

## Features

- 0.05% full scale (FS) accuracy
- Pressure ranges to 20,000 psi (1400 bar)
- Eleven selectable pressure units
- Large, easy to read display with five digit resolution
- % pressure indication and additional bar graph for quick visual reference
- Temperature compensated accuracy from 14°F to 122°F (-10°C to 50°C)
- 0 to 5V analog output
- Pressure switch test
- Minimum/Maximum, tare and alarm functions
- IDOS compatible and RS232 serial interface
- Networking capability (1 to 99 units)
- Stainless steel or Inconel pressure cavity for aggressive media

## Applications

- Process monitoring and control
- Test and calibration

The DPI 104 is a micro-processor controlled digital pressure gauge that combines precision and functionality in a compact, robust and simple to use package. The DPI 104 matches advanced silicon sensor technology with several convenient design features resulting in an accurate, versatile yet affordable digital test gauge. Supplied as a stand-alone process indicator or in a kit with the widely proven Druck hand pumps, the DPI 104 provides a reliable and economic solution for a wide range of pressure sensing applications.

# DPI 104

## Druck Digital Test Gauge

DPI 104 is a Druck product. Druck has joined other GE high-technology sensing businesses under a new name—GE Industrial, Sensing.



# DPI 104 Specifications

## Accuracy

0.05% FS including non-linearity, hysteresis, repeatability and temperature effects from 14°F to 122°F (-10°C to 50°C)

## Resolution

Maximum five digits

## Pressure Ranges

Range			Resolution		Maximum Working Pressure	
psi	bar	type	psi	mbar	psi	bar
0-10**	0-0.7	G*	0.001	0.01	11.2	0.77
0-30	0-2	G* or A	0.001	0.1	32	2.2
0-100	0-7	G* or A	0.01	0.1	111.7	7.7
0-300	0-20	G* or A	0.01	1	319	22
0-1000	0-70	G* or A	0.1	1	1117	77
0-3000	0-200	SG	0.1	10	3190	220
0-5000	0-350	SG	0.1	10	5583	385
0-10,000	0-700	SG	1	10	11,165	770
0-15,000	0-1000	SG	1	100	15,950	1100
0-20,000	0-1400	SG	1	100	22,330	1540

\*All gauge models will respond to negative pressures.

\*\*0.15% FS for 10 psi (700 mbar) range.

## Burst Pressure

Burst pressure is 2x working pressure (exception, 20,000 psi (1400 bar); burst pressure 29,000 psi (2000 bar).

## Selectable Pressure Units

kPa, MPa, kg/cm<sup>2</sup>, psi, mbar, bar, inHg, inH<sub>2</sub>O, mH<sub>2</sub>O, mmH<sub>2</sub>O and mmHg

## Display

- Pressure reading: 5 digits with 0.5 in (12.7 mm) character height
- Full scale indicator: 2.5 digits with 0.25 in (6.35 mm) character height

## Pressure bar graph

In addition to the numeric pressure indication the DPI 104 LCD display contains a round twenty segment bar graph to provide the user with a quick visual estimation of pressure from 0 to 100% FSO. The bar graph increments represent 5% of the user selectable range.

## Display Update

Two times per second

## Minimum/Maximum Values

The minimum and maximum pressure values can be displayed on the DPI 104. This function can be enabled/disabled, and reset by the user.

## Switch Test

The DPI 104 features a switch test function that will capture and display the open and closed values from an external pressure switch. Maximum switch impedance 200 Ω.

## Voltage Output

The DPI 104 can be programmed to provide a 0 to 5 V output signal that can be configured as directly proportional to the pressure shown in the display or set to a fixed value. The voltage output mode provides 0.1% FS accuracy from 50 mV to 5 V.

## Alarm Output

The alarm output consists of an open drain FET (maximum current 250 mA, maximum voltage 24 VDC)

## Adjustable Mounting Positions

For added convenience the DPI 104 housing will rotate 320° around the pressure fitting and the faceplate can be rotated in any orientation for optimum visibility.

## Menu Lock

To guard against unauthorized menu access the DPI 104 features a menu and tare lock function

## RS232 Interface

Serial communications are provided to allow transfer of data to a PC with the optional serial lead (IA090-1-VO). Using this link all menu commands and display data are available via an ASCII command set or the optional SiCal Pro Software.

## Network Capability

Up to 99 DPI 104 instruments can be connected together in a daisy chain-configured network.

# DPI 104 Specifications

## Universal Pressure Module (UPM) Capability

UPM modules can be connected to the DPI 104 to enhance the accuracy and extend the pressure range.

## Battery

The DPI 104 is supplied with a 9V alkaline battery, type MN1604. For increased performance a 9V lithium battery (not supplied by GE) is suggested.

## Pressure Port

- 1/4 NPT or BSP male for units to 10,000 psi (700 bar)
- 9/16 × 18 UNF male cone connection 15,000 psi (1000 bar) and 20,000 psi (1400 bar) units

## Enclosure

- Case material: ABS/PC plastic sealed to Type 4/IP65
- Wetted parts: All stainless steel (316) or Inconel welded pressure cavity for compatibility with aggressive media.

## European Compliance

CE marked

## SiCal Pro Software

This software package allows the user to control the DPI 104 remotely thru a virtual instrument panel on the computer screen. The calibration data can be logged, viewed and printed in graphical format or as a calibration certificate.

## System Requirements

Minimum Intel Pentium with Windows® 95 or higher

## General

### Storage Temperature

-4°F to 158°F (-20°C to 70°C)

### Dimensions

*Diameter:* 3.74 in (95 mm) excluding pressure fittings

*Depth:* 2.17 in (55 mm)

### Weight

13 oz (350 g) approximate

### Mechanical Vibration

To Def Stan 66-31, 8.4 Cat III

### Mechanical Shock

To BS EN 61010:2001

### Electrical Environments

- EMC: BS EN61326-1:1998 + A2:2001
- Electrical Safety: BS EN 61010:2001
- Mechanical Safety Pressure Equipment Directive—Class: Sound Engineering Practice (SEP)

## Options

- A) PC serial lead for connection to PC; p/n IA4090-1-VO
- B) DPI 104 UPM/power lead; p/n IA4101-1-VO for use with remote UPM IDOS sensor—option C also required; UPM
- C) External power supply for use with DPI 104 UPM IDOS remote sensor  
p/n 1S-17-0035 United Kingdom  
p/n 1S-17-0036 Europe  
p/n 1S-17-0037 United States  
p/n 1S-17-0038 Australia
- D) SiCal pro software (including PC lead);  
1S-SiCalpro-DPI104

## Ordering Information

Please state the following (where applicable)

1. Model DPI 104
2. Pressure range, type (G, A or SG) and pressure connections required.
3. Options, if required. Please order as separate items.

# DPI 104 Specifications

## Pneumatic and Hydraulic Test Kits

The DPI 104 is included as a standard component in these test and calibration kits:

### Low Pressure Pneumatic Test Kit

Part number PV210-104-P-1 (BSP) or -2 (NPT).  
Includes: DPI 104; Ranges to 30 psi (2 bar), PV 210 low pressure pneumatic test pump, hose, adaptors, seal kit and case.

### Pneumatic Test Kit

Part number PV211-104-P-1 (BSP) or -2 (NPT).  
Includes: DPI 104; Ranges to 300 psi (20 bar), PV 211 pneumatic test pump, hose, adaptors, seal kit and case.

### Hydraulic Test Kit

Part number PV212-104-H-1 (BSP) or -2 (NPT).  
Includes: DPI 104; Ranges to 15,000 psi (1000 bar), PV 212 hydraulic test pump, hose, adaptors, seal kit and case.

### Pneumatic and Hydraulic Test Kit

Part number PV411-104-HP-1 (BSP) or -2 (NPT).  
Includes: DPI 104; Ranges to 10,000 psi (700 bar), PV 411A combined hydraulic and pneumatic test pump, hydraulic reservoir, PV hose, adaptors, seal kit and case.

## Ordering information

Cuthbertson Laird Group  
Oaktree House  
408 Oakwood Lane  
Leeds  
LS8 3LG  
Tel: 0113 235 1356  
Fax: 0113 235 1161

Visit our website at:  
<http://www.cuthbertsonlaird.co.uk>



*PV 211 pneumatic test kit*



*PV 210 low pressure pneumatic test kit*



*PV 212 hydraulic test kit with DPI 104*



*PV 411A pneumatic and hydraulic test kit with DPI 104*



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