Instructions in accordance with directive 2014/34/EU BVS 17 ATEX E 064 X

Optical Overfill Prevention Sensor with Product-Identification-Device type O^2-PID Ver.: 09.2017

I Range of Application

The optical overfill prevention sensor type O^2-PID detects the limit level and serves as part of an overfill prevention device for liquid fuels.

II Standards

The optical overfill prevention sensor is designed according to the European standards

EN 60079-0:2012 + A11:2013	Equipment – General requirements
EN 60079-11:2012	Equipment protection by intrinsic safety "i"
EN 60079-26:2015	Equipment with Equipment Protection Level (EPL) Ga

III Instructions for safe …

III.a … use

The optical overfill prevention sensor is used as intrinsically safe equipment and is suitable for use in potentially explosive atmospheres. The optical overfill prevention sensor can be used for the gas groups IIA and IIB.

III.b … assembling and dismantling

Disassembly of the enclosure is not provided. Dismantling would also damage the optical overfill prevention sensor and the approval expires.

III.c … installation

Wiring may only be carried out without power. Special requirements, e. g. EN 60079-14 or the local installation regulations must be observed.

If the optical overfill prevention sensor is supplied with a screw-in body, the thread of the screw-in body must be provided with suitable sealing material, screwed into the existing sleeve and tightened. If the optical overfill prevention sensor is supplied without a process connection, the installer is responsible for compliance with the Ex requirements.

General remark (see also EN 60079-26, clause 4.3):

If the optical overfill prevention sensor is installed in the boundary wall between Zone 0 and Zone 1, ensure that a sufficiently tight gap (IP66 or IP67) is reached after installation.

The permissible inductance and capacitance of the associated apparatus must not be exceeded the wiring from the optical overfill prevention sensor to the associated apparatus (preferably blue cable). The connection is supply + (brown) and supply – (blue).

General remark (see also EN 60079-14, clause 6.4.1):

Exposed conductive parts need not be separately connected to the equipotential bonding system if they are firmly secured to and are in conductive contact with structural parts or piping which are connected to the equipotential bonding system.

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III.d … adjustment

No Ex-relevant adjustments are necessary for the operation of the optical overfill prevention sensor.

III.e … putting into service

Before putting into service, all devices must be checked for correct connection and installation. The electrical supply, including the connected devices, must be checked.

III.f … maintenance (servicing and emergency repair)

The optical overfill prevention sensor is generally maintenance-free. In the event of a defect, this must be returned to FAFNIR or one of its distributors.

Compliance with the requirements for the dielectric strength between the intrinsically safe circuit and the chassis of the optical overfill prevention sensor according to EN 60079-11, clause 6.3.13 exists.

Warning: Clean the cable tail only with a damp cloth.

IV Equipment marking

1	Manufacturer:	FAFNIR GmbH, 22525 Hamburg
2	Type designation:	O^2-PID
3	Certificate number:	BVS ATEX E 064 X
4	Ex marking:	Ⓔx II 1 G Ex ia IIB T4 Ga II 1/2 G Ex ia IIB T4 Ga/Gb II 2 G Ex ia IIB T4 Gb
5	CE marking:	CE 0044
6	Technical data:	See instructions for technical data

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V Technical data

The following electrical input values are defined for the optical overfill prevention sensor:

Input voltage	U_i	≤	15 V
Input current	I_i	≤	300 mA
Input power	P_i	≤	1.1 W
Inner inductance	L_i	≤	5 µH
Inner capacitance	C_i	≤	12 nF

For use in potentially explosive atmospheres, the maximum temperatures, depending on the temperature class and the category respectively the equipment protection level, are shown in the following table.

Temperature class	T_a	T_F
Category 1 resp. equipment protection level Ga (sensor completely installed in zone 0)		
T4, T3, T2, T1	-20 °C … +60 °C	
Category 1/2 resp. EPL Ga/Gb (overfill prevention sensor in the border wall)		
T4, T3, T2, T1	-40 °C … +60 °C	-20 °C … +60 °C
Category 2 resp. equipment protection level Gb (sensor completely installed in zone 1)		
T4, T3, T2, T1	-40 °C … +60 °C	

Table V: Maximum temperatures of the optical overfill prevention sensor

For use in areas where the equipment protection level Ga is required, the following applies:

The process pressure of the media must be between 0.8 bar and 1.1 bar in the presence of explosive steam / air mixtures. If no explosive mixtures are used, the devices may also be operated outside this range in accordance with their manufacturer's specification.

General remark (see also EN 60079-0, clause 1):

Zone 0 is only given under atmospheric conditions:

Temperature range:	-20 °C … +60 °C
Pressure range:	0,8 bar … 1,1 bar
Oxidant:	Air (oxygen content approx. 21 %)

The optical overfill prevention sensor achieves a housing protection degree of:

Degree of protection	IP68

VI Special conditions of use

The risk of ignition due to static electricity due to friction on the cable tail must be avoided.

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