



# Instructions for configuration and installation

## Ecometer P

Ultrasonic level indicator for fast measurements with external power supply  
(09/2018)

### Before installing the gauge on the tank

1. Please check the installation options based on Fig. 1: Can the gauge be installed on the tank? Is there a wire opening / corresponding holes?
2. If possible, view the videos on monitor and gauge coupling / synchronization and monitor configuration on [www.youtube.com](http://www.youtube.com) looking for "Proteus Ecometer".
3. Prepare your tank for the following dimensions: max. fill level, max. volume, distance between max. fill level and the mounting position of the gauge corresponding to the offset

### Attention!

- Avoid using tank sleeves higher than 2cm (5cm for 2" diameter sleeves)
- Maintain a safety distance of at least 15 cm between the gauge and the tank wall. (For example, a basketball must be able to fall undisturbed and not be distracted by accessories, etc.)
- The maximum measuring range of the gauge is 3 m between the gauge and the tank floor (0% bar)
- The maximum display volume is 19,999 litres

### Correct orientation of the gauge

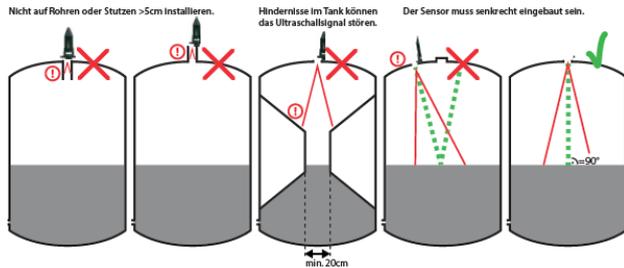


Fig. 1

### Choosing the right tank

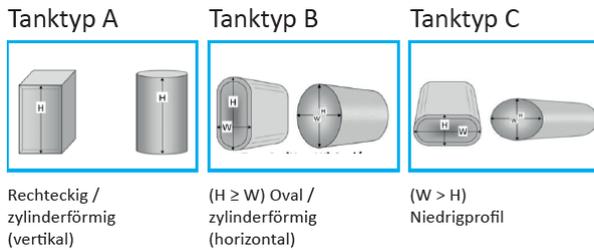


Fig. 2

### Important Information

The Proteus EcoMeter P supplies the gauge with 3VDC voltage. To activate the gauge, plug the power supply into the power socket. As a result, the gauge sends a new measurement signal to the EcoMonitor every 15 seconds. This means that rapid level changes during filling or emptying can be reliably detected.



The gauge does not necessarily have to be screwed in, as there are no mechanical forces, as long as the gauge looks directly at the surface of the liquid and does not come into direct contact with it. Please also take into account the required safety distance of 15 cm from the wall (basketball analogy).

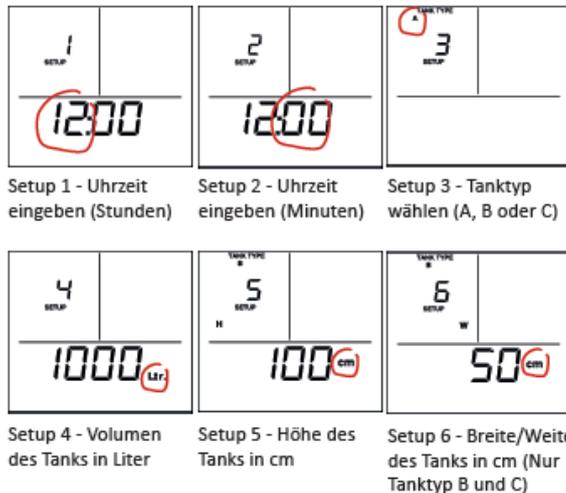
Fig. 3

### Ecometer P Applications

- Plastic tanks with alkalis and acids
- Tanks with quick change of liquid level

### Step 1 - Basic configuration of the EcoMonitor

The Ecometer monitor (radio display) is powered when it is used for the first time. The Ecometer monitor then automatically starts in the setup mode, so that the hours (Setup 1) flash. Enter the desired values with the ▲/▼ keys and confirm your selection always with the ENTER key (if the entry is incorrect, press the ENTER key several times to return to the menu item to be modified.)



Proceed similarly for the following menu items:

- Setup 1: Time setting (hours)
- Setup 2: Entering the hour / minute
- Setup 3: Choose tank type A/B/C (see fig. 2)
- Setup 4: Max. volume Hard tank in litres
- Setup 5: Tank height in cm
- Setup 6: Tank width in cm (only type B /C tanks)
- Setup 7: Enter the offset (Oft) in cm. Distance between the max. level and the mounting position of the gauge (the left and right tabs are the gauge reference point). This distance must be 15cm. The maximum offset corresponds to the difference of 300 cm and the maximum level.
- Setup 8: Entry of the volume of dead space on the ground (OLH) in cm (corresponds to the 0% bar that can be corrected upwards to take into account a sump volume or similar).
- Setup 9: Alarm on/off (levels above 90% and below 10% are detected as alarms. The display changes and the red LED starts flashing and an alarm sounds regularly).
- Setup 10: CLR, press the ENTER button to delete the stored historical data from the Ecomonitor.

Fig. 4

Then press the SETUP key to end the configuration process. After a few seconds, the current volume should be calculated, provided there is a data connection with the sensor and corresponding distance values are available.

After the first configuration, LRN appears on the monitor so that it is ready for pairing with the sensor.

After the first configuration you can enter the setup menu at any time (e.g. to change or optimize your configuration data) by holding down the SETUP button until the hours start flashing. To exit the Setup menu, simply press the Setup button briefly.



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#### Stage 2 – Pairing the gauge and the Ecometer P monitor

This process activates the gauge and synchronizes the data exchange with the monitor. Each gauge has a unique number, so that several Ecometer gauges and monitors can operate in parallel without interference.

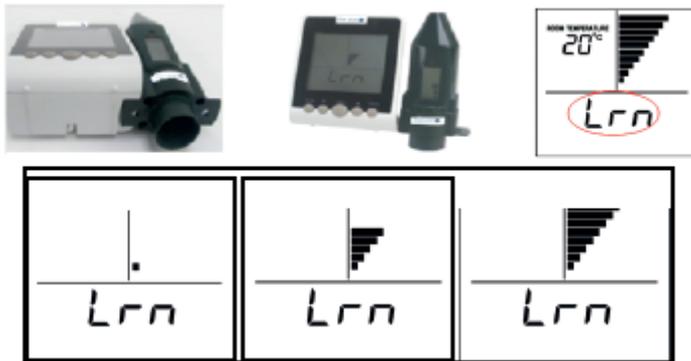
Power the gauge with +3VDC so that it is ready for operation. Connect +3VDC to the end of the red cable and ground / GND to the end of the black cable.

The plug and the power supply provided facilitate this process.

To start the coupling, the EcoMonitor must be in "Learn" mode (Lrn flashes on the screen). This mode is active for only 2 minutes, but will be activated after each start. You can cancel the learning mode by pressing the SETUP button.

The 2 devices are now coupled and the gauge is ready for installation on the tank.

The Ecometer monitor makes a Tic-Tac and the red LED flashes continuously.



Now you have the possibility to align the gauge exactly so that the calculated volume can be checked immediately. If the volume is not correct, please check the parameters during setup. You can correct and optimize them at any time.

If the gauge is not able to measure a valid distance, a warning triangle will appear on the screen. Please realign the gauge or shorten the distance to the surface. If a valid distance is detected, it is indicated by the bar or a nozzle symbol on the gauge display.

As the gauge measures a distance using the ultrasonic method, it can be mounted at any level. It is therefore not necessary to empty the tank to mount the gauge.

Fig. 5

#### For tanks with 2" or 1½" openings or threaded connectors:

1. Attach the gauge and adapter joint with the supplied screws (crossheads) with the thread adapter.
2. Check that the sealing tape is correctly installed between the gauge and the adapter joint. The sealing tape is used for decoupling and should not be too tight (slightly screwed).
3. Remove the cap from the threaded opening of your tank and screw the dipstick into the free opening.
4. Check that the gauge is perpendicular to the fluid surface and that there is no warning triangle on the rocket display.

#### For underground tanks with wells

1. Screw the gauge and adapter ring onto the threaded adapter using the screws provided. For 1" threaded holes, the gauge can simply be inserted into the threaded hole. Wrap insulating tape around the hopper to avoid fuel oil vapours.
2. Use the neoprene seal to decouple the ultrasonic signal and avoid tightening it.
3. If the gauge is to be mounted 15 cm below the manhole cover, we recommend the Plus version, as this ensures that the radio signal can be received outside the tank.
4. Depending on the cover, a Plus version must be selected so that the transmitter unit can be positioned outside the well and to ensure a reliable radio connection.
5. If an empty tube is available, the Plus version coaxial cable can be separated so that the cable can simply be pulled through the empty tube. Then connect the ground conductor to the ground conductor and the cable core to the cable core. Domino connections would be quite sufficient.
6. Make sure that the gauge is perpendicular to the fluid surface and that no warning triangle is visible on the transmitter / gauge unit display.

#### FAQ

##### Q: What type of tank should I choose?

A: For plastic tanks and tanks welded in the cellar, please select tank type "A". For round underground tanks, please select tank type "B".

##### Q: Do I lose configuration and adjustment data if the Ecomonitor is disconnected from the network?

A: Configuration and adjustment data are stored via a CR2450 or CR2440 button cell (identical gauge design) and are not lost in the event of a power failure.

##### Q: My Ecomonitor displays E:03 after a few months even though it has not been modified!

A: Please note that the gauge is sensitive to condensation. Water droplets in the funnel and on the membrane can influence the measurement. Wipe the funnel with an oil-soaked cloth to create a water-repellent film.

##### Q: My Ecomonitor displays E:02 after a while?

A: There are 2 possibilities: Either the radio connection is not stable and you have to switch to the Plus variant, or the battery capacity has collapsed, so that the power is no longer sufficient to transmit data.



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### Features of the EcoMeter monitor and gauge

- The Ecometer gauge consists of a digital radio station (range up to 150m) and a gauge that must be powered by +3VDC.
- The EcoMonitor shows the volumes of tanks and reservoirs up to 19,999 litres.
- The EcoMonitor receives the measurement data every 15 seconds and calculates the tank volume from the measured distance.
- Fits standard 2" and 1 1/2" threaded holes.
- The packaging contains the following parts: Ecomonitor, gauge, threaded adapter, power supply unit, 2 x Phillips screws, 2 x headless screws, operating instructions.

### Display

Up-to-date information

In normal mode, the current status and level of the tank are displayed. You can use the arrow keys to switch between the two displays:

- Time
- Filling height in cm
- Tank capacity in percent
- Current tank capacity/volume in litres

The bar graph and ambient temperature are always displayed. The MODE button is disabled in this version and has no function.

### Remarks

The bar graph of the gauge shows only the top 100 cm in the tank and may differ from the display on the screen.

If the level in the tank is higher than 90%, the monitor displays "FULL" alternating with the calculated volume. When the alarm is activated, the red LED flashes.

The gauge must not come into direct contact with water, but it is weather-resistant so that it can be used outdoors all year round. However, it is recommended to protect it from intense sunlight. No measurement below the water surface is possible and the electronic system may be damaged. Avoid placing the gauge/transmitter unit more than 20 cm underground in order to obtain a good radio connection with the EcoMonitor.

### Installation Guide

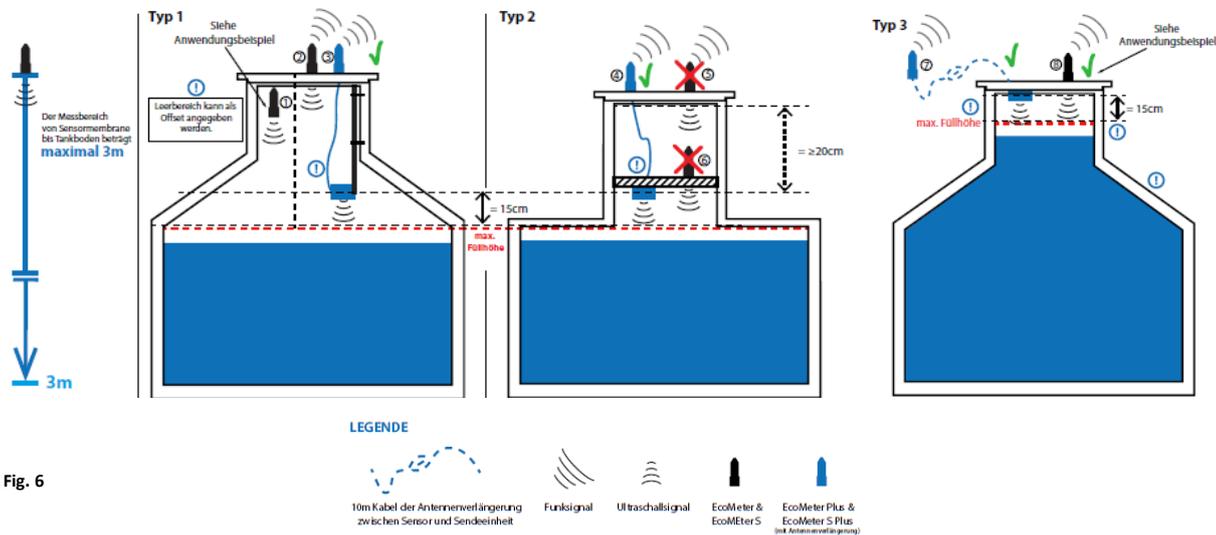


Fig. 6

There are several methods to mount the gauge depending on the application required. Please note, however, that the gauge must always be mounted at a minimum distance of 15 cm from the tank wall, regardless of the model.

### Tips & Advice

To check if a good wireless connection between the gauge and the monitor is possible, use your cordless phone as a reference. Place the base station where you want to place the monitor. If you have no or little reception in the well of your tank, we recommend that you order the antenna extension (EcoMeter S Plus).

**Error codes** : The EcoMonitor checks itself and delivers the corresponding error codes in the event of a malfunction. These are also on the back of the EcoMonitor:

### E01 – Fickle Reading

- Is the gauge mounted vertically - is it correctly positioned?
- Does the gauge have an unobstructed view of the mirror of the tank contents?
- Are the screws of the gauge/thread adapter too tight?
- Is the tank full? Has the minimum distance of 15 cm between the gauge and the maximum level been exceeded?
- Is the gauge diaphragm dirty / wet?



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#### E02 – Loss of connection for more than 6 hours

Is the gauge within reach of the EcoMeter monitor? Try to bring the monitor closer to the tank. Note that the signal strength of the EcoMeter Monitor may be influenced by sources of radio interference such as metal objects or other electrical devices.

#### E03 – Reading received but not valid

Check the position of the gauge (see E01). Make sure that the gauge is correctly aligned and that no warning triangle is visible on the display.

#### E04 – The measuring distance > max. level + Offset

- Check the maximum filling level and the offset entered. Correct this if necessary.
- Press and hold the Enter key for about 15 seconds to force the firmware to restart.

#### E05 - E06 Contact customer service

- Press and hold the Enter button for about 15 seconds to force the firmware to restart.
- Contact us!

#### Warranty

This product has a 24-month warranty period, active from the time of purchase, which insures you against breakdowns and manufacturing defects.

This does not affect your legal rights. Normal wear and tear, damage due to negligence, accidents or improper use/installation of this equipment is not covered by the above warranty. Any modification or transformation made by the buyer or a third party will void the warranty. This includes attempts to repair. The warranty is only valid if the unit is installed according to the instructions and connected to one of the specified power sources.

The warranty is void as soon as the device has been resold by an end user.

This product is for private and industrial use. E-Sensorix Sarl obligations are limited to the repair or, at its discretion, the replacement of the device.

E-Sensorix Sarl undertakes to take back and recycle each Ecometer P in accordance with the Recycling Act.

E-Sensorix Sarl, its subsidiaries and distributors are not liable for any indirect or consequential damages or losses that may arise from the use of this product.

#### Contact Information

For further questions about configuration, installation or your application, please visit our help page at the following address where you can get answers to frequently asked questions (FAQs)

<https://www.e-sensorix.com/fr/faq-questions-reponses-generales>

You can also contact our customer service at the following address:

[support@e-sensorix.com](mailto:support@e-sensorix.com)

You can find help videos on YouTube ([www.youtube.com](http://www.youtube.com)) by searching "Proteus Ecometer".

The technical specifications of the Proteus EcoMeter, the contents of the manual and the illustrations and images contained therein are subject to change without notice. The content and images in this manual are protected by copyright and may not be used or copied without written permission from E-Sensorix Sarl.

#### FAQ

##### Q: How can I change the battery in a Proteus Ecometer?

A: Loosen the 4 x Phillips screws under the neoprene seal with a suitable Phillips screwdriver and remove the cap. You will then see the battery holder with the CR2450 button battery. The EcoMonitor contains an identical CR2450, which is less charged, so that it can be replaced if necessary.

##### Q: What does the nozzle sign on the gauge display mean?

A: If a distance greater than 100 cm is measured, it can no longer be viewed with the bars. The nozzle symbol is then displayed, which means that the measuring distance is greater than 100 cm.

##### Q: Why does the EcoMonitor display too much or too little volume?

A: Please check the Offset and Dead Space Volume settings in SETUP 7 and 8, these two values determine the 0% and 100% values. The standard settings are 15 cm Offset and 0 cm dead space volume.

##### Q: How is the current volume calculated?

A: From the data entered, the litres / cm are first calculated by dividing the maximum volume / maximum filling level. Then the current filling level is calculated:  $F_h = \text{maximum filling level} - (@ \text{measuring distance} - \text{offset})$ . Multiply the current filling level by the number of litres/cm to obtain the current volume.

##### Q: What are the two setscrews in the plastic bag for?

A: Generally, they are not necessary. Headless screws are used to mount a sound conductor, i. e. a guide tube of the ecoMeter is screwed onto the threaded adapter. With the grub screws, this tube can be fixed laterally.