

Flange heaters and process heaters with connection housings in flame proof design



Electric flange heater DN 200 Ex I G b Ex d II C T4.

heatsystems designs and produces flame proof connection housings for their product range of electrical flange heaters and process heaters.

Same quality standard and same options as for the „normal“ designs are available. From the standard applications for process heat, over the nearly-dead-leg-free design up to the dead-leg-free heating elements for heating up ultra pure media. The flame proof housing, optionally equipped with increased safety connection box offer sufficient safety for application in zone 1 and 2.

Generally speaking the flame proof housings are produced from stainless steel and optionally available electrically polished. Rust due to ineffective corrosion protection is a thing of the past.

Standard designs for gas- and dust-ex-applications. Temperature classes T1 to T6 and for gases IIB and IIC.

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Electric flange heater for heating of water 80 kW 400 V.

heatsystems electric flange heaters and electric process heaters were designed for direct heating of various liquid and gaseous media.

They are used preferably for heating:

- rape seed oil
- palm oil
- demineralised water
- fully desalinated water
- drinking water
- insulating oil
- transformer oil
- non-aggressive circuit water
- cleaning fluids
- heavy oil
- bitumen

- heating water
- hydraulic oil
- diphyl
- lubricating oil
- turbine oil
- steam generation
- steam (superheating)
- heat transfer oil
- non-flammable gaseous media and vapours

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Connection housing in flame proof design DN 200.



Connection area with sufficient space.

Flange plate

Dimensions according to:

- EN 1092-2, form A as normal version
- On request also in form C or form N according to DIN 2512
ANSI standard B 16.5 rf
- Tri-Clamp according to DIN 32676
- For vessels according to DIN 4800 to 4805
- According to customer requirements.

Connection housing

Ex d IIC
Ex d IIB+H2

Available materials for **heatsystems** electric flange heaters and electric process heaters

Tube plate

Carbon steel
Stainless steel AISI 316Ti (1.4571)
Stainless steel AISI 316L (1.4404/1.4435)
Stainless steel AISI 904L (1.4539)
All other common stainless steels

Heating surface

Stainless steel AISI 316Ti (1.4571)
Stainless steel AISI 316L (1.4404/1.4435)
Stainless steel AISI 309 (1.4828)
Stainless steel AISI 904L (1.4539)
Stainless steel Incolloy 800 (1.4876)
Stainless steel Incolloy 825 (2.4858)
Stainless steel Hastelloy C-278 (2.4819)
Copper nickel CuNi10Fe
Titanium Grade 2

Special materials:

Niob / tantalum and similar

heatsystems electric flange heaters and electric process heaters consist of the following components:

Design and construction

Computer-aided design of the surface load of the heating surfaces ensures optimum design and capacity. Optimization based on the film temperature.

Heating surface

Highly compressed tubular heater, rod-shaped cartridge heater or oval tube heater. Material, dimensions and length individually adapted to the application. Welded gas tight into the flange plate. Inserted tubular heater diameters are e. g. 6.5 mm, 8.5 mm, 16 mm, Cartridge heater diameters 8.5 mm, 16 mm and 25 mm, Oval tube heater diameter 16 x 6 mm. The optimum suitable heater is determined depending on the immersion length and the medium to be heated.

Temperature controlling and limiters

Temperature controllers and/or temperature limiters (effective on the medium) are installed in the connection housing on request.

Optional: Overheating protection (effective on the surface of the heating elements).










Temperature controllers and limiters can be designed both electromechanically and for electronic evaluation (Pt 100, thermocouple). Separate arrangement is possible.

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Electric process heater DN 100 with connection housing in flame proof design  II G b Ex d II C T4.

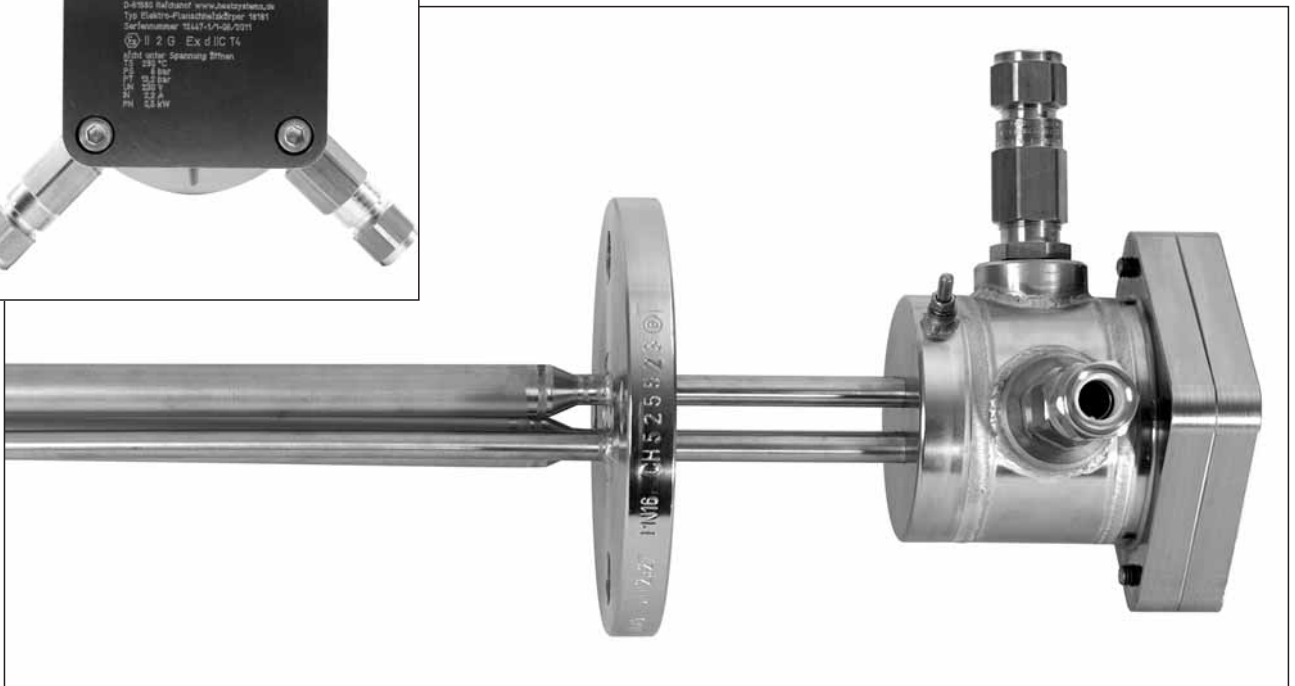
Other options in **heatsystems** electric flange heaters and electric process heaters:

-  dead-leg-free version
-  roughness depth of the parts which come into contact with the medium Ra <0.8 µm
-  material certification according to EN 10204-3.1
-  acceptance by TÜV, GL, DNV, LR, BV
-  gap between tube plate and heating elements reduced to minimum dead-leg (nearly dead-leg-free version)
-  complete temperature control and control temperature limiting, also with cabinet as turn key solution
-  combined heating, electric and with steam, hot water or hot oil
-  exchangeable heating elements
-  mounted rollers as insertion aid

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Electric flange heater DN 40 2000 W, dead-leg-free version, for heating of gas.



Electric flange heater with connection housing in flame proof design with open cooling zone.