

## Frost monitor

For monitoring the temperatures of water/air heaters in ventilation and air-conditioning systems to prevent frost damage to the cooling registers. Manual or automatic reset versions and adjustable setpoints. The frost alarm is provided with a single-pole double-throw (SPDT) changeover switch.



## Type Overview

| Type        | Output signal frost protection switch | Additional features | Capillary |
|-------------|---------------------------------------|---------------------|-----------|
| 01ATS-104XC | Changeover                            | Manual reset        | 3 m       |
| 01ATS-105XC | Changeover                            | Manual reset        | 6 m       |
| 01ATS-1040B | Changeover                            | Auto reset          | 3 m       |
| 01ATS-1050B | Changeover                            | Auto reset          | 6 m       |

## Technical data

|                                   |                        |                                            |                                                                                                          |
|-----------------------------------|------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------|
|                                   | <b>Electrical data</b> | Electrical connection                      | Spring loaded terminal max. 2.5 mm <sup>2</sup>                                                          |
|                                   |                        | Cable entry                                | Cable gland with strain relief M20x1.5 mm, for cable ø6...12 mm                                          |
|                                   | <b>Functional data</b> | Application                                | Air                                                                                                      |
|                                   |                        | Output signal frost protection switch note | AC 230 V 16 (2.5) A @ Switch position 1-2<br>AC 230 V 2 (0.4) A @ Switch position 1-4<br>DC 230 V 0.25 A |
|                                   |                        | Switching reliability                      | Min. switching current 100 mA @ AC / DC 24 V                                                             |
|                                   | <b>Measuring data</b>  | Measured values                            | Temperature                                                                                              |
| Specification temperature active  |                        | Long term stability                        | 2 K according to DIN EN 14597                                                                            |
| Specification temperature passive |                        | Measuring range                            | -10...15°C [15...60°F]<br>Default setting: 5°C [41°F]                                                    |
|                                   |                        | Adjustment range                           | -10...15                                                                                                 |
|                                   |                        | Switching differential                     | 1.5 K (±1 K tolerance)                                                                                   |
|                                   |                        | Accuracy temperature                       | Setting accuracy: ±2 K                                                                                   |
|                                   |                        | Time constant τ (63%) in the air duct      | Typical <25 s @ 1 m/s                                                                                    |
|                                   |                        |                                            |                                                                                                          |
|                                   | <b>Safety data</b>     | Degree of protection IEC/EN                | IP65                                                                                                     |
|                                   |                        | EU Conformity                              | CE Marking                                                                                               |
|                                   |                        | Quality Standard                           | ISO 9001                                                                                                 |
|                                   |                        | Ambient humidity                           | Max. 95% RH, non-condensing                                                                              |
|                                   |                        | Ambient temperature                        | -20...80°C [-4...175°F]<br>The ambient temperature must exceed the switching point by +2 K.              |
|                                   |                        | Fluid temperature                          | Up to max. 120°C                                                                                         |
|                                   |                        | Storage temperature                        | -30...80°C [-22...176°F]                                                                                 |
|                                   |                        |                                            |                                                                                                          |

**Technical data**

|                  |             |                                                                                            |
|------------------|-------------|--------------------------------------------------------------------------------------------|
| <b>Materials</b> | Housing     | Bottom: PA (RAL 7001, silver grey)<br>Cover: ABS with inspection glass (PMMA)<br>Seal: NBR |
|                  | Cable gland | PA6, black                                                                                 |
|                  | Capillary   | Copper                                                                                     |
|                  |             |                                                                                            |

**Safety notes**


This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application. Unauthorised modifications are prohibited. The product must not be used in relation with any equipment that in case of a failure may threaten humans, animals or assets.

Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.

The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.



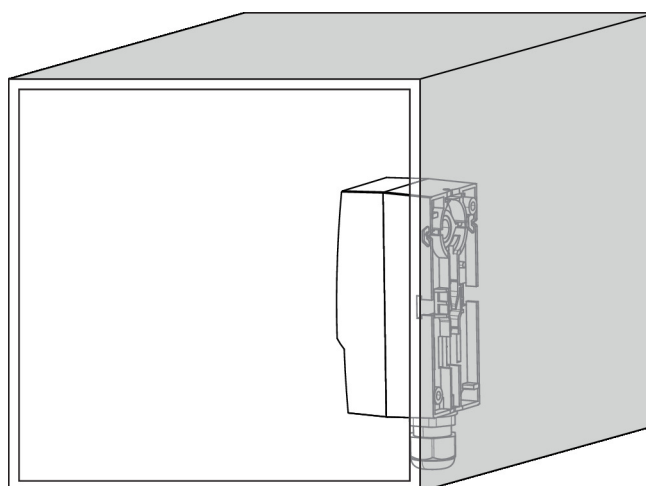
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

**Remarks**
**General remarks concerning sensors**

The ambient temperature must exceed the switching point by +2 K.

For the switching function to be reliable, the ambient temperature at the housing must exceed the set switching point by more than 2 K.

Install the frost monitor inside the air duct if necessary in case of application in low ambient temperatures.


**Switching function**

If the capillary line falls below the entered setpoint value, over a length of 150 mm with 3 m, 300 mm with 6 m, then electrical circuit 1-2 is opened while electrical circuit 1-4 is closed due to the changeover function.

**Remarks**
**Reset function** Auto reset

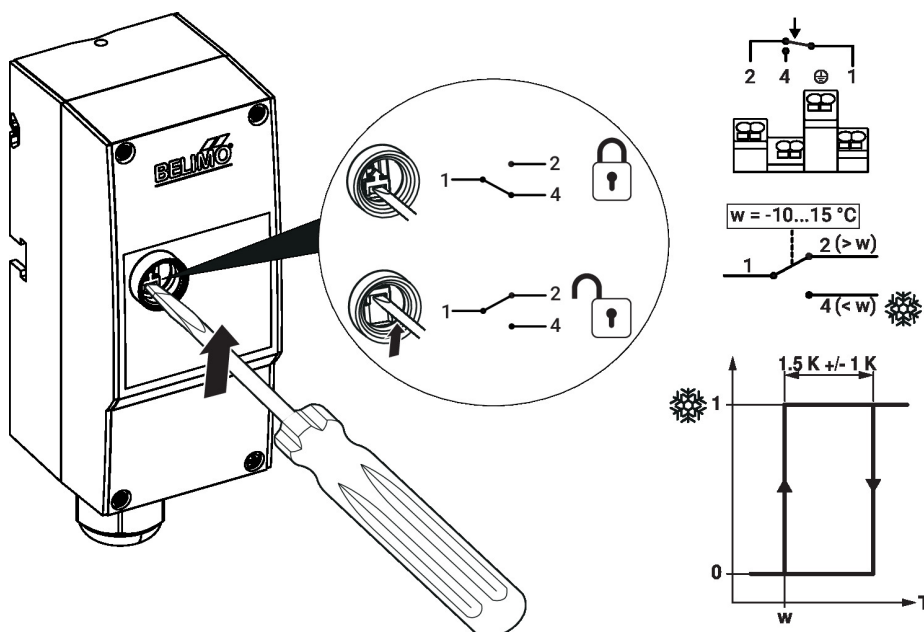
When the temperature rises, the microswitch is automatically switched back to its original position.

If the measuring system is destroyed (i.e. if the expansion fluid escapes) the pressure in the diaphragm drops and permanently opens electrical circuit 1-2 and closes electrical circuit 1-4.

**Manual reset**

The types with manual reset lock automatically when the temperature drops and can only be unlocked manually after the temperature has risen.

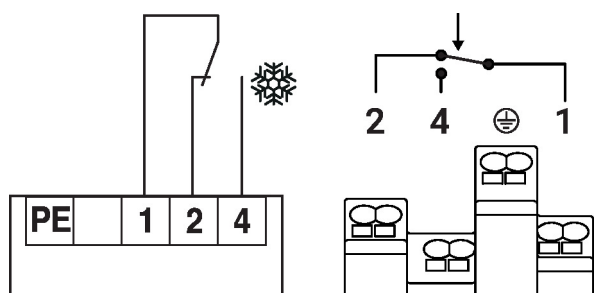
If the measuring system is destroyed (i.e. if the expansion fluid escapes) the pressure in the diaphragm drops and permanently opens electrical circuit 1-2 and closes electrical circuit 1-4.


**Parts included**
**Description**

Mounting kit, with 6 mounting brackets

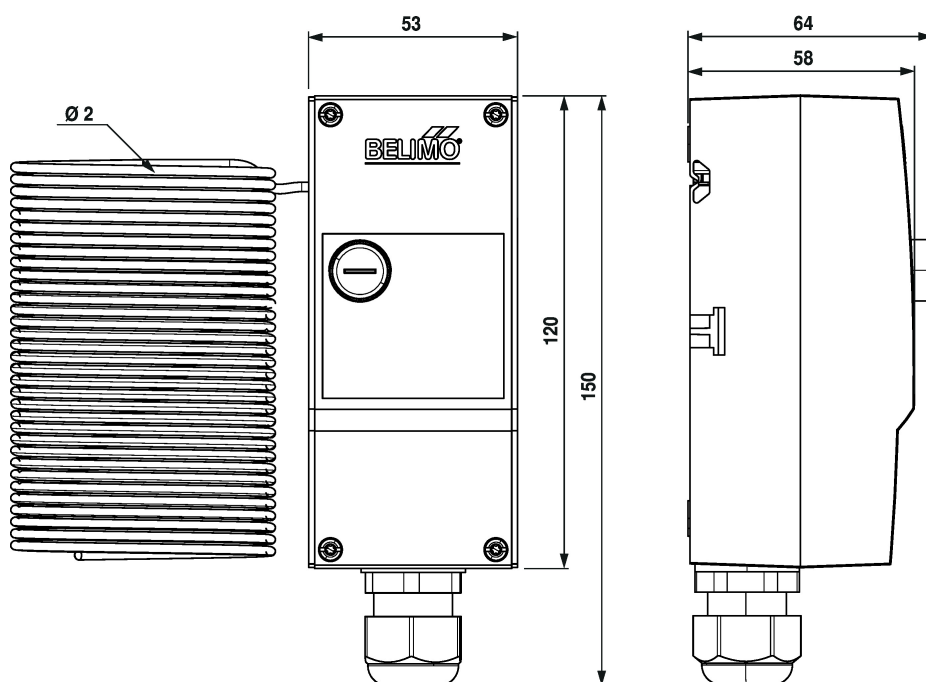
**Type**

A-22D-A08

**Wiring diagram**


If the capillary leaks, the switch changes to the frost position.

## Dimensions



### Type

### Weight

|             |         |
|-------------|---------|
| 01ATS-104XC | 0.35 kg |
| 01ATS-105XC | 0.42 kg |
| 01ATS-1040B | 0.35 kg |
| 01ATS-1050B | 0.42 kg |

## Further documentation

- Installation instructions