function when Pressing M+

This scale is equipped with accumulation function enabled/disabled when pressing **M+**. When accumulation function is engaged, press **M+** will simultaneously print out RS-232/printer data and perform accumulation function.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON/ZERO**
- c. Scale displays **F1**
- d. Press **TARE** ten times
- e. Scale displays **F11**
- f. Press **MODE** to select between **Ad._on** or **Ad._oF**

-To enable **Accumulation Function when pressing M+**,
press **TARE** when **Ad._on** appears

-To disable **Accumulation Function when pressing M+**,
press **TARE** when **Ad._oF** appears

- g. After **TARE** is pressed, scale display **F13**
- h. Press **MODE** to enter next set up or **ON/ZERO** to restart the scale

4.2.10 Select Number of Printout Copy (This function is UTP printer related)

9 parameters (copy 1 to copy 9) are available. Select the required number of printout copy here.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON/ZERO**
- c. Scale displays **F1**
- d. Press **TARE** eleven times
- e. Scale displays **F13**
- f. Press **MODE** to select number of printout copy of **COPY1 ~ COPY9**
- g. When preferred number of printout copy shows on display, press **TARE** to confirm.
- h. After **TARE** is pressed, scale display **F14**
- i. Press **MODE** to enter next set up or **ON/ZERO** to restart the scale

4.2.11 Select Total Print when Performing Memory-clear Function

This scale is equipped with total print enabled/disabled when performing memory-clear function. When total print is disabled, press **MR & TARE** will only perform memory-clear function, it won't print out data of total.

- a. Scale is off
- b. Press and hold **TARE**, then press **ON/ZERO**
- c. Scale displays **F1**
- d. Press **TARE** twelve times
- e. Scale displays **F14**
- f. Press **MODE** to select between **tt_on** or **tt_of**
 - To enable **Total Print when Performing Memory-clear Function**, press **TARE** when **tt_on** appears
 - To disable **Total Print when Performing Memory-clear Function**, press **TARE** when **tt_of** appears
- g. After **TARE** is pressed, scale display **F15**
- h. Press **MODE** to enter next set up or **ON/ZERO** to restart the scale

4.2.12 Set and Send Date & Time Data to UTP

- a. Scale is off
 - b. Press and hold **TARE**, then press **ON/ZERO**
 - c. Scale displays **F1**
 - d. Press **TARE** thirteen times
 - e. Scale displays **F15**
 - f. Press **MODE** to enter data and time setting
- Make sure that the UTP printer is connected to scale and it is in online status.

Key Function

- **MR** = move cursor to the right
- **M+** = increase numeric value

Sequentially set **y=xx** for last 2 digits of year →

m=xx for month → **d=xx** for day

Once date is set, press **MODE** to set time.

H=xx for hour → **m=xx** for minute

Once time is set, press **MODE** to confirm.

*****F19 ~ F21 functions are reserved for verification**

Use.

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 scale is turned on
- d. The **ZERO INDICATOR** is on. If not, press **ON/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 **ON/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 **ON/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 **ON/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 **ON/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 **MR** and **TARE** at the same time.

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

5.9 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. PRINTER AND RS232C INTERFACE

The VFM/AFM series are capable to install printer interface, and RS232 interface upon purchase.

6.1 Connect the Scale with a Computer

Follow the below steps to connect the scale with a computer.

- a. Turn scale off
- b. Turn computer off
- c. Connect the RS232C output of scale to computer with an appropriate data cable(D-SUB 9)
- d. Turn scale on
- e. Turn computer on
- f. Load and run the BASICA program file (For DOS platform)

6.1.1 Default Output Settings

- BAUD RATE = 9600
- DATA BITS = 8
- PARITY = NONE
- STOP BITS = 1

6.1.2 When Using DOS System

- a. Create BASICA computer program file as below to enable the computer to receive data sent by scale.

```
10 OPEN "COM*:9600, N,8,1,CS,DS,CD" AS#1
```


6.2 Connect the Scale with a Printer(Parallel Port)

- a. Turn scale off
- b. Turn printer off
- c. Connect the printer output of scale to printer with an appropriate data cable(D-SUB 25)
- d. Turn scale on
- e. Turn printer on(in online status)

Below is the data output format for printer interface.

Data output format (Prnt.1 parameter in F8)

Ex.

```
165.2  g
165.2  g
330.4  kg
165.2  kg
0.3642 lb
1.0924 lb
```

Data output format (Prnt.2 parameter in F8)

Ex.

```
S/N-----WT-kg      ---Heading
1.      0.200      ---Individual weighing with S/No
2.      0.215
3.      0.320
4.-----0.215
4/      0.950      ---Total and number of weighings
```

7. 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 0000 after counting down**

Check Is the load applied to platter excess the acceptable power-on zero range?

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?

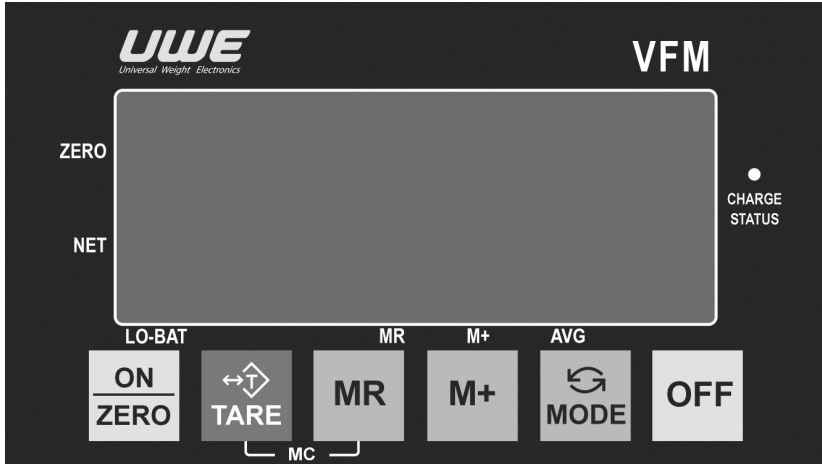
Action Contact your dealer.

8. DAILY CARE AND MAINTENANCE

- 8.1 Clean the indicator with a soft and damp cloth.
If necessary, apply a mild detergent.
- 8.2 Do not use any harsh, abrasive material, acetone, volatile solvent, thinner or alcohol for cleaning.
- 8.3 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.
- 8.4 Store indicator scale in a dry and clean place.

APPENDIX: APPEARANCE

MODEL SHOWN: VFM/AFM





KONFORMITÄTSERKLÄRUNG
Declaration of conformity
Déclaration de conformité

Die ichtselbsttätigen Waage



The non-automatic weighing instrument

L'instrument de pesage à fonctionnement non automatique

Hersteller: <i>Manufacturer:</i> Fabricant	Universal Weight Enterprise Co., Ltd.
Typ/Modell: <i>Type/Model:</i> Type/modèle:	VFM/AFM
Nr. der EG-Bauartzulassung (gegebenen falls): <i>No of the EC type-approval certificate (where applicable):</i> N° du certificat d'approbation CE de type (le cas échéant):	

entspricht dem in der Bescheinigung über die Bauartzulassung beschriebenen Baumuster, sowie den Anforderungen der EG-Richtlinie 2009/23/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 2009/23/EC as amended and to the requirements of the following EC directives:

correspond au modèle décrit dans le certificat d'approbation CE de type, aux exigences de la directive 2009/23/CEE modifiée et aux exigences des directives CE suivantes:

*Diese Erklärung gilt nur in Verbindung mit einer Konformitätsbescheinigung einer benannten Stelle.

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

*Cette déclaration est valide seulement avec une attestation de conformité d'un organisme notifié.

Anmerkung 1: Der mit * gekennzeichnete Satz entfällt, wenn die nichtselbsttätige 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 marquée avec * ne s'applique pas au cas où l'instrument de pesage à fonctionnement non automatique a été vérifié par le fabricant.

Unterschrift

Signature

Signature

Datum

Date

Date