

LEAKAGE ALARM UNIT (Model 24 V AC/DC)



Ordering No. 50 24 92
CON-LEME-24V



Characteristic features

- ▶ Safe operation, impedance measuring principle
- ▶ Operating voltage 24 V DC/AC
- ▶ 2 integrated, gold plated measuring tips
- ▶ Potential free switch output (Relay) 30 V / 4 A
- ▶ Adjustable sensitivity and switching mode
- ▶ Adjustable measuring level 0 ... 15mm
- ▶ Simple mounting
- ▶ Optional with acoustic signal generator

Typical areas of application

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

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. 0.5 ... 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.

Connection

After unscrewing the sensor cover, the control cable is inserted into the cable gland M16. The operating voltage supply (24 V DC or AC) is connected at the terminals AC/DC+ and AC/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.



Technical data

Sensor	
Switching point	Approx. 2 ... 60 kOhm type 15 kOhm, 67 µS
Measuring medium	Conducting liquids, construction material
Application temperature	5 ... 60 °C
Control unit	
Operating voltage	24 V DC ±10%, max. 80 mA
Operating status display	LED green at live operating voltage
Relay contact	Potential free changeover contact max. 36 V / 5 A
Switch status display	LED red at closed relay contact
Dimensions	Approx. 130 x 82 x 60 mm
Connection	Terminals, 1.5 mm ²
Housing	ABS, white, Enclosure IP 54
EMV Noise immunity	EN 50082-2
EMV Noise emission	EN 50081-2
CE-Conformance	89/336/EWG
Guarantee	24 Months
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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 non-conducting 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!

Settings

Output signal generator (optional): A passive Piezo-signal generator can be connected at the plug connector (Pin BUZ and GND). The status of signal (acoustic signal at dry or wet) can be adjusted with the jumper plugs S1-S2 or S2-S3. In the position S2-S3, the signal generator is active on detecting leakage.

Switching mode: The switching mode of the relay (closed or open during wet) can be adjusted with the jumper plugs of T1-T2 or T2-T3. In the factory routine adjustment, the jumper T1-T2 is plugged and the relay closes if the electrodes detect leakage.

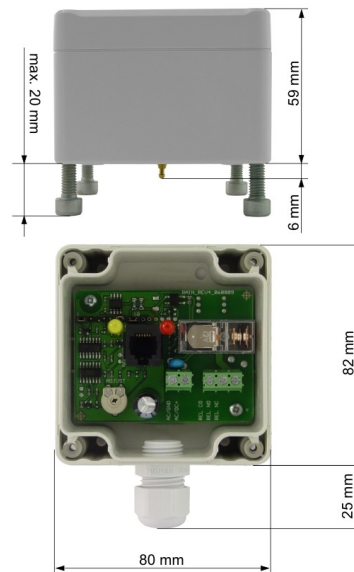
Sensitivity setting: The sensitivity of humidity alarm can be changed with a potentiometer. A higher sensitivity is achieved if the potentiometer axis is rotated in the clockwise direction. Normally, the middle position is most suitable. Please note that no functioning takes place at the end positions.

Display: There is a green LED for operation status display and a red LED as switch position display (Relay contact closed).

Connection layout

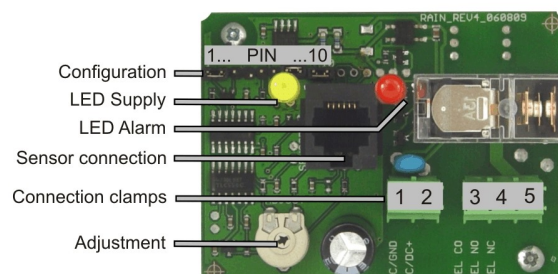
Clamp	Function	Description
1	AC/GND	Supply 24 V DC/AC
2	AC/DC+	Supply 24 V DC/AC
3	REL-COM	Main relay, common pin
4	REL-NO	Main relay, NO terminal
5	REL-NC	Main relay, NC terminal

Drawing



Jumper plugs

Configuration		
1	S3	Signal generator switching mode(dry)
2	S2	Middle contact for S3, S1
3	S1	Signal generator switching mode (wet)
4	GND	Signal generator ground
5	BUZ	Signal generator output
6	T3	Relay switching mode (dry)
7	T2	Middle contact for T3, T1
8	T1	Relay switching mode (Wet)
9	HZ1	Heating (only for external sensor)
10	HZ2	Heating (only for external sensor)
Factory setting: S3-S2 T1-T2 HZ1-HZ2		



A further probe (special accessories) can be connected to the sensor connection, which can be additionally monitored by the built in electronics.

More info on our website: www.hygroSens.com