Features

- Ranges up to 3000 psi (200 bar)

- Precision 0.01% full scale (FS)

- Internal or external Intelligent Digital Output Sensors™ (IDOS™)

- Programmable analog output

- RS232 and IEEE-488 communications

High Performance, Low Cost

The DPI 150 precision pressure indicator is a single range instrument designed to provide high accuracy and excellent long term measurement stability at an economical price. The instrument uses the latest techniques in pressure measurement and manufacturing technology to combine reliability, ruggedness and accuracy with minimal cost.

DPI 150

Druck Precision Pressure Indicator

DPI 150 is a Druck product. Druck has joined other GE high-technology sensing businesses under a new name—GE Sensing.

Versatility

The DPI 150 offers powerful versatility in a small package and provides a range of dedicated pressure functions.

The instrument has been designed to function as a local indicator, while the digital communications provide connectivity to larger systems required to log or monitor pressure precisely.

Pressure Indication

The primary function of the instrument is accurate pressure measurement. The pressure value can be displayed in one of 24 internationally recognized standard pressure units:

Pa, hPa, kPa, MPa, mbar, bar, kg/cm^2, kg/m^2, mmHg, cmHg, mHg, mmH_2O, cmH_2O, mH_2O, torr, atm, psi, lb/ft^2, inHg, inH_2O 39°F and 68°F (4°C and 20°C), ftH_2O 39°F and 68°F (4°C and 20°C), inH_2O 60°F (15°C).

Two user-configurable pressure scales are included and may be programmed as a ratio to Pascals.

Measurement precision is maintained by regular zeroing of the sensor, which is simply achieved via a front panel key press.

The process functions for tare, hold (front panel key), % FS, maximum/minimum capture and filter are also available in this mode.

Pressure Leak Testing

A dedicated leak test mode allows the user to set a test time up to 999 seconds. The instrument will calculate the leak rate over this period in current pressure units and display the results.

Airspeed

This mode converts the differential pressure from the input into Knots, mph or km/hr.

The process functions for tare, hold (front panel key) and filter are also available in this mode.

Airspeed Leak Testing

Similar to the pressure leak test, but will calculate the leak rate in selected airspeed units and display the results.

Instrument Status

The calibration and maintenance history of the DPI 150, along with its configuration, are stored within the instrument and can be viewed via status screens in the instrument set-up menu.

Analog Output (Optional)

This option can be programmed via the set-up menu screen to output a signal proportional to the instrument range selected. This allows the instrument to interface with PC or PLC I/O cards, remote displays, chart recorders or other data logging equipment.

Barometric Reference (Optional)

The DPI 150 is a gauge pressure indicator; in order to measure absolute pressures an optional barometric reference is required. The indicator will add an atmospheric reading from the reference port (located on the back panel) to the gauge pressure at the positive input to provide an accurate absolute pressure reading on the display.

External IDOS Sensor

The DPI 150 rear panel has a female five-pin socket for attaching the new IDOS external universal pressure module (UPM or UPMP).

The DPI 150 can be ordered without an internal pressure range if only external measurement is required. In this case no range should be specified for the DPI 150 and the appropriate IDOS UPM (standard version) or IDOS UPMP (high precision version) sensors should be ordered. See the separate IDOS datasheet for information.

A single DPI 150 can display one pressure reading at a time, but can switch between internal and external sensors. Absolute ranges are created by adding the barometer and gauge readings.

The IDOS sensors are supplied with their own calibration data, making the external IDOS fully interchangeable between IDOS compatible products such as the DPI 150 and the DPI 800 portable calibrator.

DPI 150 Specifications

General

Pressure Measurement
The DPI 150 is available with the following selection of internal pressure sensor ranges. It is also available without internal pressure range for use instead with IDOS UPM and IDOS UPMP external sensors.

Standard Pressure Ranges
- 10 inH$_2$O (25 mbar)
- 1 and 3 psig (70 and 200 mbar)
- 5, 10, 15, 30, 50, 100, 150, 300, 500, 1000, 1500, 2000, 3000 psig (350, 700 mbar, 1, 2, 3.5, 7, 10, 20, 35, 70, 100, 135, 200 bar)
- All versions available with negative gauge calibration (specify option D)
- For absolute pressure ranges specify option E, Barometric Reference
- Absolute pressure ranges as above, plus atmospheric pressure

Over Range
1.1 x FS pressure range

Maximum Working Pressure
- 1.2 x FS pressure range for 10 to 3000 psi (700 mbar to 200 bar)
- 2 x FS pressure range for 10 inH$_2$O to 5 psi (25 to 350 mbar)

Pressure Media
Pressure range 30 psi (2 bar) and below:
- Silicon, pyrex, titanium and structural adhesive
- Media must be non-conductive

Pressure range 50 to 3000 psi (3.5 to 200 bar):
- 316 stainless steel and Hastelloy C276
- Reference port: dry, non-corrosive gas only

Display
High-contrast panel backlit LCD

Readout
±9999999 maximum, updated two times per second

Pressure Units
24 units plus two user-defined and airspeed in mph, km/h and kts

Languages
English, Chinese, French, German, Italian, Japanese, Portuguese and Spanish

Process Features
Hold, Maximum/minimum value, tare and programmable filter

Performance

Precision
- Precision 0.01% FS from 15 to 3000 psi (1 to 200 bar)*
- Precision 0.03% FS below 15 psi (1 bar)*
- Precision includes non-linearity, hysteresis, repeatability and temperature effect between 64.4°F and 82.4°F (18°C and 28°C), for both absolute and gauge pressures
- Calibration Standard (Deadweight Tester) accuracy 0.005% of reading

Precision assumes regular zeroing.

Negative Gauge Precision
Maximum error at any negative pressure value is equal to maximum error at the equivalent positive pressure value.

Measurement Stability
- 0.01% of reading per year from 15 to 3000 psi (1 to 200 bar).
- 0.02% of reading per year below 15 psi (1 bar)

Barometric Reference Precision
Precision for the optional barometric reference: 0.002 psi (0.15 mbar). Includes non-linearity, hysteresis, repeatability and temperature effects between 41°F and 122°F (5°C and 50°C). Long term stability 0.002 psi (0.15 mbar) per year.

Electrical

Communications
- RS232 interface supplied as standard. (SCPI protocol)
- IEEE-488 optional

Power Supply
11V to 26 VAC or VDC, 10VA, via 0.08 in (2.1 mm) jack, supplied with AC/DC power adaptor 90 to 264 VAC, 45 to 65Hz.

Environmental

Temperature
- Operating 41°F to 122°F (5°C to 50°C)
- Calibrated 71°F (23°C)
- Storage -4°F to 140°F (-20°C to 60°C)

Humidity
Compliant with Def. Stan. 66-31 8.6 Cat. 3

GE
Sensing

Environmental

Temperature
- Operating 41°F to 122°F (5°C to 50°C)
- Calibrated 71°F (23°C)
- Storage -4°F to 140°F (-20°C to 60°C)

Humidity
Compliant with Def. Stan. 66-31 8.6 Cat. 3

Vibration
Compliant with Def Stan. 66-31 8.4 Cat. 3

Shock
Mechanical shock conforms to EN61010

Conformity
- Electrical and mechanical safety: EN61010
- EMC emission: EN61326-1
- EMC immunity: EN61326-1
- Certification: CE marked

Physical

Weight
Approximately 2.2 lb (1 kg)

Dimensions (w x h x d)
7.2 in x 3 in x 7.7 in (185 mm x 75 mm x 195 mm)

Pneumatic Connections
1/8 NPT female or G 1/8 BSP female

Options

(A) Analog Output
0 to 10V, 0 to 5V, -5 to 5V, 0/4 to 20 mA outputs selectable. Accuracy 0.05% FS, variable update rate 30 readings per second. Programmable between minimum and FS pressure for proportional output against pressure.

(B) IEEE-488 (GPIB) Interface
Full computer control is available via a databus using the SCPI protocol. IEEE parallel D connector is provided on the rear panel.

(C) Rack Mount Kit
Two sided plates and front panel cutout enable easy mounting to racks and panels.

(D) Negative Calibration
Calibration of bi-directional channels is usually in the positive direction only. If negative direction calibrations are required this option should be requested.

(E) Barometric Reference
Additional barometric sensor enables the DPI 150 to display in absolute pressures by adding atmospheric pressure to the gauge pressure. Only available on instruments with internal pressure range sensor.

Supplied as Standard
The DPI 150 is supplied complete with universal power adaptor, user handbook and calibration certificates traceable to international standards.

External Sensors
IDOS Universal Pressure Modules are rugged, reliable and simple to use. Highly accurate Intelligent Digital Output Sensors (IDOS) are housed in tough functional cases to provide dependable pressure modules with plug and play connectivity. They represent simple, cost effective solutions for expanding instrument ranges, adding pressure measurement capability and addressing wider applications. See UPM datasheet for details.

Calibration Standards
Instruments are calibrated against precision calibration equipment traceable to international standards.

Ordering Information

Please state the following (where applicable):

1. DPI 150
2. Pressure range, gauge or 'No range' if using IDOS UPM/UPMP only
3. Options required
4. Order IDOS UPM/UPMP for external sensors
5. Supporting Services (order as separate items)

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.gesensing.com/productservices/service.htm

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www.gesensing.com