GE
Sensing

Features

- Sources and reads mA, mV, V, ohms, frequency and pulses
- Simulates and reads 8 RTDs and 12 thermocouples
- 32 pressure modules from 10 in H_20 to 10,000 psi (25 mbar to 700 bar)
- Simultaneous dual reading capability
- Automatic switch test and pressure leak test
- 1000 point data storage with real time clock
- 24 V loop power supply
- HART® loop resistor
- Large backlit display
- Robust and weatherproof
- Compact, simple to use, easy to carry
- Convenient one-handed operation
- Plug/play connector for IDOS Universal Pressure Modules

Applications

- Test and maintenance
- Transmitter calibration
- Loop set-up and diagnostics
- Switch, trip and alarm 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 880

Druck Multi-function Calibrator

DPI 880 is a Druck product.
Druck has joined other GE high-technology sensing businesses under a new name–GE Industrial, Sensing.



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DPI 880 Specifications

The DPI 880 Multi-function Calibrator is an ultra compact and simple to use tool for testing, configuring and calibrating virtually all process parameters.
It measures, sources and simulates mA, mV, V, RTDs, thermocouples, ohms, frequency, pulses and pressure, captures switch values and provides 24 V loop power.

Simultaneous dual readings
Reads both input and output parameters simplifying calibrations and system diagnostics. Calibration values are captured on one screen and adjustments are seen in real time, for example, when making zero and span adjustments.

	Measure or source							IDOS
	mA	V	mV	Hz	RTD	TC	V	Pressure
mA	✓	✓	✓	✓	✓	✓	✓	✓
mA (24V)	✓	✓	✓	✓	✓	✓	✓	✓
V	✓	✓	✓	✓	✓	✓	✓	✓
Switch test	✓	✓	✓	✓	✓	✓	✓	✓
IDOS Pressure	✓	✓	✓	✓	✓	✓	✓	
Leak test								✓

Programmable step and ramp outputs
Quickly step through calibrations with the %Step output or make zero and full scale adjustments using Span Check. The Ramp output is ideal for delicate analogue meters, rate of change indicators and checking valve travel and slew rates.

Adjustable nudge output
Provides small incremental output changes for accurately setting valve positioners, switches, trips, and alarms.

Automatic switch test
Captures open/closed trip values providing a fast and highly accurate "safety system" check.

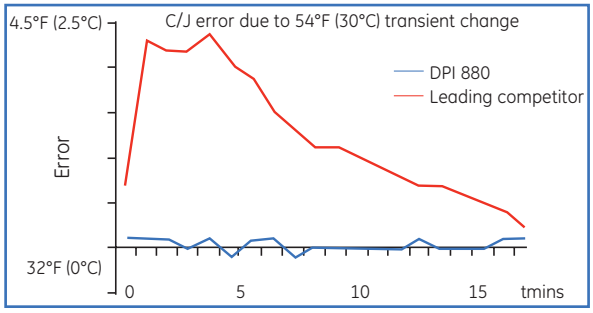
HART resistor
Can be switched into the loop when required for a HART digital communicator avoiding the inconvenience of carrying a 250 Ω resistor.

24V loop power supply
Energises transmitters and control loops.

Temperature

Measures or simulates RTD or thermocouple sensors and is the ideal tool for checking probes, transmitters, process loops, indicators and controllers. Use with a temperature probe to provide a versatile thermometer.

Unique thermocouple cold junction compensation
Virtually eliminates errors caused by changing environmental conditions on test instruments used outside.



Automatic detection of 2, 3 and 4 wire RTDs
Quickly detect damaged sensors and faulty wiring that could otherwise be missed or cause system inaccuracy.

Thermometer with wide probe compatibility
Compatibility with 8 RTDs and 12 thermocouples allows probe selection for any thermometer application, e.g. general purpose, high temperature, hygienic and aggressive media.

Frequency

Measures or sources Hz, kHz, CPM and CPH providing a highly accurate calibration standard and versatile test tool for process technicians and electronic engineers. Dedicated features facilitate test and maintenance of electronic circuits, frequency/flow meters, batch counters, tachometers, and motion pickups.

Automatic trigger
Detects the best value regardless of waveform or amplitude.

Pressure

Intelligent Digital Output Sensor (IDOS) Pressure Modules are available from 10 in H_2O to 10,000 psi (25 mbar to 700 bar). IDOS modules are Plug & Play requiring no instrument calibration or set-up to provide a fully featured pressure calibrator.

Standard and Premier accuracy
Standard accuracy from 0.05% FS includes operation over 32°F to 122°F (0°C to 50°C), one year stability and calibration uncertainty. The Premier range provides laboratory grade precision to 0.01% FS.

Total flexibility
IDOS modules can be used with any compatible instrument carrying the IDOS logo; for example, the DPI 800 series and DPI 150.

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Electrical specification

	Measure accuracy	Source accuracy
0 to 24.000 mA		0.02% rdg + 2 counts
0 to 55.000 mA	0.02% rdg + 3 counts	
0 to 120.00 mV	0.02% rdg + 2 counts	
0 to 12.000 V		0.02% rdg + 2 counts
0 to 30.000 V	0.03% rdg + 2 counts	
0 TO 4000.0 Ω	0.1 to 1.3 Ω	
Switch detection	Open and closed, 2 mA current	
Loop power	24 V +/-10% (35 mA maximum)	
HART mA loop resistor	250 Ω (menu selection)	

Frequency specification

	Measure accuracy	Source accuracy
0 to 999.999 Hz	0.003% rdg + 2 counts	0.003% rdg + 0.0023 Hz
0 to 50.0000 kHz	0.003% rdg + 2 counts	0.003% rdg + 0.0336 Hz
0 to 999999 cpm	0.003% rdg + 2 counts	
0 to 59999 cpm		0.003% rdg + 0.138 cpm
0 to 999999 cph	0.003% rdg + 2 counts	
0 to 99999 cph		0.003% rdg + 0.5 cph
Output waveform	Square wave (zero crossing)	
Voltage input	30 V maximum	
Trigger level	0 to 12 V resolution 0.1V	
Output amplitude	0 to 12 VDC +/- 1% (10 mA maximum) 0 to 12 VAC pk-pk +/- 5% (10 mA maximum)	

Temperature specification

Measure and Simulate	Standard	*Accuracy	Range
Pt 50 (385)	IEC 751	0.9°F (0.5°C)	-328°F to 1562°F (-200°C to 850°C)
Pt 100 (385)	IEC 751	0.45°F (0.25°C)	-328°F to 1562°F (-200°C to 850°C)
Pt 200 (385)	IEC 751	1.08°F (0.6°C)	-328°F to 1562°F (-200°C to 850°C)
Pt 500 (385)	IEC 751	0.72°F (0.4°C)	-328°F to 1562°F (-200°C to 850°C)
Pt 1000 (385)	IEC 751	0.36°F (0.2°C)	-328°F to 752°F (-200°C to 400°C)
D 100 (392)	JIS 1604-1989	0.45°F (0.25°C)	-328°F to 1202°F (-200°C to 650°C)
Ni 100	DIN 43760	0.36°F (0.2°C)	-76°F to 482°F (-60°C to 250°C)
Ni 120	MINCO 7-120	0.36°F (0.2°C)	-112°F to 500°F (-80°C to 260°C)
Ohms		0 to 4000	0.1 to 1.3 Ω

* Mid range figure quoted
Excitation: 0.2 to 0.5 mA measure, 0.05 to 3 mA simulate
Pulse excitation currents minimum duration 10 ms

Type	Standard	*Accuracy	Range
K	IEC 584	1.1°F (0.6°C)	-454°F to 2502°F (-270°C to 1372°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)	32°F to 3308°F (0°C to 1820°C)
R	IEC 584	1.8°F (1.0°C)	-58°F to 3214°F (-50°C to 1768°C)
S	IEC 584	2.5°F (1.4°C)	-58°F to 3214°F (-50°C to 1768°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 4199°F (0°C to 2315°C)
D		1.8°F (1.0°C)	32°F to 4514°F (0°C to 2490°C)
mV		0.2%rdg + 0.01%FS	-10 to 75 mV

**Mid range figure quoted*
Cold Junction Error 0.4°F (0.2°C) maximum for 86°F (30°C) change in ambient temperature.

IDOS Universal Pressure Modules

Pressure Range	G/D	G	A	Media +	Media –	*Accuracy %FS S	*Accuracy %FS P
±10 in H_2O (25 mbar)	✓			❷	❸	0.1	0.03
±1, 3, 5, or 10 psi (70, 200, 350, or 700 m bar)	✓			❷	❸	0.075	0.03
5 psi (350 mbar)			✓	❷		0.1	N/A
-15 to 15 or 30 psi (-1 to 1 or 2 bar)	✓			❷	❸	0.05	0.01
30 psi (2 bar)			✓	❷		0.075	N/A
-15 to 50, 100, 150 or 300 psi (-1 to 3.5, 7 10 or 20 bar)		✓		❶		0.05	0.01
100, 300 psi (7, 20 bar)			✓	❶		0.075	N/A
500, 1000, 1500, 2000 or 3000 psi (35, 70, 100, 135, 200 bar)		✓		❶		0.05	0.01
5000 or 10,000 psi (350 or 700 bar) Sealed gauge		✓		❶		0.05	N/A

G = gauge, A = absolute, G/D = gauge/differential; calibrated referenced to atmosphere maximum line pressure 30 psi (2 bar).. ❶Stainless steel, compatibility ❷Non-corrosive gas ❸Non-corrosive gas. (N/A = not available). Accuracy assumes regular zero correction.

*IDOS UPM-S Standard Accuracy
Total accuracy over 32°F to 122°F (0°C to 50°C) and one year stability.

*IDOS UPM-P Premier Accuracy
Precision over 65°F to 82°F (18°C to 28°C).
Option A) Negative calibration for Premier ranges

Pressure Connections
G 1/8 female or 1/8 NPT female

Please refer to IDOS UPM data sheet for full specification

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General specifications

Electrical connection
4mm sockets and mini-jack thermocouple socket

Calibrated temperature
50°F to 86°F (10°C to 30°C) unless otherwise stated

Operating Temperature
14°F to 122°F (-10°C to 50°C) unless otherwise stated
Temperature coefficient 14°F to 50°F, 86°F to 122°F 0.0017%FS/°F (-10°C to 10°C, 30°C to 50°C 0.003%FS/°C)
For ohms 14°F to 50°F, 86°F to 122°F 0.0028%FS/°F (-10°C to 10°C, 30°C to 50°C 0.005%FS/°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. Pressure Equipment Directive (PED), Class SEP. 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), 15 oz (425 g)

Batteries
3 AA alkaline, >50 hours measure, >10 hours 24V source

CE

Accessories

IO800A
Soft fabric carrying 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** onscreen 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 tags**: 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

For DPI 880
Please state the model number DPI 880 and accessories as separate items.

Each unit is supplied with batteries, calibration certificate, user guide and a set of electrical test leads.

For IDOS UPM
Please state the model number IDOS UPM S for the standard accuracy version or IDOS UPM P for the premier accuracy version followed by the range, G/D, G or A and G 1/8 female or 1/8 NPT female.

Each unit is supplied with 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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