

DPI 800/802

Druck pressure indicator/loop calibrator

Features

- Ranges from 10 in H2O 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.

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DPI 800/802 specifications

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

❶ Optional (please refer to IDOS datasheet), ❷ when fitted with IDOS pressure module ❸ 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_2O 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_2O 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_2O (25 mbar)	✔			❷	❸	0.1	0.03
±1, 3, 5, or 10 psi (70, 200, 350, or 700 m bar)	✔			❷	❸	0.075	0.03
5 psi (350 mbar)			✔	❷		0.1	N/A
-15 to 15 or 30 psi (-1 to 1 or 2 bar)	✔			❷	❸	0.05	0.01
30 psi (2 bar)			✔	❷		0.075	N/A
-15 to 50, 100, 150 or 300 psi (-1 to 3.5, 7 10 or 20 bar)		✔		❶		0.05	0.01
100, 300 psi (7, 20 bar)			✔	❶		0.075	N/A
500, 1000, 1500, 2000 or 3000 psi (35, 70, 100, 135, 200 bar)		✔		❶		0.05	0.01
5000 or 10,000 psi (350 or 700 bar) sealed gauge		✔		❶		0.05	N/A

G = gauge, A = absolute, G/D = gauge/differential; calibrated referenced to atmosphere maximum line pressure 30 psi (2 bar).. ❶ Stainless steel, compatibility ❷ Non-corrosive gas/fluid and ❸ 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

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