



## DPC<sub>front</sub> Temperature control device family

### Features

- Dual display (setpoint/actual value display)
- Wide-range voltage input
- Sensor monitoring
- Programmable with CodeKey
- Can be used in conjunction with Pt100 Ex, for temperature regulation in explosion-protected heating circuits

### DPC<sub>front</sub> Standard

- Pre-parameterisation as two-position controller
- Also usable as a PID controller
- Pt100, mV standard signals, thermocouples

### DPC<sub>front</sub> Komfort

- Pre-parameterisation as a PID controller
- Also usable as a two-position controller
- Pt100, mV standard signals, thermocouples
- Process-value feedback through 4 - 20 mA analog output

### DPC<sub>front</sub> Monitor

- Pre-parameterisation as a PID controller
- Monitor version with heating current monitoring
- Universal measuring input
- Process-value feedback through 4 - 20 mA analog output
- RS485-interface/Modbus RTU

### Description

The new DPC<sub>front</sub> temperature control device series currently consists of three standardised temperature control devices that are adapted to the (trace) heating applications.

Thanks to the use of a dual display the two important temperature readings (setpoint and actual value) can be seen at a glance. At the touch of a button, the regulation's output power is displayed. This function allows an evaluation of the heating circuit quality.

The control devices can function as two-point ON/OFF control devices or PID control devices. If desired, the autotuning function in all devices will automatically determine the optimum (PID) adjusting parameters for the control path. In all models the regulation can be switched off for maintenance work by pressing a button.

On account of the wide-range voltage input the devices can be used almost everywhere in the world.

### Assembly

The control device is fitted into the front panel. The compact dimensions of the front (48 x 48 mm) allow a space-saving control cabinet design. The electrical connection is set up through terminal screws on the rear.

### Function

Temperature alterations in the sensor being used are evaluated in the DPC<sub>front</sub> and shown as temperature readings on the top LED display. If the reading falls short of or exceeds the temperature value that can be seen in the bottom LED display, the output being used will automatically switch itself on or off or set the manipulated variable to the required value. To monitor the temperature, a high & low alarm function is pre-programmed.

The devices detect malfunctioning at the sensor and in the control circuit and report these as faults. Each type of alarm is signalled as a group alarm via a relay.

### Technical data

**Operating temperature range**  
0 °C up to +50 °C

**Storage temperature**  
-10 °C up to +60 °C

**Dimensions** (length x width x depth)  
48 mm x 48 mm x 108 mm

**Installation**  
Front panel  
(Cut-out 45.5 mm x 45.5 mm)

**Weight**  
180 g

**Protection class**  
IP 54 or IP 65 with installation sealing

**Terminals**  
Terminal screws 2 x 1.5 mm<sup>2</sup>

**Enclosure material**  
Plastic UL 94 V0

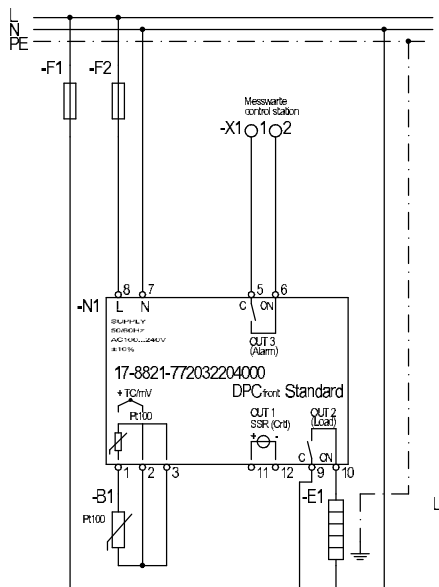
### Electrical data

**Nominal voltage**  
AC 100 V to AC 240 V +/- 10 %  
50/60 Hz

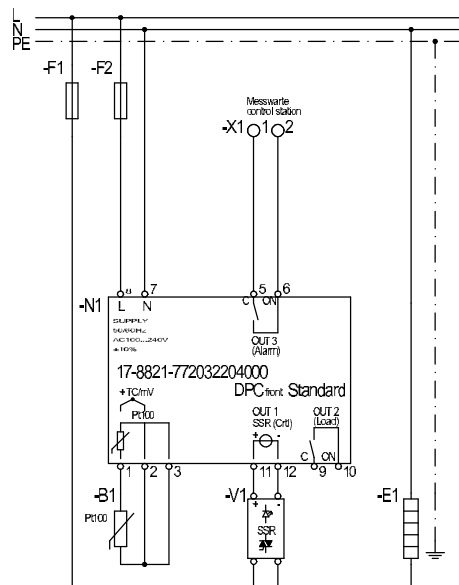


DPC<sub>front</sub> Standard

Circuit diagram DPC<sub>front</sub> Standard as ON/OFF control device



Circuit diagram DPC<sub>front</sub> Standard as PID control device



Features

- Pre parameterisation as ON/OFF control devices
- Can also be used as PID control devices
- Easy Setup

Description

Basic control devices that can be used in the factory setting as ON/OFF control devices with two relay outputs for regulation and alarm signalling for normal applications. Due to the factory basic setting only the setpoint and the alarm value(s) need to be set. The Easy Start-up function makes this extremely user-friendly. As an alternative, the same device can also be used as a control device with PID control characteristics and an external semi-conductor relay.

Technical data

**Control characteristics** two-position ON/OFF, alternatively PID

**Sensor input** Pt100, mV standard signals, thermocouple J,K,S

**Input impedance** at mV: 1 MΩ

**Measuring ranges** depending on the sensor version

**Measuring accuracy** **in resistance thermometers** ±0.5 % of the actual value or ±1 °C; the higher value applies ±1 digit

**in thermocouples** ±0.5 % of actual value or ±1 °C; the higher value applies ±1 digit (see also reference junction accuracy)

**in standard signals** (±0.5 % of actual value ) ±1 digit

**Accuracy of the reference junction in thermocouple measurements** 0.04 °C for each °C operating temperature of the control device (after 20 min. operating time of the control device)

**Sampling frequency at the sensor input** 7.5 Hz

**Output 1** Logic output for SSR control (DC 11 V/20 mA)

**Output 2** Relay output 1 normally open contact (8 A - AC 1, 250 V)

**Output 3** Relay output 1 normally open contact (5 A - AC 1, 250 V)

**Electrical service life of the relay outputs** at least 100.000 switching cycles

**Protection class** II

**Power consumption** max. 5 SS (depending on connection of outputs)

**Weight** 0.2 kg

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