

Leakage alarm unit water detector model: LP-PS



OPERATION MANUAL

Description



Characteristic features

- o Safe operation, impedance measuring principle
- o Operating voltage 24 V DC
- o 2 integrated, gold plated measuring tips
- o Potential free switch output (Relay) 30 V / 4 A
- o Adjustable sensitivity
- o Adjustable measuring level 0 ~ 15 mm
- o Simple mounting

Areas of application

- o Sanitary plants, water installation
- o Monitoring of cooling systems
- o Condensate switch for collection tanks
- o Building instrumentation, air-conditioning

Technical data

Leakage alarm unit

| | |
|---------------------------|---|
| Measuring principle | electrolytic conductivity |
| Measuring medium | conducting liquids, construction material |
| Application temperature | +5 ~ +60 °C |
| Operating voltage | 24 V DC ±10 %, max. 80 mA |
| Current consumption | 13,5 mA (without leakage) 58 mA (with leakage) max. 80 mA (with leakage and extra probe) |
| Switching power | 30 V / 4 A (100 k) |
| Switching point | approx. 2 ~ 60 kΩ (type. 15 kΩ) |
| Switching output | 5 A / 250 V AC 5 A / 30 V AC |
| Cable gland | Cable diameter 8 ~ 13 mm |
| Housing | ABS, Ingress protection IP54 |
| EMC noise emission | EN 61000-6-3:2011 |
| EMC noise immunity | EN 61000-6-1:2007 |
| CE-Conformance | 2014/30/EU |
| Dimensions (W x H x D) | 65 mm x 60 mm x 38 mm |

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| Leakage alarm unit 24 V DC | LP-PS |
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Functional description

The leakage monitor works as per the operating principle of electrolytic conductance measurement. There are two electrodes beneath the device which are evaluated by means of AC impedance measurement. As soon as the conductance value between the electrodes rises over an adjustable limit, the relay contact closes. Because of the universally conceived model with gold plated spring loaded electrodes with height adjustable device feet, it is suitable for a wide variety of applications.

Monitoring of collection tanks

The device can be directly placed in the tank to be monitored. Over the height adjustable feet, the permissible liquid level can be adjusted at which the device has to switch (approx. 0 ~ 15 mm).

Leakage monitor

In order to detect small liquid quantities, the spring loaded electrodes are placed directly on an insulating base of absorbent material (for example hardboard, cardboard, cloth). As soon as the leaking out liquid is absorbed by the base, the device gives out an alarm.

Construction or wood humidity monitor

For this application, the springy electrodes are put directly on the material to be monitored. If there is high humidity in the underground, the device gives out an alarm.



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Connection

After unscrewing the sensor cover, the control cable is inserted into the cable gland. The operating voltage supply (24 V DC) is connected at the terminals 24V and GND. The potential free changeover contacts are connected to terminals NC, COM and NO. Care to be taken that the cable gland is assembled water tight and the cover gasket is correctly inserted.

Up-Keeping

The leakage alarm unit is, as far as possible, maintenance free. However, the housing lower side and the measuring tips should be occasionally (e.g. once in a year, depending on mounting location) cleaned with a wet cloth. If there is a continuous alarm, even without touching the water, that means there is a heavy contamination.

Application Notes

Because of the electrolytic evaluation, the device is suitable for all liquids or construction material, which are electrically conductive ($> 150 \mu\text{S}$). However, the device is not suitable for detection of nonconducting liquids like oil or distilled water. In acidic or alkaline media or in unknown materials with impurities, the material compatibility of the probe is to be checked before use. In case of application in dirty medium, the probe tips should be periodically cleaned. The use in inflammable or explosive environment is not permissible. The device is not intended for connecting to the mains voltage. While monitoring of tanks, crossing over the tank should be avoided. The safety regulations are to be duly followed!

Jumper Plugs

Configuration

Factory setting: S3-S2, T1-T2, HZ1-HZ2

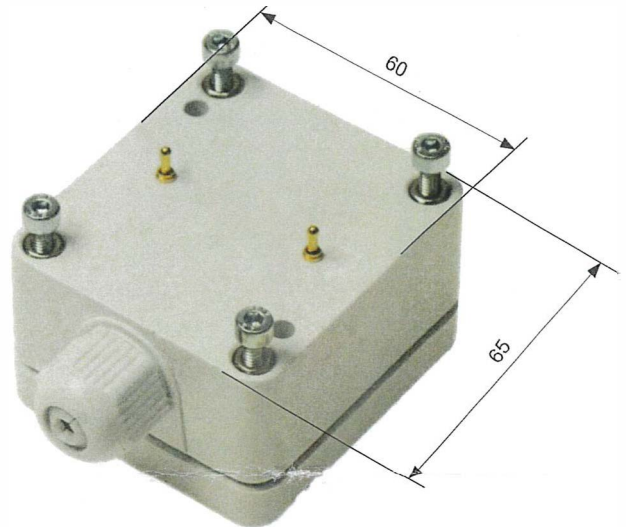
Connection Layout

| Clamp | Function | Description |
|-------|----------|---------------------|
| 1 | GND | 0 V |
| 2 | 24V | Supply +24 V DC |
| 3 | REL-COM | Main relay, Bockpol |
| 4 | REL-NO | Main relay, open |
| 5 | REL-NC | Main relay, closed |

Settings

Sensitivity setting:

The sensitivity of humidity alarm can be changed with a potentiometer. A higher sensitivity is achieved if the potentiometer axis is rotated in the clockwise direction. Normally, the middle position is most suitable.



Attention

Please avoid extreme mechanical and inappropriate exposure.

The device/product is not suitable for potential explosive areas and medical-technical applications.



LP-PS

Point Type sensor

Installation guides

Installation

Mount the point type sensor LP-PS with the bracket at the ground, for example under drip tray or any desired location where detection of water is desired using the two measuring tips provided. Adjust the measuring level from 0-15mm by adjusting the level of the four mounting screws. The sensitivity of humidity alarm can also be adjusted via the potentiometer by unplugging the top cover of the point type sensor. Once the LP-PS is powered with 24V DC power supply, Green LED is lit. The sensor will be activated with RED LED when the measuring tips contact water while the main relay NO contact will be energized as closed circuit and NC contact will be energized as open circuit.

Testing:

The water sensor should be periodically tested to ensure proper operation (suggested monthly). After the continuous activation (detection of water) the measuring tips should be cleaned. Wipe or scrape off any accumulated substances to expose the measuring tips.

Kind Reminder to the contractor

Regular maintenance by the installer and frequent testing by the user is vital for continuous satisfactory operation of any water leakage detection system. The installer should assume the responsibility of developing and offering a regular maintenance programme to the user as well as acquainting the user with a proper operation and limitation of the water leakage detection system. Recommendations must be included for a specific programme of frequent testing and maintenance to ensure the systems proper operation at all the times.

Typical application scenario

