

Precision Pressure Controller/Calibrator

DPC 3800**Absolute, gauge or differential pressure**

Applications

- Calibration laboratories
- Service industries and calibration services
- Laboratories for research and development
- Pressure gauge, pressure switch and sensor manufacturing resp. transmitter calibration and creation of certificates
- Long-term measurement

Specialties

Pressure Ranges

Gauge pressure: -1 bar to 100 bar

Absolute pressure: 0 to 100 bar abs.

Differential pressure: ± 30 mbar to ± 300 mbar

Measurement

uncertainty (k = 2): 0.01 % FS, differential pressure ± 0.03 % FS

- Pressure controller with precision pressure sensor
- Up to 3 precision sensors can be actuated automatically (plus barometric reference)
- Customised configurations of the pressure controller possible
- Very high measuring rate
- Colour touch screen, LED backlight
- Easily calibrated
- Modular construction
- Fully digital measuring instrument
- Automatic creation of test certificates via optional calibration software DynaCal

Description

Application

The modular controller DPC 3800 is equipped with up to three precision sensors and an optional barometric reference. Due to a measurement uncertainty of 0.01 % FS of the entire measuring chain and its control stability of 0.003 % FS this instrument is perfectly suited for the automatic calibration of pressure measuring instruments.

Functionality

This instrument stands out due to its up to three precision sensors, that combine maximum precision with highest long-term stability. The DPC 3800 achieves a control stability of 0.003 % FS of the currently active pressure range.

The instrument is operated intuitively via touch screen. All extended functions are accessible via submenus.

Software

Besides the optionally available calibration software DynaCal, which allows for comfortable calibration of pressure measuring instruments, including automatic creation of test certificates, the user is able to create own software programmes, e.g. via LabVIEW®.

Communication

For integration in existing systems a RS-232, Ethernet or optionally IEEE-488.2 interface or an analogue output 4 – 20 mA is available.

Complete Testing and Calibration Systems

Completely mobile or stationary test benches can be manufactured upon request.



Technical Data

Pressure Ranges

Gauge pressure (bar) -1 – 1; 0 – 2; -1 – 3; 0 – 5;
-1 – 10; 0 – 20; -1 – 30; 0 – 60;
-1 – 100

Absolute pressure (bar abs.) 0 – 1; 0 – 3; 0 – 10; 0 – 30;
0 – 100

Differential pressure (mbar) ± 30 ; ± 100 ; ± 300

Optional barometric reference

Function: Barometric reference is required for the change of absolute pressure \Leftrightarrow gauge pressure. A pressure controller with relative reference sensors requires compound ranges for full functionality.

Pressure range: 800 mbar to 1,200 mbar abs.
Precision: 0.008 % FS

Pressure Units 23 and 1 freely programmable

Instrument Version Desktop case
optional: 19" rack mounting with side panels incl. mounting kit

Dimensional Data see back of page

Weight approx. 7.0 kg (15.43 lb)

Display

Screen division: actual value, reference value, steps
Resolution: 6 digits
Keyboard: colour touch screen
Warm-up time: < 10 minutes
Response time: approx. 10 ms

Pressure Ranges max. 3 pressure ranges and barometric reference

Pressure Connections G 1/8" female
optional: 6 mm Swagelok® tube fitting or connection adapter

Technical Data

Technical Data (continued from page 1)

Medium

Clean, dry, non-corrosive, non-combustible and non-oxidising gases

Overrange Protection 150 % of the largest pressure range
optional: external pressure relief valves

Power supply

Auxiliary energy 88 – 264 V AC, 47 – 63 Hz

Permissible Ambient Conditions

Operating temperature: +10 to +40 °C (+50 to +104 °F)

Storage temperature: 0 to +70 °C (32 to +158 °F)

Relative humidity: 0 to 95% r. h. (non-condensing)

Compensated

Temperature range: +15 to +35 °C (+59 to +95 °F)

Communication

Interfaces: RS-232, Ethernet

Optional

Interface:

IEEE-488.2

Analogue output:
(16 bit)

0 – 1 V; 0 – 5 V; 0 – 10 V or 4 – 20 mA

Switching outputs:

24 V DC PWM or TTL level

Analogue inputs:

4 – 20 mA or 0 – 10 V, others upon request

Instruction Sets

DPC 3800, alternative instruction sets possible, alignment to existing HOST software upon request

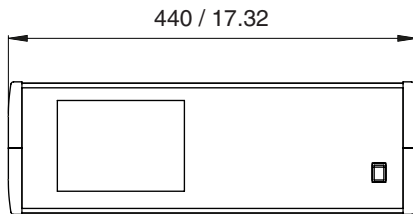
Approvals and Certificates

EMC-Directive 2004 / 108 / EC, EN 61 326-1 emission (group 1, class A) and stability (industrial sector);

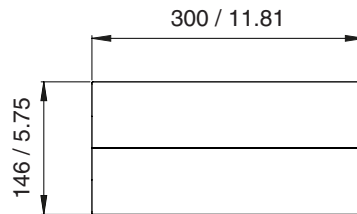
Calibration certificate 3.1 according to DIN EN 10204, optionally internationally traceable calibration certificate.

Dimensional Data in mm / inch

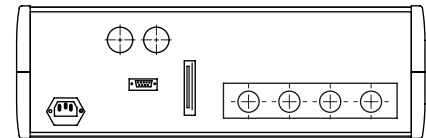
Front view



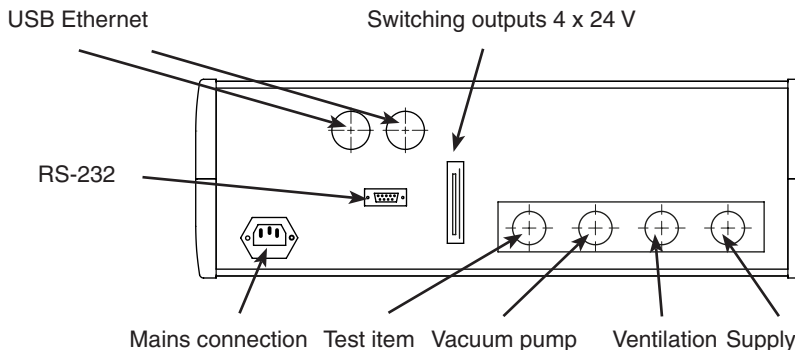
Lateral view



Back view



Electrical connections and pressure connections – back



Further Options

The DPC 3800 has 4 switching outputs that can be used for options. Furthermore, up to four precision sensors can be actuated.

Option M

The following features were integrated:

- On and off switch for a vacuum pump
- Internal separation of regulator and test item
- An additional ventilation valve for the test item side

This option is suited, for example, for pressure gauge adjustment.

Option StdBy

A valve uncouples the regulator and the precision sensors from the test item connection. This option is required, in order to operate several DPC pressure controllers in parallel.

Option Rack (only in combination with Option StdBy)

With this option, several DPC pressure controllers can be combined in one controller unit. Sensors, e.g. barometers, can also be mirrored to connected DPC pressure controllers.

Option Vac

With this option, a 24 V signal can be actuated, in order to switch a vacuum pump on or off, for example.

Scope of Delivery

- Precision pressure controller / Calibrator
- Mains cable 1.5 m
- Operating instruction
- Calibration certificate 3.1 according to DIN EN 10204

Ordering Information

Model DPC 3800, 1. pressure range, 2. pressure range, 3. pressure range, options upon request