

Device Description

ITF21H5 2-Stage Duct Frost Protection Monitor

Application

The ITF21H5 2-stage duct frost protection monitor provides large-area temperature monitoring behind air heaters in ventilation and air conditioning systems.

Type

ITF21H5 Duct frost protection monitor with two potential-free changeover switches

Technical Data

Output	Two potential-free changeover switches, with switch-back, each max. 15 (8) A/AC 250 V Fixed switching difference of 5 K between first and second changeover switch Switch-back difference of approx. 1 K per changeover switch
Working range	-10 to +12°C
Setting range	-10 to +7°C, delivery setting = 5°C, setting can be sealed
Measuring system	Copper capillary tube, 6 m long. Self-monitoring, a frost alarm is triggered if damage occurs. Max. temperature at capillary tube: 200°C
Connection	Terminals in housing
Ambient temperature	At switch housing Maximum temperature: 55°C, Minimum temperature: 7 K higher than the setpoint that has been entered
Degree of protection	IP40
Weight	720 g
Installation position	Cable entry from below (see the "Installation" section)



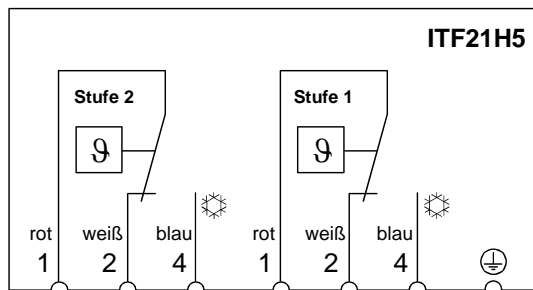
Installation



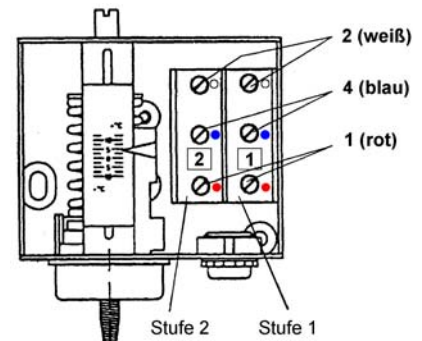
Danger

Electrical installation and unit connection may only be carried out by qualified technicians (e.g. electricians).

Ensure that this process complies with VDE guidelines and local wiring regulations.
The device must be connected in accordance with the applicable system wiring diagram.



If there is a risk of frost, the contacts switch from 1–2 (red–white) to 1–4 (red–blue).



Note

The process for attaching the plastic cover is detailed in the "Installation"

Switching Function

The ITF21H5 duct frost protection monitor works at two levels using two changeover switches.

The switching point of level 1 has a fixed temperature difference of 5 K above the defined setpoint (level 2).

At level 1, the system can be accessed before temperatures with a risk of frost are reached (e.g. opening the heating valve or air valve).

Example: Switching function with defined setpoint = 5°C (delivery setting)

If the temperature drops to 10°C,
the changeover switch for level 1 switches from terminals 1–2 to 1–4.

If the temperature drops to the defined setpoint (5°C),
the changeover switch for level 2 switches from terminals 1–2 to 1–4.

If the temperature rises to approx. 6°C, the changeover switch for level 2 switches back.

If the temperature rises to approx. 11°C, the changeover switch for level 1 switches back.


See also the "Setting" section.

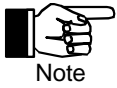
Installation



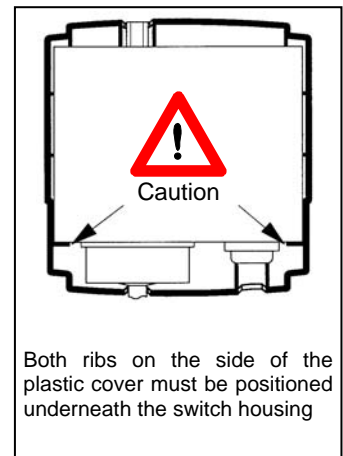
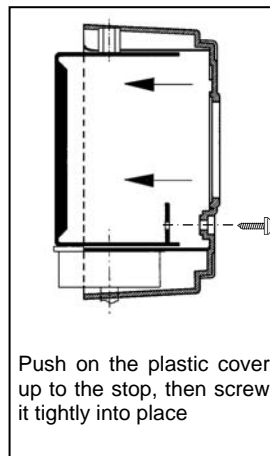
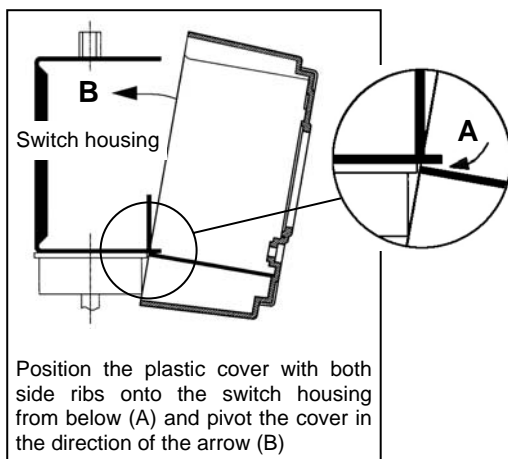
Caution

Installation may be carried out only by qualified technicians.

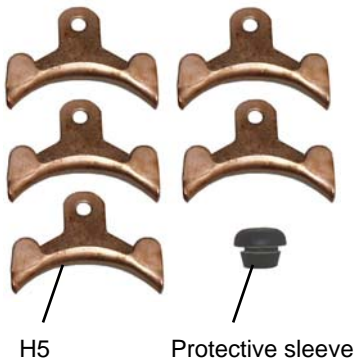
- Select an installation location where the minimum ambient temperature at the switch housing is at least 7 K warmer than the setpoint.
This also applies for parts of the capillary tube that are outside the air heater.
-  If the minimum ambient temperature outside the ventilation duct cannot be ensured, the switch housing in the ventilation unit must be installed behind the air heater.
- The capillary tube must be held firmly onto the anti-kink device on the switch housing as it is uncoiled.
Do not damage or kink the capillary tube.
The H5 capillary tube holders (provided) simplify installation, prevent sharp kinks, and hold the capillary tube in place.
- Use the protective sleeve for the drill hole (provided) to guide the capillary tube into the ventilation duct (duct drill hole \varnothing 11 mm).
- The 6 m long capillary tube is active along its entire length.
The frost protection switching responds to temperatures that are too low at approx. 30 cm along the capillary tube.
Install the capillary tube so that the coldest part of the heating coil being monitored is recorded.
- The switch housing of the ITF21H5 duct frost protection monitor is mounted on a flat, vibration-free mounting surface using two screws.
Installation position: Cable entry from below.
In order to install the duct frost protection monitor, the plastic cover must be pulled off forwards after loosening the retaining screw on the front.



Observe the following when attaching the plastic cover:



Mounting Accessories (Included)



Protective sleeve for the capillary tube
Protects the capillary tube when inserted into the ventilation duct (duct drill hole \varnothing 11 mm)

H5 capillary tube holder for securing the capillary tube in the ventilation duct.

Device Description

ITF21H5 2-Stage Duct Frost Protection Monitor

Setting

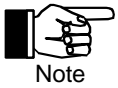
The ITF21H5 duct frost protection monitor is delivered with a setpoint of 5°C.

When necessary, the setpoint can be changed on the adjusting spindle using a screwdriver.

The setpoint can be sealed on the adjusting spindle.



Do not set the setpoint to above +7°C, as level 1 will then switch at the maximum working range of +12°C (setpoint + 5 K).



For the commissioning technician only

During commissioning, the frost protection switching can be triggered and tested by spraying the capillary tube with cold spray along a length of about 20–30 cm.



Dimensions

