Technik für Umweltschutz

Messen. Regeln. Überwachen.

EN

Operating instructions



Vacuum type leak detector

Eurovac NV
Eurovac HV

Type: Eurovac NV/HV without protective housing
Type: Eurovac NV/HV in protective housing
Type: Eurovac NV/HV in protective housing with heating

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1 About these operating instructions

These operating instructions describe the vacuum type leak detectors (also referred to as "product" in these operating instructions):

- "Eurovac NV"
- "Eurovac HV"

These operating instructions are part of the product.

- You may only use the product if you have fully read and understood these operating instructions.
- Verify that these operating instructions are always accessible for any type of work performed on or with the product.
- Pass these operating instructions as well as all other product-related documents on to all owners of the product.
- If you feel that these operating instructions contain errors, inconsistencies, ambiguities or other issues, contact the manufacturer prior to using the product.

These operating instructions are protected by copyright and may only be used as provided for by the corresponding copyright legislation. We reserve the right to modifications.

The manufacturer shall not be liable in any form whatsoever for direct or consequential damage resulting from failure to observe these operating instructions or from failure to comply with directives, regulations and standards and any other statutory requirements applicable at the installation site of the product.

2 Information on safety

2.1 Safety messages and hazard categories

These operating instructions contain safety messages to alert you to potential hazards and risks. In addition to the instructions provided in these operating instructions, you must comply with all directives, standards and safety regulations applicable at the installation site of the product. Verify that you are familiar with all directives, standards and safety regulations and ensure compliance with them prior to using the product.

Safety messages in these operating instructions are highlighted with warning symbols and warning words. Depending on the severity of a hazard, the safety messages are classified according to different hazard categories.



DANGER

DANGER indicates a hazardous situation, which, if not avoided, will result in death or serious injury.

NOTICE

NOTICE indicates a hazardous situation, which, if not avoided, can result in equipment damage.

In addition, the following symbols are used in these operating instructions:



This is the general safety alert symbol. It alerts to injury hazards or equipment damage. Comply with all safety instructions in conjunction with this symbol to help avoid possible death, injury or equipment damage.



This symbol alerts to hazardous electrical voltage. If this symbol is used in a safety message, there is a hazard of electric shock.

2.2 Intended use

Different types of intended use apply to the two vacuum type leak detectors.

- **Eurovac NV:** see chapter 2.2.1
- **Eurovac HV:** see chapter 2.2.2

2.2.1 Intended use Eurovac NV

The product is a leak detector for vacuum systems, class I as per EN 13160-1 and EN 13160-2.

This product may only be used to detect leaks in tanks which are not pressurised (i.e. operated under atmospheric conditions) and which are used for the storage of liquids.

Tanks

- Double-walled tanks whose suction line leads to the lowest point of the interstitial space
- Single-walled steel or plastic tanks with leak protection lining or leak protection coating, whose suction line leads to the lowest point of the interstitial space

The interstitial spaces of the tanks must be operated without leak detection fluid.

Installation in the manhole of underground tanks is only permissible with the approval of the authorities.

Liquids

- Water-polluting liquids with a flash point > 55 °C, which do not become viscous and which do not release solid matter, for example, AdBlue® (urea solution 32.5 %) as per DIN 70070

The product must be resistant to the liquid and its vapours. Resistance has been proven for the liquids listed in the list of substances in chapter 15.2.

Any use other than the application explicitly permitted in these operating instructions is not permitted and causes hazards.

Verify that the product is suitable for the application planned by you prior to using the product. In doing so, take into account at least the following:

- All directives, standards and safety regulations applicable at the installation site of the product
- All conditions and data specified for the product
- The conditions of the planned application

In addition, perform a risk assessment in view of the planned application, according to an approved risk assessment method, and implement the appropriate safety measures, based on the results of the risk assessment. Take into account the consequences of installing or integrating the product into a system or a plant.

When using the product, perform all work and all other activities in conjunction with the product in compliance with the conditions specified in the operating instructions and on the nameplate, as well as with all directives, standards and safety regulations applicable at the installation site of the product.

2.2.2 Intended use Eurovac HV

The product is a leak detector for vacuum systems, class I as per EN 13160-1 and EN 13160-2.

This product may only be used to detect leaks in tanks which are not pressurised (i.e. operated under atmospheric conditions) and which are used for the aboveground or underground storage of liquids.

Tanks

- Double-walled steel tanks. The interstitial space must meet the requirements as per EN 12285-1, EN 12285-2 or DIN 6608.
- Double-walled tanks whose interstitial space is suitable for the vacuum of Eurovac HV.

Installation in the manhole of underground tanks is only permissible with the approval of the authorities.

Liquids

- Water-polluting liquids with a flash point > 55 °C, which do not become viscous and which do not release solid matter, for example, AdBlue® (urea solution 32.5 %) as per DIN 70070

The product must be resistant to the liquid and its vapours. Resistance has been proven for the liquids listed in the list of substances in chapter 15.2.

The permissible density of the liquid depends on the tank used and its content:

Tank as per	Hydrostatic height	Permissible density of stored liquid
EN 12285-1 Class A	≤ 3.0 m	≤ 1100 kg/m³
EN 12285-1, DIN 6608, EN 12285-2, DIN 6616	≤ 3.0 m ≤ 2.5 m ≤ 2.0 m ≤ 1.6 m	≤ 1019 kg/m³ ≤ 1223 kg/m³ ≤ 1529 kg/m³ ≤ 1900 kg/m³
DIN 6618-2	≤ 15.95 m ≤ 12.75 m ≤ 9.585 m	≤ 1120 kg/m³ ≤ 1470 kg/m³ ≤ 1900 kg/m³
DIN 6619	≤ 2.84 m ≤ 2.76 m ≤ 2.6 m ≤ 1.9 m	≤ 1060 kg/m³ ≤ 1090 kg/m³ ≤ 1160 kg/m³ ≤ 1580 kg/m³
DIN 6623, DIN 6624	≤ 1.2 m	≤ 1900 kg/m³

Any use other than the application explicitly permitted in these operating instructions is not permitted and causes hazards.

Verify that the product is suitable for the application planned by you prior to using the product. In doing so, take into account at least the following:

- All directives, standards and safety regulations applicable at the installation site of the product
- All conditions and data specified for the product
- The conditions of the planned application

In addition, perform a risk assessment in view of the planned application, according to an approved risk assessment method, and implement the appropriate safety measures, based on the results of the risk assessment. Take into account the consequences of installing or integrating the product into a system or a plant.

When using the product, perform all work and all other activities in conjunction with the product in compliance with the conditions specified in the operating instructions and on the nameplate, as well as with all directives, standards and safety regulations applicable at the installation site of the product.

2.3 Predictable incorrect application

The product must never be used in the following cases and for the following purposes:

- Hazardous area
  - If the product is operated in hazardous areas, sparks may cause deflagrations, fires or explosions.
- Use with corrosive liquids which attack the materials of the product
- Electrical connection with switch or plug connection
- In conjunction with products which are used for health-saving or life-saving purposes or whose operation may incur hazards to humans, animals or property

Additionally for Eurovac NV only
• Use in tanks without suction line to the lowest point of the interstitial space

2.4 Qualification of personnel

This product may only be mounted, commissioned, maintained and decommissioned by a qualified, specialised company which has all required certifications and which meets the following requirements:

- Compliance with all directives, standards and safety regulations concerning handling of water-polluting substances as applicable at the installation site of the product.
- In Germany: Certification as per § 62 "Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen" (AwSV) (Ordinance on Installations for Handling Water-Polluting Substances).

These persons must have sufficient technical training, knowledge and experience and be able to foresee and detect potential hazards that may be caused by using the product.

All persons working on and with the product must be fully familiar with all directives, standards and safety regulations that must be observed for performing such work.

2.5 Personal protective equipment

Always wear the required personal protective equipment. When performing work on and with the product, take into account that hazards may be present at the installation site which do not directly result from the product itself.

2.6 Modifications to the product

Only perform work on and with the product which is explicitly described in these operating instructions. Do not make any modifications to the product which are not described in these operating instructions.

3 Transport and storage

The product may be damaged as a result of improper transport or storage.

NOTICE

INCORRECT HANDLING

- Verify compliance with the specified ambient conditions during transport or storage of the product.
- Use the original packaging when transporting the product.
- Store the product in a clean and dry environment.
- Verify that the product is protected against shocks and impact during transport and storage.

Failure to follow these instructions can result in equipment damage.

4 Product description

The product contains the following elements in an impact-resistant plastic housing: display elements and controls as well as all electronic components.

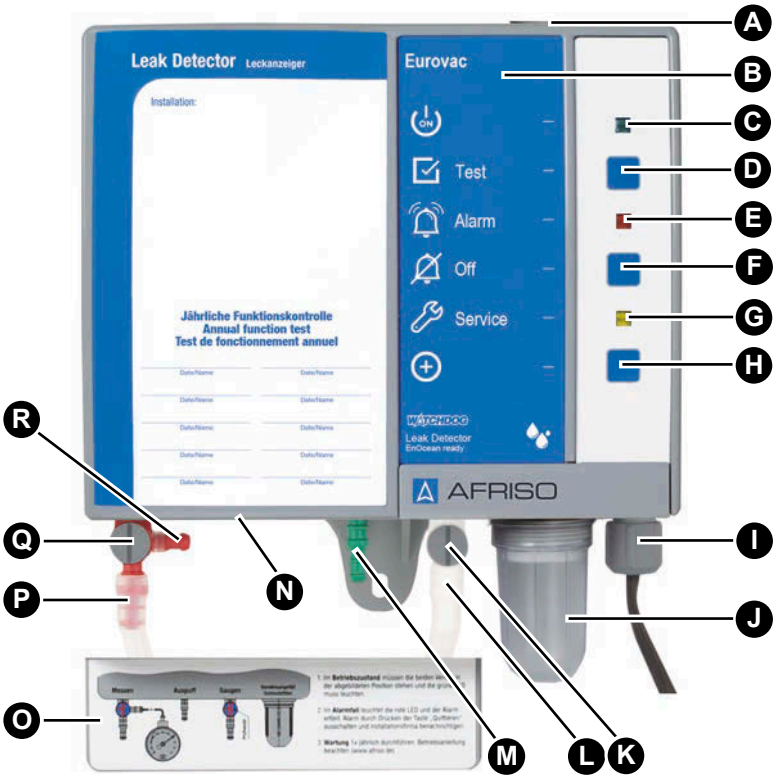
Hose connections are available for the pneumatic connection to the interstitial space of the tank.

The product monitors and controls constant vacuum in the interstitial space of the tank and triggers an alarm if the vacuum drops.

The product can be retrofitted with an EnOcean® wireless module.

Product description

4.1 Overview



A. Rubber grommet
B. Type designation of the product
C. Green LED
D. Test key
E. Red LED
F. Mute key
G. Yellow LED
H. LRN key
I. Cable gland
J. Condensate trap with filter
K. Test valve
L. Suction line connection
M. Exhaust line connection
N. Nameplate at the bottom
O. Cover for hose connections
P. Measuring line connection
Q. Measurement valve
R. Test port

4.1.1 Pictograms

Symbol	Meaning/function
	**Indication** The green LED next to the symbol indicates that the product is ready for operation.
	**Key** The test key allows you to check the visual and audible alarms.
	**Indication** The red LED to the right of the symbol indicates an alarm.
	**Key** This key allows you to mute the audible alarm.
	**Indication** The yellow LED to the right of the symbol indicates that the annual service must be performed if the service function is active.
	**Key** If the LRN key is pressed, the product sends a LRN telegram (LRNTEL) to connect to the AFRISOhome gateway if the optional EnOcean wireless module is installed.

4.2 Dimensions

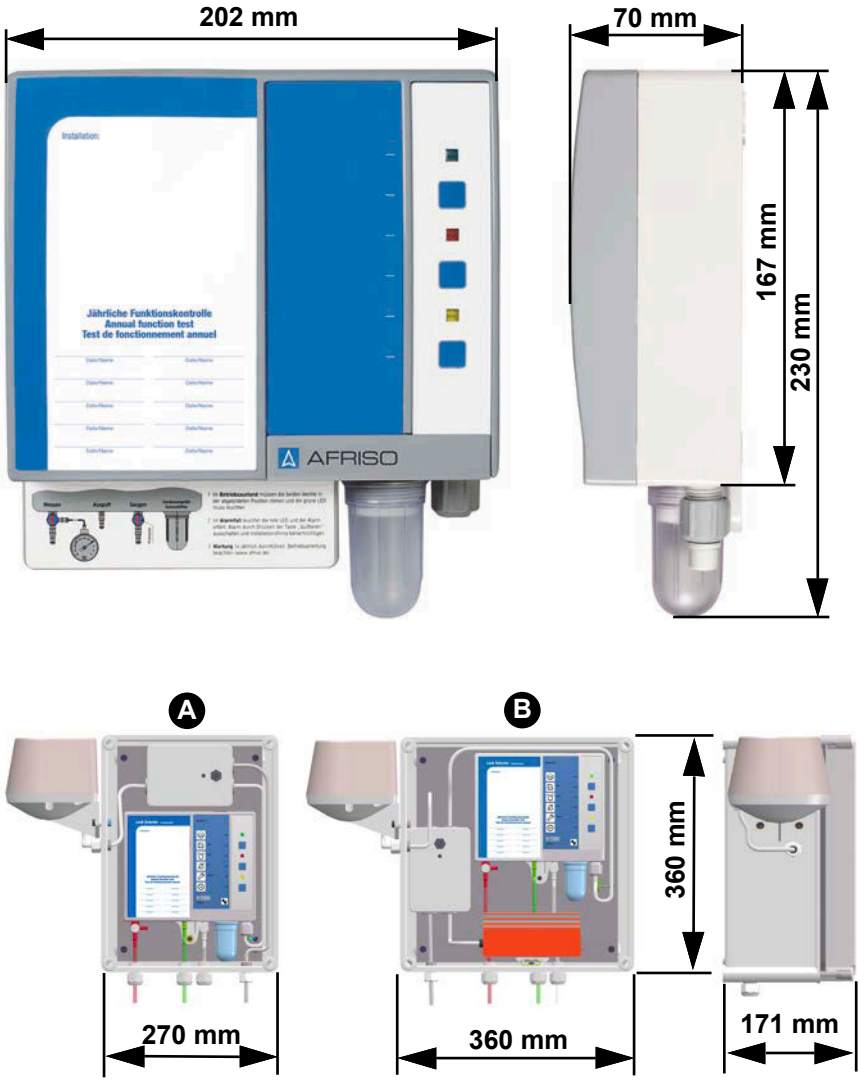
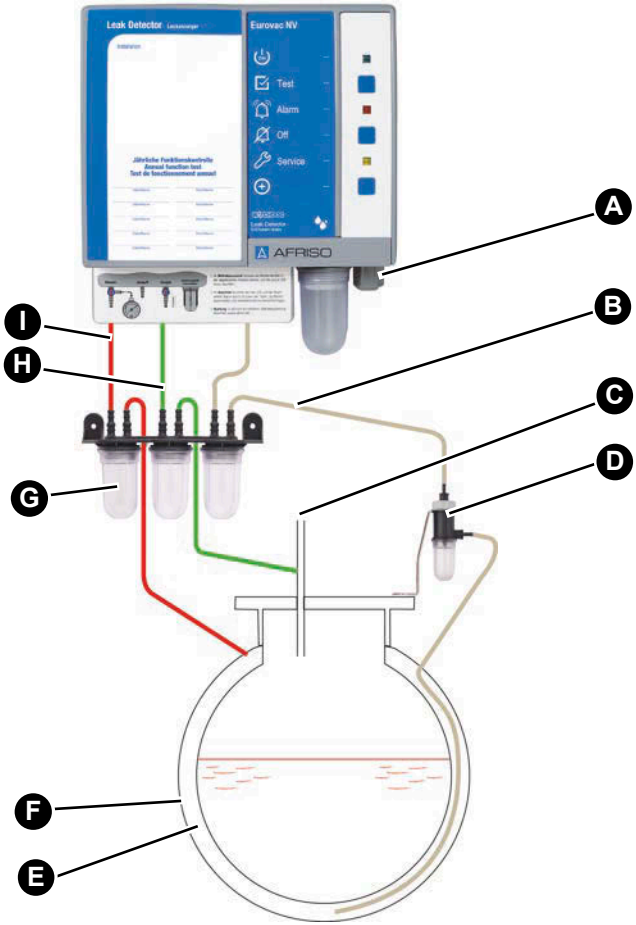


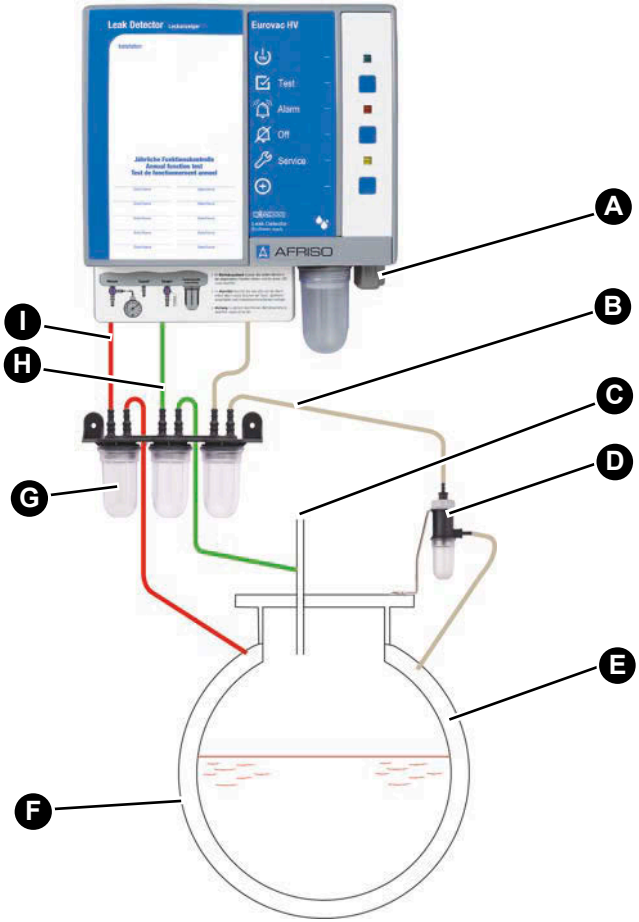
Fig. 1: Eurovac in protective housing, without (A) or with heating (B), pre-assembled and ready to be connected. The horn is connected to the output relay.

4.3 Application example Eurovac NV



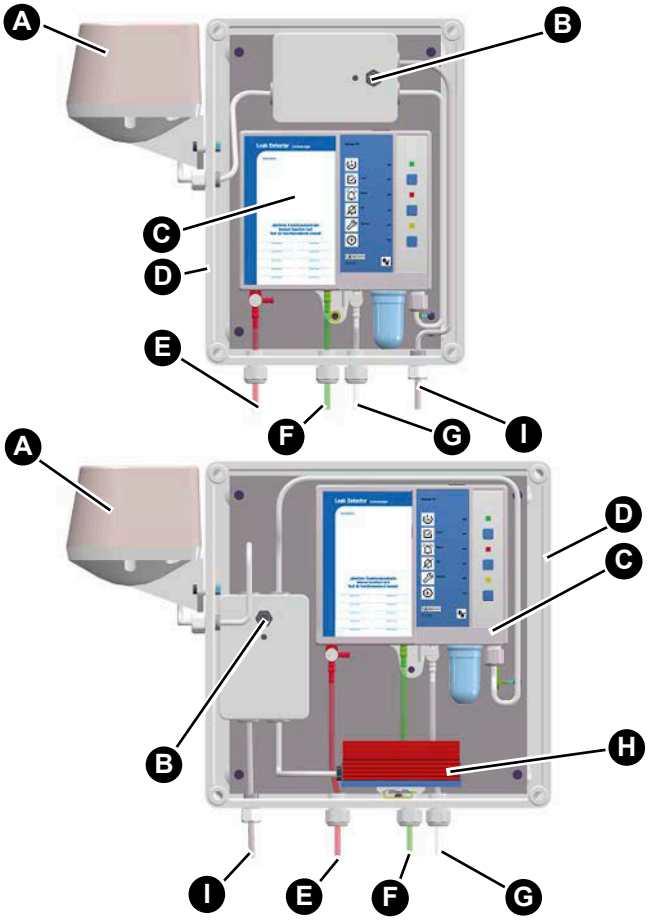
A. Electrical connection
B. Suction line (transparent or white)
C. Tank vent
D. Liquid barrier
E. Interstitial space
F. Outer wall of tank
G. Condensate traps
H. Exhaust line (green)
I. Measuring line (red)

4.4 Application example Eurovac HV



A. Electrical connection
B. Suction line (transparent or white)
C. Tank vent
D. Liquid barrier
E. Interstitial space
F. Outer wall of tank
G. Condensate traps
H. Exhaust line (green)
I. Measuring line (red)

4.5 Application example Eurovac



A. Horn "HPW 2"
B. Acknowledge switch for horn "HPW 2"
C. Product
D. Protective housing
E. Measuring line (red)
F. Exhaust line (green)
G. Suction line (transparent or white)
H. Heating with thermostat
I. Mains cable

4.6 Function

The products trigger visual and audible alarms. The alarm signal can be transmitted to additional equipment (for example, horn or warning light with rotating reflector) via the voltage-free changeover contact.

The product monitors and controls the vacuum in the interstitial space by means of an electronic pressure sensor and a pump.

If a leak occurs in the inner or outer wall of the tank (tank wall, leak protection lining or leak protection coating) either above or below the level of the stored liquid or the ground water, and if this leak is greater than the suction capacity of the pump, the vacuum will drop. When the alarm threshold for the switching point is reached, the red LED lights permanently and the audible alarm is activated. The voltage-free changeover contact is switched. The audible alarm can be switched off by pressing the Mute key.

Products with EnOcean® wireless module

The AFRISOhome gateway allows for automatic transmission of messages in the case of an alarm.

4.7 Voltage-free changeover contact (relay output)

The product features a voltage-free changeover contact. In the case of an alarm, the voltage-free changeover contact is switched.

The product can be operated with or without additional external equipment, for example:

- Visual and audible alarm units
- Remote alarm equipment
- Building control systems

4.8 Approvals, conformities, certifications

The product complies with:

- EMC Directive (2014/30/EU)
- Low Voltage Directive (2014/35/EU)
- Construction Products Directive 305/2011 (EN 13160-2:2003)
- RoHS Directive (2011/65/EU))

4.9 Technical specifications

Parameter	NV	HV
General specifications		
Dimensions housing (W x H x D)	202 x 230 x 70 mm	
Weight	1.1 kg	
Emission/alarm sound	Min. 70 dB(A) A-weighted sound level of the audible alarm at a distance of one metre	
Operating pressure in interstitial space	Approx. -60 ... -80 mbar	Approx. -380 ... -420 mbar
Switching point Alarm On	-40 ±5 mbar	-340 ±10 mbar
Switching point Alarm Off	-60 ±5 mbar	-380 ±10 mbar
Switching point Pump On	-60 ±5 mbar	-380 ±10 mbar
Switching point Pump Off	-80 ±5 mbar	-420 ±10 mbar
Connecting hose	PVC hose 6 x 2 mm	
Ambient conditions		
Ambient temperature operation	-5 ... 60 °C	
Ambient temperature outdoor installation with protective housing and heating	-25 ... 60 °C	
Ambient temperature storage	-25 ... 60 °C	
Electrical data		
Supply voltage	AC 100 ... 240 V ±10 %	
Battery (optional)	Alkaline, 9 V monobloc battery (6LR61)	
Nominal power	< 10 VA	
Relay fuse	T 2 A	
Protection class (EN 60730-1)	II	
Degree of protection (EN 60529)	IP 30	
Degree of protection in protective housing	IP 65	
Degree of protection horn	IP 55	

Product description

Parameter	NV	HV
Outputs	1 voltage-free changeover contact	
Breaking capacity output relay	250 V maximum, 2 A, resistive load	
Emitted interference	CISPR 22	
Noise immunity	EN 61000	
EnOcean® wireless		
Frequency	868.3 MHz	
Transmission power	Maximum 10 mW	
Range	10 ... 30 m see "Range of EnOcean® wireless"	
EnOcean® Equipment Profile (EEP)	A5-30-04	

5 Mounting

5.1 Preparing mounting

⇨ Verify that the audible alarm signal of the product can always be heard, even in the case of ambient noise.

⇨ If audibility cannot be ensured, you must install an additional alarm unit at a suitable location in the building (for example, additional alarm unit ZAG 01, horn KH 1 or combined alarm light and horn from AFRISO).

5.1.1 Vacuum

NOTICE

INCORRECT PRESSURE IN INTERSTITIAL SPACE

- Verify that the pressure in the interstitial space of the tank corresponds to the specifications of the product.

Failure to follow these instructions can result in equipment damage.

Generate a vacuum in the interstitial space of approximately the value shown in the table below. Use a vacuum pump with a greater capacity for this purpose.

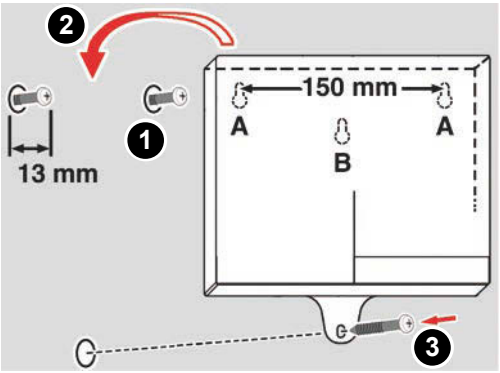
Eurovac NV	Eurovac HV
-80 mbar	-420 mbar

5.1.2 Tightness test

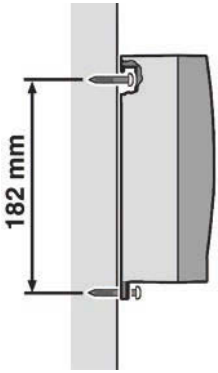
Check for leaks in the interstitial space. A slight pressure drop in the first hour is possible. After that, the pressure must not drop any more.

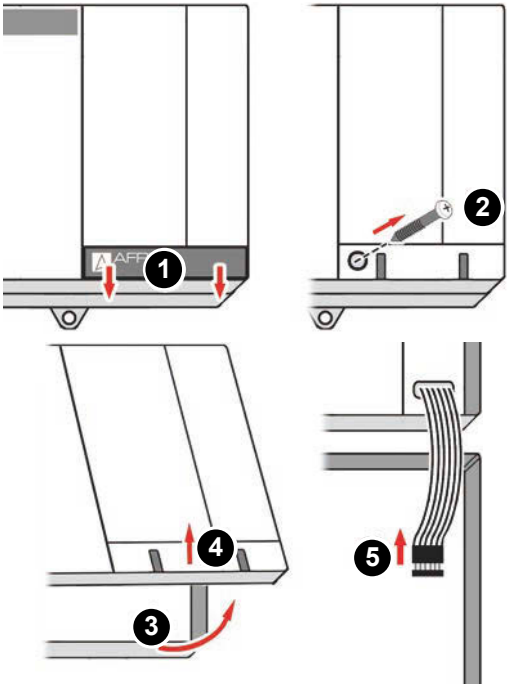
5.2 Mounting the product

- ⇨ Verify that the product is mounted to an even, rigid and dry wall at eye level.
- ⇨ Verify that the product is accessible and easy to oversee at all times.
- ⇨ Verify compliance with the permissible ambient conditions at the product.
- ⇨ Verify that the product without protective housing is protected against water and splash water.
- ⇨ Verify that the product is protected from direct atmospheric influences if it is installed outdoors.
  - Use an AFRISO protective housing.

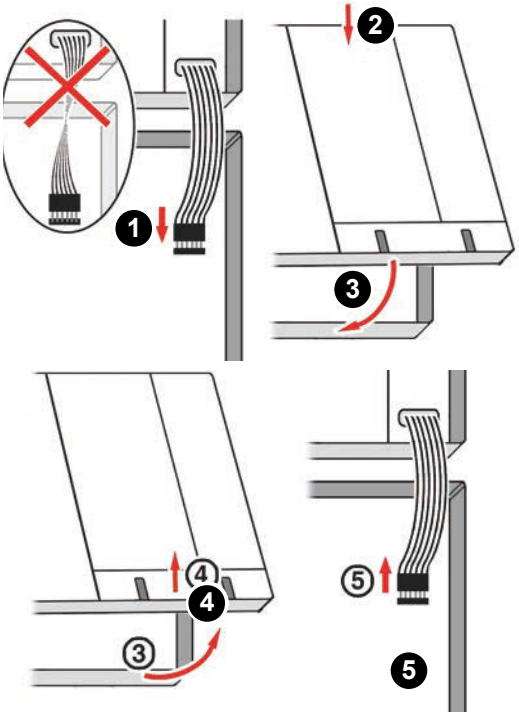


1. Mount the product to the wall using mounting type A or B.
   - Use the enclosed drilling template.





2. Open the product.
3. Connect the product as described in chapter 5.3.



4. Close the product.

5.3 Electrical connection



DANGER

ELECTRIC SHOCK

- Verify that the degree of protection against electric shock (protection class, double insulation) is not reduced by the type of electrical installation.
- Verify that the product is connected by means of a permanently installed cable connection.

Failure to follow these instructions will result in death or serious injury.



DANGER

ELECTRIC SHOCK CAUSED BY LIVE PARTS

- Disconnect the supply voltage before performing the work and ensure that it cannot be switched on.
- Verify that no hazards can be caused by electrically conductive objects or media.

Failure to follow these instructions will result in death or serious injury.

NOTICE

UNAVAILABLE MONITORING FUNCTION

- Do not install mains plugs or switches in the supply line to the product.
- Only power on/power off the product via the on-site mains fuse.

Failure to follow these instructions can result in equipment damage.

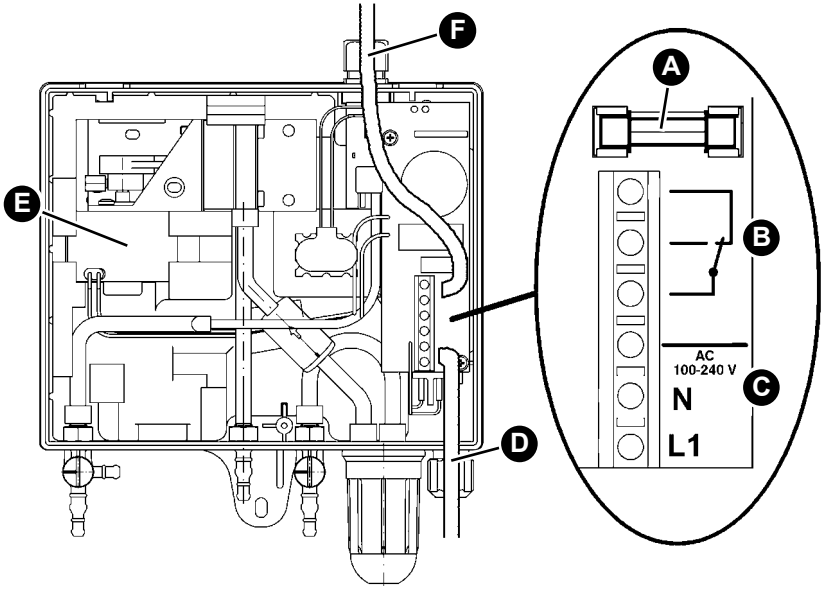
5.3.1 Supply voltage

⇨Verify that the product is connected to mains by means of a suitable, permanently installed cable (for example, NYM-J 2 x 1.5 mm²).

⇨Verify that the power supply to the product is separately fused with 16 A maximum.

1. Open the product.
2. If you want to route the mains cable or relay cable through the top of the housing, replace the rubber grommet at the top of the housing by the enclosed cable gland.
3. Route the mains cable through the upper or bottom cable gland into the product.
4. Connect the phase to terminal L1 and the neutral conductor to terminal N.
5. Close any cable glands of the product that are not used by means of the enclosed plugs.

5.3.2 Connecting the product

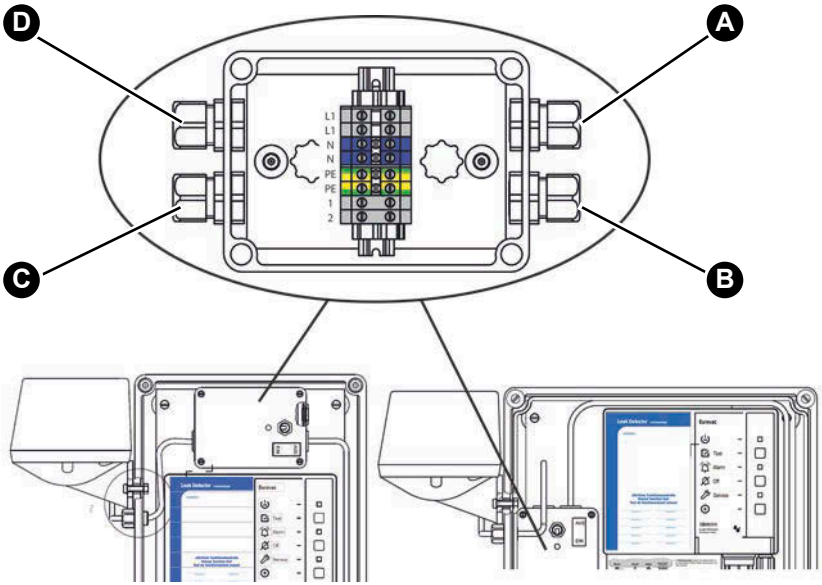


A. Relay fuse (voltage-free changeover contact)
B. Voltage-free changeover contact (relay output)
C. Mains connection
D. Cable routed through bottom cable gland
E. Vacuum pump
F. Cable routed through upper cable gland (alternative)

5.3.3 Connecting the product in protective housing

If the product is installed in a protective housing, you must observe the following:

- The product is connected via an external connection box.
- An additional audible alarm must be installed outside of the protective housing.
- In a protective housing without horn or heating, the product must be connected as in chapter 5.3.2.



A. Mains connection
B. Connection Eurovac
C. Connection horn
D. Connection heating (optional)

5.3.4 Voltage-free changeover contact (relay output)

NOTICE

VOLTAGE PEAKS WHEN INDUCTIVE CONSUMERS ARE SWITCHED OFF

When inductive consumers are switched off, this can cause voltage peaks and can lead to adverse effects on electrical systems and may destroy the switching contact.

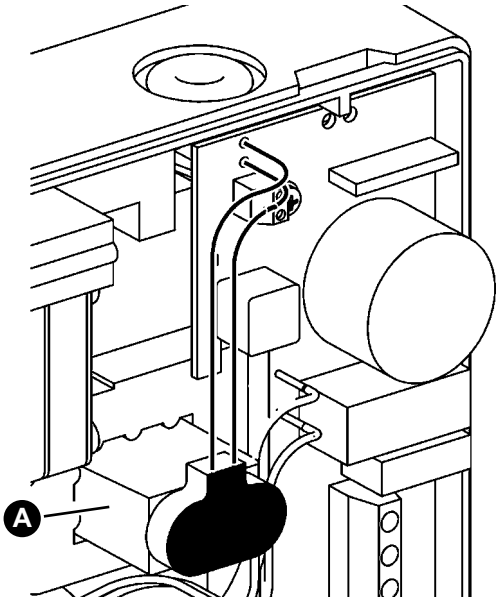
- Use commercially available standard RC combinations such as 0.1 µF/100 Ohm for inductive consumers.

Failure to follow these instructions can result in equipment damage.

In the case of an alarm, the voltage-free changeover contact is switched.

1. Permanently install the cable connected to the voltage-free changeover contact.
2. Route this cable through the upper or bottom cable gland into the product.
3. Connect the cable to the terminals designated with relay.
4. Verify safe insulation of the cable.

5.3.5 9 V monobloc battery (for signal in the case of power outage)



Optional or for applications in Switzerland

1. Connect a 9 V monobloc battery (A) to the product.

If a battery is connected, a signal sound is activated in the case of a power outage. The signal sound cannot be acknowledged; it remains on until the supply voltage is available again. When supply voltage is restored, the product immediately resumes operation. If an alarm has occurred in the meantime, this is indicated.

No battery is included in the scope of delivery for operation of the product in other countries. Connection of a standard 9 V monobloc battery is optional.

5.4 Converting the system to vacuum (Eurovac HV only)

This chapter is only relevant if the system is converted from a leak detection fluid system to vacuum type leak detector.

Tanks whose interstitial space is filled with leak detection fluid.

1. Provide a collecting container to remove the liquid from the interstitial space.
2. Dismount the connection line between the container for leak detection fluid and the interstitial space.
3. Collect the escaping leak detection fluid in the bucket.
4. Dismount the test valve and the container for leak detection fluid.
5. Suck the leak detection fluid from the interstitial space into a suitable container via the suction connection (suction line) until the liquid column becomes unstable and air is withdrawn.
6. Leave the connection opening for the measuring line open for the time being so that air can be admitted.
7. Remove the maximum possible volume of liquid from the interstitial space.
   - Air must be at last in the top third of the interstitial space.
8. Provide the connections for the suction line and the measuring line.
   - The connection of the line for the leak detection fluid can be used for the suction line.
   - The connection of the test valve can be used for the measuring line.

5.5 Retrofitting an EnOcean® wireless module (optional)

DANGER

ELECTRIC SHOCK CAUSED BY LIVE PARTS

- Disconnect the supply voltage before performing the work and ensure that it cannot be switched on.

Failure to follow these instructions will result in death or serious injury.

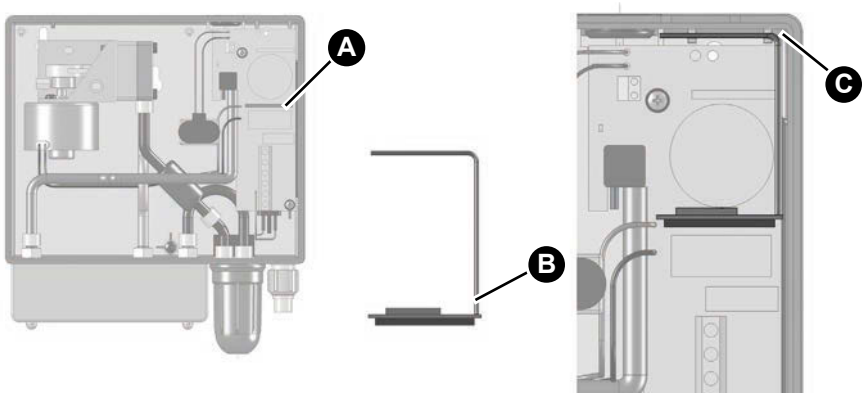
NOTICE

ELECTROSTATIC DISCHARGE

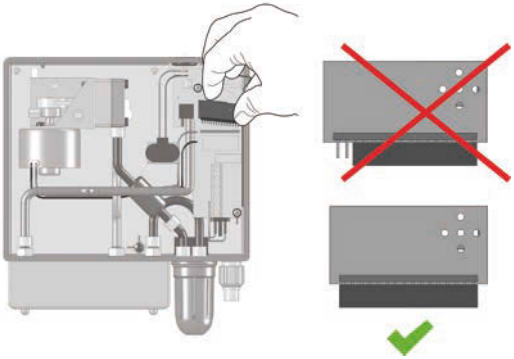
- Always earth yourself before touching electronic components.
- Do not touch the EnOcean® wireless module to plug it in; use the anti-electrostatic film to plug it into the slot.

Failure to follow these instructions can result in equipment damage.

1. Open the product.

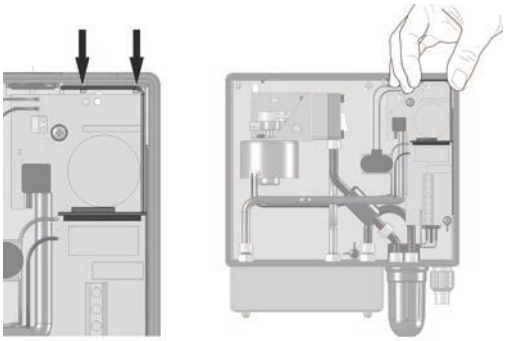


A. Slot for EnOcean® wireless module
B. Position antenna
C. Housing opening (for fastening the antenna)



2. Plug the EnOcean® wireless module into the slot.

   When plugging in the wireless module, ensure the following:
   - All pins must be inserted into the female connector.
   - The position of the antenna must be at the right side (close to the housing wall).



3. Push the antenna of the EnOcean® wireless module into the two housing openings of the product.
4. Close the cover of the product.

5.6 Connecting the hose lines

See the application example chapter 4.3 and chapter 4.4 for examples of how to route the hose lines from the product to the tank to be monitored.

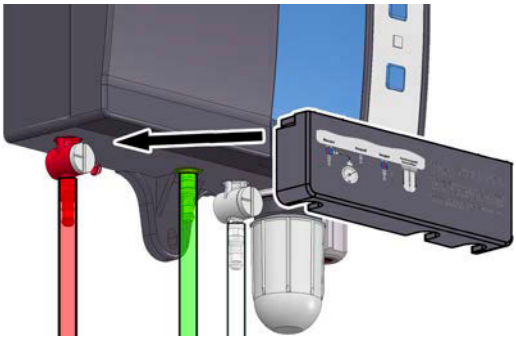
⇨ Verify that the hoses are resistant to the stored liquid and its vapours.

1. Use a resistant hose 6 x 2 mm for the measuring hose (red), the suction hose (transparent or white) and the exhaust hose (green).
   - When the leak detector of existing systems is replaced, you may also use 4 x 2 mm hose lines provided such hoses had been used before the leak detector is replaced.
   - The hose connections of the product are designed for 4 x 2 mm and 6 x 2 mm hose lines.

2. The hose lines must have the full cross section over the entire length; there must be no bends and indentations.
   - In the case of outdoor tanks, install the hoses with a gradient of 4 %.

If the hose line does not have a steady gradient to the tank or if condensate can collect in the line, use a condensate trap at each lower point of the hose line.

1. Do not install any shut-off fittings.
2. In outdoor or underground applications, install the hoses in suitable liquid-tight, shock-resistant and weather-resistant protective pipes.
3. Connect the measuring line to the measurement connection of the interstitial space.
4. Connect the exhaust line to the tank vent pipe.
   - If an AFRISO Euroflex withdrawal system is used, the exhaust line can be directly connected to the return connection.
5. Connect the suction line to the suction connection of the interstitial space.
6. Install a liquid barrier in the suction line.
   - Mount the liquid barrier vertically, for example, at the manhole cover.



7. Push the cover over the connections.

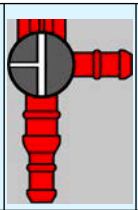
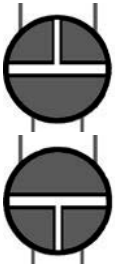
5.7 Valve settings

NOTICE

INCORRECT PRESSURE IN INTERSTITIAL SPACE

- Verify that the pressure in the interstitial space of the tank corresponds to the specifications of the product.

Failure to follow these instructions can result in equipment damage.

Valve setting	Measurement valve (red) 	Test valve (white) 
	Normal operation	Normal operation
	Test with pressure measuring instrument	Venting
	Not permissible	Not permissible

6 Commissioning

6.1 Commissioning the product

NOTICE

INCORRECT PRESSURE IN INTERSTITIAL SPACE

- Verify that the pressure in the interstitial space of the tank corresponds to the specifications.

Failure to follow these instructions can result in equipment damage.

⇨ Verify that the product has been properly mounted and electrically connected.

⇨ Verify that both valves are in the position "Normal Operation".

⇨ Verify that the interstitial space has been evacuated to a vacuum of approximately the value shown in the following table.

Eurovac NV	Eurovac HV
-80 mbar	-420 mbar

⇨ Verify that the tightness test of the interstitial space has been properly performed.

⇨ Verify that a liquid barrier has been installed.

1. Switch on the supply voltage via the on-site mains fuse.
   - The green LED is on.
   - Once the correct vacuum is reached, the pump switches off.
   - The system is now ready for operation.
2. Perform a function test.

The specialised company certifies the installation, commissioning and test of the product (see chapter 15.1).

6.2 Function test

Have the function test performed and documented by a specialised company.

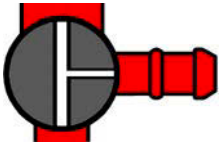
Perform the function test at the following occasions:

- After each commissioning
- After each alarm
- Once per year during maintenance

A test report on the function test must be created and kept with the system documentation.

6.2.1 Performing the function test

The free lateral connection of the red measurement valve is provided for connecting a pressure measuring instrument to test the system. Test reports can be found at www.afriso.de.



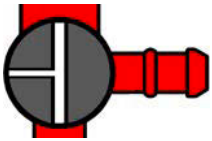
1. Connect the pressure measuring instrument (vacuum).
   - You must zero the pressure measuring instrument, if necessary.
2. Set the measurement valve (red connection) to position "Test".
   - The pressure measuring instrument indicates the vacuum in the interstitial space.



3. Set the test valve (white connection) to position "Vent".
   - The vacuum drops slowly.
4. Observe the pressure measuring instrument and document the pressure values at which the pump and the alarm signals are switched on.



5. Set the test valve (white connection) to position "Normal Operation".
6. Compare the recorded values to the set values.



7. Set the measurement valve (red connection) to position "Normal Operation".
8. Remove the pressure measuring instrument.

6.2.2 Test of the indicators

1. Press the Test key.
   - The green LED, the red LED and the yellow LED light up and the audible alarm sounds.
   - The test is terminated once you release the Test key.

6.2.3 Simulate leakage



1. Set the test valve (white connection) to position "Vent".
   - Air is supplied to the interstitial space of the tank.
   - The vacuum in the interstitial space drops and the product triggers an alarm.



2. Set the test valve (white connection) to position "Normal Operation".
   - The vacuum in the interstitial space is regenerated.
   - The alarm signals must switch off automatically.

6.3 Connecting the product to an AFRISOhome gateway (optional)

See the operating instructions of the AFRISOhome gateway or the app for detailed information on establishing a wireless connection.

⇨ Verify that the EnOcean wireless signal of the product reaches the AFRISOhome gateway or that the AFRISOhome gateway is in the vicinity of the product.

⇨ Verify that the AFRISOhome gateway is in "Learn" mode.

1. Switch on the supply voltage.
   - The green LED is on.



2. Press LRN key (A).
   - The product sends a Learn telegram.
   - The product is now connected to the AFRISOhome gateway.

7 Operation

Operating the product is limited to its regular monitoring:

- The green LED is on.
- The red LED is off.
- The audible alarm is off.

7.1 Alarm condition

In the case of a leak, the red LED is permanently illuminated and the audible alarm is activated. The voltage-free changeover contact switches.

Immediately notify a specialised company.

The alarm signal can be transmitted to additional equipment via the voltage-free changeover contact.

In the case of products with an EnOcean® wireless module, the product sends a message to the AFRISOhome gateway. The user receives a message from the AFRISO app that a leak has been detected.

7.2 Acknowledging the audible alarm

1. Press the Mute key to switch off the audible alarm.
   - The red LED remains lit.
2. The specialised company must remove the cause.
3. Have the function test performed by a specialised company.

Power outage

No alarm is triggered in case of a power outage. If the optional battery is used, a power outage is indicated by an audible signal. When supply voltage is restored, the product immediately resumes operation. If an alarm has occurred in the meantime, this is indicated.

8 Maintenance

The product is safety-related equipment; maintenance may only be performed by a qualified specialised company.

It is recommended close a maintenance agreement with a specialised company.

8.1 Service indication

The product features an integrated service indicator. When the device is shipped, the service indicator is not active.

1. Activate the service indicator, if necessary.

When annual servicing of the product is required, the yellow LED flashes and the audible alarm sounds for approximately one second once per hour.



2. Press the Acknowledge key (A) to mute the audible alarm.
   - The yellow LED (B) lights solid.
3. Have the annual maintenance/service performed by a specialised company.

8.2 Maintenance intervals

When	Activity
Annually	Perform a function test (see chapter 6.2)
	Check the condensate trap at the product and the condensate traps installed in the hoses Drain the condensate traps, if necessary If the filter in the condensate trap is polluted, replace the filter
	If a 9 V monobloc battery is fitted for alarm in the case of power outage, replace the battery
After an alarm condition	Perform a function test after each alarm (see chapter 6.2)
If required	Replace the relay fuse of the voltage-free change-over contact F1 (T 2 A)

8.3 Maintenance activities



DANGER

ELECTRIC SHOCK CAUSED BY LIVE PARTS

- Disconnect the supply voltage before performing the work and ensure that it cannot be switched on.

Failure to follow these instructions will result in death or serious injury.

Replacing the relay fuse (voltage-free changeover contact) F1

⇨ Verify that the supply voltage is interrupted and cannot be switched on.

1. Open the upper part of the housing.
2. Remove the flat cable from the connector.
3. Remove the transparent cover from the fuse F1.
4. Fit a new fuse F1 (T 2 A).
5. Refit the transparent cover.
6. Connect the flat cable to the connector.
7. Fit the upper part of the housing and close it.
8. Switch on the supply voltage.

9 Troubleshooting

Problem	Possible reason	Repair
Green LED is not on	No supply voltage	Apply supply voltage
	Flat cable not properly connected to printed circuit board	Connect the flat cable to the printed circuit board in correct position
Red LED is on	Leak exists	Check the hose lines and hose connections Notify a specialised company
	Test/measurement valve in position "Test/Vent"	Set the test valve and the measurement valve to position "Normal Operation"
	Condensate trap or liquid barrier leaking	Tighten the sight glass of the condensate trap or the liquid barrier
Yellow LED flashes	Annual maintenance required	Perform annual maintenance (see chapter 8)
Water in condensate trap	-	Drain the condensate trap
Filter polluted	-	Replace the filter
Other malfunctions	-	Contact the AFRISO service hotline

Any malfunctions that cannot be removed by means of the measures described in this chapter may only be repaired by the manufacturer.

9.1 Evaluating the pump operating time

The specialised company can read out the pump operating time by pressing the Test key. This allows you to assess the tightness of the complete system.



1. Hold down the Test key (B).
   - After five seconds, the green LED (A) indicates the pump operating time.

The green LED (A) provides information on the last 5 days. The pump operating time is indicated as a total.

If the green LED (A) lights up for one second, this corresponds to a pump operating time of a total of one day during the last five days.

If the green LED (A) lights up briefly, this indicates that the pump operating time during the last five days was proportionally shorter.



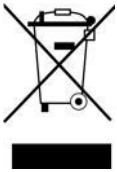
If you open the device, the yellow LED (C) on the printed circuit board always displays the pump operating time (you do not need to press the Test key).

10 Decommissioning, disposal

Dispose of the product in compliance with all applicable directives, standards and safety regulations.

Electronic components and batteries must not be disposed of together with the normal household waste.

⇨ Verify that the 9V monobloc batteries battery are fully discharged.





1. Disconnect the product from mains.
2. Remove the battery (see chapter 5.3.5, reverse sequence of steps).
3. Dismount the product (see chapter 5, reverse sequence of steps).
4. Dispose of the product and of the optional battery separately.

11 Returning the device

Get in touch with us before returning your product (service@afriso.de).

12 Warranty

See our terms and conditions at www.afriso.com or your purchase contract for information on warranty.

13 Spare parts and accessories

NOTICE

UNSUITABLE PARTS

- Only use genuine spare parts and accessories provided by the manufacturer.

Failure to follow these instructions can result in equipment damage.

Product Eurovac NV

Product designation	Part no.	Part no. (France)	Figure
Vacuum type leak detector "Eurovac NV"	43755	2651005	
Vacuum type leak detector "Eurovac NV" in protective housing without heating, without horn	43788	-	-
Vacuum type leak detector "Eurovac NV" in protective housing without heating, with horn	43782	-	-
Vacuum type leak detector "Eurovac NV" in protective housing with heating, without horn	43792	-	-
Vacuum type leak detector "Eurovac NV" in protective housing with heating, with horn	43789	-	-

Spare parts and accessories

Product Eurovac HV

Product designation	Part no.	Part no. (France)	Figure
Vacuum type leak detector "Eurovac HV"	43750	2651001	
Vacuum type leak detector "Eurovac HV" in protective housing without heating, without horn	43774	-	-
Vacuum type leak detector "Eurovac HV" in protective housing without heating, with horn	43776	-	-
Vacuum type leak detector "Eurovac HV" in protective housing with heating, without horn	43793	-	-
Vacuum type leak detector "Eurovac HV" in protective housing with heating, with horn	43781	-	-

Spare parts and accessories

Product designation	Part no.	Figure
Audible alarm, weatherproof	61012	-
Alarm lamp, weatherproof	61015	-
Condensate bar, triple	43692	-
Liquid barrier	43646	-
PVC hose 6 x 2 mm, 100 m, red	43662	-
PVC hose 6 x 2 mm, 100 m, green	43663	-
PVC hose 6 x 2 mm, 100 m, transparent	43664	-

Product designation	Part no.	Figure
PVC hose 4 x 2 mm, 100 m, red	43648	-
PVC hose 4 x 2 mm, 100 m, green	43649	-
PVC hose 4 x 2 mm, 100 m, transparent	43650	-
Pump for "Eurovac NV"	43783	-
Pump for "Eurovac HV"	43777	-
Check valve	43605	-
EnOcean® wireless module	78082	-

14 Information on EnOcean® wireless

14.1 Range of EnOcean® wireless

Visit www.enocean.com for further information on range planning with EnOcean®.

14.2 Additional information on EnOcean® wireless systems

Additional information on planning, installation and operation of EnOcean® wireless systems can be found at www.enocean.com.

- Wireless standard
- Wireless technology
- AN001
- AN102
- AN201

14.3 Features of the EnOcean® technology

Visit www.afrisohome.de for documents on EnOcean® technologies.

A variety of videos on AFRISO products can also be found on the AFRISO YouTube channel.

15 Appendix

15.1 Certificate of specialised company

This is to certify that the product was installed, commissioned and function-tested in accordance with these operating instructions.

Pump OFF: _____ mbar

Pump ON: _____ mbar

Alarm ON: _____ mbar

Alarm OFF: _____ mbar

Pressure drop entire system: _____ mbar

in _____ minutes

Tank as per standard: _____

Year of manufacture: _____

Litres: _____

Factory no.: _____

O aboveground O underground

Appendix

Tank manufacturer:

_____

_____

_____

Specialised company:

_____

_____

_____

Owner/operator:

_____

_____

_____

Location of system:

_____

_____

_____

_____

Date, signature

15.2 List of substances

Number	ID (DIN 6601)	Designation of substance
1		Used oils
2		Used motor and gearbox oils
3		Hydraulic oils HL and HLP DIN 51524, DIN 51525
4		Silicone oils
5		Lubricating oils DIN 51501, DIN 51511, DIN 51512
6		Thermal oils Q DIN 51522
7		Transformer oils (clophene)
8		Collected oil separator concentrate from compressor operation
9		Used cutting oil (drilling) emulsion
10		Cutting oils (drilling)
11		Spindle oils
12		Cutting oils
13		Cooling agents from grinding processes
14	3393	Gas oil, flash point > 100 °C, boiling point > 200 °C
15	3224	Shale oils, flash point > 100 °C boiling point > 100 °C
16	3230	Turpentine substitute, flash point > 100 °C boiling point > 100 °C
17	3176	Brake fluid, hydraulic, flash point > 100 °C
18		Glysantin, antifreeze
19		Ethyl glycol, flash point > 100 °C
20		Diethylene glycol
21		Ethylene glycol
22		Methyl glycol
23		Adipic acid dinitrile
24		Arsenic acid, aqueous solution
25		Benzotrichloride

Num-ber	ID (DIN 6601)	Designation of substance
26		Boric acid
27		Butylene phenol, liquid
28		Calcium chlorate aqueous solution max. 65 %, flash point > 100 °C
29		Calcium hydroxide
30		Calcium nitrate
31		Diphenyles
32		Iron(III) chloride sulphate solution
33		Iron(III) chloride solution saturated
34		Iron(II) chloride solution saturated
35		Iron(II) sulphate solution saturated
36	3193	Extracts, aromatic substances in alcoholic solution, boiling point > 100 °C
37	3188, 3189	Extracts, odorous substances in alcoholic solution, boiling point > 100 °C
38		Fluoroacetic acid
39		Formaldehydes
40	443, 445	Formaldehydes with methanol concentration < 15 %, flash point > 55 °C boiling point 96 °C
41	607	Freon
42	609	Frigen
43		Urea, dissolved, Ad Blue, NOx
44	3085	Resins dissolved in hydrocarbon without alcohol, flash point > 100 °C, boiling point > 100 °C
45		Potassium chloride
46		Potassium hydroxide aqueous solution max. 20 %
47		Potassium nitrate aqueous solutions
48		Potassium sulphide
49		Hydrocarbons and mixtures, flash point > 100 °C

Appendix

Num-ber	ID (DIN 6601)	Designation of substance
50		Magnesium chlorate solutions
51		Magnesium nitrate solutions
52		Sodium acetate solutions
53		Sodium chloride solutions
54		Sodium fluoride solutions
55		Sodium hydroxide solutions, flash point > 100 °C
56		Sodium nitrate
57		Sodium thiosulfphate
58		Silver nitrate
59		Soap, concentrated
60		Soap solutions
61	3183	Coal tar distillate, flash point > 100 °C boiling point > 100 °C
62	3268	Coal tar naphtha, flash point > 100 °C boiling point > 100 °C
63	3167	Tars, liquid flash point > 100 °C
65	3226	Tinctures, medical, in alcohol solutions, flash point > 100 °C
66		Natural linseed oil
67		Natural olive oil
68		Natural caster oil
69		Natural wheat germ oil
70		Mineral brine
71		AdBlue® (NOx reducing agent 32, urea solution 32.5 %) as per DIN 70070
72		Liquid fertiliser UAN (urea ammonium nitrate solution)
73		Fuel oils DIN 51603-1, DIN 51603-6, DIN 51603-8

Num-ber	ID (DIN 6601)	Designation of substance
74		Fuel oils with FAME EN 14215
75		Diesel fuel EN 590
76		Diesel fuel with FAME EN 14214
77		Unused motor and gearbox oils

15.3 EU Declaration of Conformity

AFRISO

Technik für Umweltschutz

Messen. Regeln. Überwachen.

EU - Konformitätserklärung
EU Declaration of Conformity / Déclaration EU de conformité / Declaración de conformidad CE / Declaração de confirmidade CE / Deklaracja zgodności UE

CE

Formblatt FB 27 - 03

Name und Anschrift des Herstellers: AFRISO-EURO-INDEX GmbH, Lindenstraße 20, 74363 Güglingen
Manufacturer / Fabricant / Fabricante / Nome e endereço do fabricante / Producent:

Erzeugnis: Leckanzeiger für doppelwandige Tanks
Product / Produit / Producto / Produto / Produkt:

Typenbezeichnung: Eurovac NV, Eurovac HV, Europress
Type / Type / Tipo / Tipo / Typ:

Betriebsdaten: AC 100-240V
Techn. Details / Caractéristiques / Características / Detalhes técnicos / Dane techniczne:

Wir erklären in alleiniger Verantwortung, dass das bezeichnete Erzeugnis mit den Vorschriften folgender Europäischer Richtlinien übereinstimmt:
We declare under our sole responsibility that the above mentioned product meets the requirements of the following European Directives:
Le produit mentionné est conforme aux prescriptions des Directives Européennes suivantes:
El producto indicado cumple con las prescripciones de las Directivas Europeas siguientes:
O produto indicado cumpre com as prescrições das seguintes Diretivas Europeias:
Wymieniony wyżej produkt spełnia wymagania następujących Dyrektyw Europejskich:

Elektromagnetische Verträglichkeit (2014/30/EU)
Directive Electromagnetic Compatibility / Directive compatibilité électromagnétique / Directiva compatibilidad electromagnética / Diretiva sobre compatibilidade eletromagnética / Dyrektywa kompatybilności elektromagnetycznej
EN 60730-1:2011 (erfüllt auch / meets also EN 60730-1:2016)

Niederspannungsrichtlinie (2014/35/EU)
Low Voltage Directive / Directive basse tension / Directiva baja tensión / Diretiva sobre baixa tensão / Dyrektywa niskonapięciowa
EN 60730-1:2011 (erfüllt auch / meets also EN 60730-1:2016)

Bauprodukte Verordnung (EU) Nr. 305/2011 + Nr. 574/2014
Construction Products Directive / directive sur les produits de construction / Reglamento de productos de construcción / Regolamento dei prodotti da costruzione / Rozporządzenie w sprawie wyrobów budowlanych
EN 13160-1:2003, EN 13160-2:2003

RoHS-Richtlinie (2011/65/EU)
RoHS Directive / Directive RoHS / Directiva RoHS / Diretiva RoHS / Dyrektywa RoHS
EN IEC 63000:2018

Unterzeichner: Dr. Späth, Geschäftsführer Technik
Signed / Signataire / Firmante / Assinado por / Podpisał: *Technical Director / Diretor Técnico / Dyrektor Techniczny*

25. Mai 2021
Datum / *Date / Fecha / Data*

AFRISO-EURO-INDEX GmbH
Lindenstr. 20 • 74363 Güglingen
Tel. 07135 102-0 • www.afriso.de

Unterschrift / *Signature / Firma / Assinatura / Podpis*

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15.4 Declaration of Performance (DoP)

AFRISO

Technik für Umweltschutz

Messen. Regeln. Überwachen.

CE

LEISTUNGSERKLÄRUNG (DoP)

Nr.: Eurovac-EU-BauPVO-DE-2014

nach Verordnung (EU) Nr. 305/2011 DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 9.März 2011 zur Festlegung harmonisierter Bedingungen für die Vermarktung von Bauprodukten und zur Aufhebung der Richtlinie 89/106/EWG des Rates

1. Eindeutiger Kenncode des Produkttyps:
   Leckanzeiger Typen: Eurovac NV, Eurovac HV
   Über- und Unterdrucksysteme für doppelwandige Tanks

2. Verwendungszweck:
   Leckanzeigesystem der Klasse I für den Einsatz in doppelwandigen Tanks für wassergefährdende Flüssigkeiten

3. Hersteller:
   AFRISO
   AFRISO-EURO-INDEX GmbH
   Lindenstraße 20, 74363 Güglingen
   Tel.-Nr.: +49 7135 102-0 Fax: +49 7135 102 212
   e-Mail: info@afriso.de www.afriso.de

4. Bevollmächtigter: N.A.

5. System zur Bewertung und Überprüfung der Leistungsbeständigkeit:
   System 3

6. Harmonisierte Norm: EN 13160-1:2003, EN 13160-2:2003
   Notifizierte Stelle:
   TÜV NORD Systems GmbH & Co KG, Große Bahnstraße 31, 22525 Hamburg, Deutschland
   Kennummer des notifizierten Prüflabors: 0045

7. Erklärung Leistungen:

Wesentliche Merkmale	Leistung
Prüfung der Elektrik	bestanden
Prüfung der Druckschaltpunkte	bestanden
Prüfung der Zuverlässigkeit	bestanden
Prüfung des akustischen Alarmgebers	bestanden
Prüfung der Leckanzeigeeinrichtung	bestanden

8. Unterzeichnet für den Hersteller und im Namen des Herstellers von:
   Dr. J. Späth
   Güglingen, 25.05.2021

15.5 CE Marking



AFRISO-EURO-INDEX GmbH, Lindenstr. 20
74363 Güglingen, Germany

14

EN 13160:2003

Leckanzeigesystem der Klasse I
Typ: Eurovac NV

Für den Einsatz in doppelwandigen Tanks für wassergefährdende Flüssigkeiten.

Installation nach Betriebsanleitung 900.000.0510

Betriebsweise: Unterdruck, mit Saugleitung zum tiefsten Punkt des Überwachungsraumes.

Angezeigte Flüssigkeit: Siehe Stoffliste
Temperaturbegrenzung: -25°C bis +60°C
Druckbegrenzung: atmosphärisch betriebene Tanks
Schalt-/Rückstellzeit Sensor: < 1 s