

System comparison of Löbbe explosion-proof series - gtex & gtexHP

Introduction:

Our gtex & gtexHP system series are electrical heating systems specially designed for ATEX or IECEx hazardous areas. Their operating principle is similar to that of the gflex system series, with the difference that the complete system is designed according to special ATEX and IECEx regulations. gtex & gtexHP are compatible with almost all tank containers on the market - also for retrofitting. Modular in design, the result of each system is an individual and maintenance-friendly design with many expansion options.

Function:

The systems of the explosion-proof series temper the tank contents indirectly via the outer wall of the container. For this purpose, the circulation pump conveys a heat transfer medium in a closed circuit through the half-pipes, which are normally used for steam heating. The heat transfer fluid is a food-sanitary glycol-water mixture. The electric heater installed in our system is part of the closed circuit.

In heating mode, the electric heater integrated in the system heats the heating medium. The heating of the heat transfer fluid is carried out according to the principle of a continuous flow heater, thereby it is strictly separated in terms of material from the customer's product. The power supply for the system is provided by a special 380-440 V ATEX CEE plug according to industrial standards. Heating is fully automatic. The flow temperature at which the heat transfer medium enters the container's pipe circuit can be set with high precision. This means that even very temperature-sensitive products are protected from quality losses due to too high contact temperatures.

Additional info:

gtex is the standard version of the system series. Therefore, it is equipped with the above-described features of an explosion proof system. The system series is fitted with fewer basic equipment than the gflex series.

gtexHP is the high-power system of the system series. In addition to the above-mentioned features of an explosion-proof system, the system reaches the flow temperature particularly quickly thanks to the higher power of 33.6 kW. The system series is fitted with fewer basic equipment than the gflex series.

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System comparison gtex & gtexHP

gtex



gtexHP



Systemvergleich gtex & gtexHP










gtex 1.0

gtex
HEATING-SYSTEM by LÖBBE












gtexHP 2.0

gtex
HEATING-SYSTEM by LÖBBE

	  	   
Product group:	Electrically operated, hazardous area protected glycol/water heating systems for integration on tank containers	
Product details:	Standard system, most favorable solution in the Ex-heating area	+ High power system, compact model, to quickly reach the target temperature
Housing formfactor:	+ The systems are largely adapted to the contours of the tank container	
Installation of operator panel:	+ Control panel installation possible at different locations on the tank container	
Heating power:	Up to 19,2 kW (at 440 V)	+ Up to 33,6 kW (at 440 V)
System safety:	Stage II + ATEX: Ex II 2G Ex db eb [iaGa] IIC T4 Gb (flow up to 90 °C)/optional also T3 up to 95 °C flow temperature	
Mains connection:	32 A CEE - 380 to 440 VAC (50/60 Hz)	63 A CEE - 380 to 440 VAC (50/60 Hz)
Ambient temperatures:	-20 °C - +40 °C	
Max. preflow temperatures:	Up to 90 °C temperature class T4, or optional to 95 °C temperature class T3	
Control unit:	2-point-regulator	
aflex extention ¹ :	No	
Control schematic:	Operation of the system is only possible to a limited extent due to ATEX regulations, while operating the setpoints are fixed set. The control elements are accessible but are partially located inside pressure-proof housings	
Scope of functions:	Simple control functions, threshold monitoring	
Telematics interface:	No	
Telematics scalable:	No	
Installation positions:	Upright installation position only	
Maintenance:	+ The heating rod and other wearing parts can be reached and replaced from the front	
Housing:	+ The heater housing is made of stainless steel and, for corrosion protection, is additionally powder-coated	

¹aflex is an agitator extension for many of our heating systems and for our cooling /heating system cflex. The heating system is extended in the control accordingly and can control one or more agitator drives. The drives can additionally be equipped with frequency converters to control the rotation of the agitators.

Pictograms & abbreviations list:

	Cooling		Diesel burner
	Cooling heating		High power
	Heating		Battery
	Glykol (up to 95 °C optional up to 110 °C)		Generator
	Thermaloil (up to 230 °C)		

TRM: Temperature Rise Monitoring

The controller monitors the rate of temperature rise. If this rises too quickly, the heat is not transported away correctly and there is a high probability of a flow fault; the system then switches off the heating process and outputs an error message.

SFM: Software Flow Monitoring

The temperature of the heating medium is monitored at two points in the system. If the differential temperature remains stable within a set range, the flow of the heating medium is in order. If the differential temperature drops, there is a flow fault, and a warning message is issued.

PCM: Power Contactor Monitoring

The mechanical main and circuit contactors in the system are switched at fixed intervals (once a day), the auxiliary contacts are monitored, and it is determined whether the contactor is still working reliably. In this way, any „sticking“ of the contactor can be determined. If one of the two contactors no longer switches correctly, the system is disabled for heating processes and an error message is displayed.

DBM: Double Boost Mode

This mode is currently only available for the hybrid and dflexHP systems. When connected to the mains voltage, the system can also switch on the diesel burner in addition to the electric heating element. This is only possible for a certain period and is then blocked until the system is restarted.

SCM: Single Channel Monitoring (ibcflex only)

The single channel monitoring measures the temperature at each back flow connection of the ibcflex, thus the most accurate temperature control of the product is possible. This monitoring can also be carried out directly in the product, either cable-bound or by radio sensors.

ECO: Eco Mode

The eco mode is an automatic operating mode to make the heating process as energy-efficient as possible. In a system with a minimum of two heating elements, both are controlled in such a way that the heating phase is as short as possible, and the holding phase is as economical as possible.

STB: Safety Temperature Limiter

The safety temperature limiter is a standard component installed in every heating system, from Stage I to Stage III. It is the most important and, in case of a temperature rise monitoring (TRM) in the system, also the last instance for emergency shutdown of the heating process. The sensor of the STB is located directly on the heating rod and switches off the heating rod at a fixed defined overtemperature (e.g., 105 °C).

Stage I-III: Safety Level (I - lowest / III - highest level)

The individual safety levels are shown in a table, currently only levels II and III are used. Level I is only used in old or transitional systems.