



CONTROL

UNIPLEX III – Powerful control for heating systems

The latest release of the Klöpper-Therm heating controller UNIPLEX again convinces by development competence and trendsetting technology within one device. Especially designed for the control and monitoring of electric heating systems, several function modules have been combined in one device. Temperature controller, safety temperature limiter and current controller have been placed on a space-saving 19"-rack mounting in Eurocard size.

The main features:

- ▶ high safeness by safety temperature limiter (STB), certified according to ATEX and classified as Safety Integrity Level SIL 2
- ▶ configurable as PI- or two-position controller
- ▶ continuous control of heating circuits by driving a solid state relay (SSR)
- ▶ integrated current controller (pulse-width-modulation) for adjusting the desired heating current (reduces the number of heating cable types or resistance types used)
- ▶ customized adaption of heating current to variable maintenance temperatures
- ▶ large display indicating nominal, actual and control value (control value as bar graph)
- ▶ comfortable operating menu in different languages (language selection)
- ▶ serial RS-485 interface and Ethernet interface for connection to higher control systems
- ▶ front USB connection for diagnosis/configuration
- ▶ password-protected access on three levels
- ▶ reset of limiter by tool/code entry
- ▶ various limit value monitoring for temperature and current
- ▶ automatic self-testing
- ▶ extended application possibilities by additional controller sensor and limiter sensor
- ▶ connection of 4–20 mA sensor or set point encoder

UNIPLEX III – Technical Data

Dimensions

- ▶ 19"-rack mounting
 - Front panel 8 HP (40.64 mm) wide, 3 HE (133.35 mm) high
 - Printed Circuit Board Eurocard size 100 x 160 mm
 - Connector 48-pin female in model F

Ambient conditions

- ▶ Ambient temperature 0 °C to +50 °C in operation, -20 °C to +70 °C during storage
- ▶ Relative humidity < 95 % at 30 °C, non-condensing

Power supply

The power supply takes place via a switch mode converter with a transformer, which ensures the electrical decoupling of the assembly.

- ▶ Voltage supply 24 VDC \pm 20 %, ripple max. 1 V_{pp}
- ▶ Power consumption typically 3 W
- ▶ Mains failure bridging > 20 ms, otherwise automatic reset

Input for temperature measuring sensor Pt100 in 3-wire circuit

- ▶ Measuring range -200 °C to +650 °C
- ▶ Resolution 1 K in the range -200 °C to +650 °C
- ▶ Measuring tolerance \pm 1 K up to +300 °C, \pm 3 K up to +650 °C
- ▶ Sensor current 1 mA (kept constant via current source)

Input for current converter

The input is electrically decoupled by means of a magnetic measuring transformer.

- ▶ Measuring range 0 mA to 100 mA
- ▶ Conversion factor 1 : 10 up to 1 : 1000 freely adjustable
- ▶ Input resistance (burden) 50 ohms
- ▶ maximum permissible input voltage \pm 7 V_{pp}
- ▶ True-RMS measurement approx. 1000 samples/s

Control output for heating contactor and solid state relay

- ▶ connected output voltage 24 VDC against GND
- ▶ maximum current load approx. 1000 mA, self-limiting

Relay outputs for software-selectable messages

- ▶ 1-pin NO contact, closed circuit principle
- ▶ Switching capacity 24 VDC, 1 A, 30 W bzw. 24 V AC, 1 A, 30 VA

Potential-free inputs for software-selectable signals

External voltage signal, voltage present = input active

- ▶ max. permissible input voltage 24 VDC
- ▶ min. necessary input current 10 mA