

# INSTALLATION INSTRUCTIONS

## Antifreeze heating for Siphons (FSH)



Item No.: 24 (suction side, FSH-S)  
Item No.: 25 (pressure side, FSH-D)

The antifreeze heating has been especially developed for the use in all common suction and pressure side type siphons with 1½" connection for AH units.

### Description

In general the antifreeze heating consists of a flexible self-regulating and automatic power-limiting heating cable which is led through the siphon and energized automatically by a variably adjustable thermostat as soon as the set temperature is fallen below. Heating the cable prevents the siphon from freezing.

- < For universal use in all 1½" siphons
- < Easy retrofit
- < Preassembled

### Maintenance

The heating cable and the connection box must be checked in regular intervals for mechanical damages, and the electrical protection and function of the thermostat for their proper functioning.

The siphon should be checked for contamination at least twice a year and, if the air is heavily polluted (e.g. exhaust air from the kitchen), more frequently. It should be cleaned, if necessary.

### Installation

Before installing the antifreeze heating (FSH) in suction-side siphons just remove the 1½" end cap marked "A" first; in pressure-side siphons the 90° elbow must be replaced by the supplied 1½" T-piece.

Then push the flexible heating cable into the direction of the arrow into the siphon (Fig. 2)

It can be necessary in the process to separate the siphon at the screwings marked "B" because the somewhat stiff point of the heating cable sticks there easily, and so it can be pulled through easily from the other side.

After the antifreeze heating has been screwed using the preassembled union nut the tightness of all screwed connections of the siphon must be checked.

Before pressure-side siphons can be taken into opera-

tion again after having been assembled they must be refilled with water!

They can be refilled through the newly inserted T-piece which must be closed afterwards using the previously removed end cap "A".

For suction-side siphons particular attention has to be paid that the ball of the non-return valve is not pushed up by the heating cable because otherwise the function of the siphon cannot be guaranteed.

### Technical data

- < Including connection box (IP 67) with integrated antifreeze thermostat for installation in the immediate environment of the siphon
- < Completely equipped with clamps for an easy connection to the existing electrical supply (3x 1,5mm<sup>2</sup>), 230 V UPS, max. 10 A
- < Electrical protection by use of a 30 mA residual-current-operated circuit-breaker (r.c.c.b.) provided by the customer
- < Self-regulating and power-limiting heating cable (70 cm, heated up to the connecting sleeve)
- < Power: 19 W/m (at +10°C) and 30W/m (at -25°C)
- < Protection class I, model with protective conductor
- < Completely watertight in the heated area, from connecting sleeve
- < Supply cable IP 54 (100 cm, unheated)
- < Admissible operating temperature -30°C to +55°C
- < Thermostat preset to +15°C
- < Hysteresis (switching difference): 6K ± 4K  
Example: required minimum temperature 5°C  
Set point 15°C  
Resulting from: required minimum temperature 5°C + maximum hysteresis 10K (6K + 41K)

### Safety instructions

All safety and accident prevention regulations as well as the guidelines and standards of the country where the installation is carried out must be observed for installation and commissioning. Apart from that the VDE regulations, in particular VDE 0100 and VDE 0721,

Part 1 and Part 2 A3 as well as VDE 0254, have to be observed for the installation of the antifreeze heating. The antifreeze heating must only be installed by an authorised specialist. The electrical connection must only be carried out by an electrician in accordance with the electrical regulations.

### Modifications to the heating cable are not allowed.

Damages at the heating cable can cause the ingress of humidity and dirt as well as arcing and a fire in the entire system. A heating cable damaged by fire can cause further fire damage when being switched on. Therefore such a heating cable must be taken out of operation immediately.

### Intended use

Antifreeze heating for siphons for VAC plants. Assembly and connection must be carried out according to these instructions. Any use other than that which is intended shall not be allowed.

### Instructions for the electrical connection

The heating cable of the antifreeze heating must never be shortened, not even on the PTC thermistor side. Excess cable lengths of the heating cable are to be led through the outlet in the condensate trough (necessary for example for shortened siphons). The heating cable is not to be fastened, but just inserted into the siphon and fixed with the screwing in such a way that the connecting sleeve is completely outside the siphon. The heating cable must not be brought into contact with sharp edges and be protected from mechanical damage.

the heating cable must not be crossed or touched anywhere. The heating cable is to be laid in such a way that no heat accumulation will be caused. The heating cable must not be led above or through combustible materials. The electrical protection and the protective

Fig. 1

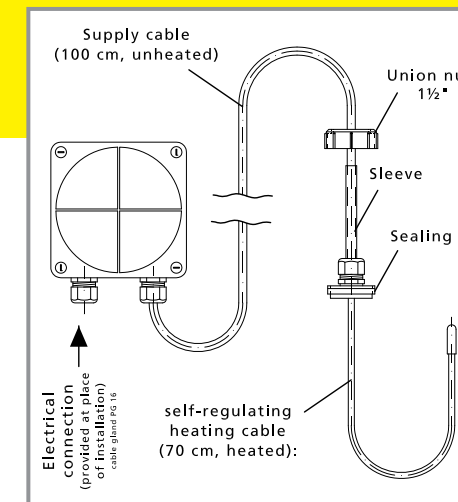
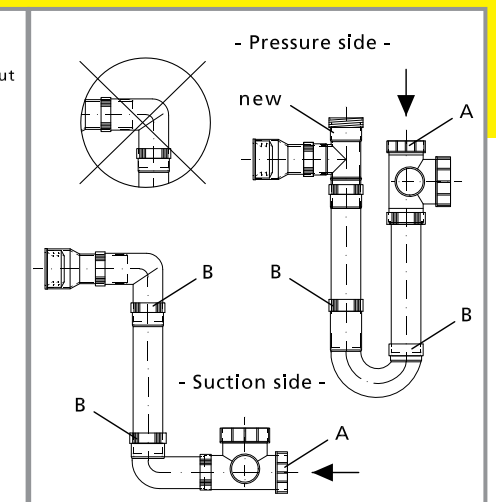


Fig. 2



measures must have been provided on the installation side for which the use of a 30 mA residual-current-operated circuit breaker (r.c.c.b.) is mandatory. The exclusive use of miniature circuit breakers may not be enough to prevent the progression of arcs and can provide a fire hazard.

The heating cable of the antifreeze heating must be operated exclusively from the provided connection box with the built-in antifreeze thermostat to ensure that an operation is impossible at ambient temperatures > +5°C. An insulation test is required before the heating is taken into operation. Pipes used for cable laying must be included in the protective measures (grounding of pipes).

The circuit diagram is available as a free download on our homepage.

### Repair

A damaged heating cable must never be repaired but be replaced by a new one.

### Instructions for connection and installation

The connection box should be easily accessible but protected from mechanical damage. It should always be installed in such a way that the cable glands do not point upwards and the lid can be removed. The heating cable of the antifreeze heating must be laid between the connection box and the entry into the siphon in such a way that any mechanical damage will be prevented. No dragging is allowed at the heating cable gland and at the siphon intake..