



DPC_{front} Temperature control device family

DPC_{front} Standard

DPC_{front} Comfort

DPC_{front} Monitor

Description

The new DPC_{front} 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_{front} 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.

Features

- Dual display (setpoint/actual value display)
- Wide-range voltage input
- Sensor monitoring
- Programmable with CodeKey
- can be used in conjunction with Pt 100 Ex, for temperature regulation in explosion-protected heating circuits

➤ Technical data

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

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

Dimensions
Length 48 mm
Width 48 mm
Depth 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 mm²

Enclosure material
Plastic UL 94 V0

■ Electrical data

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



DPC_{front} Standard

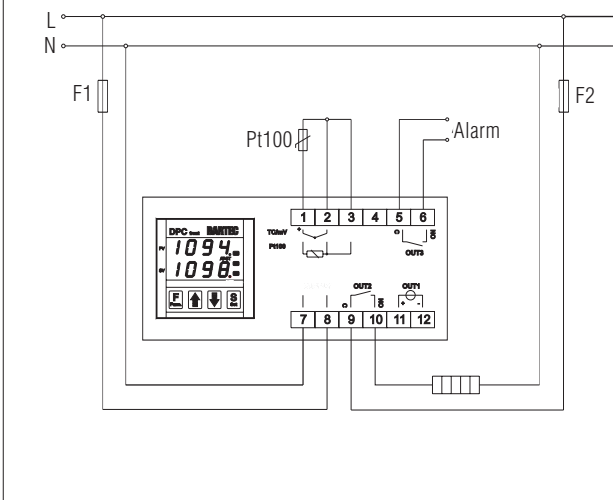
Features

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

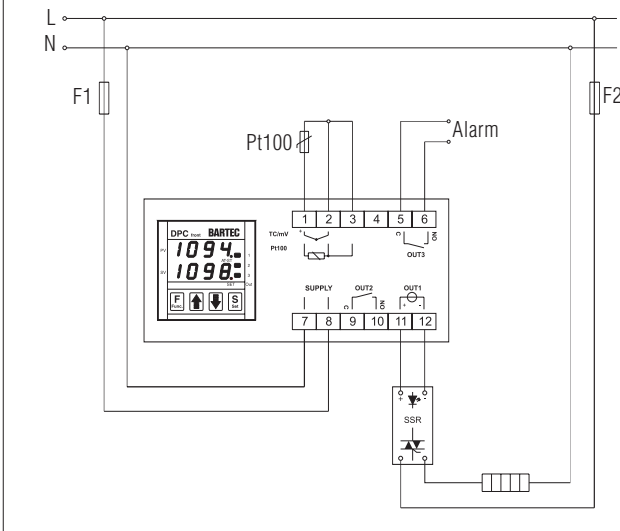
Description

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 semiconductor relay.

Wiring diagram DPC_{front} Standard as ON/OFF control device



Wiring diagram DPC_{front} Standard as PID control device



Technical data

Control characteristics	ON/OFF, alternatively PID
Sensor input	Pt 100, mV standard signals, thermocouple J,K,S
Input impedance	at mV 1 MΩ
Measuring ranges	depending on the sensor version
Measuring accuracy	<p>in resistance thermometers ± 0.5 % of the actual value or ± 1 °C; the higher value applies ± 1 digit</p> <p>in thermocouples ± 0.5 % of actual value or ± 1 °C; the higher value applies ± 1 digit (see also reference junction accuracy)</p> <p>in standard signals (± 0.5 % of actual value) ± 1 digit</p>
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 - AC1, 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

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