

# Storage Tank Heating ROTKAPPE®

Direct heating of liquids in storage tanks and containers efficiently prevents freezing, crystallizing out and thickening. The type approval of your container is not affected in any way by fitting ROTKAPPE storage tank heaters.

Storage tank heaters are always planned, designed and built individually for our customers. They consist of an angular immersion heater, a temperature probe and a level sensor. All parts are integrated into a fixing flange.

## The Angular Immersion Heater

The angular immersion heater is adjustable in height (+ 50 mm / - 100 mm) and is built into the fixing flange. Therefore the exact adjustment of the heater can be executed according to the tank height at the final fitting. The angle shaped support feet welded onto the horizontal immersion tube ensure the minimum distance to the container bottom.

## The Temperature Sensor

The TF temperature sensor with integrated Pt 100-sensor is built into the flange and registers the liquid temperature. The result is transferred to an adjustment control in order to maintain the desired temperature level.

The temperature sensor can be fitted with two Pt 100-sensors so as to combine temperature control and monitoring.



## The Level Sensor

Float switches or level rod-probes can be mounted into the flange as level sensors. They monitor the minimum liquid level in order to protect the heater and the container from damage in case of drying out. If necessary the heating is switched off.



Installed storage tank heater with protective cover

## The Fixing Flange

On the one hand, the fixing flange holds the various parts of the storage tank heater, on the other hand, it is the fixing of the complete tank heater to the container. The standard flange made of PP can be provided in other materials if desired or a specific flange connection can be planned to suit your needs.

For containers installed outside, we can offer a protective cover to protect the flange and the terminal casing from direct sunlight and other effects caused by weather.

## Electronic Controlling and Monitoring Devices

Our electronic devices necessary for controlling and monitoring temperature and liquid level are designed for installing in control cabinet or panel mounting.

Angular immersion heaters ROTKAPPE type B... have the VDE label.



# GALMATHERM® as Storage Tank Heating

For liquids in which metallic immersion tube materials are not suitable, we recommend as a storage tank heating our heater GALMATHERM.

The very good chemical resistance of the heating cable is achieved by the use of a special coating made of FEP or PFA. The surface load is only  $1\text{ W/cm}^2$ .

## Construction

The heaters consist of a metal heating wire in a fluoroplastics coating, wound on a flexible PP or PVDF support. The necessary distance between the heater and the tank bottom is ensured by the support feet attached to the stable PP/PVDF frame.

The unheated connection cable leaving the heater is also coated in fluoroplastics as far as the connection sleeve and is secured in a PP expandable braided sleeving.

This part of the heater can be immersed in the process liquid and is attached to the container lid with a threaded nipple (250 mm below the connection sleeve).

From the PVC connection sleeve (degree of protection IP 64 according to EN 60529), a PVC connection cable leads to the control cabinet. The connection sleeve may not be immersed in the liquid, nor may it be directly exposed to vapours.

For containers installed outside, we can offer a protective cover to protect the connection sleeve from direct sunlight and other effects caused by weather.



## Safety Technology

Overheating of the fluoroplastics coating can cause thermal destruction. Take care that there is always sufficient convection and take precautions to prevent dirt or deposits from collecting on the heater.

Also, please take care that electrical heating systems are supposed to be equipped with safety technology (temperature limiter and dry-out protection) by the user. This can be most effectively implemented by level rod-probes and float switches with integrated temperature sensors and the relevant electronics from our wide sensor program. We gladly provide advice to you.

## Electrical Safety

The products are individually tested according to EN 60519 / 1-2 which ensures the safety and operative ability of each individual immersion heater. The storage tank heating ROTKAPPE and the heater GALMATHERM are assigned to protection class 1 according to EN 60519 / 1-2. All metal parts that can be touched are securely connected to earth. The effectiveness of the earth and the highest possible electrical safety are fully ensured by using an earth leakage circuit breaker (ECLB).