



EFS-100 Filling Scale Users Manual

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1. INFORMATIONS FOR CUSTOMERS

This service manual is designed for all customers and users of liquefied gas propane-butane scales series Eurostar EFS.

As EUROPUMP INTERNATIONAL we recommend to become familiar with the present manual before proceeding to installation and use of this LPG scale.

1.1 Pictograms and Terms Used in the Manual



Caution



Hazardous Area for Explosion



Electrical Warning



No Smoking



Do not fire



No Cellphone usage

VERY IMPORTANT NOTICE :

EUROPUMP LPG SCALES ARE ONLY MOUNTED ON OPEN AREAS !!!

This service manual and all other associated documents should be kept during the use of the LPG scale. In addition all other materials, supplemented during the use should also be kept.

Preserve this Service Manual and other documents for future users.

1.2 IMPORTANT NOTICES

1. EUROPUMP INTERNATIONAL shall not be liable for any damages or loss due to improper use of this Service Manual. In this manual it is described how to operate the LPG scale properly.
2. EUROPUMP INTERNATIONAL shall also be not liable for damages to persons and material due to failure in adherence to safety regulations contained in this manual.
3. The safety regulations contained herein are to be considered as a supplement of national regulations instead of replacement and therefore should be within the knowledge of personnel, that is servicing the LPG scale.
4. Before unpacking, installation or taking the LPG scale into service, read this Service manual thoroughly.
5. The propane-butane liquefied gas scale is only to be serviced by personnel, furnished with requisite authorisation according to national regulations.
6. Any repairs and modifications in design are subject to the manufacturer's explicit consent. Only parts approved by the manufacturer may be used.
7. To prevent electric shock or fire, any operation inside the LPG scale shall not be carried out before switching off power supply by the main power switch, that is placed in the room for the service personnel of the filling station.
8. In cases, when gas leakage is encountered, immediately push emergency stop button, switch off the LPG scale and the main power switch, that is placed in a room on the station. Do not cause pollution to the environment. Contact the manufacturer's Service Department.
9. Taking the LPG scale in service shall be conducted by the manufacturer's service or any other authorized service only. Any failure in adherence to these requirements entails the loss of warranty for the purchased product.
10. In cases, when irregular operation of the LPG scale is encountered, immediately contact the manufacturer.
11. No components of the housing may be removed during operation of the LPG scale.

12. The propane-butane liquefied gas scale may not be installed in explosive areas, Zone 0,1,2 defined in EN 60079-10
13. Due to its constructional features, the LPG scale may not be operated without roofing or in closed space and in cases of untight installation or during filling or cleaning of fuel tanks. The LPG scale is designed to deliver propane-butane liquefied gas.
14. In order to point out, that the LPG scale is designed, manufactured and described according to directives of the European Parliament, the LPG scale is denoted with CE mark (drawing 1).



Drg.1 CE Mark

15. The manufacturer reserves his right to carry out modifications in design, thereby taking into account the product quality not be affected.

2. SAFETY OF OPERATION

Owner of the filling station is liable for its operation which shall be entrusted to the trained staff only, having relevant authorization. The operator refuels cylinders by LPG professionally, checks state of the fuel scale and the technology in the preset time intervals, checks operation of the whole unit and maintains operating records.

The prohibit of smoking and open fire handling in the area of 10 m must be fixed on a visible places next to the scale. Max. volume of refueling (80%). From the design point of view the fuel scales and all components which might initiate explosion are approved by the state authorized institution.

For detection of possible gas leaks relevant detectors/sensors should be installed in the scale area.

From the hygienic point of view the device is harmless for the operator and the owner. When operating and maintaining the device, it is advisable to protect the hands by gloves.

2.1 FIRST AID

Poisoning-gaseous LPG

When refueling, avoid LPG vapor inhalation - danger of suffocation. The injured person must be taken out of the contaminated area. Attention! Fire and explosion hazard! LPG is not poisonous, but is suffocating. In case of breathing failure carry out apply artificial breathing immediately. In case of blood circulation failure combine artificial breathing with indirect heart massage. Transfer the affected person the health facility immediately.

Frostbites-liquid LPG

In case of steep drop of overpressure to the atmospheric pressure the liquid LPG is evaporated under the temperature of -42°C. Leak of the liquid LPG may result in frostbites, when in contact with the skin. Do not rub the frostbitten parts of the body, but cover by a sterile dressing and call the doctor.

Eyes affected by LPG shall be flushed by plenty of water. Call the doctor.

Burns-fire

When burnt, cool the injury by cold water, do not lubricate, cover by a sterile dressing and call the doctor. Do not remove the dress. If the clothes are burnt - do not run, extinguish by water, blanket, by rolling about

3. INSTALLATION AND TAKING THE LPG SCALE INTO SERVICE

Installation and taking into service the LPG scale shall only be made by manufacturer's technical service or an authorized technical service.

Due to the construction of the LPG scale, it may not operate in area without roofing or in closed space and in cases of untight installation or during filling or cleaning of fuel tanks.

RECOMMENDATIONS

1. The pulse overvoltage can take place in any line due to lightning - up to the distance of several kilometers – or due to industrial activities. The pulses arisen by lightning induction are quite enough for full destruction of the electronic unit. For this purpose the advanced countries usually apply the overvoltage protection, leading the overvoltage pulse power away into the earthing conductor, thus protecting the unit in question. Therefore the manufacturer of fuel scales recommends to protect the main (and/or the secondary) switchboard, feeding the fuel scale, electronic unit (computer, POS, etc.) and the data lines by overvoltage protection and lightning arresters.
2. In order to provide trouble-free operation of LPG scale, it is necessary to secure the stabilized scale feeding by the standby source - UPS. Power supply dropouts, heavy disturbances or drop of voltage in peak hours (particularly during winter season) are very frequent phenomena in our power supply network. All phenomena as above can be eliminated by utilization of a correct standby source (UPS). There are two models of standby source available and suitable for the lpg scale in our market :

- UPS of line interactive type
- UPS of on-line type

UPS of the line-interactive type is enough for stabilization in the filling stations connected to a very stable power supply network (without any voltage drop and without any disturbances).

In other cases the ON-LINE type UPS has to be applied. Disturbances, drops of voltage or failures can result in frequent blocking of the scales, problems in computer/scale communication, failures of computers (data loss), etc.

3. For trouble-free operation of LPG Scale the signal cables have to be separated thoroughly from the power supply cables. Parallel connection of power and signal cables without any separation results in disturbances and undesirable parasite phenomena which may cause problems with LPG Scale control and/or even full damage of electronic units inside the scales and in the kiosk. Therefore any crossing or parallel laying (in a single bundle) of the signal and power cables has to be prevented reliably. Separate "channels" (metal tubes, troughs) for power and signal cables represent a suitable solution. The manufacturer is not liable for the damages caused due to unsuitably designed cable connection.

Cleaning of pipes

Pipes are coming from the storage tank to the scale. Before installing and starting the LPG scale, clean pipes to avoid debris of sand grain and metal chips inside the pipes. Cleaning is to be done until all impurities are removed.

Driving LPG out of the lpg scale and piping (e.g. during disassembly) is carried out by nitrogen or inert gas. Driving LPG out by air or oxygen is prohibited!

Emergency stop button :

The emergency stop button is placed on the side wall of the LPG scale at a visible location "within reach". The emergency stop button switches off the entire energy supply to the scale and LPG pump.

 **The emergency stop switches to open position and energy cuts off. Pulling the button switches off and energizes.**

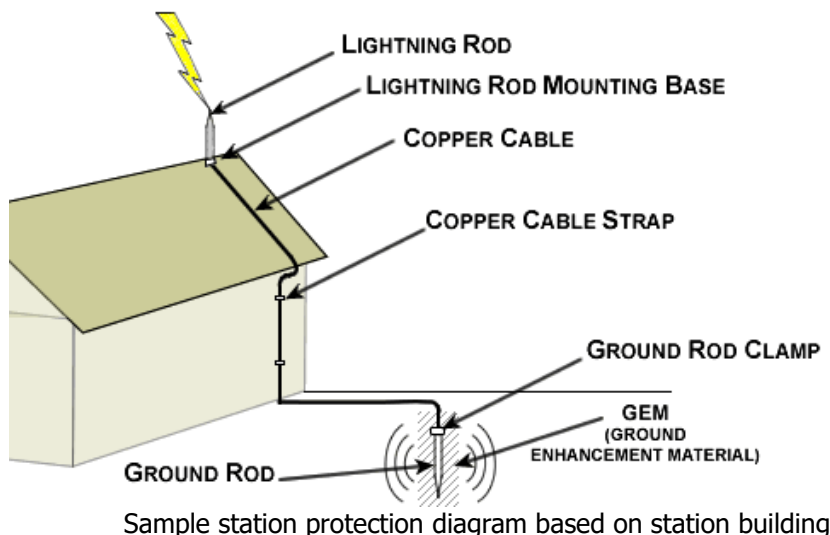
Gas Sensor :


For detection of possible gas leaks relevant detectors/sensors should be installed in the scale area.

 **Installing shear valve to scale is responsibility of station constructors.**

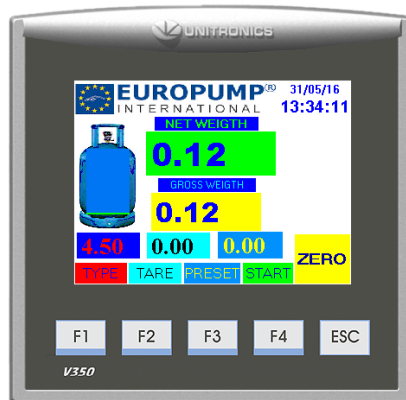
Lightning Protection

Lightning is the visible discharge of static electricity within a cloud, between clouds, or between the earth and a cloud. Lightning is a major threat to LPG Gas Stations and systems in it - not only in rare direct strikes, but also nearby strikes radiating energy to the station. A lightning protection system does not prevent lightning from striking; it provides a means for controlling it and preventing damage by providing a low resistance path for the discharge of lightning energy.



 **Lightning protection systems should be designed by skilled electrical engineers as it requires sensitive calculations and experience. Lightning protection is responsibility of station constructors.**

4. General Definitions Of Electronic Unit



Electronic scale interface is consists of membrane keypad and a touch screen.

F1: This button is used to select cylinder types. Scale can fill based on capacity of the selected cylinder. This cylinder types can be defined under the **Settings Menu**.

F2: This button is used to set Tare of the cylinder.

F3 : Button is used to increase predefined filling value (0.50 kg per each press)

F4 : It is used to start filling.

ESC : There are two main functions :

- If you are in any menu, it is used to "go back.
- If there is a filing process, then it can be used to stop filling process.

Zero : Zero button is used to make measured value on screen to 0 before filling. This button should be done before starting every filling. There is no function during filling process.

Date and Time : Shows date and time on screen.

Net Weight: It shows net filled amount as kilograms.

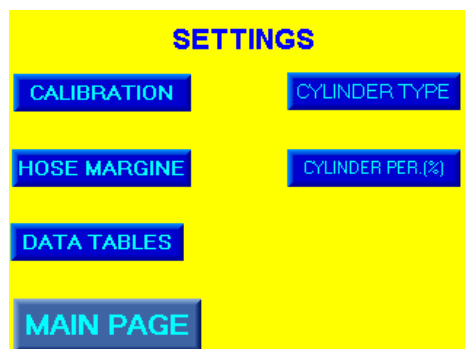
Gross Weight : Shows net weight and tare together.

5. Filling Process :

1. Make sure that scale platform is empty.
2. Press ZERO to scale measured value to 0.00 .
3. Place the cylinder to be filled at the center of flexible platform.
4. Press F1 to select type of cylinder.
5. Press F2 to get Tare of the cylinder to get current weight of cylinder.
6. If you want to fill predefined value press F3 to enter preset value. Otherwise skip to next step.
7. Press F4 start to filling.
8. If preset value is entered, system will stop at preset value ,if not filling will be finished at the maximum filling value.(%80 by default)
9. If need to stop filling at any time press ESC to stop filling.

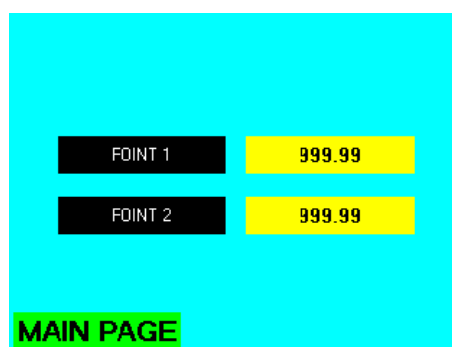
6. Settings Menu :

If you touch EUROPUMP logo on the main screen; scale will ask you password to enter Settings Menu.



Calibration of Scale :

1. Enter settings menu by using password.
2. Then enter Calibration menu.
3. Make sure that there is nothing left on the scale platform.
4. Write Point 1 parameter as 0.00 then press Point 1 button.
5. Put a pre-proved weight on scale platform. (Example : 10kg). Enter value of pre-proved weight on Point 2 field then press Point 2 button. This will finished the calibration process.
6. Press main page to return main screen.



Hose Offset :

It is important factor to make sure that filling is finished at the predefined value with Preset Fillings. Those values are defined per solenoid stage as grams.



Cylinder Type :

It is used to define cylinder types. System will calculate maximum filling value based on percentage selection.

Cylinder Percentage :

Defines how much percentage of cylinder will be filled maximum.



NOTE: Please note that it is not advised to use more than %80 percentage of cylinder because of safety reasons !

Data Table :

Shows list of filing values with date. Table can be cleared by "Clear Data" button.

NO	DATE	TIME	NET FILLING
1	01/02/2016	12:45:12	12.00 Kg
2	01/02/2016	14:04:00	5.00 Kg
3	01/02/2016	16:04:03	7.00 Kg
3	02/02/2016	09:13:07	9.00 Kg
4	02/02/2016	11:04:03	8.00 Kg
MAIN PAGE			CLEAR DATAS

7. Contact Us :

Please do not hesitate to contact us for your all kind of technical and sales support from our website www.europump.com or following worldwide offices :

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