

Precision Pressure Controller / Calibrator

DPC 3800

HDG

Gauge and absolute pressure

Applications

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

Construction

- **Pressure ranges**
 - gauge pressure 0 – 100 bar to 0 – 220 bar
(0 – 1500 psi to 0 – 3000 psi)
 - absolute pressure and combinations as in data sheet 10461 upon request
 - measurement uncertainty (k = 2) better than 0.01 % 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 available
- Very high measuring rate
- Colour touchscreen, LED backlight
- Easily calibrated
- Modular construction
- Fully digital measuring instrument
- Automatic creation of test certificates via full version calibration software DynaCal

Description

Application

The modular controller DPC 3800 HDG 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 for which liquids are excluded as transfer medium.

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 HDG achieves a control stability of 0.003 % FS of the currently active pressure range.

The instrument is operated intuitively via touchscreen. All advanced functions are accessible via submenus.

Software

Besides the full version 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®.

Interfaces

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

Complete Testing and Calibration Systems

Fully mobile or stationary test benches can be manufactured upon customer request.

barotec
KALIBRIERTECHNIK



Technical Data

Pressure Ranges

Gauge pressure	0 – 100 bar	0 – 1500 psi
	0 – 160 bar	0 – 2500 psi
	0 – 220 bar	0 – 3000 psi

For higher pressures or for differential pressures, we recommend our DPC 3800 and DPC 3800 HD

Optional Barometric Reference

The barometric reference is required for the change of absolute pressure ↔ gauge pressure. A pressure controller with relative reference sensors requires vacuum ranges for full functionality.
Pressure range 800 mbar to 1200 mbar abs. (12 psi to 17 psi abs.)
Accuracy 0.008 % FS

Pressure Units

23 fixed and 1 freely programmable

Instrument Version

Desktop case

Optional: 19" rack mounting with side panels incl. mounting kit

Display

Screen division	actual value, set pressure, steps
Resolution	6 digits
Keypad	colour touchscreen
Warm-up time	< 10 minutes
Response time	approx. 10 ms

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Technical Data, Options, Scope of Delivery, Accessory, Ordering Information

Pressure Ranges

Max. 3 pressure ranges and a barometric reference
The turn-down between smallest and largest pressure range can be up to 1:10

Pressure Connections

G ½" female
Optional: 6 mm (0.24") Swagelok® tube fitting or connection adapter

Medium

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

Overrange Protection

150 % of the largest pressure range
Optional: external pressure relief valves

Supply Voltage

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

Permissible Ambient Conditions

Operating temperature	+10 °C to +40 °C (+50 °F to +104 °F)
Storage temperature	0 °C to +70 °C (+32 °F to +158 °F)
Relative humidity	0 to 95 % r. h. (non-condensing)
Compensated temperature range	+15 °C to +35 °C (+59 °F to +95 °F)

Communication

Interfaces	RS-232, Ethernet, USB (service function only)
Optional:	IEEE-488.2
Analogue outputs	0...1 V, 0...5 V, 0...10 V or 0...20 mA, resolution 16 bit
Switching outputs	24 V DC PWM or TTL level
Analogue inputs	0...10 V or 0...20 mA, resolution 16 bit

Number of input and output channels or deviating input and output interfaces upon request

Instruction Sets

DPC 3800 HDG
Optional: other instruction sets available, alignment to existing HOST software upon request

Certificates and Approvals

EMC directive 2014/30/EU, DIN EN 61326-1 emission (group 1, class A) and stability (industrial sector)

Calibration certificate 3.1 according to DIN EN 10204
Optional: internationally traceable calibration certificate (e.g. DAkkS)

Further certificates and approvals upon request, e.g. GOST (see also website)

Options

The DPC 3800 HDG is equipped with switching outputs that can be used for options.

Option M

The following features were integrated:

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

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

Option StdBy

A valve uncouples the controller and the precision sensors from the test item connection. This option is used 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, an external valve (24 V) can be actuated when using vacuum pumps, e.g. to protect the pump.

Scope of Delivery

- Precision pressure controller / calibrator
- Full version calibration software DynaCal
- Mains cable 1.5 m
- Operating instructions
- Calibration certificate 3.1 according to DIN EN 10204

Accessory

- Portable case
- Dirt traps
- Pressure generators
- Vacuum pumps

Ordering Information

Please specify in your order:

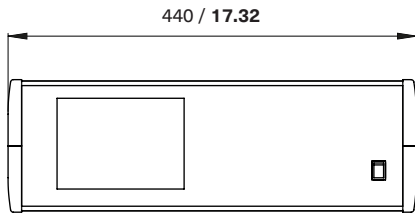
Basic model	DPC 3800 HDG
Pressure range	1 st pressure range, e.g. 0 – 100 bar 2 nd pressure range, e.g. 0 – 160 bar 3 rd pressure range, e.g. 0 – 220 bar
Options	e.g. Option M

Example	DPC 3800 HDG, 0 – 100 bar, 0 – 160 bar, 0 – 220 bar, Option M
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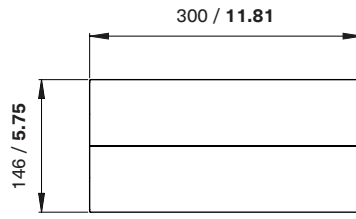
Dimensional Data and Weight

Dimensional Data in mm / inch

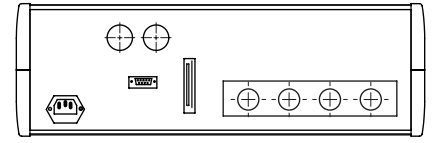
Front view



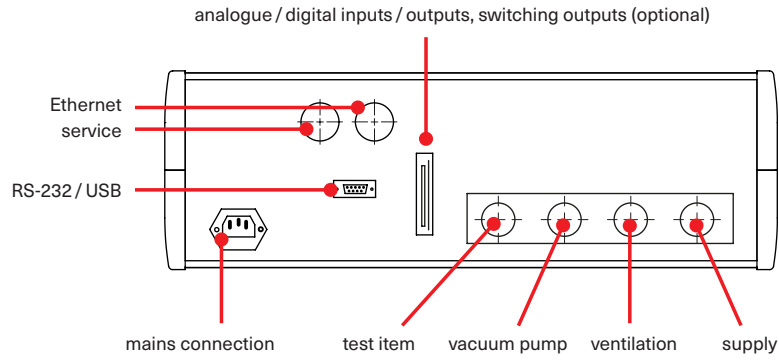
Lateral view



Back view



Electrical connections and pressure connections – back



Weight

Approx. 7.0 kg (15.43 lb)