

# GE Sensing

## Features

- Advanced frequency meter and generator with three output waveforms from 0.1 V to 24 V amplitude
- Measure or source 0.01 Hz to 50 kHz
- CPM, CPH and totalizing counter
- Sine, square and triangular waveforms
- 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 Sensors™ (IDOS) Universal Measurement Modules

## Applications

- Electronic test and maintenance
- Transmitter calibration and switch test
- Loop set-up and diagnostics

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 841/842

## Druck Frequency Calibrator/ Loop Calibrator

DPI 841/842 is a Druck product. Druck has joined other GE high-technology sensing businesses under a new name—GE Industrial, Sensing.



# DPI 841/842 Specifications

|   | DPI 800 | DPI 802 | DPI 811 | DPI 812 | DPI 820 | DPI 821 | DPI 822 | DPI 832 | DPI 841 | DPI 842 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Type</b>                                     | 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).

## DPI 841 Frequency Loop Calibrator

Measures or sources Hz, kHz, CPM, CPH and pulses. It is the ideal instrument for process technicians and electronic engineers, providing a highly accurate calibration standard and versatile test tool. Dedicated features facilitate test and maintenance of electronic circuits and frequency instruments including frequency meters, batch counters, tachometers, motion pickups, integrators and flowmeters.

### Automatic Trigger

Detects the best value regardless of waveform or amplitude

### Frequency Scaling

Reads in process units; e.g. flow or revolutions/minute

### Programmable Step and Ramp Outputs

Simplify calibration and diagnostics

### Adjustable "Nudge" Value

Provides an incremental output for setting switches, relays, trips and alarms

### Advanced Features

Hold, maximum/minimum/average (with time stamp), scaling, tare (offset) and damping filter facilitate system checks and troubleshooting

## DPI 842 Frequency Loop Calibrator

### Dual Readings

Provides simultaneous frequency output and mA measurement for transmitter and loop maintenance

### 24 V Power Supply

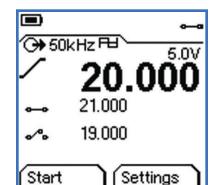
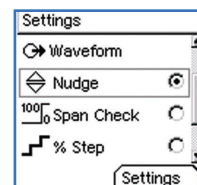
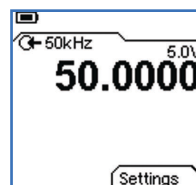
Energize transmitters and control loops

### 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 for a HART digital communicator and avoids the inconvenience of carrying a 250 Ω resistor



# DPI 841/842 Specifications

## IDOS Flexibility

### Intelligent Digital Output Sensor (IDOS)

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

### Total Flexibility

Means IDOS modules can be used with any compatible instrument; for example, a DPI 842 frequency 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 841 and DPI 842

| Measure  | Accuracy*  |
|--|--|
| 0 to 999.999 Hz                                    | 0.003% of reading + 2 counts   |
| 0 to 50.0000 kHz                                   | 0.003% of reading + 2 counts   |
| 0 to 999999 cpm/cph                                | 0.003% of reading + 2 counts   |
| 0 to 999999 total count                            |  |
| Source   | Accuracy*  |
| 0 to 999.99 Hz                                     | 0.003% of reading + 0.0023 Hz  |
| 0 to 50.000 kHz                                    | 0.003% of reading + 0.0336 KHz   |
| 0 to 99999 cpm                                     | 0.003% of reading + 0.138 cpm  |
| 0 to 99999 cph                                     | 0.003% of reading + 0.5 cph  |
| 0 to 999999 pulse with variable rate 0 to 99999 Hz |  |
| 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) |
| Waveform   | sine, square and triangular (unipolar or bipolar)                                      |
| Voltage Input                                      | 30 V maximum   |
| Trigger Level                                      | 0 to 24 V, resolution 0.1 V  |
| Output Amplitude                                   | 0 to 24 VDC ±1% (20 mA maximum)<br>0 to 24 VAC ±5% (20 mA maximum)                     |

#### DPI 842/Additional Specification

| Measure                 | Accuracy*  |
|-------------------------|--|
| 0 to 55.000 mA          | 0.02% of 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)   |

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

## 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

### 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, >60 hours frequency measure, 10 hours mA source (24 V @ 12 mA)

### Electrical Connectors

Four (4 mm) sockets

# DPI 841/842 Specifications

## Accessories

### IO800A

Soft fabric carrying case with accessory pocket

### IO800B

Belt clip, wrist strap/hanging loop and bench stand

### IO800C

NiMh batteries with charger (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 format. **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 841 or 842 and accessories as separate items.

*Each unit is supplied with batteries, test leads, calibration certificate and user guide.*

## 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.



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