



GE Druck

DPI 150

Precision Pressure Indicator

- Ranges up to 200 bar
- Precision 0.01% FS
- Internal or external IDOS sensors
- Airspeed in mph, km/hr, and kts
- Programmable analogue output
- RS232 and IEEE 488



DPI 150

Precision Pressure Indicator

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 utilises the latest techniques in pressure measurement and manufacturing technology to combine reliability, robustness and accuracy with minimal cost.

Versatility

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

The instrument has been designed to act as a local indicator whilst 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 current value can be displayed in one of 24 internationally recognised standard pressure units:

Pa, hPa, kPa, MPa, mbar, bar, kg/cm², kg/m², mmHg, cmHg, mHg, mmH₂O, cmH₂O, mH₂O, torr, atm, psi, lb/ft², inHg, inH₂O (4 and 20 deg C), ftH₂O (4 and 20 deg C), inH₂O (60 deg F).

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, this is simply achieved via a front panel key press.

The Process Functions for Tare, Hold (front panel key), % Full Scale, Max/Min 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 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.

High contrast graphics,
backlit display

Low voltage AC/DC
operation



Easy to use, simple
menu structure

Robust, lightweight
construction

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.

Analogue 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 the barometric reference is required. The indicator will add the atmospheric reading from the rear reference port to the gauge pressure at the positive input to give an accurate absolute pressure reading on the display.

Barometric pressure can also be displayed by selecting the reference sensor.

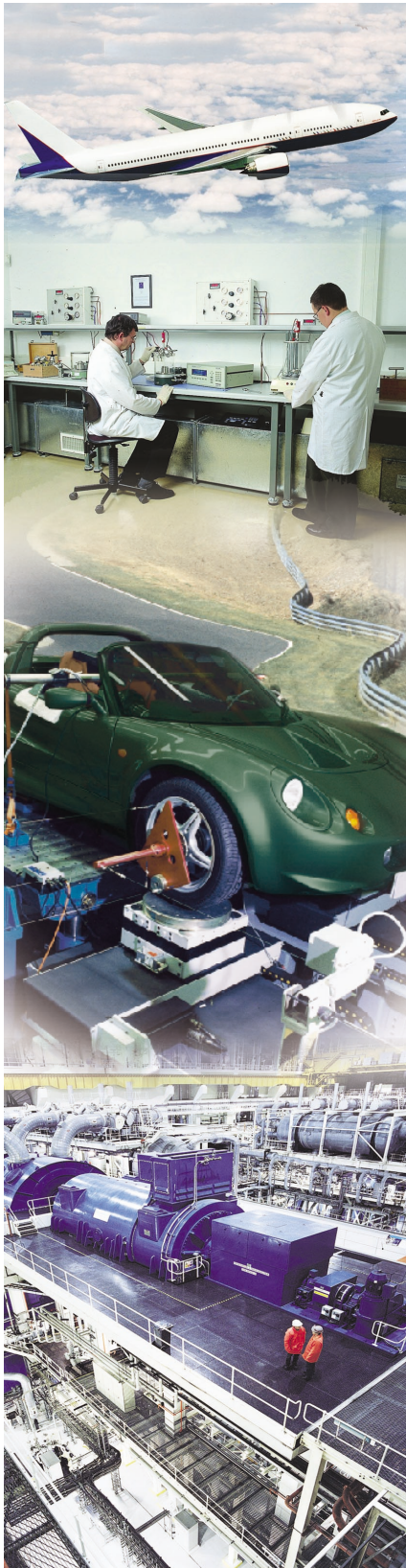
External IDOS Sensor

The DPI 150 rear panel has a female 5-pin socket for attaching the new IDOS external Universal Pressure Module (UPM).

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 UPM (Standard Version) or UPMP (Precision version) sensors should be ordered. See datasheet for information.

A single DPI 150 can display one pressure reading at a time, but can swap between internal and external sensors or the barometric reference (option E). Absolute ranges can also be created by adding the barometer and gauge readings.

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



STANDARD SPECIFICATIONS

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 UPM and UPMP external sensors.

Standard pressure ranges

25, 70, 200, 350, 700 mbar, 1, 2, 3.5, 7, 10, 20, 35, 70, 100, 135 and 200 bar gauge.

All versions available with negative gauge calibration 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 700 mbar to 200 bar.
2 x FS pressure range for 25 mbar to 350 mbar

Pressure Media

Pressure range 2 bar and below:

Silicon, Pyrex, Titanium and structural adhesive.

Media must be non-conductive.

Pressure range 3.5 bar to 200 bar:

316 Stainless Steel and Hastelloy C276

Reference port:

Dry, non-corrosive gas only.

DISPLAY

Panel

High-contrast, backlit LCD.

Readout

±9999999 maximum, updated 2 times per sec.

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% full scale from 1bar to 200 bar.*

Precision 0.03% full scale below 1 bar.*

Precision includes non-linearity, hysteresis, repeatability and temperature effect between 18°C and 28°C, for both absolute and gauge pressures.

Calibration Standard (Deadweight Tester) accuracy 0.005% of reading.

* **Note:** 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 annum from 1 bar to 200 bar.

0.02% of reading per annum below 1 bar.

Barometric reference precision

Precision for the optional barometric reference 0.15 mbar.

Includes non-linearity, hysteresis, repeatability and temperature effects between 5°C and 50°C. Long term stability 0.15 mbar per annum.

ELECTRICAL

Communications

RS 232 interface supplied as standard. (SCPI protocol).

Power supply

11V to 26 V ac or dc, 10VA, via 2.1mm Jack, supplied with ac/dc power adaptor 90 to 264 Vac, 45 to 65Hz.

ENVIRONMENTAL

Temperature

Operating 5°C to 50°C

Calibrated 23°C

Storage -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 1kg.

Dimensions

185 mm (wide) x 75 mm (high) x 195 mm (depth).

Pneumatic connections

G 1/8 BSP or 1/8 NPT female.

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OPTIONS

(A) Analogue Output

0 - 10V, 0 - 5V, -5V to 5V, 0/4 - 20mA outputs selectable on the same option card. Accuracy 0.05% FS, variable update rate 30 to 50 readings per second. Programmable between minimum and full scale 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) Panel 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

GE Druck IDOS Universal Pressure Modules are robust, 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 manufactured by GE Druck are calibrated against precision calibration equipment traceable to international standards.

RELATED PRODUCTS

Laboratory and workshop instruments

GE Druck manufacture a comprehensive range of pressure instruments. Included in this range are Pressurements industrial deadweight testers and Ruska high precision controllers and primary standard piston gauges. A selection is shown opposite:



Portable field calibrators

GE Druck manufacture a wide range of portable pressure, temperature and electrical field calibrators particularly suitable for use in remote outdoor conditions. A selection is shown above.

Calibration management software

GE Druck Intecal-W is a Windows® based package which supports laboratory and field based calibrations. Interfacing with many popular instruments such as the DPI 515, DPI 605, DPI 610 and MCX, Intecal-W offers a complete and quality assured solution to calibration management.

Pressure transducers and transmitters

GE Druck manufacture an extensive range of pressure transducers and transmitters, including custom designed, rangeable and Smart/HART® process pressure transmitters.

ORDERING INFORMATION

Please state the following (where applicable):

1. DPI 150.
2. Pressure range, gauge or 'No range' if using UPM/UPMP only
3. Options required.
4. Order UPM/UPMP for external sensors.

Continuing development sometimes necessitates specification changes without notice.