



USE AND MAINTENANCE MANUAL
DIGITAL FLOW METER
MERCURY SERIES
WITH PRESET FUNCTION



2815 – 2817 – 2816

IMPORTANT! AFTER REMOVING THE PLASTIC TAB THAT ACTIVATES THE BATTERIES, PROCEED TO UPDATE DATE AND TIME OF THE METER

rev. 11/24

EN

We thank you for purchasing our product and invite you to read this booklet. Inside you will find all the information necessary for the correct use of the equipment.

It is important to read this booklet in its entirety by carefully following the warnings and place it in a suitable location to keep it unaltered. The contents of this manual may be changed without notice or further obligations, in order to include changes and improvements to units already sent. Reproduction or translation of any part of this booklet without permission from the manufacturer is prohibited.

It should be noted that, for reasons of visibility and clarity, some figures are represented with the equipment not in the correct configuration.

Digital gear meter Mercury

code 2815

Serial number: xxxxxxxx

Production Year 2022



Flow (l/min)	1 - 20
Working temperature (°C)	+5 / +50
Pressure (bar)	50

FLEXBIMEC INTERNATIONAL S.r.l.

Via Roma 26 - 42020 Albinea (RE) Italy

MADE IN ITALY

WARRANT

The duration of the warranty is, according to what is established by the general rules in force, 12 months from the date of purchase.

The guarantee entitles you exclusively to the replacement of defective parts. The guarantee is however excluded if the devices are improperly used or tampered with by persons authorized by us or in any case using non-compliant components or techniques. The original defective particular will be replaced if returned ex works.

DECLARATION OF CONFORMITY

FLEXBIMEC INTERNATIONAL S.r.l.
Via Roma 26 - 42020 Albinea (RE) Italy

The undersigned Franco Ruozzi as legal representative of Flexbimec International S.r.l.

HEREBY STATES

under its own responsibility that the products Digital gear meter series Mercury:

2815 – 2817 – 2816

- With serial number: see label EC on the product.
- Are in conformity with the provisions of Directive:

Directive for Electromagnetic Compatibility: 2014/30/UE

- The which the essential safety requirements have been applied and complied with the following norms:

UNI EN ISO 14121-1:2007

UNI EN ISO/TR 14121-2:2010

UNI EN ISO 12100-1:2009

UNI EN ISO 12100-2:2009

Machine safety – Risk assessment Part 1;

Machine safety – Risk assessment Part 2;

Machine safety Part 1;

Machine safety Part 2;

FLEXBIMEC INTERNATIONAL S.r.l.
42020 ALBINEA (RE)



Flexbimec International S.r.l.

Albinea (RE) Italy 01 maggio 2022

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1. INTRODUCTION

1.1 PURPOSE OF THE MANUAL

The Manufacturer has created this manual to provide the necessary information for those who are authorized to safely carry out the activities of use, handling, installation, maintenance, repair and disposal of the digital meter.

All the information needed are contained in this manual.

Users have the duty to use the digital meter for the purposes and uses envisaged and identified in this manual.

Failure to comply with this information can cause risks for health and safety of people.

The documentation must be kept by a responsible person, in a suitable place, so that it is always available for consultation in the best state of conservation.

In the event of loss or damage, the documentation for replacement must be requested directly from the manufacturer, quoting the code in this manual.

The manual reflects the state of the art at the time the digital meter was placed on the market.

However, the manufacturer reserves the right to make changes, additions or improvements to the manual itself, without this being a reason for considering this publication inadequate.



ATTENTION: this symbol indicates situations of serious danger which, if neglected, can seriously endanger people's health and safety.

1.2. GLOSSARY AND TERMINOLOGY

Some recurring terms are described in this manual in order to explain their meaning.

- Ordinary maintenance: operations necessary to maintain the functionality and efficiency of the digital meter. Normally these operations are programmed by the manufacturer, who defines the necessary skills and intervention methods.
- Extraordinary maintenance: operations necessary to maintain the functionality and efficiency of the digital meter. These operations are not programmed by the manufacturer and must be performed by the expert maintenance technician.
- Expert maintenance technician: chosen and authorized from among those who have the requisites, skills and information of mechanical and electrical nature to perform repairs and extraordinary maintenance on the digital meter.

1.3. HOW TO REQUEST ASSISTANCE

For any request for technical assistance, please contact the manufacturer's sales contact, indicating the product code.

1.4. MANUFACTURER'S RESPONSIBILITY

The manufacturer declines all responsibility in case of:

- use of the digital meter in contrast with national laws on safety and accident prevention;
- incorrect installation, failure or incorrect observance of the instructions provided in this manual;
- power supply defects;
- modifications or tampering;
- operations carried out by untrained personnel

The safety of the digital meter depends on the scrupulous observation of the prescriptions indicated in this use and maintenance manual and it is especially necessary to:

- always operate within the limits of use of the digital meter;
- always carry out an efficient routine maintenance;
- request periodic extraordinary maintenance and calibration interventions;
- carry out routine maintenance on the following components at least once every 100 hours of use:
 - gun filter
 - seal fittings
 - batteries
 - seals of the fittings in the overall system

2. TECHNICAL INFORMATION

2.1. DESCRIPTION OF THE INSTRUMENT

The digital gear meter MERCURY is based on the oval gear measuring system. The digital meters are equipped with an electronic component capable of detecting and reporting on a backlit liquid crystal display, by means of a probe, the quantities of fluid that pass through the instrument.

This measurement tool is particularly suitable for installations of lubrication equipment, as it allows to control fluid movements within the operating structure and it has a double functionality:

1. Preset function
2. Manual function

THE INSTRUMENT IS NOT CERTIFIED AND SO IT CANNOT BE USED FOR MEASUREMENTS THAT PROVIDE COMMERCIAL AND FISCAL TRANSACTIONS.

THE METER IS SUITABLE FOR MEASURING LUBRICANT OILS: DO NOT USE FOR OTHER LIQUIDS OTHER THAN OIL.

2.2. TECHNICAL DATA

Connections..... 1/2" BSP GAS

Min. flow..... 1 l/min

Max. flow.....20 l/min

Exercise temperature range..... min. +5°C – max. +50°C

Min. pressure.....1 bar

Max. pressure.....50 bar

Accuracy.....±0,5%

Feeding..... n°3 1,5 V alkaline batteries

The digital meter has three totalizers:

- Single operation (resettable)
- TRIP: daily/weekly partial totalizer (resettable)
- TOTAL: absolute totalizer (not resettable)

➤ **PRESET FUNCTION:** the meter allows to automatically dispense pre-established quantities of fluid.

➤ **FLOW:** it is possible to read the instant flow.

3. MAIN WORKING MENU

3.1 INITIAL PREMISES

- After removing the sticker that holds the batteries, proceed to update hour and date of the meter
- To switch on the meter from the stand-by phase it is necessary to quickly press the left **SELECT** key or by letting fluid pass through the meter.
- To activate the backlit display quickly press the right button **RESET** (this option is available in every menu) or let fluid pass through the meter.
- Quickly press the left **SELECT** button to navigate from a menu to the other.



ATTENTION:
there are two types of key presses:

– Short button press (quick touch)

– Long key press (hold the button)

3.2 SINGLE DISPENSING AND TRIP

In this menu it is possible to view the single delivery value and the sum of the previous deliveries (**TRIP**)

The partial total **TRIP** accumulates every single supply of fluid until it is reset.

For example, it can be reset every day or week in order to have a statistic of the periodic consumption.

single dispensing value

FROM 0.001 TO 99.999 → 3 DECIMALS
FROM 100.00 TO 999.99 → 2 DECIMALS
FROM 1000.0 TO 9999.9 → 1 DECIMAL



UNIT OF MEASUREMENT:
liters/gallons/pint/quarter

sum of previous deliveries
(**TRIP**)

FROM 0.001 TO 9999.999 → 3 DECIMALS

Hold the right **RESET** button to reset the single dispensing and store it.



In order to reset the **TRIP** value it is necessary to have previously reset the single dispensing.

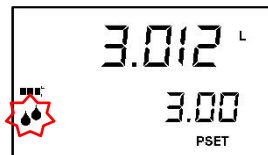
Once the single dispensing value has been reset, press and hold the right **RESET** button again to reset the **TRIP** value and store it.

It is possible to view the saved value in the list of deliveries in the **MEMORY** menu.



If the two-drop symbol is present in the **TRIP** menu, it means that the preselection mode is still active, this means that the meter will automatically stop dispensing at the set value.

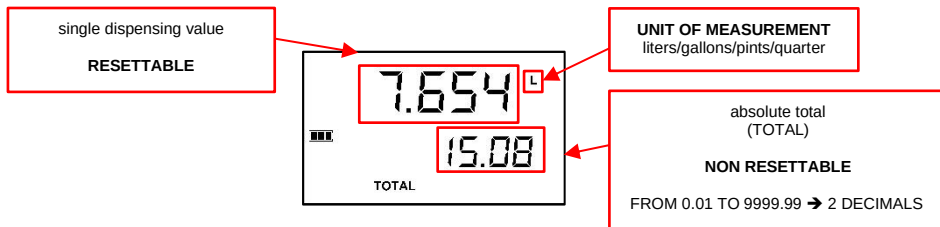
To turn off the preset mode, go to the **PSET** menu by using the right **RESET** button and then press and hold the right **RESET** button to reset the dispensing value first and then the preset value



3.3 ABSOLUTE TOTAL (TOTAL)

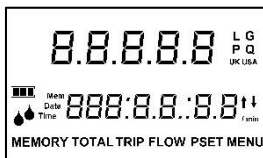
In this menu it is possible to view the absolute total of all the deliveries.

The absolute total is **NOT RESETTABLE**.



SEGMENT TEST

In the TOTAL menu it is possible to turn on all the segments of the display, in order to check their efficiency, by holding the right **RESET** button (after resetting the single value).



3.4 FLOW

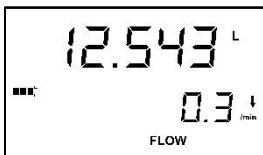
In this menu it is possible to view the liquid flow rate in liters/gallons/pints/quarter in real time during the dispensing.

The digital meter shows, by means of two arrows, if the flow trend exceeds the factory values of minimum and maximum flow set by the Manufacturer (**minimum flow= 1 L/min – maximum flow=20 L/min**).

This option allows to check that the accuracy of the instrument is not affected by a range different from the factory values.

For example, if a quantity of 0,3 L/min is delivered (i.e. less than 1 L/min) a down arrow will appear to indicate that the current flow is below the minimum factory set value.

At the same time, if a quantity of 40 L/min is delivered (i.e. higher than 20 L/min) the display will show an arrow pointing upwards, to indicate that the current flow is higher than the maximum factory set value.



If neither of the two arrows appears, it means that the delivery is being performed within the factory range.

3.5 PSET (PRESELECTION)

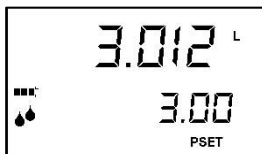
- Use the **+** and **-** button to configure a preset value (by holding the **+** and **-** button the value increases every 0.01 then every 0.10 and finally every 1.00 from a minimum of 0.01 to a maximum of 100.00). If the image of two drops appears on the screen, it means that the preset mode is active



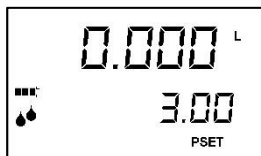
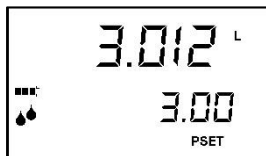
- Make sure the preset lever is lowered towards the gun.



- Start dispensing.
Once the preset value has been reached, the mechanical coupling will automatically block the flow of liquid and the lever will rotate upwards.



- Press and hold the right **RESET** button to reset the delivery and store it.

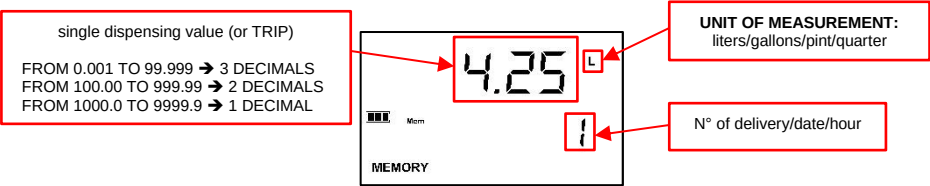


- To turn off the preset mode, press and hold the right **RESET** button so that the symbol of the two drops disappears.



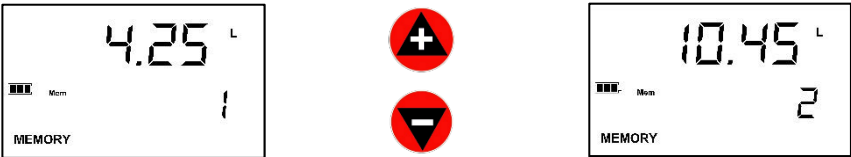
3.6 MEMORY

In this menu the list of the deliveries made is displayed.
Each delivery is stored with the unit of measurement, date and time in which it was performed.
The memory menu **IS NOT ACCESSIBLE** during dispensing.



• LIST OF STORED DATA

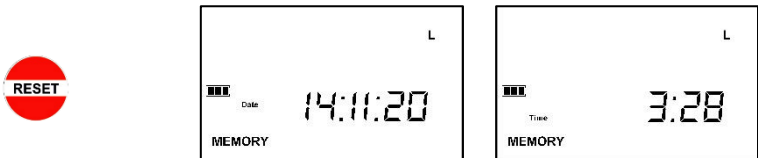
To consult the list of stored deliveries, go to the memory menu and press the + and - buttons to scroll through the various deliveries.



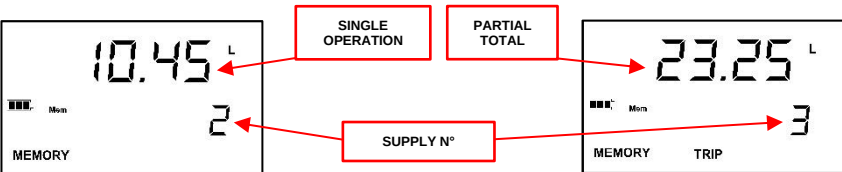
Once positioned on the chosen delivery, after a few seconds the date and time in which the operation was performed will be displayed intermittently.



By holding the right **RESET** button, the display will intermittently show the time and date set by the user for the meter.



In the list of deliveries in the MEMORY menu the values stored as TRIP will be displayed with the word TRIP at the bottom of the screen, in order to separate them from the single dispensing value.



4. CALIBRATION MENU

Calibration: the meter is already calibrated when supplied by the manufacturer;
It is advisable, once the product has been installed, to redo the calibration
with the oil that will actually be used, to maintain the right accuracy.

In the calibration menu, the backlight is always on.

1. To enter the calibration menu it is necessary to first go to any menu of the main working screen and then hold the left **SELECT** button for about 10 seconds; the following screen will then appear.



Press for 10 seconds



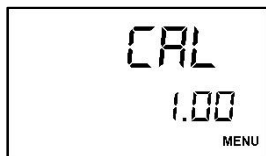
2. Quickly press the right **RESET** button to reach the CAL menu



ATTENTION:
there are two
types of key
presses:

- Short button press (quick touch)
- Long key press (hold the button)

3. Quickly press the left **SELECT** button to start the calibration.



4. The small number in the inferior part of the screen will begin to flash: this number indicates the amount of fluid with which the calibration will be performed

By default the number 1 will be shown, corresponding to 1 liter; this quantity is only indicative and it can change based on the availability of the reference tank.

The quantity that can be used for the calibration can be changed using the **+** and **-** button from a minimum of 1 liter to a maximum of 10 liters (by holding the **+** and **-** button the value increases first every 0.01, then every 0.10 and finally every 1.00).

ATTENTION: once the value in liters has been set (eg 2 liters) and the delivery has started, it will not be possible to modify the established value, unless the calibration procedure is repeated from the start.

5. Make sure that the preset lever is lowered towards the gun and start dispensing 2 liters of liquid using a graduated container certified with a certain accuracy; at the end of the supply the main screen will show approximately 78 ± 1 pulses

*Calibration
example on
2 liters*



6. Press and hold the left **SELECT** button until the CAL screen appears which means that the calibration has been successful



7. Quickly press the right **RESET** button until reaching the END menu
8. In the END menu quickly press the left **SELECT** button to confirm the calibration and automatically go back to the main working menu



4.1 CALIBRATION RESET (RESET CAL)

Quickly press the left **SELECT** button and choose between one of the two following options (to move from NO to YES always quickly press the left **SELECT** button):

- NO → press and hold the left **SELECT** button to confirm and DO NOT reset the calibration
- YES → press and hold the left **SELECT** to confirm and reset the calibration

To cancel the operation, quickly press the right **RESET** button to continue without saving the changes.



4.2 DATE

In this menu you can change the date.

From the main working menu press and hold the left **SELECT** button for at least 10 seconds and then quickly press the right **RESET** button until you reach the "DATE" menu

To proceed with the edit, quickly press the left button **SELECT**

The message "**YEAR**" will then appear and the related number of the year will begin to flash.

Use the + and - keys to change the year.



Press and hold the right **RESET** button to move to the month

Use the + and - button to change the month.



Press and hold the right **RESET** button to move to the day.

Use the + and - button to change the day.



Then press and hold the left **SELECT** button to confirm the changes, otherwise quickly press the right **RESET** button to continue without saving.

4.3 HOUR

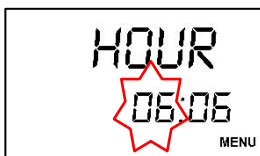
In this menu you can change the time.

From the main working menu press and hold the left **SELECT** button for at least 10 seconds and then quickly press the right **RESET** button until you reach the "HOUR" menu

To proceed with the edit, quickly press the left button **SELECT**

The message "HOUR" will then appear and the related number of the hour will begin to flash.

Use the + and - keys to change the hour.



Press and hold the right **RESET** button to move to the minutes

Use the + and - keys to change the minutes.



Then press and hold the left **SELECT** button to confirm the changes, otherwise quickly press the right **RESET** button to continue without saving.

4.4 MEMORY RESET (DEL MEMORY)

In this menu it is possible to delete the memory of ALL the saved deliveries.

To proceed with deleting the memory of ALL the saved deliveries, quickly press the left **SELECT** button and choose one of the following options (to move from NO to YES quickly press the + and - keys):

- NO → press and hold the left **SELECT** button to confirm and DO NOT clear the memory
- YES → press and hold the left **SELECT** button to confirm and clear the memory



4.5 END

Once in this menu, choose between the two options:

- If a new calibration has been previously performed, quickly press the left **SELECT** button to **save the calibration and return to the main working menu**
- Quickly press the right **RESET** button to return to the main working menu; if previously changed, the **date** and **time** settings will be stored (the new calibration will not be saved)



5. MEASUREMENT UNIT



ATTENTION: it is possible to change the unit of measurement of the meter from the calibration menu only if initially allowed by the company at the time of delivery of the product.
It is therefore necessary to specify in advance the possibility of configuring the meter with different units of measurement; otherwise the meter will be delivered in the standard configuration (LITERS).

5.1 LIST OF MEASUREMENT UNITS

It is possible to choose from the following:

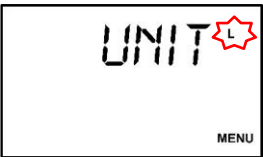
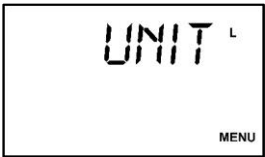
- Liters
- Gallons (UK)
- Quart (UK)
- Pint (UK)
- Gallons (USA)
- Quart (USA)
- Pint (USA)
- Cubic centimetres (Q)

5.2 HOW TO CHANGE UNIT OF MEASUREMENT

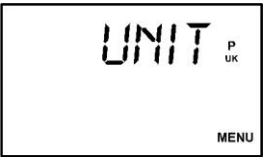
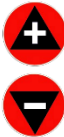
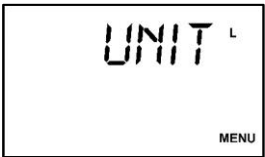
Before being able to change the unit of measurement of the meter, it is necessary to have previously communicated to the company (before delivery of the product) to allow setting the meter with a unit of measure chosen from those listed in the previous paragraph.

From the main working menu press and hold the left **SELECT** button for at least 10 seconds and then quickly press the right **RESET** button until you reach the "UNIT" menu

Then press the left **SELECT** button: the unit of measure icon currently in use will begin to flash



Press the + and – buttons to switch between the various units.



Press and hold the left **SELECT** button to confirm the choice.

Then use the right **RESET** button to get to the END screen and then keep the left **SELECT** button pressed to save the changes.



6. BATTERY CHECK

The instrument has a section for checking the state of charge of the batteries.

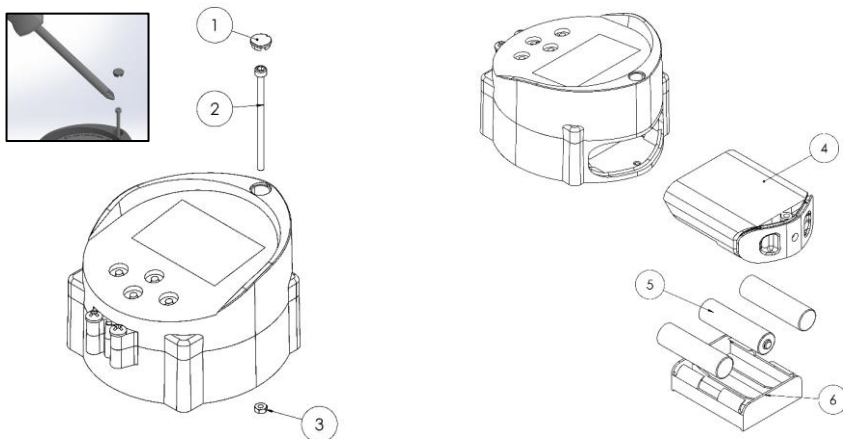
The correct functioning of the instrument is guaranteed with voltages between 4 and 5 volts; lower or higher voltages can respectively cause unreliable working operation and permanent damage.

Only the low voltage condition is indicated, since the instrument works with 3 batteries of 1,5 Volts each, placed in series (4,5 volts total).

ATTENTION: when the battery icon on the display begins to flash, it means that the battery power is low; in this case it is necessary to replace the batteries.



6.1 BATTERIES REPLACEMENT



1. Make sure the instrument is turned off.
2. Make sure to have the new batteries on hand.
3. Remove the cap pos.1 and unscrew the screw and nut pos. 2 and 3.
4. Remove the cover pos. 4 and the battery holder pos.6 from the housing
5. Replace the 1,5 V batteries pos.5.
6. Reassemble the battery holder pos.6 with the new batteries inside the cover pos. 4
7. Insert the cover pos.4 inside the digital meter.
8. Tighten the screw and nut pos.2 and 3 and fit the screw cover cap pos.1
9. The digital meter is now ready for use.
10. **Proceed to update hour and date (this has to be done everytime batteries are removed and replaced)**

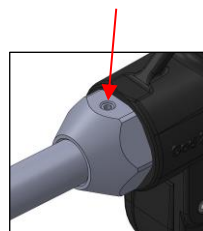
7. SWITCH ON/OFF

The restart can occur by pressing the left **FUNCTION** button or by letting some fluid pass through the meter. The backlighting of the screen turns off after 10 seconds, while the instrument switches off automatically after 60 seconds of inactivity to conserve battery power. In this mode, the consumption is very low and the display does not show any number or message.

8. TUBE CONNECTION

For the correct assembly of the output tube with the connection fitting it is necessary to observe the following instructions:

1. Tighten the fitting to the gun with a key of 24.
2. Unscrew the grub screw and manually adjust the orientation of the tube.
3. At the end of the operation, tighten the grub screw again to fix the tube.



9. SAFETY INFORMATION



It is forbidden to use the digital meter in potentially explosive atmospheres or where the use of anti-deflagrating components is required.

9.1 SAFETY RULES

Failure to comply with the instructions and danger warnings can cause serious injury to operators and those present. Do not operate before having read and understood all the danger / caution notices of this manual. Only a qualified and authorized operator can correctly use this instrument and understand the written instructions given by the manufacturer; it also have to be trained and know the safety rules. The operator should not use drugs or alcohol before using the digital meter. It's also essential to:

- know how to read and understand what described;
- know the capabilities and characteristics of this instrument;
- keep unauthorized people away from the working area;
- make sure that the installation has been carried out in compliance with all applicable laws and regulations;
- make sure that all operators are properly trained, that they know how to use the equipment in correct and safe way and that there is adequate supervision;
- do not touch electric lines and internal parts of motor or electrical equipment without first making sure that the electrical feeding has been shut down;
- carefully read this booklet and learn how to correctly and safely use the instrument;
- always keep this user manual available in an easily accessible place

9.2 INFORMATION ON DISMANTLING

In case of dismantling of the instrument, first separate the electrical, electronic, plastic and ferrous parts. Then proceed with diversified scrapping as required by current regulations.

9.3 ENVIRONMENTAL INFORMATION

The following disposal procedure should only be applied to machines where the data plate has the crossed out



This product may contain substances that can be harmful to the environment and human health if it is not disposed of properly.

We therefore provide you with the following information to avoid the release of these substances.

Electrical and electronic equipment must not be disposed of in normal municipal waste but must be sent to separate collection for their correct treatment.

The crossed-out bin symbol, affixed on the product and in this page, reminds us of the need to properly dispose the product at the end of its life.

In this way it is possible to avoid that a non-specific treatment of the substances contained in these products, or improper use of parts can lead to harmful consequences for the environment and for the human health. Furthermore, it contributes to the recovery, recycling and reuse of many of the materials contained in these products.

For this purpose the manufacturers and distributors of electrical and electronic equipment must organize appropriate collection and disposal systems for the equipment itself.

At the end of the product's life, contact your distributor for information on collection methods.

When purchasing this product, your distributor will also inform you of the possibility of returning another equivalent instrument at the end of its life and with the same functions of the purchased product.

Disposal of the product in a different way from what is described above will be subject to penalties provided by the national legislation in force in the country where the product is disposed of.

We also recommend that you take other measures favorable to the environment: recycle the internal packaging and properly dispose of used batteries (only if contained in the product).

With your help, we can reduce the amount of natural resources used for the construction of electrical and electronic equipment, minimize the use of landfills for product disposal and improve the quality of life by preventing potentially dangerous substances from being released into the environment.



FLEXBIMEC INTERNATIONAL s.r.l.
Via Roma 26 42020 Albinea (RE) Italy
tel. 0522 347330 – info@flexbimec.com