

UNIPLEX III

Overview

The UNIPLEX III is a controller for heat tracing systems.

It consists of the subunits:

- temperature controller
- current controller
- safety temperature limiter (STL)

These components are integrated in a compact mounting form on a 19"plug-in card.

The temperature controller can be configured both with PI- and 2-point-action. A simultaneous operation is possible as well.

An integrated current controller is connected downstream, enabling the adaptation to different operating states by means of an additional electronic solid state relay, SSR.

The current is adapted and controlled in pulse width modulation (PWM) to the respective power demand.

A temperature limiter guarantees the safe avoidance of excess temperatures. This limiter has been ATEX-certified for use at heating circuits in hazardous area and fulfils the safety integrated level SIL2. By means of an external contactor, the heating circuit is galvanic separated from the mains. A reset is affected by tool or code entry.

The device is operated via four buttons at the front side. The menu and the values are indicated on a display. The language can be adapted.

On the back side there is a serial interface RS485 for the coupling to superior control systems. A corresponding PC-software is available. As an alternative, another interface e.g. Ethernet is possible as well. In front, there is an USB-connection available for diagnosis and updates.

The UNIPLEX III is a further development of the UNIPLEX II and PIN-compatible. An additional controller- and limiter sensor each can be connected, thus offering further configuration possibilities.

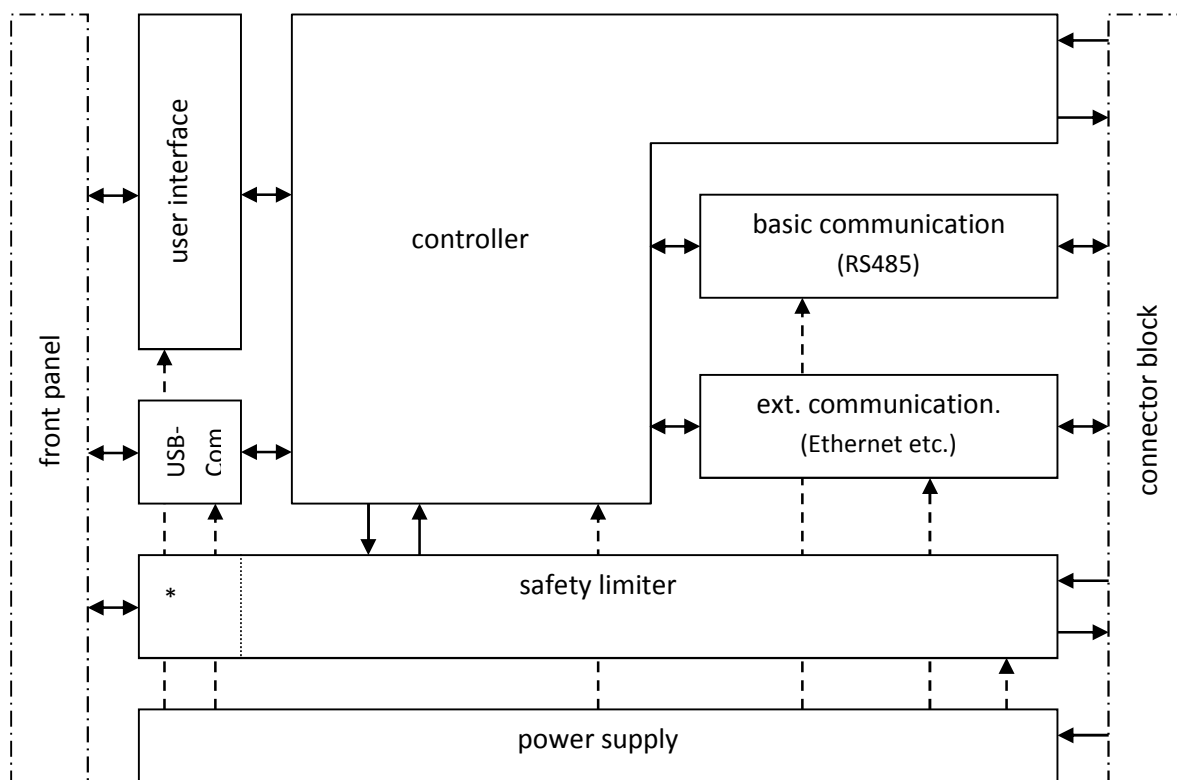


Subunits

The heating controller UNIPLEX III consists of the subunits

- temperature controller
- current controller and
- safety temperature limiter

Further components are the operating and display unit, power supply, serial interface and the connector block.



* Bedienelemente des STB (Reset-Lichtschanke, LED)

Design

The heating controller UNIPLEX III has been designed as 19" card. The front panel has a width of 8TE (40.64 mm) and a height of 3 HE (133.35 mm). There are racks for up to 10 heating controllers available.

The main processor as well as two independent processors for the safety temperature limiter are located on the board in European card size 100 mm x 160 mm.

The activation of the display and the evaluation of the keyboard entries are made via an independent communication processor behind the front panel.

The UNIPLEX III is connected via a 48-pole female multipoint connector in F-configuration.

Technical Data

Ambient Conditions

- ambient temperature 0 .. 50 °C operation, -20 ... +70 °C storage
- relative air humidity <95 % at 30 °C, non-condensing

Current Supply

The current supply is made via a switch controller with transmitter guaranteeing the electrical isolation of the subunit from the supply.

- voltage range 24 VDC \pm 20%, ripple max. 1 V_{SS}
- current consumption typical 3 W
- power failure bridging > 20ms, otherwise automatic reset

Input for Temperature Measuring Sensor Pt100 in 3-Wire-Connection

- measuring range -200 ... +650 °C
- resolution 1 K in range -200 ... +650 °C
- measuring tolerance \pm 1 K up to 300 °C, \pm 3K up to 650 °C
- sensor current 1 mA (kept constantly via current source)

Input for Current Transformer

The input is galvanic decoupled by a magnetic measuring transformer.

- measuring range 0 ... 100 mA
- transformer factor 1 : 10 ... 1 : 1000 individually adjustable
- input resistance (ohm resistance) 50 Ohm
- maximum input voltage permitted \pm 7 V_{SS}
- true-RMS measuring ca. 1000 samples/s

Control Output for Heating Contactor and electronic Solid State Relay

- Output voltage switched 24VDC to GND
- Maximum current charge 1000 mA approx., self-regulating

Relay Outputs for Messages selectable via Software

- 1-pole make contact, closed circuit current principle
- breaking capacity 24 VDC, 1 A, 30 W or 24 VAC, 1A, 30 VA

Potential-free Inputs for Signals selectable via Software

External voltage signal, voltage available = input active

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

Comparison UNIPLEX III with UNIPLEX II

- current consumption considerably lower than UNIPLEX II
- reduction of number of components in comparison to UNIPLEX II
- extended application possibilities by additional control- and limiter sensors
- temperature controller with PI-behaviour
- larger display with indication of nominal, actual and control value (control value as bar graph)
- comfortable operating menu in different languages
- USB-connection (front) for diagnosis and configuration
- limiter reset by tool or password
- password-protected access on three levels
- connection of 4-20 mA sensor or set point device