



# O<sup>2</sup>-PID

**Overfill Prevention and  
Product Identification**  
for fuel drop at petrol stations



# O<sup>2</sup>-PID

## Overfill Prevention & Product Identification



EN 13616  
EN 14116

### Application

The O<sup>2</sup>-PID System is a safety device to prevent the overfilling of storage and bunker tanks when filled with petrol, diesel or fuel oil. The system consists of an optical liquid detector with product identification (O<sup>2</sup>-PID)

in the storage tank and an evaluation system (PRD) in the road tanker. The detector continuously monitors the filling of the tank. The evaluation system (PRD) detects the correct hose connection (ASS/HCC), the prod-

uct quality (QSS/COP) and the condition of the overfill prevention sensor.

Unwanted mixing of products due to wrong connection is prevented.

### Benefits of the overfill and cross over prevention system with O<sup>2</sup>-PID

- Much easier handling of the fuel drop
- No extra cable at the road tanker is needed for the overfill prevention
- The connection to the O<sup>2</sup>-PID detector is realized by electrically conductive hoses
- Automatic hose connection control (HCC)
- Reliable low power optical overfill prevention sensor
- According to EN 13616 and EN 14116
- Product mix is no longer possible because of product identification
- The product code is stored in the O<sup>2</sup>-PID and can easily be changed by the customer

# The System

There are three important tasks that are served by the new O<sup>2</sup>-PID

- Overfill prevention for the fuel drop
- Product identification (PID) for cross over prevention (QSS/COP)
- Hose connection control (HCC)

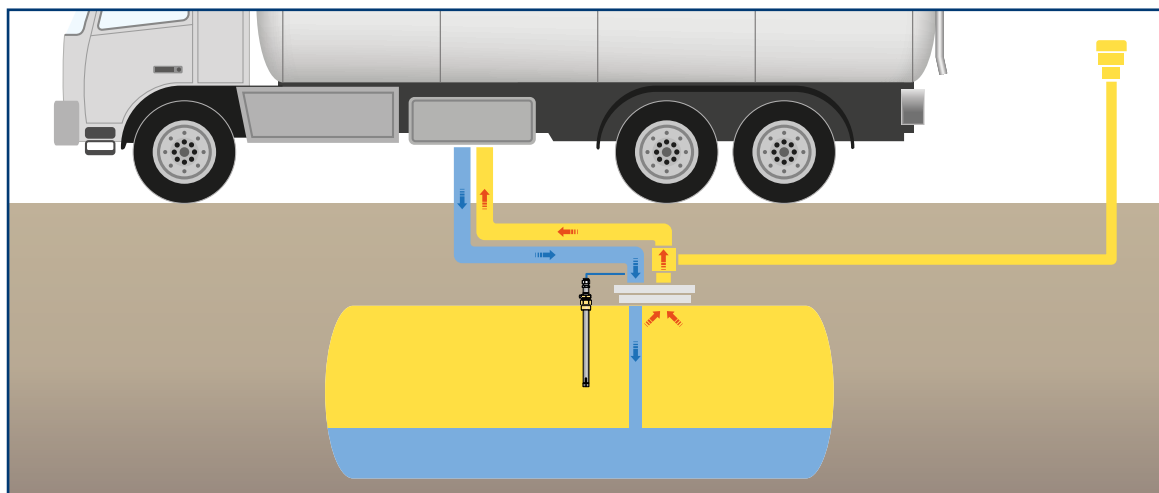
## Function

The typical fuel drop at a petrol station is shown in the 1st figure: the fuel (blue) displaces the vapour in the storage tank (yellow) and leads it back into the compartment of the road tanker. The road tanker is connected to the storage tank via electrically conductive hoses (see figure 2).

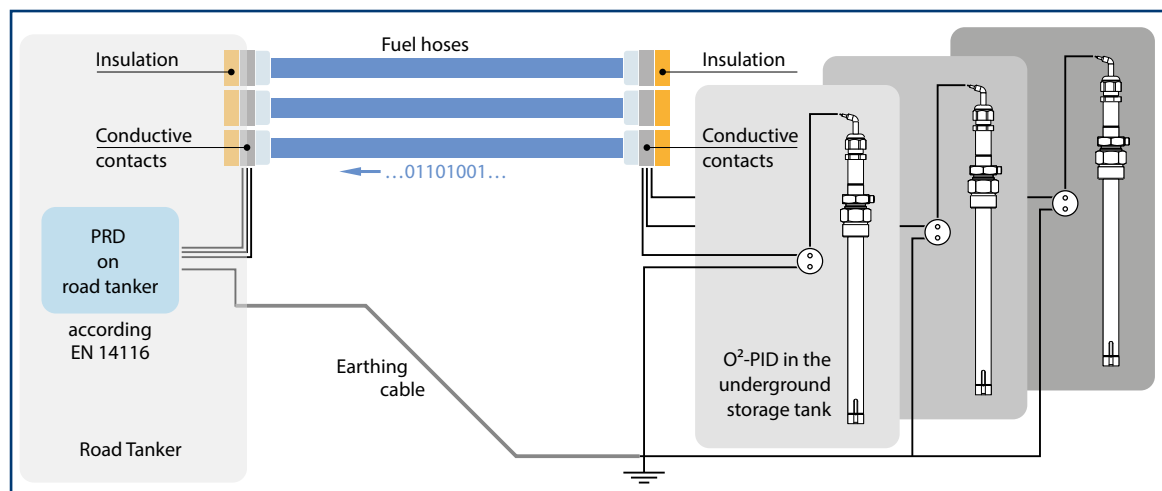
The connection couplings of the hoses are electrically isolated. Therefore it is possible to supply the O<sup>2</sup>-PID fluid detector with an intrinsic safe current and to read its measured values. The status of the detector is interrogated 10 times per second. If a liquid touches the optical prism of the O<sup>2</sup>-PID detector, the

status of the detector changes and a corresponding signal is transmitted to the road tanker electronics (PRD). Every evaluation in accordance with EN 14116 can read the PID and overfill information!

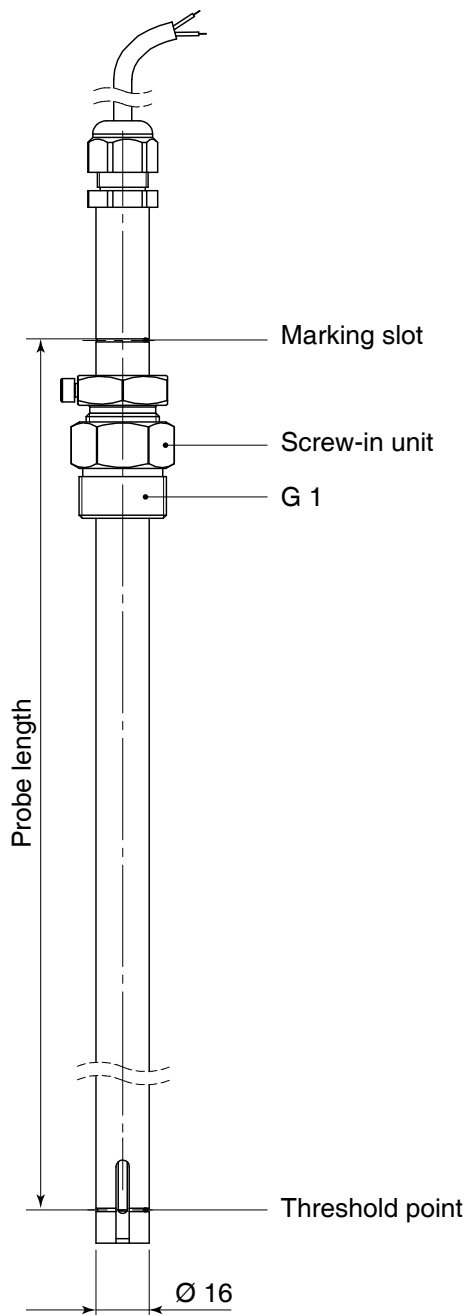
## A typical filling at a petrol station



## The O<sup>2</sup>-PID system



## O<sup>2</sup>-PID



Dimensions in mm

### Technical Data of O<sup>2</sup>-PID

#### Operating data

- » Temperature range:  
-40 °C to +60 °C
- » Pressure range: 0,1 MPa

#### Optical detection principle

- » Prism: Polysulfon

#### Materials

- » Wetted parts: Stainless steel  
1.4301 (304); Brass; Viton;  
Polysulfon

#### Dimensions

- » Diameter of  
sensor tube: 16 mm
- » Length: 600 mm
- » Screw-in unit G 1
- » Cable connection:  
2 m of two wire lead

#### Approvals

- » Overfill prevention device  
EN 13616
- » Communication of PID:  
EN 14116
- » ATEX: II 1 G Ex ia IIB T4 Ga



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