

# VOTRONIC

## Installation and Operating Manual

### LED Tank Display HE 010

12 V / 24 V, Measuring Signal 0...10 V

No. 0242

The VOTRONIC LED *Tank Display HE* is a special development for **heavy-duty use in fire fighting vehicles**, and it serves for exact remote indication of the level of water and foam tanks.

The tank level is represented by means of 10 super bright light-emitting diodes in form of a **tricolour luminous band** (red/yellow/green). Intermediate level values are indicated by a change of the luminous intensity of the respective highest light-emitting diode. The representation of the display is an almost **continuous luminous bar**.

A photocell **controls** the **brightness** of the light-emitting diodes of the display in such a way, that it can be **read exactly**, even in case of direct sunlight or darkness.

The design of the robust display unit is very compact, **it is sealed water-tightly and dust-tightly, it is completely vibration-proof**, and it is suitable for installation in display panels. It is designed for an operating voltage of 12 V to 24 V, and it is rated and factory-adjusted to a standard measuring signal from 0...10 V (e. g. for VOTRONIC *Tank Sensors FW 120* or *FW 240*). The unit is equipped with an efficient protection against wrong polarization and overvoltage.

A simple parallel connection of the desired number of *LED Tank Displays HE* allows **control of the tank from several locations of the vehicle**.

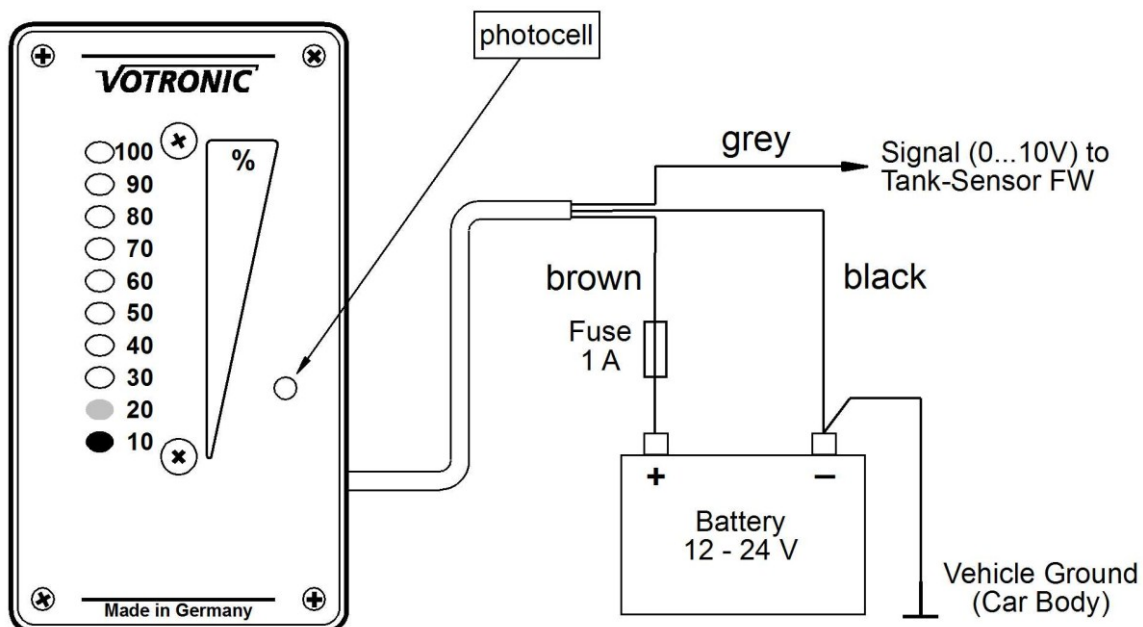
### Installation:

The LED Tank Display is designed for installation in display panels.

Opening rectangular, width 38 mm, height 56 mm, mounting depth max. 27 mm.

Fastening on the display panel can be effected by screwing the delivered fastening screws into the mounting holes of the LED Tank Display.

### Connection Plan:



### Start-up and Adjustment:

After supply of the operating voltage and connection to a tank sensor, the tank level will be indicated by means of the light-emitting diodes.

The display unit has been factory-adjusted, so adjustment tasks are not required.

## Tips:

No reaction of display:

- a.) Battery connection or fuse defective - check
- b.) Cable „+ 12-24 V“ interrupted – check
- c.) Cable „Signal (0...10 V)“ interrupted – check
- d.) Cable „Signal (0...10 V)“: Short-circuit to ground – check

Constant display of 100 % on the display unit:

- a.) Cable „Signal (0...10 V)“: Short-circuit to ground + 12-24 V – check

Indication Errors:

- a.) Bad contact of cable „– Ground“ – check
- b.) Further currents of e. g. further consumers are flowing on the cable „–“, thus causing displacement of voltage - check.

The brightness of the display is insufficient due to sunlight.

- a.) Clean photo sensor.



### Safety Regulations and Appropriate Application:

The tank display has been designed according to the valid safety regulations.

**Appropriate application is restricted to:**

1. In fixed installed 12 V / 24 V DC systems.
2. A fuse of the indicated capacity near the battery for protection of the cabling.
3. Technically faultless condition.
4. Never use the unit at locations where the risk of gas or dust explosion exists.
  - Always disconnect the power supply prior to executing any electric welding on the vehicle (overvoltage)!
  - The user/buyer is obliged to observe any construction and safety regulations.
  - The unit is not equipped with parts, which can be replaced by the user.
  - Non-observance may result in injury or material damage.
  - The warranty period is 36 months from the purchase date (against presentation of the sales slip or invoice).
  - The warranty will be void in case of any inappropriate utilisation of the unit, if it is used beyond the technical specification, in case of improper operation or external intervention. We do not assume any liability for any damage resulting hereof. The liability exclusion is extended to any service being executed by third, which has not been ordered by us in writing. Service is to be effected exclusively by VOTRONIC Lauterbach / Germany.

### Technical Data:

Operating Voltage:	12 V - 24 V DC (8.5 V - 32 V Battery Voltage)
Current Consumption at 100 %:	< 15 mA (Darkness) to max. < 60 mA (Sunlight)
Input Signal 0 - 100 %:	0...10 V (related to operating voltage's minus)
Input resistance:	180 kOhm
Dimensions Front Panel:	85 x 47 mm
Mounting Cutout / Mounting Depth:	38 x 56 mm (rectangular) / 27 mm
Temperature Range Storage:	-25/+60 °C
Working Temperature Range:	-20/+45 °C
System of Protection / Weight:	IP 67, 80g



### Declaration of Conformity:

In accordance with the provisions of Directives 2014/35/EU, 2014/30/EU, 2009/19/EC, this product complies with the following standards or normative documents:  
EN55014-1; EN55022 B; EN61000-6-1; EN61000-4-2; EN61000-4-3; EN61000-4-4;  
EN62368-1; EN50498.



The product must not be disposed of in the household waste.



The product is RoHS compliant. It complies with the directive 2015/863/EU for Reduction of Hazardous Substances in electrical and electronic equipment.

**Quality Management System**  
DIN EN ISO 9001

### Delivery Scope:

- 1 ea. LED Tank Display HE
- 4 ea. Fastening Screws
- 1 ea. Mounting Instructions and Operating Manual

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Made in Germany by VOTRONIC Elektronik-Systeme GmbH, Johann-Friedrich-Diehm-Str. 10, 36341 LAUTERBACH / GERMANY

Phone: +49 (0)6641/91173-0 Fax: +49 (0)6641/91173-20 E-mail: info@votronic.de Internet: www.votronic.de