

Instructions

IECEX TUN 10.0014

Environmental Sensor for Leakage Detection type VISY-Reed ...

Edition: 11.2014

I Range of application

The environmental sensors VISY-Reed ... serve as level detectors in potentially explosive areas. A float with built-in magnet slides on the sensor tube. It closes or opens a reed contact. A microcontroller evaluates the contacts and can trigger an alarm in both the open and the closed state.

II Standards

The equipment is designed in accordance with the following international standards

- IEC 60079-0:2011-06, Edition 6.0 Equipment – General Requirements
- IEC 60079-11:2011-06, Edition 6.0 Equipment protection by intrinsic safety 'i'
- IEC 60079-26:2006-08, Edition 2 Equipment with Equipment Protection Level (EPL) Ga

III Instructions for safe ...

III.a ... use

The environmental sensors are designed as intrinsically safe equipment and are suitable for use in potentially explosive areas. The environmental sensors may be used for all gas groups (IIA, IIB and IIC).

The approval applies to the device versions

- VISY-Reed Interstitial Dry
- VISY-Reed Interstitial Wet
- VISY-Reed Sump Dispenser
- VISY-Reed Sump Manhole

III.b ... assembling and dismantling

The housing of the environmental sensor must not be opened! Disassembly may damage the environmental sensor and its approval expires.

III.c ... installation

Wiring work may only be performed with the power disconnected. Special rules and regulations, including IEC 60079-14 and local installation regulations, must be observed.

When wiring the sensor to the measuring transducer (preferably blue coloured cable), the permissible inductance and capacitance of the associated equipment must not be exceeded. The terminals of the sensor must be connected to the same terminals of the transducer. The environmental sensors can also be connected in parallel to the level sensor VISY-Stick ... Pin assignment:

Meaning	Abbreviation	Colour
Power supply +	+	brown
Power supply -	-	blue
Communication A	A	white
Communication B	B	black

Table III.c: Pin assignment of environmental sensors with integrated cable

For integration of the environmental sensor in the potential equalization, a PA terminal at the sensor housing is present.

III.d ... adjustment

To operate the environmental sensor, security settings are not necessary.

III.e ... putting into service

Before putting into service, all equipment must be checked to ensure it is properly connected and installed. The power supply, as well as connected equipment, must be checked.

III.f ... maintenance, overhaul and repair

The environmental sensors are generally maintenance-free. In case of a defect it must be sent back to FAFNIR or one of its representations.

The unit complies with the dielectric strength requirements as set out in IEC 60079-11, clause 6.3.13.

IV Equipment marking

- 1 Manufacturer: FAFNIR GmbH, Hamburg
- 2 Type designation: VISY-Reed ...
- 3 Serial number: Ser. N°: ...
- 4 Certificate number: IECEx TUN 10.0014
- 5 Ex marking: Ex ia IIC T6...T5 Ga
Ex ia IIC T6...T4 Gb
- 6 Technical data:
 - 20 °C ≤ T_a(Ga) ≤ +50 °C_{T6} / +60 °C_{T5}
 - 40 °C ≤ T_a(Gb) ≤ +50 °C_{T6} / +65 °C_{T5} / +85 °C_{T4}
 - U_i ≤ 15 V
 - I_i ≤ 60 mA
 - P_i ≤ 100 mW
 - L_i < 100 μH
 - C_i < 10 nF

V Technical data

The following electrical input values apply to the environmental sensors:

Input voltage	$U_i \leq 15 \text{ V}$
Input current	$I_i \leq 60 \text{ mA}$
Input power	$P_i \leq 100 \text{ mW}$
Internal capacitance	$C_i < 10 \text{ nF}$
Internal inductance	$L_i < 100 \text{ }\mu\text{H}$

When the environmental sensor is used in potentially explosive atmospheres, the maximum temperatures depending on the temperature classes and the categories or the equipment protection level can be found in the table V.

Temperature class	T_a
Equipment protection level Ga (environmental sensor installed in zone 0)	
T6	-20 °C ... +50 °C
T5, T4, T3, T2, T1	-20 °C ... +60 °C
Equipment protection level Gb (environmental sensor installed in zone 1)	
T6	-40 °C ... +50 °C
T5	-40 °C ... +65 °C
T4, T3, T2, T1	-40 °C ... +85 °C

Table V: Maximum temperatures of environmental sensors

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

The process pressure for the media must be between 0.8 bar and 1.1 bar where explosive vapour-air mixtures are present. If no explosive mixtures are present, the equipment may also be operated outside this area according to the manufacturer's specification.

General information (see also IEC 60079-0, section 1):

Zone 0 exists only under atmospheric conditions:

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

The environmental sensor achieves a degree of protection provided by enclosure of:

Degree of protection: IP68

VI Specific conditions

None.