

**Antifreeze thermostat with contact output
binary sensor in hazardous locations zones 1 and 2**

ATEX compliant

TBK-FR-2G

APPLICATION

TBK-FR-2G the thermostate protect systems for freeze. In combination with EEx-i switch Type EXL-IRU-1 with intrinsic safe circuit the sensors may be used in hazardous areas zones 1 and 2. Application areas heat exchanger and hot-water heating registers for air conditioning and refrigeration systems and can be used everywhere temperature must not drop below a certain fixed safety value.

TECHNICAL DATAS

Type	TBK-FR-2G
Supply	by EXL-IRU-1
Contact	dust encapsulated single micro switch
Ambient temperature	0...+50 °C
Working temperature	-10...+12 °C
Storage temperature	-20...+80 °C
Humidity	0...95 %r.H., non condense
Enclosure	Plastic, PC
Protection	IP40
Dimension	118 x 102 x 72 mm
Protection class	II2G EEx ia IIC T6, acc. to EN 50014/ EN 50020
CE	simple apparatus
Includes in price	94/9/EC (ATEX)
Installation area	1 Antifreeze thermostat Type TBK-FR-2G Zone 1, 2 by using the switch module Type EXL-IRU-1

**II2G EEx ia IIC T6
Zone 1, 2
acc. to ATEX**



EEx-i CIRCUIT - TABLE 1

Operation values maximum at terminal

Voltage	Ui	15 VDC
Current	Ii	50 mA
Power	Pi	100 mW
Capacity	Ci	0 µF
Inductivity	Li	0 mH

The maximum values must not be exceeded!
Please check your external capacities and inductivities in acc. to the length of the cable and the methode of installation

MOUNTING AND INSTALLATION

The unit may be sealed on the top of the setting spindle. The room temperature at the thermostate body should not fall below the setting point

The 6 m capillaries are active on full length for a minimum of 300 mm. Any position is acceptable. For mounting and connection remove the cover to gain access to fixing holes and use the supplied screws for the installation. The capillary tube must be held by the anti-kink device on the diaphragm pot during the unwinding operation.

FUNCTION

Heating

Connect red and blue terminals, the contact opens while rising of the temperature

Cooling

Connect red and white terminals the contact opens while dropping of the temperature. The respective free contact closes simultaneously (signal contact)

RECOMMENDED MODULE

- Switching module Mfr. Schischek Type EXL-IRU-1.
- In combination with transducer EXL-IRU-1 is intrinsic safety proof for simple circuits given.
- Manufacturer declaration zone 1 and 2.

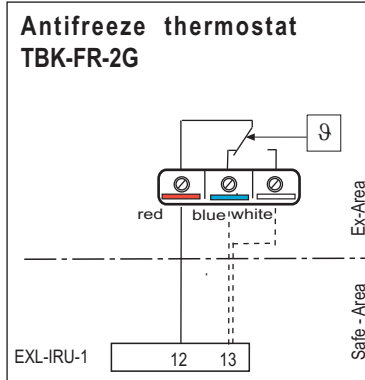
MAINTENANCE

The antifreeze thermostate is maintenance free!

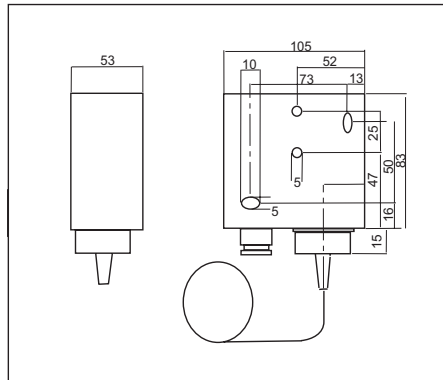
ATTENTION!

- For installation, use and maintenance the official standards and rules must be applied.
- The energy of intrinsically safe circuits are below the level to start an explosion in case of a spark..
- Intrinsic safe circuits must be installed with light blue coloured and separate from non intrinsic safe circuits.
- The sensor is passiv and potential free for use in hazardous locations in zone 1, 2.
- Pay attention to the max values for wiring, listed in table 1.
- Avoid electrostatic discharge.
- Only wet cleaning.

ELECTRICAL CONNECTION



DIMENSION



subject to change