



# DPI 800/802

## Druck pressure indicator/loop calibrator

### Features

- Ranges from 10 in H<sub>2</sub>O to 10,000 psi (25 mbar to 700 bar)
- Single or dual range configuration
- IDOS pressure sensors provide accuracies to 0.05% FS all-inclusive or 0.01% precision
- mA measure, switch test and 24V loop power
- Large backlit display, menu driven interface
- HART® loop resistor
- Robust and weatherproof
- Compact, simple to use, easy to carry
- Convenient, one-handed operation
- Secure grip, impact resistant, elastomer protected
- Plug and play connector for IDOS universal measurement modules

### Applications

- Pressure test and maintenance
- Transmitter calibration
- Loop set-up and diagnostics
- Switch verification

The DPI 800 Series is a complete range of advanced, robust and simple to use hand-held instruments. Highly cost effective, these tools are ideal for test/calibration of many popular process parameters. Advanced features and technical innovations address more applications in less time and deliver results you can rely on.

# DPI 800/802 specifications

	DPI 800	DPI 802	DPI 811	DPI 812	DPI 820	DPI 821	DPI 822	DPI 832	DPI 841	DPI 842
<b>Type</b>	P	P	RTD		°F (°C)	TC		mA/V		Hz
Indicator (measure pressure)	✓	✓								
Calibrator (measure or source)			✓	✓		✓	✓	✓	✓	✓
Thermometer (dual input T1, T2, T1 - T2)					✓					
<b>Dual capability</b>										
mA measure with 24 V loop power		✓		✓			✓	✓		✓
Switch test		✓		✓			✓	✓		✓
HART resistor		✓		✓			✓	✓		✓
IDOS Universal Measurement Modules	①	①	①	①	①	①	①	①	①	①
<b>Features</b>										
Programmable step and ramp output			✓	✓		✓	✓	✓	✓	✓
Hold, scaling, max/min/avg, filter, alarm, tare	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25 pressure units, flow scaling, leak test	✓	✓	②	②	②	②	②	②	②	②
1000 point data memory, RS232	③	③	③	③	✓	③	③	③	③	③
<b>Applications</b>										
Measurement and monitoring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Indicator, controller and recorder testing	✓	✓	✓	✓		✓	✓	✓	✓	✓
Transmitter maintenance and calibration		✓		✓			✓	✓		✓
Process loop set-up and maintenance		✓		✓			✓	✓		✓
Switch, trip and safety system testing		✓		✓			✓	✓		✓

① Optional (please refer to IDOS datasheet), ② when fitted with IDOS pressure module ③ Optional (please refer to accessories IO800E).

## Pressure test and measurement

### DPI 800 pressure indicator

The ideal tool for pressure test and measurement

#### Pressure ranges

10 in H<sub>2</sub>O to 10,000 psi (25 mbar to 700 bar) including vacuum options

### All-inclusive accuracy

Can be relied on from one year to the next, even in tough environmental conditions (see specifications)

### Dual sensor configuration

Extended measurement range and simultaneous two channel reading (P1 and P2 or P1 - P2)

### Stainless steel sensor construction

Available for compatibility with a wide range of fluids and gases (refer to range table)

### Programmable leak test

Reports the pressure drop and leak rate

### Advanced features

Hold, maximum/minimum/average, alarm, and tare facilitate troubleshooting

## Pressure instrument and loop maintenance

### DPI 802 pressure loop calibrator

Provides simultaneous pressure and mA measurement for transmitter and loop maintenance

### Dual readings

Simultaneous measurement of pressure and mA for transmitter calibration and loop maintenance

### 24V loop power supply

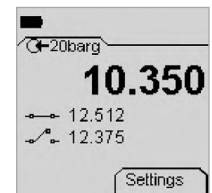
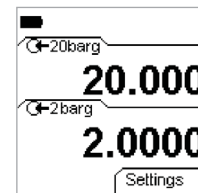
Energizes transmitters and control loops

### Automatic switch test

Captures open/closed trip values providing a fast and highly accurate "safety system" check

### HART resistor

Can be switched into the loop when required by a HART digital communicator and avoids the inconvenience of carrying a 250 Ω resistor



# DPI 800/802 specifications

## IDOS™ flexibility

### Intelligent Digital Output Sensor (IDOS)

Universal pressure modules are available from 10 in H<sub>2</sub>O to 10,000 psi (25 mbar to 700 bar).

#### Total flexibility

IDOS modules can be used with any compatible instrument; for example, a DPI 812 RTD loop calibrator can become a fully featured pressure calibrator.

#### Plug and play

Modules are interchangeable between instruments, requiring no set-up or instrument calibration.

#### Range expansion

Achieved by adding modules (please refer to the IDOS Universal Pressure Module datasheet).

Pressure range	G/D	G	A	Media		*Accuracy	%FS
				+	-	S	P
±10 in H <sub>2</sub> O (25 mbar)	✓			②	③	0.1	0.03
±1, 3, 5, or 10 psi (70, 200, 350, or 700 m bar)	✓			②	③	0.075	0.03
5 psi (350 mbar)			✓	②		0.1	N/A
-15 to 15 or 30 psi (-1 to 1 or 2 bar)	✓			②	③	0.05	0.01
30 psi (2 bar)			✓	②		0.075	N/A
-15 to 50, 100, 150 or 300 psi (-1 to 3.5, 7 10 or 20 bar)		✓		①		0.05	0.01
100, 300 psi (7, 20 bar)			✓	①		0.075	N/A
500, 1000, 1500, 2000 or 3000 psi (35, 70, 100, 135, 200 bar)		✓		①		0.05	0.01
5000 or 10,000 psi (350 or 700 bar) sealed gauge		✓		①		0.05	N/A

G = gauge, A = absolute, G/D = gauge/differential; calibrated referenced to atmosphere maximum line pressure 30 psi (2 bar).. ① Stainless steel, compatibility ② Non-corrosive gas/fluid and ③ Non-corrosive gas. (N/A = not available). Accuracy assumes regular zero correction.

#### \*S\_Standard accuracy

Total accuracy over 32°F to 122°F (0°C to 50°C), including one year stability and calibration uncertainty

#### \*P\_Premier accuracy

- Precision over 65°F to 82°F (18°C to 28°C)
- For operation over 41°F to 113°F (5°C to 45°C):
  - 0.014% FS for ranges above 10 psi (700 mbar)
  - 0.075% FS for ranges below 15 psi (1 bar)
- Stability over a year:
  - 0.01% reading ranges above 5 psi (350 mbar)
  - 0.03% reading ranges below 10 psi (700 mbar)
- Calibration uncertainty: 50 ppm of reading

#### Single or dual range

One or two internal sensors can be selected. For dual range instruments, G/D ranges will be configured as G (gauge).

Only one of the two sensors can be 1500 psi (100 bar) or above.

#### Overpressure (maximum transient/intermittent pressure)

- 5 psi (350 mbar) and below 4 x FS
- 10 to 10,000 psi (700 mbar to 700 bar) 2 x FS
- Maximum working pressure: 1.1 x FS

#### Pressure connections

1/8 NPT female or G 1/8 female

#### DPI 802 only

Measure	Accuracy
0 to 55.000 mA	0.02% reading + 3 counts
Temperature coefficient	14°F to 50°F, 86°F to 122°F, 0.0011%/FS/°F (-10°C to 10°C, 30°C to 50°C, 0.002% FS/°C)
Switch detection	Open and closed. 2 mA current
Loop power output	24 V ±10% (35 mA maximum)
HART mA loop resistor	250 Ω (menu selection)
Electrical connectors	4 mm sockets

## DPI 800 series common specification

#### Operating temperature

14°F to 122°F (-10°C to 50°C)

#### Storage temperature

-4°F to 158°F (-20°C to 70°C)

# DPI 800/802 specifications

## Humidity

0% to 90% non-condensing, Def Stan 66-31, 8.6 Cat III

## Shock and vibration

BS EN61010:2001, Def Stan 66-31, 8.4 Cat III

## EMC

BS EN61326-1:1998 + A2:2001

## Safety

Electrical BS EN61010:2001. Pressure Equipment Directive (PED), Class SEP. CE marked

## Display

Graphic LCD with backlight. Resolution 99999

## Size (l x w x h) and weight

7.1 in x 3.3 in x 2 in (180 mm x 85 mm x 50 mm), 18 oz (500 g)

## Batteries

3 AA alkaline, >50 hours measure, >10 hours 24V source

## Accessories

### IO800A

Soft fabric carrying case with accessory pocket

### IO800B

Belt clip, wrist strap/hanging loop and bench stand

### IO800C

NiMh batteries with charger, batteries charged externally

### IO800E

Data logging upgrade and RS232 lead

**Log data** periodically (1 s to 23h 59m 59s) or manually by key press. **Review data** on-screen or upload to a PC via the RS232 interface. No software purchase is necessary as standard Microsoft® applications provide data transfer (HyperTerminal) and analysis (Excel). Alternatively, print directly to a compatible serial printer. **Real time clock** with date. **Memory:** 1000 single or 750 dual reading screens with date and time. **Header tag:** 6 user characters to identify groups of readings. **RS232:** 19200 baud, 8 data bits, 1 stop bit, no parity, Xon/Xoff. **Data output:** comma separated ASCII.

## Ordering information

Please state the model number DPI 800 or DPI 802 for standard accuracy and DPI 800P or DPI 802P for high accuracy, pressure range(s) G, A or G/D, 1/8 NPT female or G 1/8 female and accessories as separate items.

Supporting services (order as separate items)

Each unit is supplied with batteries, calibration certificate and user guide. The DPI 802 and DPI 802P include a set of electrical test leads.

## Related products

Druck is a world leader in the design and manufacture of pressure, temperature and electrical field calibrators, laboratory/workshop calibration equipment and pressure sensors.

## Supporting services

Our highly trained staff can support you, no matter where you are in the world. We can provide training, nationally accredited calibration – both initially and at periodic intervals – extended warranty terms, maintenance and even rental of portable or laboratory calibrators. Further details can be found in [www.bakerhughesds.com/druck/global-service-support](http://www.bakerhughesds.com/druck/global-service-support)

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