

BARTEC Safe.t[®] news

The BARTEC Customer Information

HSF Heaters Going Strong



Whenever temperature fluctuations must be effectively avoided or certain minimum temperatures must be maintained – the BARTEC HSF heater offers a reliable and convincing solution.

Whether in application areas such as switchgear and control cabinets, protective boxes for transmitters, measuring units, analyses cabinets for sample processing, etc., the HSF is very popular, not only because of its compact, flat design.

- Self-limiting characteristic
- Any installation position
- Extremely flat design
- ATEX gas and dust approval
- Large convector surface with black anodisation
- Ready-for-connection, maintenance-free

Using this heater, you will provide for the highest possible degree of operating safety. The HSF offers reliable protection against corrosion on mechanical system components and protects electrical built-in components against failures resulting from creeping currents.

Design

The core of the HSF heater is a PTC heating element.

The special design of the aluminium profile ensures a consistent temperature distribution inside enclosures and cabinets.

Functional principle

If the temperature inside the enclosure of the cabinet rises, the electrical resistance of the PTC heating element increases.

With high temperatures, the heating capacity is so small that the limit temperature of the respective temperature class is not exceeded. The HSF heater can be used in a broad operating voltage range - almost without affecting the heating capacity.

Direct Connection of Electrical Heating Circuits to the Process Control System at Leuna Harze/EPILOX Leuna

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The corporate domicile of the LEUNA Harze GmbH is situated in the south of the German Bundesland Saxony-Anhalt, at the Leuna chemical site.

For an extension of the product portfolio, the production plant has been expanded by new process systems over the past few years. The planning, erection and commissioning of the chemical plant was carried out by EDL Anlagenbau Gesellschaft mbH as general contractor.

The BARTEC BENKE regional office in Böhlen/Leipzig has been commissioned with the planning and project preparation for the complete electrical trace heating, incl. control systems and switchgear as well as the routing and cabling. Also the project realisation was entrusted to experienced BARTEC BENKE experts.

To provide the plant with an optimum process management, the entire control and regulation system (bus connection via PROFIBUS-DP, connection of heating control via ET 200 input/output stations) for the altogether 103 heating circuits with a total power of almost 300 kW was directly integrated into the existing process control system (ABB Operate IT).

Thanks to this solution, the heating circuit capacity can be perfectly adapted to the required parameters of the production plant. A multitude of temperature values are recorded by means of up to nine PT 100 resistance temperature sensors per heating circuit and transferred to the central control system to be interconnected. This way, each heating circuit can be extremely accurately adapted to the special operating conditions.



On the control screens in the measuring station, each heating circuit can be displayed in the corresponding plant flow chart. For process optimisation, all heating circuit information, even individual temperatures, are rapidly output in a clear structure. The modification of the heating circuits' operating parameters and their effects on the process can be directly monitored.



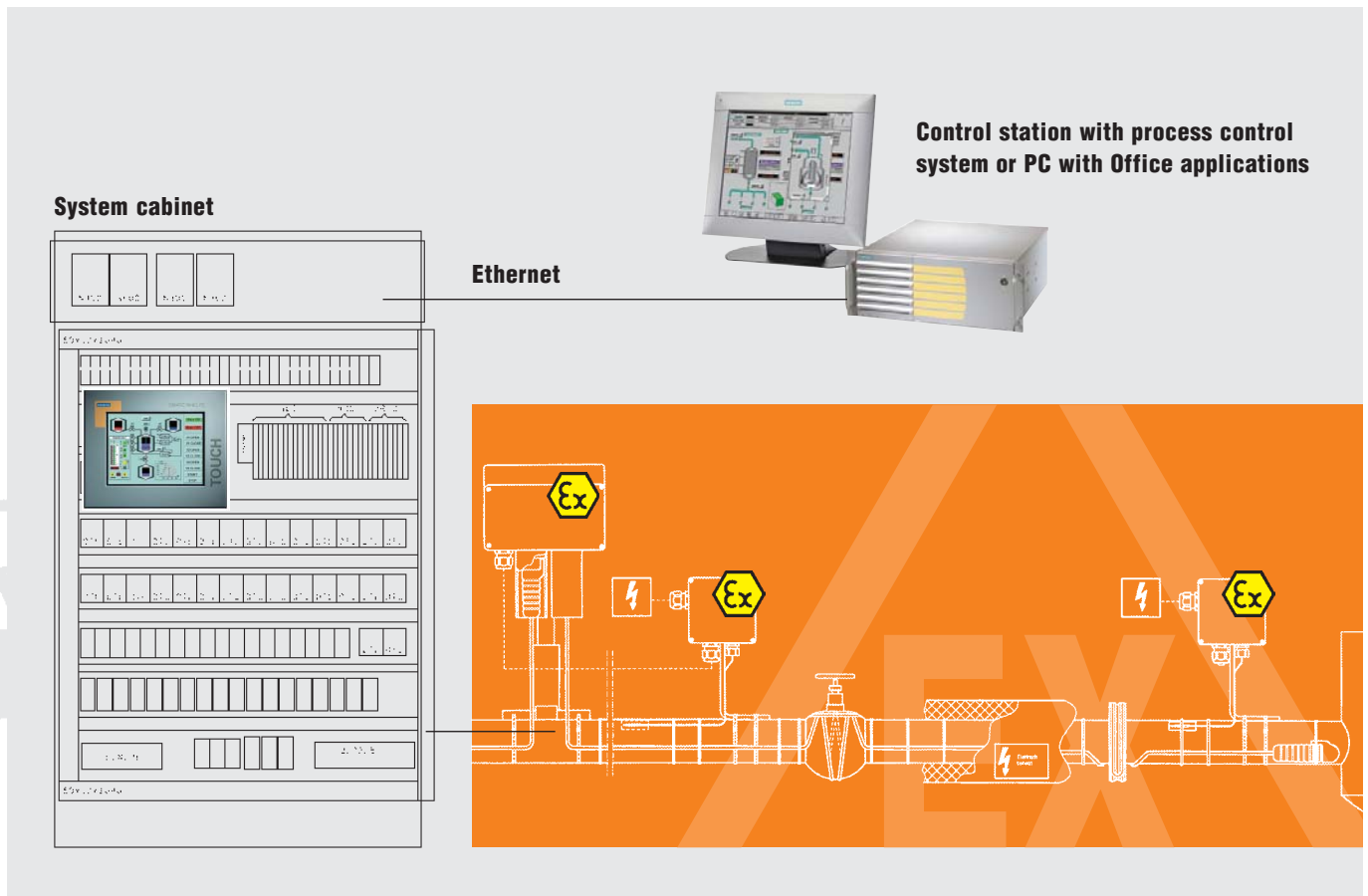
The complete product package of BARTEC BENKE comprises more than 12 km of plastic-insulated (EKL) and self-limiting heating cables (HSB). The complete control systems were supplied in 4 factory-assembled switchgear units. All enclosures, connection and temperature detection systems are explosion-proof.

The realisation of the technical solution presented by BARTEC BENKE experts as well as the supplied product quality have convinced the customer. The current subsequent order "Extension of the tank farm project EPILOX Leuna" is also executed by BARTEC BENKE.

Based on an identical technical constellation, the BARTEC BENKE success team is planning and realising the plant extension. The project comprises the planning and realisation of the electrical heating system with more than 4.5 km of heating cable as well as the switchgear extension and the required connection wiring.

The photographs show the erection of the new resin storage containers in extension of the existing tank farm. These containers, the connecting piping as well as pumps and measuring stations are also equipped with the electrical trace heating.





BARTEC BENKE

Control system for electrical heating circuits with clear advantages for plant operators

- Clearly configured and continuous process monitoring
- High operating comfort with on-site visualisation
- Extendable due to the modular concept
- Communication with available systems

Open trace heating control system - the modular solution for more than 1,000 heating circuits

The new modular system can be extended from 30 to more than 1,000 electrical heating circuits. The core element of the control system is an S7 CPU with completely standardised software structures.

A system cabinet accommodates the entire hardware for 30 or 52 heating circuits without temperature limiters. All heating circuits can be individually adjusted, optionally with/without temperature limiter and with/without load current monitoring.

Thanks to the software concept, the continuous monitoring of the control quality can easily be realised. The consistent recording and archiving of

all process parameters allows for system quality analyses. The configuration of heating circuits with the standard software saves time and increases the efficiency during the development and modification stage.

The visualisation panel offers clear advantages with its fully graphical operator interface. Depending on the application, the operator selects the single or multi-loop presentation. Heating and trend curves are stored and can be rapidly called up. The mean value of measuring data can be easily generated and, last but not least, alarm logging is simplified.

As the system has been designed as OPC server, the connection to existing control systems via Ethernet can easily and rapidly be realised.

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Ex Standstill Heating Systems

for electrical motors and generators

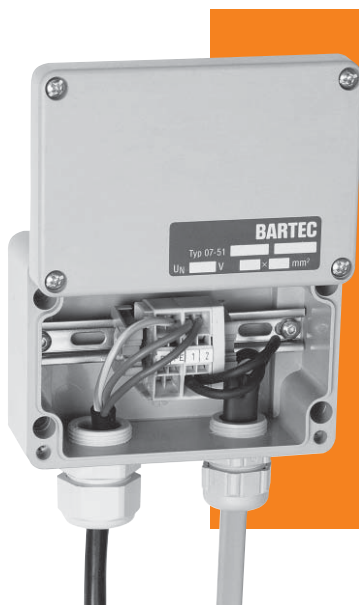
The BARTEC Ex standstill heating systems reliably protect electrical motors and generators against corrosion damage, even in hazardous areas. The core of the standstill heating system is a flexible, self-limiting heating cable, which avoids the formation of condensate, even under extreme conditions.

The Ex standstill heating system is ready-for-connection and can be directly connected to terminals in an EEx e room. The length of the crimped FEP strands is freely selectable.

Also the cable length can be adjusted to the individual requirements. Thus, every motor can be equipped with the optimum standstill heating system.

As the heating cable is self-limiting, overheating can be excluded even if the tape contacts itself or is crossed over.

The approval in accordance with ATEX corresponds to the latest standard version. A further approval of the heating system is no longer required.



Ex Connection Systems with Shrink Technology

for self-limiting heating cables

Advantages of shrink technology

- Direct routing of heating cable into an EEx e enclosure
- Space-saving, favourable dimensions
- Easy configuration

Besides the CONPAC connection systems for self-limiting high temperature heating cables of the HSB series and Twisto for self-limiting heating cables of the PSB series for non-Ex areas as well as the Plexo plug-in connection system for PSB/HSB for application in Ex areas, the BARTEC delivery range now also offers a further connection system with shrink technology for Ex areas. This connection system is available for PSB and HSB heating cables.

The heating cable is directly connected inside the polyester connection enclosure. The end of the heating circuit is closed by means of a shrinkable tubing.

The Ex connection system with shrink technology represents a cost-favourable alternative to the plug-in Ex connection systems.

Rectification

Our Safe.t® news, June 2004 version, contains factual faults in the table which we would like to rectify in the following. Please take note. We would like to thank you for your understanding.

- The explosion protection document for existing systems must be prepared by 31/12/2005.
- The 94/9/EC directive became binding for the placing of components, devices and systems on the market on 01/07/2003.