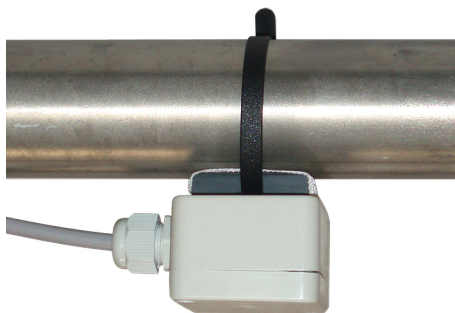


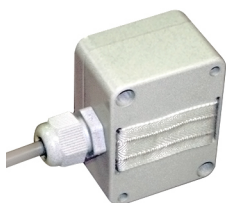
# Water leak detection LISA system



LISA-T



LISA-B



LISA-G



LISA-T-K2



LISA-T-K1



ES 5000

**BAMO** INTERNATIONAL

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**LISA system**

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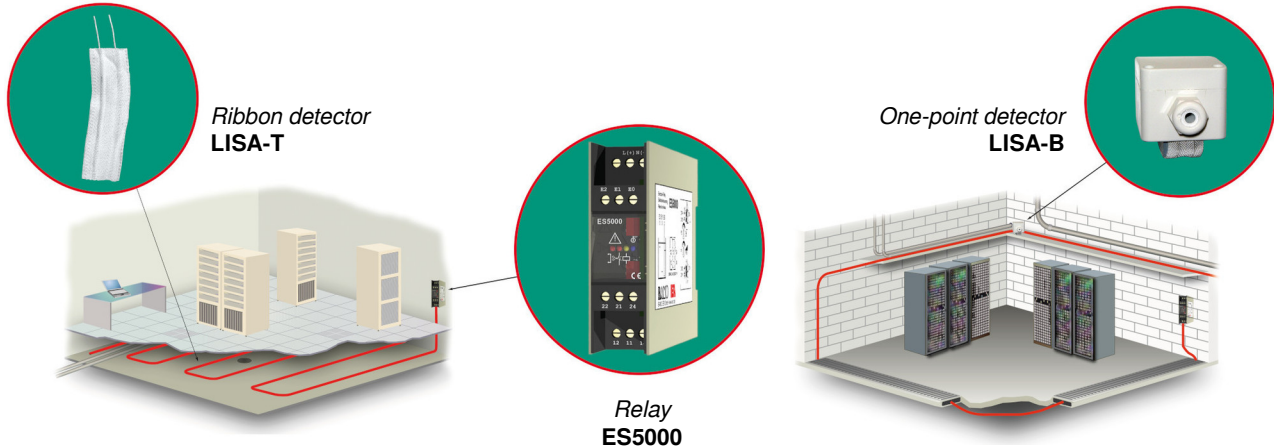
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## PRECAUTIONS

- Installation, commissioning and maintenance operations must only be performed by qualified personnel.
- Connect the device to a suitable supply voltage as indicated in the technical features.
- Turn off the main supply before any installation and maintenance works.
- Operate the device only in accordance with the conditions described in this manual.

## APPLICATIONS

LISA system is dedicated for leakage detection on water piping (pipes, sprinklers), alarming in case of water condensing/ leaking, where water is prejudicial for equipments (computer rooms, machinery, HVAC, museum, storage facilities, etc.)



## DESCRIPTION

LISA system combines a detector with a relay ES 5000.

### Operating principle:

The detector consists of two metallic wires insulated by an absorbent fabric and connected together at the loop-end by a resistor. The special material used for the tape, contains ionic ingredients, allowing the detection of low salt water, and even the detection of deionized water. This flexible ribbon is placed in all positions and fits all shapes.

As soon as there is humidity on the ribbon, the relay detects the change in resistivity and activates the alarm signal, before a significant amount of water could be seen.

The relay ES 5000 includes a self diagnostic of the integrity of measuring loop (alarming in case of short circuit, or ribbon sensor break off) in order to warrant a positive safe detection system.

### Installation:

The ribbon detector is applied on any horizontal or vertical surface for monitoring an area, or a local detection with a one-point detector. The ribbon is fixed on the ground with a special adhesive, or wrapped around a pipe or a valve. An adequate grid of the area will allow to locate the leak. Depending on the expected monitoring result, one or more detectors and one or more relays will be necessary. After repairing the object of the leak, the ribbon can be reused by drying the wet part.

### Components of a LISA system:

- LISA-T-K1: Connection kit "Start of detection loop"
- LISA-T-K2: Connection kit "End of detection loop"
- LISA-T: Ribbon detector
- LISA-B: One point detector on pipe
- LISA-G: One-point floor detector
- ES 5000: Relay (data-sheet 544-06)

## TECHNICAL FEATURES

Ribbon detector LISA-T	Flexible; Width 20 mm Packaging: Roll of 50 m
Detector LISA-B	One-point detector for pipe; Mass: about 50 g Dimensions (excluding cable gland PG 9): LxWxH = 65 x 50 x 45 mm
Detector LISA-G	One-point detector on floor; Mass: about 50 g Dimensions (excluding cable gland PG 9): LxWxH = 65 x 50 x 35 mm
Connection kits LISA-T-K1, LISA-T-K2	Kit connexion; Mass: about 50 g Dimensions (excluding cable gland PG 9): LxWxH = 65 x 50 x 35 mm

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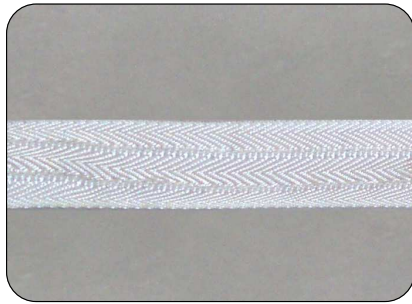
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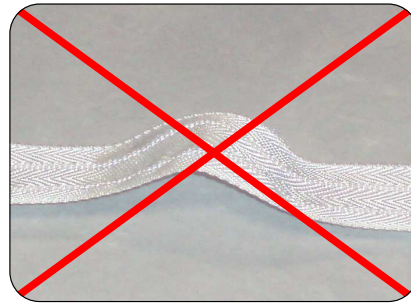
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## LISA-T: Ribbon detector



Compliant installation



Non-compliant installation

### Fixing:

The ribbon can be fixed on any horizontal or vertical surface. Be sure to lay the ribbon evenly on the surface, avoiding any detachment.

### Warning:

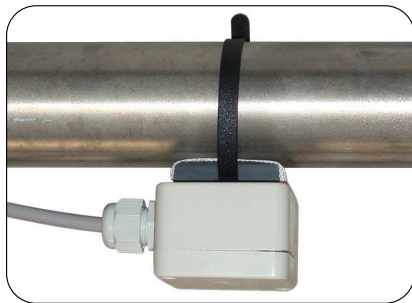
No metallic or electrically conductive object could be in contact with the ribbon. The ribbon may not be fit close to a main power supply cable.

### Fixture:

The ribbon can be clipped onto a surface (Caution with staples). In this case, ensure that the clip (or staple) does not make a short circuit between the two stainless steel wires. The staple should preferably be placed in the center of the ribbon, lengthwise. For gluing, we recommend the use of glue SP033 (article code 544138), provide approximately 1 cartridge (300 cm<sup>3</sup>) for 25 metres of ribbon.

## LISA-B: One point detector on pipe

The LISA-B detector is designed for pipe mounting. It will preferably be placed on the lower part of the tube.



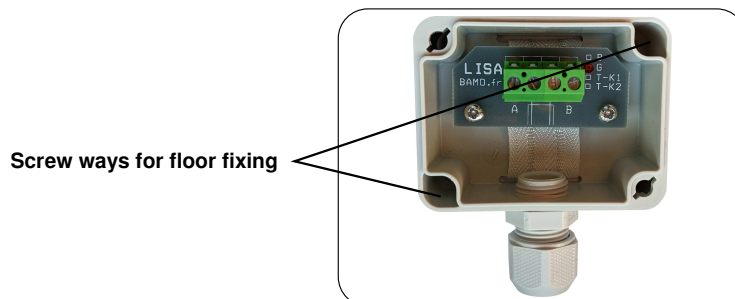
Correct assembly



Not recommended

## LISA-G: One-point floor detector

The LISA-G detector is intended for use on the floor. It can be screwed on the floor through the two holes provided for this purpose.



To allow a fail-safe loop monitoring with a relay ES 5000, detectors LISA-B, LISA-G and LISA t-K2 have a built-in resistor of 680 k $\Omega$

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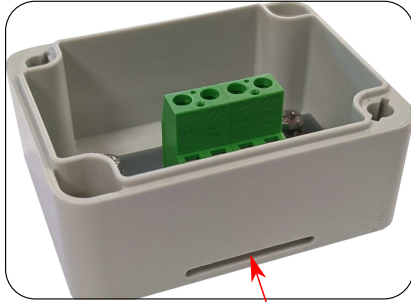
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## LISA-T: Connection kits

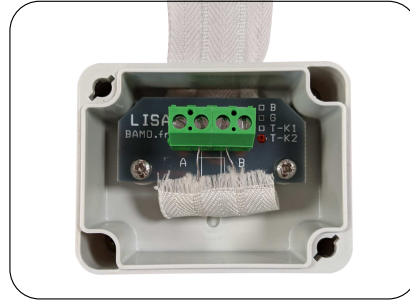
LISA-T kits are necessary for commissioning a detection loop with a ribbon detector.

- LISA-T-K1: Connection kit "Start of detection loop"; To connect the ribbon to the extension cable to connect the relay.
- LISA-T-K2: Connection kit "End of detection loop" with a built-in resistor.



### 1st STEP = T-K1 & T-K2

Open the housing  
Pass the ribbon through the slot and under the terminal block



### 2nd STEP : T-K1 & T-K2

Connect the wires on the PCB  
Screw the stainless steel wires separately on central terminals of the connector



### 3rd STEP: Only for kit T-K1

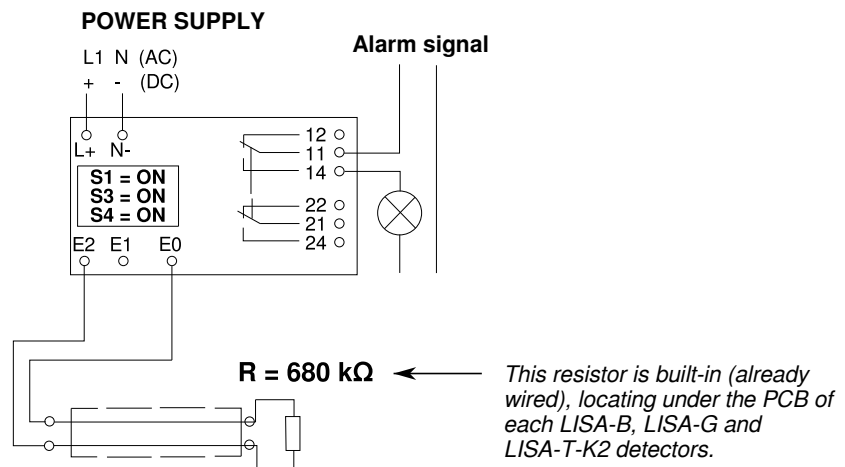
Connect the extension cable (2-wire, shielded) on external terminals A and B.

## ELECTRICAL CONNECTIONS

### WARNING

For use with the ES5000 relay and for a fail-safe detection loop (short circuit detection and open circuit monitoring):

- The maximum ribbon length is 50 m
- Regardless of the ribbon length, the extension cable (2-wire, shielded; 2 x 0.5 mm<sup>2</sup>) to the relay is maximum 50 m



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544-03/4