

## Features

- Measure and source thermocouples
- Advanced Cold Junction compensation virtually eliminates errors due to ambient temperature changes
- 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/play connector for Intelligent Digital Output Sensor (IDOS™) Universal Measurement Modules

## Applications

- Temperature 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.

# DPI 821/822

## Druck Thermocouple Loop Calibrator

DPI 821/822 is a Druck product.  
Druck has joined other  
GE high-technology sensing  
businesses under a new  
name—GE Sensing.



# DPI 821/822 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)					✓					
<b>Dual Capability</b>										
mA measure with 24 V loop power		✓		✓		✓		✓		✓
Switch test		✓		✓		✓		✓		✓
HART resistor		✓		✓		✓		✓		✓
IDOS Universal Measurement Modules	①	①	①	①	①	①	①	①	①	①
<b>Features</b>										
Programmable step and ramp output			✓	✓		✓	✓	✓	✓	✓
Hold, scaling, max/min/avg, filter, alarm, tare	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25 pressure units, flow scaling, leak test	✓	✓	②	②	②	②	②	②	②	②
1000 point data memory, RS232	③	③	③	③	✓	③	③	③	③	③
<b>Applications</b>										
Measurement and monitoring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Indicator, controller and recorder testing	✓	✓	✓	✓		✓	✓	✓	✓	✓
Transmitter maintenance and calibration		✓		✓		✓		✓		✓
Process loop set-up and maintenance		✓		✓		✓		✓		✓
Switch, trip and safety system testing		✓		✓		✓		✓		✓

① Optional (please refer to IDOS datasheet) ② When fitted with IDOS pressure module  
③ Optional (please refer to accessories IO800E)

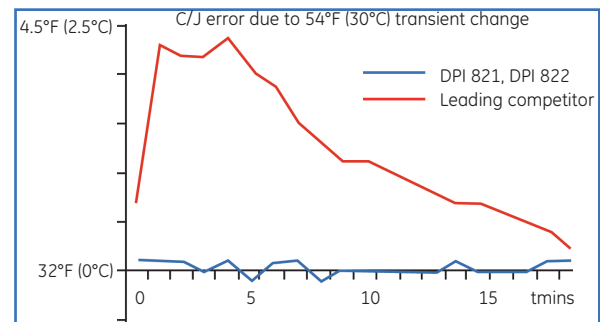
## Temperature Test and Measurement

### DPI 821 Thermocouple Calibrator

Measures or simulates thermocouple sensors and is the ideal tool for checking probes, indicators and controllers

### Unique Cold Junction Compensation

Virtually eliminates ambient temperature errors. (Patent pending)



### Advanced Features

Step, ramp, scaling, maximum/minimum/average, and hold facilitate system checks and troubleshooting

## Temperature Instrumentation and Loop Maintenance

### DPI 822 Thermocouple Loop Calibrator

Provides simultaneous T/C output and mA measurement for transmitter and loop maintenance

### 24 V Loop Power Supply

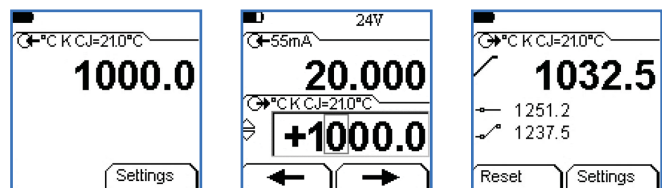
Energizes transmitters and control loops

### 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  $\Omega$  resistor



# DPI 821/822 Specifications

## IDOS Flexibility

### Intelligent Digital Output Sensor (IDOS)

Universal Pressure Modules are available from 10 in H<sub>2</sub>O to 10,000 psi (25 mbar to 700 bar).

### Total Flexibility

IDOS modules can be used with any compatible instrument; for example, a DPI 822 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.

*Please refer to IDOS UPM data sheet.*

#### DPI 820 specifications

\*Accuracy includes operation from 50°F to 86°F (10°C to 30°C), one year stability and calibration uncertainty

Type	Standard	*Accuracy	Range
K	IEC 584	1.1°F (0.6°C)	-454°F to 2498°F (-270°C to 1370°C)
J	IEC 584	0.9°F (0.5°C)	-346°F to 2192°F (-210°C to 1200°C)
T	IEC 584	0.6°F (0.3°C)	-454°F to 752°F (-270°C to 400°C)
B	IEC 584	1.8°F (1.0°C)	122°F to 3308°F (50°C to 1820°C)
R	IEC 584	1.8°F (1.0°C)	-58°F to 3216°F (-50°C to 1769°C)
S	IEC 584	2.5°F (1.4°C)	-58°F to 3216°F (-50°C to 1769°C)
E	IEC 584	0.7°F (0.4°C)	-454°F to 1832°F (-270°C to 1000°C)
N	IEC 584	1.1°F (0.6°C)	-454°F to 2372°F (-270°C to 1300°C)
L	DIN 43710	0.6°F (0.3°C)	-328°F to 1652°F (-200°C to 900°C)
U	DIN 43710	0.6°F (0.3°C)	-328°F to 1112°F (-200°C to 600°C)
C		1.8°F (1.0°C)	32°F to 4208°F (0°C to 2320°C)
D		1.8°F (1.0°C)	32°F to 4523°F (0°C to 2495°C)
mV			-10 to 100 mV

\*Mid range figure quoted

### Cold Junction Error

0.4°F (0.2°C) maximum error for 86°F (30°C) change in ambient temperature.

### Thermocouple connectors

Mini-jack sockets

#### DPI 822

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)

### 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. 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),  
14 oz (400 g)

### Batteries

3 AA alkaline, >80 hours measure, 11 hours mA source (24V @ 12 mA)

# DPI 821/822 Specifications

## Accessories

### IO800A

Soft fabric carry 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 second to 23 hours 59 minutes 59 seconds) 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:** 19.2 k baud, 8 data bits, 1 stop bit, no parity, Xon/Xoff. **Data output:** comma separated ASCII.

## Ordering Information

Please state the model number DPI 821 or DPI 822 and accessories as separate items.

Supporting Services (order as separate items)

*Each unit is supplied with batteries, calibration certificate and user guide. The DPI 822 includes a set of electrical test leads.*

## Related Products

GE 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.gesensing.com/productservices/service.htm](http://www.gesensing.com/productservices/service.htm)



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