

Precision Pressure Controller/Calibrator

Gauge and absolute pressure

DPC 3800 HDG

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: 0 – 100 bar to 0 – 220 bar
(0 – 1,500 psi to 0 – 3,000 psi)

Absolute pressure and combinations: as indicated in data sheet 10461 possible 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 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 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 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 is available.

Complete Testing and Calibration Systems

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



Technical Data

	Pressure Ranges	
Gauge pressure	0 – 100 bar	0 – 1,500 psi
	0 – 160 bar	0 – 2,500 psi
	0 – 220 bar	0 – 3,000 psi

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

Optional Barometric Reference

Function: The 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 to 1,200 mbar abs. (12 to 17 psi 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



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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 °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

Optional

Interface: IEEE-488.2
Analogue output: 0 – 1 V; 0 – 5 V; 0 – 10 V or 4 – 20 mA (16 bit)
Switching outputs: 24 V DC PWM or TTL level
Analogue inputs: 4 – 20 mA or 0 – 10 V, others upon request

Instruction Sets

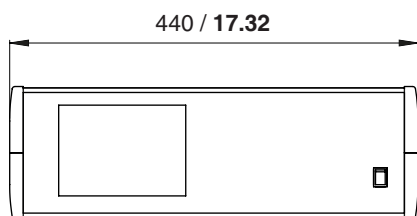
DPC 3800 HDG, alternative instruction sets possible, alignment to existing HOST software upon request

Approvals and Certificates

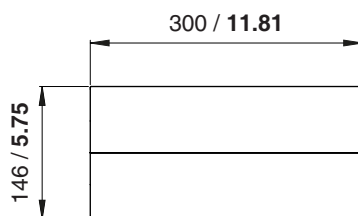
EMC-Directive 2004 / 108 / EC, DIN EN 61 326-1 emission (group 1, class A) and stability (industrial sector);
Calibration certificate 3.1 according to DIN EN 10204, optional internationally traceable calibration certificate

Dimensional Data in mm / inch

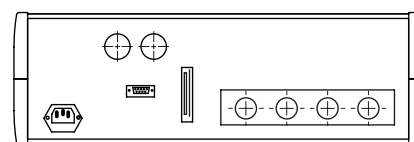
Front view



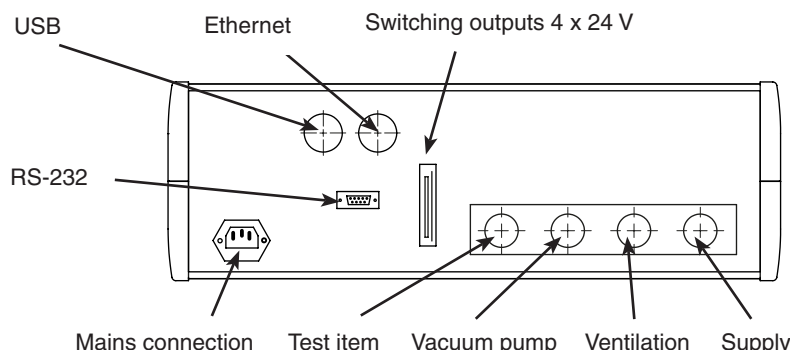
Lateral view



Back view



Electrical connections and pressure connections – back



Further Options

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

Option M

- The following functions 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 suitable, 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 HDG, 1. pressure range, 2. pressure range, 3. pressure range, options upon request