DPI 800/802

Druck pressure indicator/loop calibrator

Features

- Ranges from 25 mbar to 700 bar (10 in H2O to 10,000 psi)
- Single or dual range configuration
- 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 IUPM/IUPMP (IDOS) universal pressure modules provide accuracies to 0.05% FS all inclusive or 0.01% precision

Applications

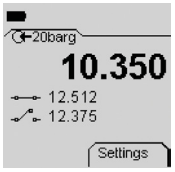
- Pressure test and maintenance
- Transmitter calibration
- Loop set-up and diagnostics
- Switch verification

The DPI 800 Series provides 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 address more applications in less time and deliver results you can rely on.

DPI 800/802 specifications

	DPI 800	DPI 802	DPI880
Type	**P**	**P**	**P**
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		✓	✓
IUPM/IUPMP (IDOS) pressure modules	❶	❶	❶
Features			
Programmable step and ramp output			✓
Hold, scaling, max/min/avg, filter, alarm, tare	✓	✓	✓
25 pressure units, flow scaling, leak test	✓	✓	✓
1000 point data memory, RS232	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 IUPM/IUPMP (IDOS) pressure modules datasheet), ❷ When fitted with IUPM/IUPMP 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

25 mbar to 700 bar (10 in H2O to 10,000 psi) 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 pressure 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 fo 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

Universal plug and play pressure modules

Intelligent Digital Output Sensor (IDOS)

Universal Pressure Modules are available from 25 mbar to 700 bar (10 in H2O to 10,000 psi).

Total flexibility

IUPM/IUPMP pressure modules can be used with any compatible instrument; for example, a DPI880 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 IUPM/IUPMP pressure modules (please refer to the Universal Pressure Modules datasheet).

Pressure Range Table

Pressure range	G/D	G	A	Media		*Accuracy %FS	
				+	-	Standard (S)	Premium (P)
25 mbar (±10 in H_2O)	✓			❷	❸	0.1	0.03
70, 200, 350, or 700 mbar (±1, 3, 5, or 10 psi)	✓			❷	❸	0.075	0.03
350 mbar (5 psi)			✓	❷		0.1	N/A
-1 to 1 or 2 bar (-15 to 15 or 30 psi)	✓			❷	❸	0.05	0.01
2 bar (30 psi)			✓	❷		0.075	N/A
-1 to 3.5, 7, 10 or 20 bar (-15 to 50, 100, 150 or 300 psi)		✓		❶		0.05	0.01
7, 20 bar (100, 300 psi)			✓	❶		0.075	N/A
35, 70, 100, 135, 200 bar (500, 1000, 1500, 2000 or 3000 psi)		✓		❶		0.05	0.01
350 or 700 bar (5000 or 10,000 psi) sealed gauge		✓		❶		0.05	N/A

G = gauge, A = absolute, G/D = gauge/differential; calibrated referenced to atmosphere maximum line pressure 2 bar (30 psi). 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 0°C to 50°C (32°F to 122°F), including one year stability and calibration uncertainty

*P-Premium accuracy

- Precision over 18°C to 28°C (65°F to 82°F)
- For operation over 5°C to 45°C (41°F to 113°F):
  0.014% FS for ranges above 700 mbar (10 psi)
  0.075% FS for ranges below 1 bar (15 psi)
- Stability over a year:
  0.01% reading ranges above 350 mbar (5 psi)
  0.03% reading ranges below 700 mbar (10 psi)
- 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 100 bar (1500 psi) or above.

Overpressure (maximum transient/intermittent pressure)

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

Pressure connections

G 1/8 female or 1/8 NPT female

DPI 802 only

Measure	Accuracy
0 to 55.000 mA	0.02% reading + 3 counts
Temperature coefficient	-10°C to 10°C, 30°C to 50°C, 0.002% FS/°C (14°F to 50°F , 86°F to 122°F, 0.0011%FS/°F)
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

-10°C to 50°C (14°F to 122°F)

Storage temperature

-20°C to 70°C (-4°F to 158°F)

DPI 800/802 specifications

Humidity

0% to 90% non-condensing

Shock and vibration

BS EN61010

Def Stan 66-31, 8.4 Cat III

EMC

BS EN61326-1

Electrical Safety

EN 61010-1

Pressure Safety

Pressure Equipment Directive - Class: Sound Engineering Practice (SEP)

Approvals

CE marked

Display

Graphic LCD with backlight. Resolution 99999

Size (l x w x h)

180 mm x 85 mm x 50 mm (7.1 in x 3.3 in x 2 in)

Weight

500 g (18 oz)

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

IO800E

Data logging upgrade and RS232 lead:

- Log data periodically (1s 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

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

1. Model Type:
   DPI800S Standard Accuracy Single Range
   DPI800D Standard Accuracy Dual Range
   DPI802S Standard Accuracy Single Range
   DPI802D Standard Accuracy Dual Range
   DPI800PS Premium Accuracy Single Range
   DPI800PD Premium Accuracy Dual Range
   DPI802PS Premium Accuracy Single Range
   DPI802PD Premium Accuracy Dual Range
2. Pressure range(s) G, A or G/D and calibration unit
   (Refer to Page 3 - pressure range table)
3. Calibration unit
   - Bar
   - psi
   - hPa
   - kPa
   - inH20
   - mbar
   - MPa
4. Pressure connection
   BSP - G1/8 BSP female
   NPT - 1/8 NPT female
5. Instrument set up
   - UK and Europe
   - USA
   - Japan
   - Russia
   - Other Countries

Note: Other countries to be configured as UK and Europe.

UKAS Calibration

We also offer UKAS accredited calibrations, please advise at the time of order placement if required.

Accessories

Please state any accessories required as separate items when placing order.

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 at Druck.com/Services.

EP SRL
Via SAN Faustino 155/P
41124 MODENA

www.epsas.i
Tel. 059/357600
ep.ma@epsas,it

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