

Compact Heating Control System KHS

In accordance with EN 60519-1 any electrically heated container must be equipped with a thermostat and a level monitoring system. It is, however, often not possible to integrate all necessary components into a large control cabinet. Our solution – the Compact Heating Control System KHS.

All components necessary for the safe operation of the heating system are contained in a light grey, glass fibre reinforced polyester enclosure (protection type IP 65 in accordance with EN 60529). The control cabinet can be mounted with stainless steel mounting brackets onto a wall directly next to the container.

The enclosure can withstand a permanent temperature of up to 70°C (and a peak temperature of 150°C). It is also self-extinguishing, halogen-free and corrosion-resistant. It meets the safety class IK 10 in accordance with EN 62262, which protects it from external mechanical stress. Its rated insulation voltage is 1.000 V.

The main operating elements can be reached from the front without opening the heating control system:

- The heating control system can be safely switched on and off with the main red/yellow emergency switch. This switch ensures the disconnection of all poles.



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- the red LED warning light indicating the fill level (minimum level cut-out active)
- the thermostat MTR 1000, whose desired value can easily be set and adjusted with the buttons that can be accessed from the front of cabinet; the actual temperature value is indicated on the large LED display; the LED display also indicates the operating status of the heating systems.
- The door of the control cabinet can only be opened with a suitable key that has a two-point closure.

The following components can be found inside the heating control system:

- the line fuses and the power protection elements
- a FI-protection switch, which in the case of malfunction disconnects the heating systems quickly and safely
- the electronic level monitoring system ETS 100 that can be connected to a floating switch or a conductive level rod probe
- the clamping strips for the electrical connection



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The cables and sensors of the heating systems are inserted into the control cabinet via cable glands situated at its base and are tightly wired at the clamping strips. A temperature probe with a Pt100 sensor element must be connected for temperature control; a MTSu floating switch or alternatively a conductive NS 2 level rod probe must be connected for fluid level measurement.

A floating switch with an integrated temperature probe (MTSt) or a level rod probe with an integrated temperature probe (NT 2) can of course be connected in place of individual sensors. The connection of a separate temperature probe is in this case not necessary.

Unused cable seals are closed with blind plugs.

When connecting single-phase immersion heaters use safety immersion heaters with an anti-burn system to improve the safety of the whole system. These immersion heaters have a temperature monitor built-in at their heating insert, which safely disconnects them at inadmissibly high immersion pipe temperatures (e.g. complete heating liquid loss).

Technical Data

| | KHS 230 | KHS 400 |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Dimensions (h x w x d in mm) | 515 x 415 x 230 | 515 x 415 x 230 |
| Weight | 12,6kg | 13,9kg |
| Supply voltage | 230V~, 50 / 60Hz or 400V 3~, 50 / 60Hz | 400V3~, 50 / 60Hz |
| Rated maximum current | 16A | 40A |
| Max. total connected load | 3,6kW / 230V~ or 10,5kW / 400V3~ | 27kW / 400V 3~ |
| Heating connection | at supply voltage 230 V~ max. 3 x 1,2 kW / 230V~ max. 2 x 1,6kW / 230V~ max. 1 x 3,5kW / 230V~ at supply voltage 400 V 3~ max. 3 x 3,5kW / 230V~ max. 2 x 3,5kW / 230V~ max. 1 x 3,5kW / 230V~ max. 1 x 10kW / 400V3~ | at supply voltage 400 V 3~ max. 3 x 9kW / 400V3~ max. 2 x 9kW / 400V3~ max. 1 x 9kW / 400V3~ |
| Ambient conditions | Condensation within the device must be avoided Internal temperature max. 50°C Rel. humidity max. 75% Ambient temperature max. 35°C | |

