OPERATION MANUAL

Leakage alarm unit
water detector, model 12 V or 24 V AC/DC

Characteristic features

- Safe operation, impedance measuring principle
- Operating voltage 12 / 24 V AC/DC
- 2 integrated, gold plated measuring tips
- Potential free switch output (Relay) 30 V / 4 A
- Adjustable sensitivity and switching mode
- Adjustable measuring level 0...15 mm
- Simple mounting

Areas of application

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

Technical data

Leckage alarm unit	
Measuring principle	electrolytic conductivity
Measuring medium	conducting liquids
Application temperature	+5...+60 °C
Operating voltage (optionally)	12 / 24 V AC/DC ±10 %
Current consumption	14 mA quiescent current max. 80 mA
Switching point	approx. 2...60 kΩ (type. 15 kΩ)
Switching output	Potential-free switching output (relais) 30 V / 4 A, closing switch contact / opening switch contact selectable
Cable gland	M16 x 1,5
Electrical connection	compression fitting 1,5 mm²
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 (L x W x H)	80 x 82 x 60 mm

Article Description	Art.-No.
Leakage alarm unit 12 V	LEME-12V
Leakage alarm unit 24 V	LEME-24V

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 concepted 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/housings:

The device can be installed directly at the place 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). When operating in a metallic environment, make sure that any grounding of the pan/the housing is not connected to the potential of the voltage supply of the leakage detector. Otherwise, there is a risk of damage to the leakage detector.

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 M16. The operating voltage supply (12 or 24 V AC/DC) 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.

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 µS). 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!

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 grounder
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		

Clamp	Function	Description
1	AC/GND	Operating voltage 12 or 24 V AC/DC*
2	AC/DC+	Operating voltage 12 or 24 V AC/DC*
3	REL-COM	Common switch contact
4	REL-NO	Closing switch contact
5	REL-NC	Opening switch contact

*according to model

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.The potentiometer is to be adjusted only with tools intended for this purpose (e.g. a precision screwdriver or trimmer).

Indicators
There is a green LED on the device to indicate the operation status and a red LED to indicate the switch position (meansrelay contact closed).

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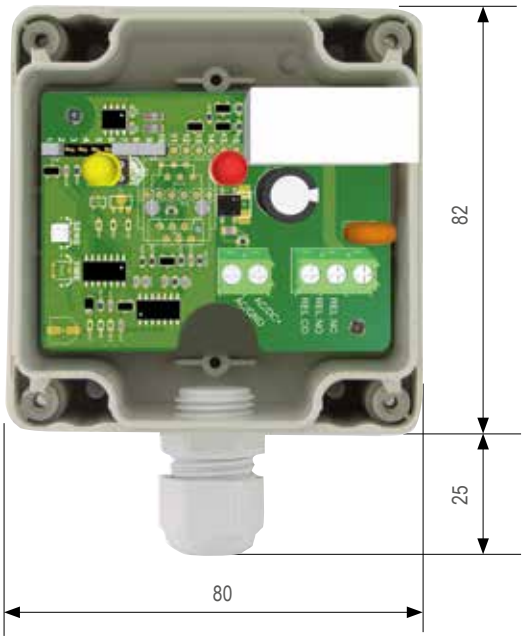
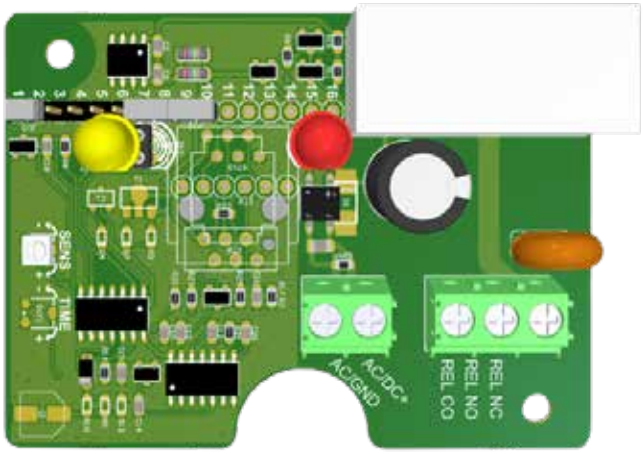
Dimensions



Bottom view



Attention

Please avoid extreme mechanical and inappropriate exposure.

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

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