



- Universal power supply
- Sensor monitoring
- Can be used in conjunction with Pt100 Ex, for temperature regulation in explosion-protected heating circuits

The DPC<sub>front</sub> temperature control device series consists of three standardised temperature control devices that are adapted to the (trace) heating applications. Having two 7-segment displays, the operator can read both set- and measured temperature at first sight. By pressing a single button, the controller's power output is displayed, allowing an evaluation of the heating circuits' quality. The control devices can act as ON/OFF or PID control devices. If desired, the autotuning function 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 single button. On account of the wide-range voltage input, the devices can be used almost everywhere in the world.

<b>DPC<sub>front</sub> Standard</b>	Pre-parameterisation as ON/OFF controller Also usable as a PID controller Pt100, mV standard signals, thermocouples
<b>DPC<sub>front</sub> Komfort</b>	Pre-parameterisation as a PID controller Also usable as ON/OFF controller Pt100, mV standard signals, thermocouples Process-value feedback through 4 to 20 mA analog output
<b>DPC<sub>front</sub> Monitor</b>	Pre-parameterisation as a PID controller Heating current monitoring Universal measuring input Process-value feedback through 4 to 20 mA analog output RS485 interface/Modbus RTU

**Assembly**

The control device is mounted 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 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 to 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 to +50 °C
Storage temperature	-10 °C to +60 °C
Dimensions (L x W x D)	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
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- Pre-defined parameters for two-position control
- Can also be used as PID control devices
- Easy Setup

Basic control device that can be used in the factory setting as ON/OFF control device 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**

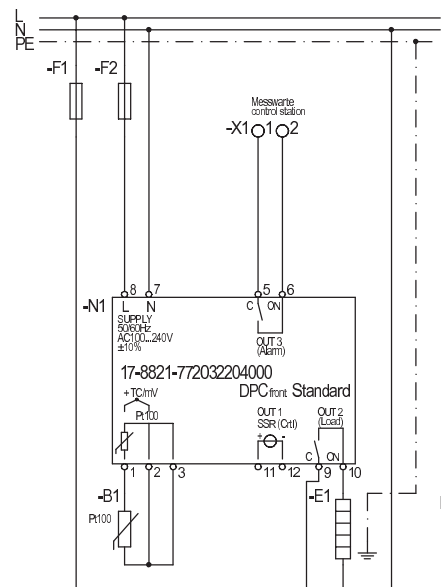
Control characteristics	ON/OFF or PID
Sensor input	Pt100, mV standard signals, thermocouple J,K,S
Input impedance	at mV: 1 MΩ
Measuring ranges	depending on the sensor version
Measuring accuracy in resistance thermometers	±0.5 % of the actual value or ±1 °C; the higher value applies ±1 digit
in thermocouples	±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 VA (depending on connection of outputs)
Weight	0.2 kg

**Ordering information**

DPC<sub>front</sub> Standard **17-8821-7720/32204000**

Technical data subject to change without notice.

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



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

