

Product manual | 18.01.2024

**Busch-Infoline®**

1531 U

Moisture alarm insert

1538/02

Sensor strip

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## 1 Notes on the instruction manual

Please read through this manual carefully and observe the information it contains. This will assist you in preventing injuries and damage to property and ensure both reliable operation and a long service life for the device.

Please keep this manual in a safe place.

If you pass the device on, also include this manual along with it.

Busch-Jaeger accepts no liability for any failure to observe the instructions in this manual.

If you require additional information or have questions about the device, please contact Busch-Jaeger or visit our Internet site at:

[www.BUSCH-JAEGER.de](http://www.BUSCH-JAEGER.de)

## 2 Safety

The device has been constructed according to the latest valid regulations governing technology and is operationally reliable. It has been tested and left the factory in a technically safe and reliable state.

However, residual hazards remain. Read and adhere to the safety instructions to prevent hazards of this kind.

Busch-Jaeger accepts no liability for any failure to observe the safety instructions.

### 2.1 Information and symbols used

The following Instructions point to particular hazards involved in the use of the device or provide practical instructions:



#### **Danger**

Risk of death / serious damage to health

- The respective warning symbol in connection with the signal word "Danger" indicates an imminently threatening danger which leads to death or serious (irreversible) injuries.



#### **Warning**

Serious damage to health

- The respective warning symbol in connection with the signal word "Warning" indicates a threatening danger which can lead to death or serious (irreversible) injuries.



#### **Caution**

Damage to health

- The respective warning symbol in connection with the signal word "Caution" indicates a danger which can lead to minor (reversible) injuries.



#### **Attention**

Damage to property

- This symbol in connection with the signal word "Attention" indicates a situation which could cause damage to the product itself or to objects in its surroundings.



#### **NOTE**

This symbol in connection with the word "Note" indicates useful tips and recommendations for the efficient handling of the product.

The following safety symbols are used in the operating manual:



This symbol alerts to electric voltage.

## 2.2 Intended use

The products Moisture alarm insert and Sensor strip serve for monitoring of undesired water leakages in kitchen or basement areas, such as below sinks, washing machines or water supply systems.

Used for detecting conductive liquids.



### Notice

The detection of conductive liquids is carried out via the separately available accessory Sensor strip 1538/02, which is connected with a plug connector.

When the accessory Sensor strip comes into contact with moisture, the signal lamp on the of the Moisture alarm insert device starts to flash.

The device is intended for the following:

- Operation according to the listed technical data,
- Installation in dry interior rooms and suitable flush-mounted boxes,
- Use with the connecting options available on the device.

The intended use also includes adherence to all specifications in this manual.

## 2.3 Improper use

Each use not listed in Chapter 2.3 “Improper use“ on page 5 is deemed improper use and can lead to personal injury and damage to property.

Busch-Jaeger is not liable for damages caused by use deemed contrary to the intended use of the device. The associated risk is borne exclusively by the user/operator.

The device is not intended for the following:

- Unauthorized structural changes
- Repairs
- Outdoor use

## 2.4 Target group / Qualifications of personnel

### 2.4.1 Operation

No special qualifications are needed to operate the device.

### 2.4.2 Installation, commissioning and maintenance

Installation, commissioning and maintenance of the device must only be carried out by trained and properly qualified electrical installers.

The electrical installer must have read and understood the manual and follow the instructions provided.

The electrical installer must adhere to the valid national regulations in his/her country governing the installation, functional test, repair and maintenance of electrical products.

The electrical installer must be familiar with and correctly apply the "five safety rules" (DIN VDE 0105, EN 50110):

1. Disconnect
2. Secure against being re-connected
3. Ensure there is no voltage
4. Connect to earth and short-circuit
5. Cover or barricade adjacent live parts

## 2.5 Safety instructions



### **Danger - Electric voltage!**

Electric voltage! Risk of death and fire due to electric voltage of 100 ... 240 V. Dangerous currents flow through the body when coming into direct or indirect contact with live components. This can result in electric shock, burns or even death.

- Work on the 100 ... 240 V supply system may only be performed by authorised and qualified electricians.
- Disconnect the mains power supply before installation / disassembly.
- Never use the device with damaged connecting cables.
- Do not open covers firmly bolted to the housing of the device.
- Use the device only in a technically faultless state.
- Do not make changes to or perform repairs on the device, on its components or its accessories.
- Keep the device away from water and wet surroundings.



### **Caution! - Risk of damaging the device due to external factors!**

Moisture and contamination can damage the device.

- Protect the device against humidity, dirt and damage during transport, storage and operation.

## 3 Information on protection of the environment

### 3.1 Environment



#### **Consider the protection of the environment!**

Used electric and electronic devices must not be disposed of with domestic waste.

- The device contains valuable raw materials which can be recycled. Therefore, dispose of the device at the appropriate collecting depot.

All packaging materials and devices bear the markings and test seals for proper disposal. Always dispose of the packaging material and electric devices and their components via the authorized collecting depots and disposal companies.

The products meet the legal requirements, in particular the laws governing electronic and electrical devices and the REACH ordinance.

(EU Directive 2012/19/EU WEEE and 2011/65/EU RoHS)

(EU REACH ordinance and law for the implementation of the ordinance (EC) No.1907/2006).

## 4 Product Overview

### 4.1 Possible combinations

			1531 U
	1538/02		X
	1518 U		X
	1539 U		X
	1563 U-12		X
	1561 U-101		X
	1564 U-1X		X
	1566 U		X
	1571 CN-21X		X

## 5 Technical data

### 5.1 Moisture alarm insert

Designation	Value
Nominal voltage	15 - 29 V AC / 18 - 35 V DC
Rated frequency	50 / 60 Hz
Nominal current	70 mA AC / 40 mA DC
Loop current	5 mA
Minimum short-circuit/interruption duration	0.1 s / 2.5 s
Operating temperature range	+5 – +40°C
Type of protection	IP 20
Protection class of device	SELV
Switching contacts	
Normally open contact (potential-bound)	1 A AC/DC, 30 VA / W
Change-over contact (floating)	42 V AC / 60 V DC, 30 VA / W

Table 1: Technical data Moisture alarm insert

### 5.2 Sensor strip

Designation	Value
Dimensions (L x W x H)	2 m x 15 mm x 0.15 mm

Table 2: Technical data Sensor strip

## 6 Connection, installation / mounting



### **Danger - Electric voltage!**

Risk of death due to electrical voltage of 100 ... 240 V during short-circuit in the low-voltage conduit.

- Low-voltage and 100 ... 240 V conduits must not be installed together in a flush-mounted box!

### 6.1 Requirements for the electrician



### **Danger - Electric voltage!**

Install the device only if you have the necessary electrical engineering knowledge and experience.

- Incorrect installation endangers your life and that of the user of the electrical system.
- Incorrect installation can cause serious damage to property, e.g. due to fire.

The minimum necessary expert knowledge and requirements for the installation are as follows:

- Apply the "five safety rules" (DIN VDE 0105, EN 50110):
  1. Disconnect
  2. Secure against being re-connected
  3. Ensure there is no voltage
  4. Connect to earth and short-circuit
  5. Cover or barricade adjacent live parts.
- Use suitable personal protective clothing.
- Use only suitable tools and measuring devices.
- Check the type of supply network (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective earthing, necessary additional measures, etc.).

6.2 Electrical connection

Connection diagram

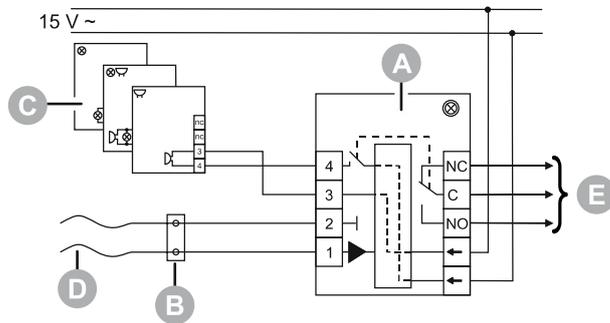


Fig. 1: Circuit diagram Moisture alarm insert

- [A] Moisture alarm insert
- [B] Plug connector
- [C] Signal lamp
- [D] Sensor strip
- [E] Floating change-over contact

Terminal assignment

Terminal designation	Assignment
4	Alarm output, potential-bound
3	
2	
1	Sensor strip
NC	Floating change-over contact
C	
NO	
←	15 V AC, ±10%, 50 / 60 Hz
←	

Table 3: Terminal assignment Moisture alarm insert

### 6.3 Mounting



**Caution! The device can sustain damage when coming into contact with hard objects!**

- The plastic parts of the device are sensitive.
- Pull the attachment off only with your hands.
  - Do not lever parts off with screwdrivers or similar hard objects.

The flush-mounted insert must only be installed in flush-mounted boxes according to DIN 49073, Part 1, or suitable surface-mounted housings.

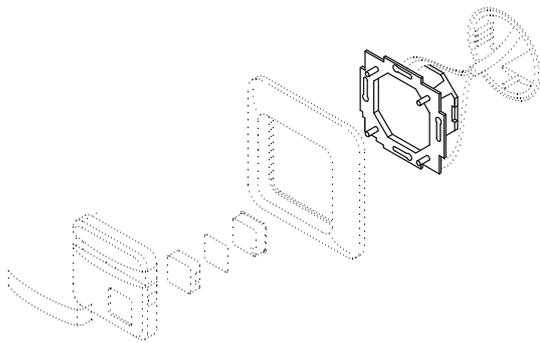


Fig. 2: Overview of mounting

1. Mount the device in a flush-mounted box according to DIN 049073-1.
2. Fix the device in the flush-mounted box with screws.
3. Mount the elements of the cover plate in the sequence shown in the illustration.

### 6.4 Installing and connecting the sensor strip



**Attention! - Damage to devices and functions due to incorrect mounting!**

- Ensure that the surface of the installation location is clean and dry.
- When installing the sensor strip, ensure that it does not get dirty or damaged, especially during angular installation.
- Do not cover the sensor strip with watertight materials to impair the function.
- Pay attention to possible device bases, such as washing machines. They must not stand directly on the sensor strip.
- During the installation, remove the protective paper from the sensor strip piece by piece.

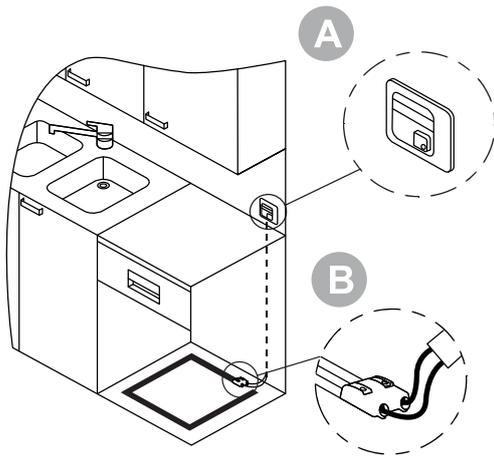


Fig. 3: Connection of sensor strip

[A] Moisture alarm insert

[B] Plug connector Sensor strip

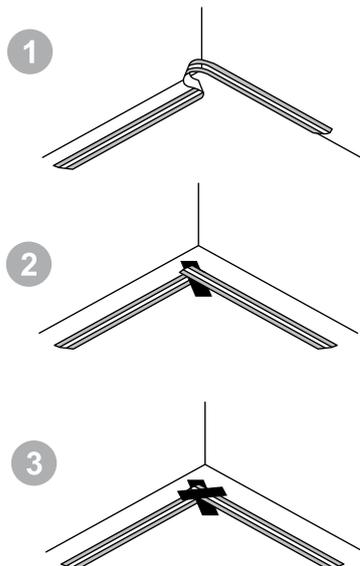


Fig. 4: Angular installation of sensor strip

[1] Do not cut the sensor strip at the corners, but fold it as shown.

[2] Additionally, use insulating tape in the corner folds to prevent short-circuits. Press the corner folds on, to adjust the sensor strip.

[3] Secure the corner fold with a second piece of insulating tape, as shown.

## 6.5 Setting the alarm behaviour

An alarm message is displayed by the flashing signal lamp, the floating change-over contact and the alarm output.

After having been triggered, the alarm is deactivated via the cancel button.

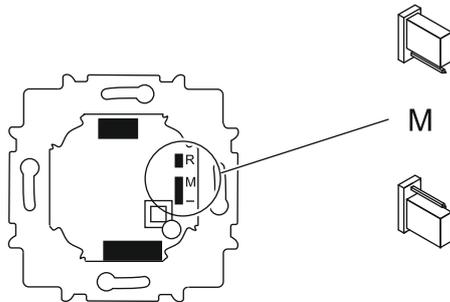


Fig. 5: Setting the alarm behaviour

Slot M	Alarm behaviour
Jumper top	With storage of the alarm status
Jumper bottom	Without storage of the alarm status

Table 4: Setting options of alarm behaviour

### With storage of the alarm status

If the memory function of the Moisture alarm insert device is activated, the alarm must always be reset by pressing the cancel button.

### Without storage of the alarm status

If the memory function is not activated, the signal lamp stops flashing as soon as there is no more moisture on the surface of the sensor strip.

## 6.6 Setting the reset mode

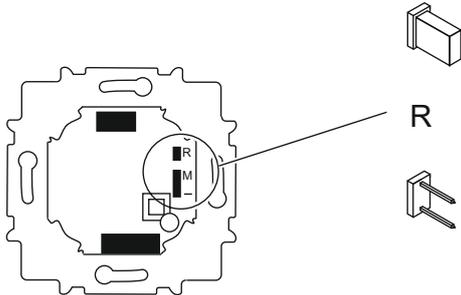


Fig. 6: Setting the reset mode

Slot R	Reset mode
Plug-in jumper inserted	Indirect reset
Plug-in jumper not inserted	Direct reset

Table 5: Setting options of alarm reset mode

### Indirect reset

Outputs 3, 4 and NO, C, NC are not released after the reset button is pressed until the moisture has been removed from the sensor. The alarm message does not disappear until the damage is remedied.

### Direct reset

Outputs 3, 4 and NO, C, NC are enabled immediately after the reset button is pressed. The alarm message disappears immediately.

## 6.7 Function test

The function of the moisture alarm must be checked at regular intervals after the installation and during operation.

When the sensor strip is touched with a moist finger, the signal lamp of the moisture alarm must start to flash.

If the moisture alarm is not activated during the test, the sensor or the sensor cable may be damaged or there is no voltage.

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