









Product group:	Electrically operated, hazardous area protected glycol/water heating systems for integration on tank containers
Product details:	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 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:	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**
-  **Cooling heating**
-  **Heating**
-  **Glykol** (up to 95 °C optional up to 110 °C)
-  **Thermaloil** (up to 230 °C)
-  **Diesel burner**
-  **High power**
-  **Battery**
-  **Generator**

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.