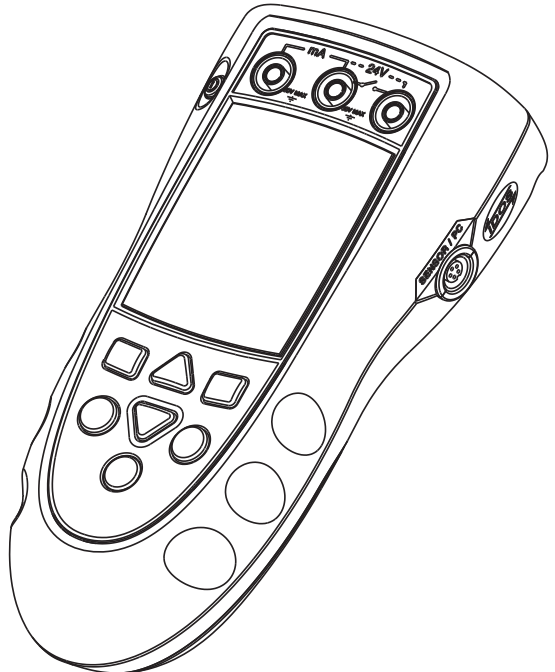


DPI 800 / 802

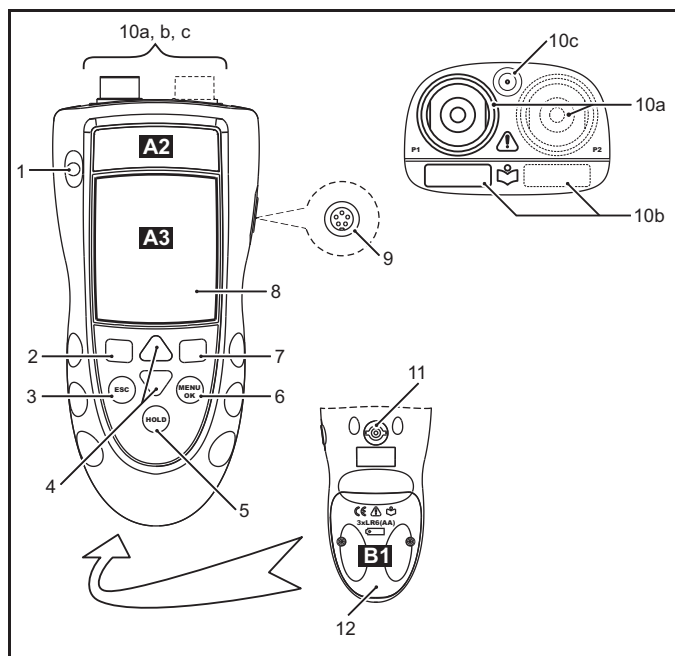
Pressure Indicator and Pressure Loop Calibrator

Instruction Manual

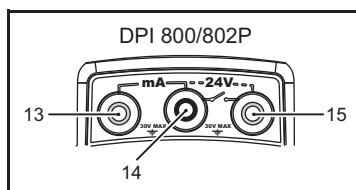
English	1 – 26
Dansk	27 – 52
Deutsch	53 – 78
Español	79 – 104
Français	105 – 130
Italiano	131 – 156
Português	157 – 182
Русский	183 – 210
中文	211 – 236
日本語	237 – 264



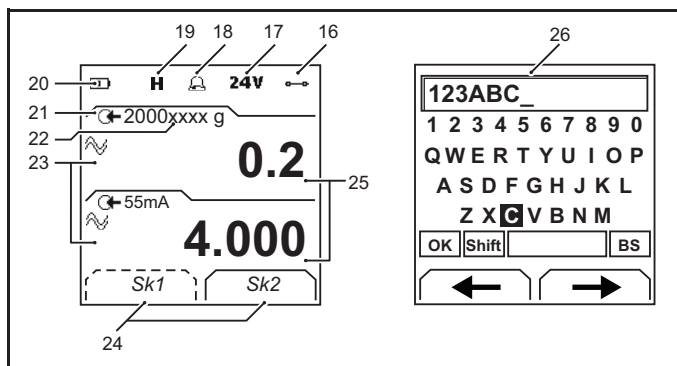
A1



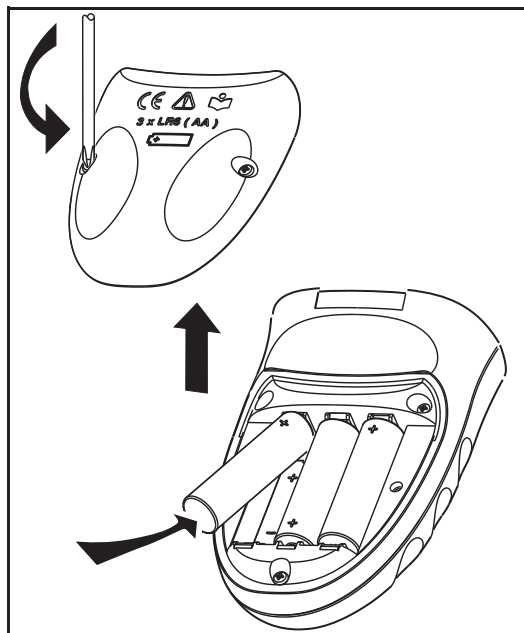
A2



A3



B1



Introduction

The DPI 800 Pressure Indicator and DPI 802 Pressure Loop Calibrator are part of the Druck DPI 800 series of hand held instruments.

The DPI 800 series uses Intelligent Digital Output Sensor (IDOS) technology to give instant plug and play functionality with a range of Universal Measurement Modules (UMM). Example: the Universal Pressure Module (UPM).

The DPI 800/802 include these functions:

Function	DPI 800		DPI 802
Measure pressure ^a	Internal IDOS: P1 and/or P2 ^b ; External IDOS: UPM ^c		
Measure pressure difference ^c	Difference (Δ) between: P1 and P2, or P1/P2 and a UPM		
Leak test	Yes		
Communications port	IDOS or RS232		
Language selection	Yes		
Pressure units	25 (Fixed)		
Snapshot **	Up to 1000 displays with a date/time stamp		
Measure mA	No		0 - 55 mA
HART® resistor	No		Yes
V dc output	No		24 V
Switch test	No		Yes
Other functions	Hold, Maximum/Minimum/Average, Filter, Tare, Scaled values, Backlight, Alarm		

a. Refer to "Specification Data" on page 22.

b. Optional item

c. High range IDOS - Low range IDOS (if applicable)

Safety

Before you use the instrument, make sure that you read and understand all the related data. This includes: all local safety procedures, the instructions for the UMM (if applicable), and this publication.



WARNING Some liquid and gas mixtures are dangerous. This includes mixtures that occur because of contamination. Make sure that the instrument is safe to use with the necessary media.

It is dangerous to ignore the specified limits for the instrument or to use the instrument when it is not in its normal condition. Use the applicable protection and obey all safety precautions.

To prevent a dangerous release of pressure, isolate and bleed the system before you disconnect a pressure connection.

Do not use the instrument in locations with explosive gas, vapor or dust. There is a risk of an explosion.

DPI 802/802P only. To prevent electrical shocks or damage to the instrument, do not connect more than 30V between the terminals, or between the terminals and the ground (Earth).

Before you start an operation or procedure in this publication, make sure that you have the necessary skills (if necessary, with qualifications from an approved training establishment). Follow good engineering practice at all times.

Safety - Marks and Symbols on the Instrument

Symbol	Description
	This equipment meets the requirements of all relevant European safety directives. The equipment carries the CE mark.
	This symbol, on the equipment, indicates that the user should read the user manual.
	This symbol, on the equipment, indicates a warning and that the user should refer to the user manual. Ce symbole, sur l'appareil, est un avertissement qui indique que l'utilisateur doit consulter le manuel d'utilisation.
	Ground (Earth)
	On/Off
	Battery
P1/P2	Identifies the pressure range connector.
	Do not dispose of this product as household waste. Use an approved organization that collects and/or recycles waste electrical and electronic equipment. For more information, contact one of these: - Our customer service department: Druck.com - Your local government office.

MWP: The maximum working pressure for the connector. Example: 2 x FS (FS = Full scale pressure).

REFERENCE: The connector is a reference port for reference pressure only. Refer to "Specification Data" on page 22.

The identification on each pressure connector includes the type of thread (1/8 NPT, G1/8...).

Contents

1.	To Start	5
1.1	Location of Items (Refer to Figure A1 and Figure A2)	5
1.2	Items on the Display (Refer to Figure A3)	6
1.3	Prepare the Instrument	7
1.4	Power On or Off	7
1.5	Set up the Basic Operation	7
1.6	Select a Task (Measure)	8
1.7	Set up the Settings	10
1.8	Edit Functions	11
2.	Operation	12
2.1	Pressure Connections	12
2.2	Communications Port Connections	13
2.3	Measure Pressure	13
2.4	Leak Test	14
2.5	Switch Test	15
2.6	Transmitter Calibration	16
2.7	mA Measurements	18
2.8	UPM Pressure Measurements	20
2.9	Error Indications	20
3.	Maintenance	21
3.1	Clean the Unit	21
3.2	Replace the Batteries	21
4.	Calibration	21
4.1	Before You Start	21
4.2	Procedures (Pressure P1/P2)	23
4.3	Procedures (mA input)	24
4.4	Procedures (IDOS UMM)	25
5.	Specification Data	25
5.1	General	25
5.2	Pressure Measurement	26
5.3	Electrical Connectors (Figure A2)	28

1. To Start

1.1 Location of Items (Refer to Figure A1 and Figure A2)

Item	Description
1. 	On or Off button.
2. 	Left-hand soft-key. Selects the function above it on the display (Item 24). Example: Edit
3. ESC	Moves back one menu level. Leaves a menu option. Cancels the changes to a value.
4. 	Increases or decreases a value. Highlights a different item.
5. HOLD	Holds the data on the display. To continue, press the HOLD button again.
6. MENU OK	Shows the Select Task menu. Selects or accepts an item or value. Selects [✓] or cancels [] a selection
7. 	Right-hand soft-key. Selects the function above it on the display (Item 24). Example: Settings
8.	Display. Refer to Figure A3
9. SENSOR/ PC	Communications port. Use to connect a Universal Measurement Module (UMM) or a RS232 cable.
10. 10a.	IDOS pressure connector with identification marks. Refer to “Safety” on page 1.
10b.	Label to identify the pressure range for the associated IDOS pressure connector (P1/P2): Sealed gage (sg), gage (g), absolute (a).
10c.	PTFE vent filter or a reference port connector. Refer to “Specification Data” on page 22.
11.	Connection point for some of the optional accessories. Refer to the datasheet.
12.	Battery compartment. Refer to Figure B1.
13., 14., 15.	DPI 802/802P only. Terminals to measure current, to supply 24V source, and to do switch tests.

1.2 Items on the Display (Refer to Figure A3)

Item	Description
16.  	DPI 802/802P only. Task indication for the switch test.  = switch closed  = switch open Task indication for the leak test. Refer to: Select Task (Table 2 & Table 3)
17. 24V	DPI 802/802P only. The loop power supply is on. Refer to: Select Task (Table 2 & Table 3)
18. 	The measured value satisfies one of the alarm conditions. Refer to: Settings (Table 4)

19.		The data on the display is on hold. To continue, press the HOLD button again.
20.		Shows the battery level: 0 ... 100%.
21.		Identifies the type of data and the measurement range.  = Input  = IDOS input Refer to: Select Task (Table 2 & Table 3)
22. ... 23.		Identifies the settings applied to the input. Refer to: Settings (Table 4)
22.	xxxx g	The units and the type of sensor (If applicable) OR a specified scale (x:y).
23.		Shows the settings applied to the measured value (If applicable).  = Filter  = Maximum  = Average  = Tare  = Minimum
24.		A soft-key function. To select an available function, press the soft-key below it. Example:  = Move left  = Move right
25.		The measured value or values applicable to the task selection.
26.		The Edit display to set up text labels (£ 6 characters): x:y Scaling (Table 4). OK = Accept the new text label Shift = Change the keys: 123ABC or -_+abc  = Add a space BS = Back space (Delete character)

1.3 Prepare the Instrument

Before you use the instrument for the first time:

- Make sure that there is no damage to the instrument, and that there are no missing items.
- Remove the plastic film that protects the display. Use the tag (D) in the top right-hand corner.
- Install the batteries (refer to Figure B1). Then re-attach the cover.

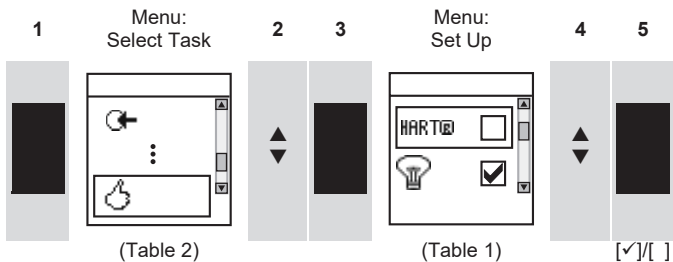
1.4 Power On or Off

To turn the instrument on or off, press  (Figure A1 - item [1]). The instrument does a self test and then shows the applicable data.

When the power is off, the last set of configuration options stays in memory. Refer to "Maintenance" on page 18.

1.5 Set up the Basic Operation

Use the *Set Up* menu to set up the basic operation of the instrument.



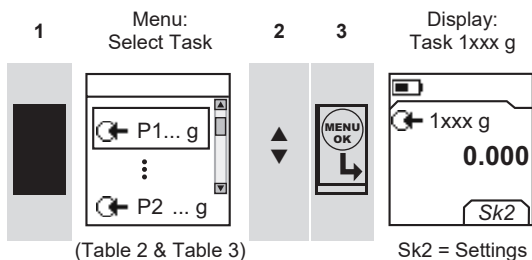
If there is additional data for a menu option, select *Settings* (■ ■) to see the values that are set up. If necessary, adjust the values.

Table 1: Menu Options - Set up

Options (If applicable)	Description
HART®	DPI 802/802P only. To add a series resistor into the mA circuit. You can then use this instrument together with a HART® communicator to set up and calibrate HART® devices.
	To select and set up the backlight facility + timer. Additional data: Select Settings (■ ■)
	To select and set up the power off facility + timer. Additional data: Select Settings (■ ■)
	To show the battery level (%).
	To set the display contrast (%). ▲ Increases %, ▼ decreases %
	To set the time + date. The calibration facility uses the date to give service and calibration messages.
	To set the language option.
	To calibrate the instrument. Additional data: Refer to "Calibration" on page 19.
	To select and show the applicable status data (Software Build, Calibration Due date, Serial Number, IDOS Information).

1.6 Select a Task (Measure)

When the instrument is set up (Table 1), use the *Select Task* menu to select the applicable task.



In Table 2 & Table 3, P1 and P2 are internal sensors, and IDOS is a Universal Measurement Module (UMM). If you attach a UMM to the communications port (Figure A1 - item [9]), the *Select Task* menu shows the applicable IDOS options.

Table 2: Menu Options - Select Task

Options (If applicable)	Description
P...	An input measurement task (P1, P2 ^a). The task includes the pressure range for the sensor.
ΔP...	An input measurement task to measure the pressure difference (Δ) between: P1 and P2 ^a , or P1/P2 ^a and a UPM ^a . ΔP = High range IDOS - Low range IDOS
mA	DPI 802/802P only. A mA measurement task.
mA(24V)	DPI 802/802P only. A mA measurement task + the loop power supply is on.
	DPI 802/802P only. A switch test.
IDOS	UMM only. An IDOS measurement task.
	Pressure options only. A leak test.
	To set up the way the instrument works. Additional data: Refer to: Set Up (Table 1).

a. Optional item

Table 3 shows all the one and two function operations that are available. If you attach a UMM, you can only use the options that include IDOS.

Table 3: Permitted 1 and 2 Function Operations

Function		P1	P2	ΔP... (Table 2)	IDOS
		(1)	(1)	(1)	(1)
mA	(1)	(2)	(2)	(2)	(2)
mA(24V)	(1)	(2)	(2)	(2)	(2)

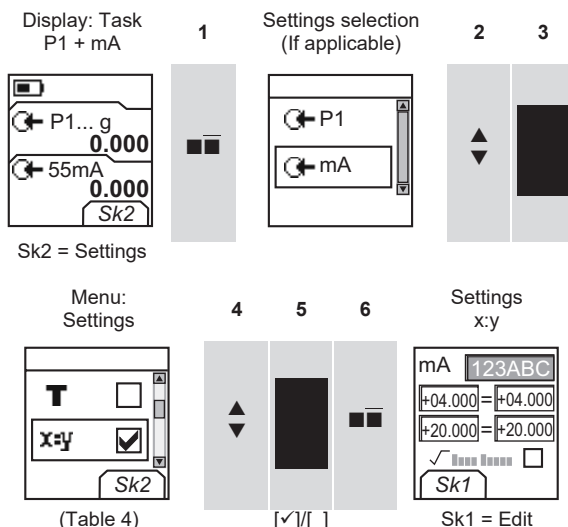
Table 3: Permitted 1 and 2 Function Operations

Function		 P1	 P2	 AP... (Table 2)	 IDOS
	x	(2)	(2)	(2)	(2)
	x	(2)	(2)	x	(2)
 IDOS	(1)	(2)	(2)	x	x
 P2	(1)	(2)	x	x	(2)

 = DPI 802/802P only

1.7 Set up the Settings

When the task is set up (Table 2 & Table 3), use the *Settings* menu to adjust the measurement operation.



If there is additional data for a menu option, select *Settings* () to see the values that are set up. If necessary, adjust the values. Refer to “Edit Functions” on page 9.

Table 4: Menu Options - Settings

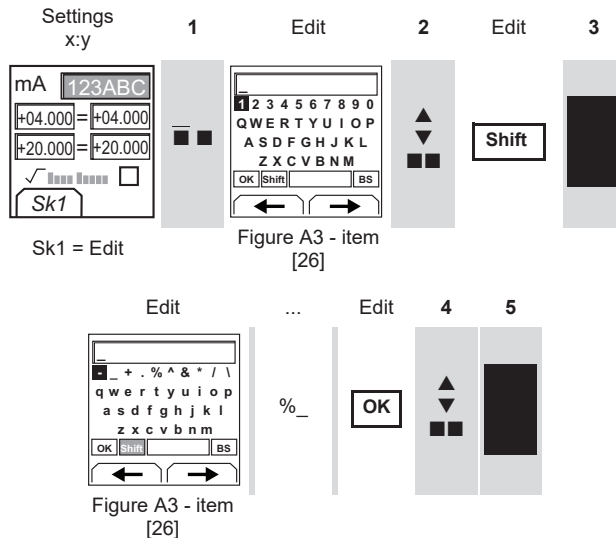
Options (If applicable)	Description
... Units	To select one of the fixed units of measurement (psi, mbar ...).
0.0	Gage sensors or sensors with differential operation (P1, P2, IDOS). A zero correction that makes the instrument read zero at local pressure.
	To include maximum, minimum and average values for the measurement task.

Table 4: Menu Options - Settings

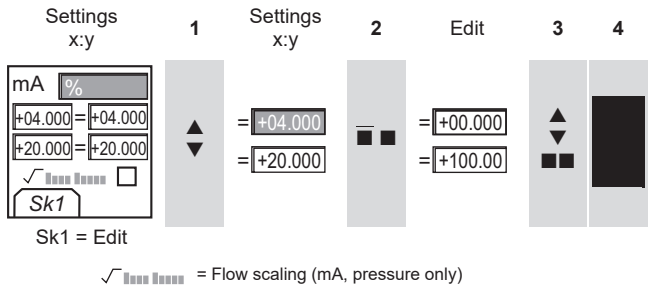
Options (If applicable)	Description
T	To select and set up a tare value for the measurement task (a specified value or the reading on the display). The instrument subtracts a positive tare value, and adds a negative tare value.
	Additional data: Select Settings (■■■)
x:y	To select and set up a scale of values: One local scale for each measurement task (Maximum: 5).
	Additional data (Example 1/2): Select Settings (■■■)
	To select and set up the filter values to give a smoother output for the measurement task:
$\frac{+}{-}$	Band as a % of full scale (FS). The filter compares each new value with the previous value. If the new value is outside the band, it is not filtered.
	Low pass filter time constant in seconds. Increase the value to increase the damping factor.
	Additional data: Select Settings (■■■)
	To select and set up the alarm values for the measurement task (maximum and minimum).
	Additional data: Select Settings (■■■)
	Leak Test only. To set an applicable period for the leak test (Hours:Minutes:Seconds).

1.8 Edit Functions

Example 1) Set up a label for x:y *Scaling* = %



Example 2) Set up values for x:y *Scaling* = 0 to 100%



2. Operation

This section gives examples of how to connect and use the instrument. Before you start:

- Read and understand section “Safety” on page 1.
- Do not use a damaged instrument.

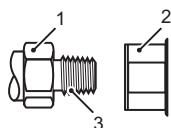
2.1 Pressure Connections

 **CAUTION** To prevent damage, do not apply torque to the body of the instrument. If available, use the flat faces on the pressure connector to hold the instrument in position.

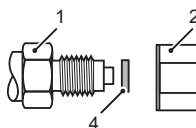
Use an applicable method to seal the pressure connections, and then tighten to the applicable torque (Figure 1).

Note: If the instrument uses G1/8 connections, and the pressure is ≥ 1500 psi (100 bar), connection method (b) is mandatory.

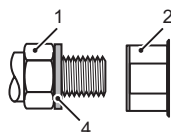
a) 1/8 NPT connections



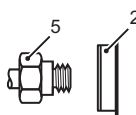
b) G1/8 connections:
Pressure ≥ 1500 psi (100 bar)



c) G1/8 connections:
Pressure < 1500 psi (100 bar)



d) M5 or 10-32 UNF connections: Refer to



- | | | | |
|---|--|---|--|
| 1 | Process connector. Maximum torque: 1/8 NPT: 26 lbf.ft (35 Nm)
G1/8: 18.4 lbf.ft (25 Nm) | 2 | Applicable instrument pressure connector (Table 9) |
| 3 | (1/8 NPT only) Thread with an applicable sealant | 4 | (G1/8 only) Applicable bonded seal |
| 5 | Reference port connector: M5 or 10-32 UNF (Table 10)
Maximum torque: 1.5 lbf.ft (2 Nm) | | |

Figure 1: Connection Methods

2.2 Communications Port Connections

Use the communications port (Figure A1 - item [9]) to attach an IDOS Universal Measurement Module (UMM).

When you attach the cable from a UMM (Figure 8), the instrument automatically changes the menus to give you all the applicable options (Table 2 & Table 3).

2.3 Measure Pressure

To measure the pressure or the pressure difference (if there are two IDOS pressure ranges).

1. Connect the instrument (Figure 2) and, if necessary, adjust the *Set Up* (Table 1).
2. Select an applicable pressure task from *Select Task* (Table 2/Table 3) and, if necessary, adjust the *Settings* (Table 4).
3. If necessary, do a zero correction (Table 4).

- Before you disconnect the instrument, isolate and bleed the system.

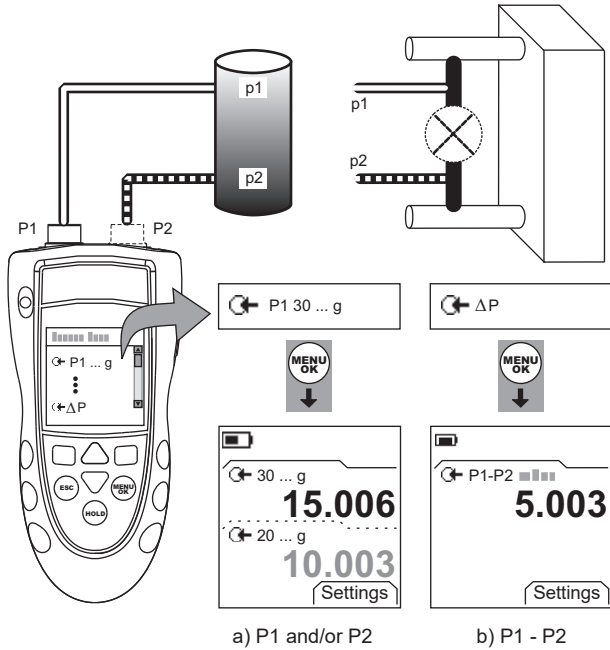


Figure 2: Example Configuration - Measure pressure

The examples in Figure 2 shows:

- How to measure one or two pressures in a system.
- How to measure pressure difference.

Note: ΔP = High range IDOS - Low range IDOS. If Pressure (p2) > Pressure (p1), the result is negative.

2.4 Leak Test

To do a leak test on a pressure system:

- Connect the instrument (Figure 3) and, if necessary, adjust the *Set Up* (Table 1).
- Select an applicable leak test from *Select Task* (Table 2/Table 3) and, if necessary, adjust the *Settings* (Table 4).
- Set the period for the leak test (Table 4).
- If necessary, do a zero correction (Table 4).
- To start the leak test, select Start (■). When the test is finished, the instrument calculates the leak rate in the applicable units/minute.

- Before you disconnect the instrument, isolate and bleed the system.

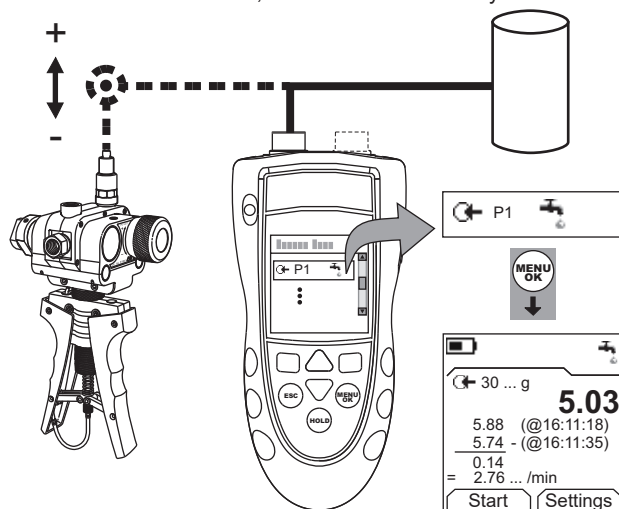


Figure 3: Example Configuration - Leak Test

2.5 Switch Test

DPI 802/802P only. To do tests on a pressure switch:

- Connect the instrument (Figure 4) and, if necessary, adjust the *Set Up* (Table 1).
- Select the applicable switch test from *Select Task* (Table 2/Table 3) and, if necessary, adjust the *Settings* (Table 4). The display shows the switch condition (open or closed) in the top right-hand corner.
- If necessary, do a zero correction (Table 4).
- Slowly apply pressure to the system until the switch changes condition (open or closed).
- Slowly release the pressure until the switch changes condition again. The display shows the pressure values to open and close the switch.
- To do the test again, press **ESC** to reset the values.

- Before you disconnect the instrument, isolate and bleed the system.

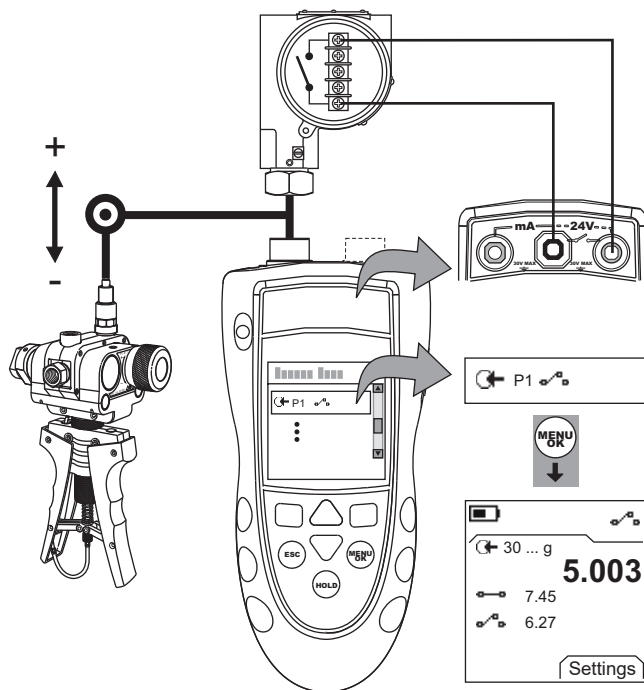


Figure 4: Example Configuration - Switch Test

2.6 Transmitter Calibration

DPI 802/802P only. To calibrate a transmitter:

- Connect the instrument (Figure 5 or Figure 6) and, if necessary, adjust the *Set Up* (Table 1).
- Select the applicable calibration task from *Select Task* (Table 2/Table 3) and, if necessary, adjust the *Settings* (Table 4).
- If necessary, do a zero correction (Table 4).
- For each calibration point, apply an applicable pressure and wait for the pressure system to stabilize.

5. Before you disconnect the instrument, isolate and bleed the system.

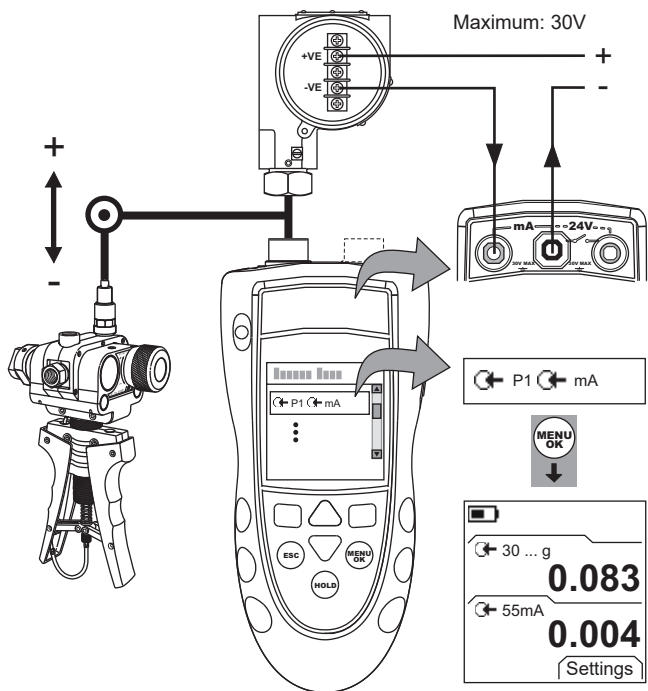


Figure 5: Example Configuration - Transmitter Calibration with External Loop Power

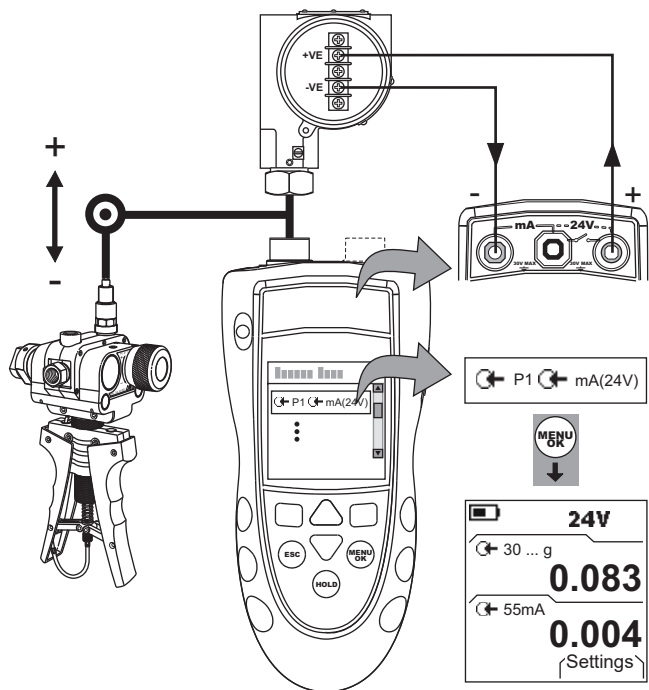


Figure 6: Example Configuration - Transmitter Calibration with Internal Loop Power

2.7 mA Measurements

DPI 802/802P only. To measure a current:

1. Connect the instrument (Figure 7) and, if necessary, adjust the *Set Up* (Table 1).

- Select the applicable mA task from *Select Task* (Table 2 & Table 3) and, if necessary, adjust the *Settings* (Table 4).

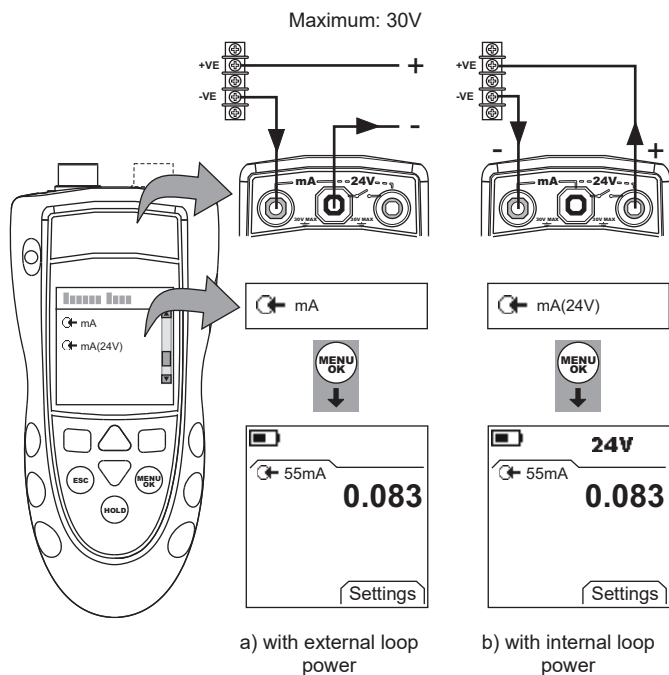


Figure 7: Example Configuration - mA Measurement

2.8 UPM Pressure Measurements

Read all the instructions supplied with the UPM and then use the specified procedures to connect it (Figure 8).

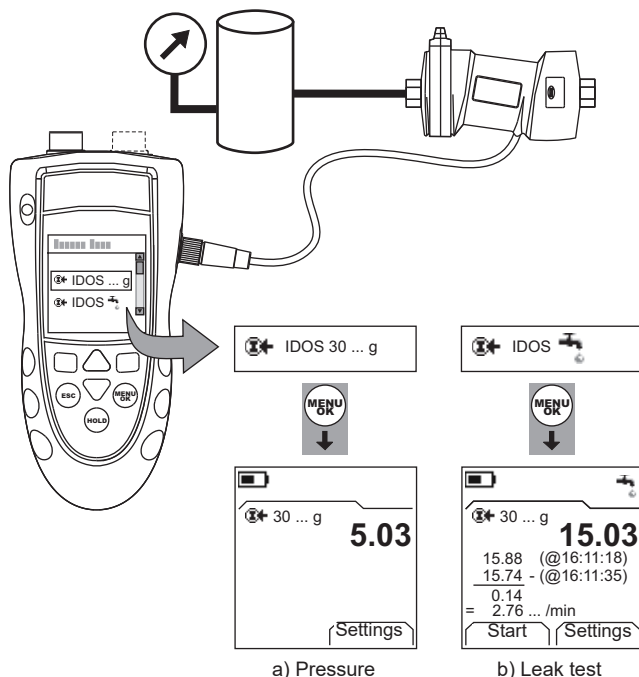


Figure 8: Example Configuration - Pressure Measurement with a UPM

When the connections are complete, make the necessary IDOS selections (Table 2/Table 3). Then use the same procedures as specified for the P1/P2 connections.

If you re-attach a UPM, the instrument uses the same measurement units that you used before. The instrument keeps a record for the last 10 modules.

2.9 Error Indications

If the display shows <<<< or >>>>:

- Make sure that the range is correct.
- Make sure that all the related equipment and connections are serviceable.

3. Maintenance

This section gives procedures to maintain the unit in a good condition. Return the instrument to the manufacturer or an approved service agent for all repairs.

Do not dispose of this product as household waste. Use an approved organization that collects and/or recycles waste electrical and electronic equipment.

For more information, contact one of these:

- Our customer service department: **Druck.com**
- Your local government office.

3.1 Clean the Unit

Clean the case with a moist, lint-free cloth and a weak detergent. Do not use solvents or abrasive materials.

3.2 Replace the Batteries

To replace the batteries, refer to Figure B1. Then re-attach the cover.
Make sure that the time and date are correct. The calibration facility uses the date to give service and calibration messages.
All the other configuration options stay in memory.

4. Calibration

Note: BHGE can provide a calibration service that is traceable to international standards. We recommend that you return the instrument to the manufacturer or an approved service agent for calibration.
If you use an alternative calibration facility, make sure that it uses these standards.

4.1 Before You Start

- To do an accurate calibration, you must have:
- The calibration equipment specified in Table 5.
 - A stable temperature environment: 70 ± 2°F (21 ± 1°C)

Table 5: Calibration Equipment

Function	Calibration Equipment
Pressure	An applicable pressure standard (primary or secondary) with a total uncertainty of 0.01% reading or better.
mA	mA calibrator. Accuracy: Refer to Table 8.

Before you start the calibration, make sure that the time and date on the instrument are correct (Table 1).

Selection Sequence:

► Select Task (Table 2) ► Set Up (Table 1) ► Calibration ►

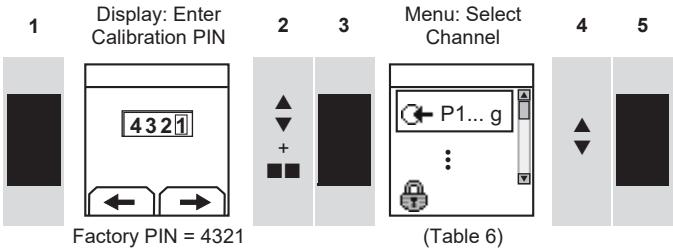


Table 6: Calibration Options

Options (If applicable)	Description
 P...	To calibrate the specified IDOS pressure input (P1 or P2 ^a).
 IDOS ...	UMM only. To calibrate the specified IDOS UMM. Refer to the user manual for the IDOS UMM.
 mA	DPI 802/802P only. To calibrate the mA input.
	Calibration Due: To set the date of the next calibration for the instrument. After the specified calibration date, there is a warning message. There is a selection box to stop the warning.
	To change the calibration PIN (Personal Identification Number).

a. Optional item

When you select a channel, the display shows the applicable instructions to complete the calibration.

When the calibration is complete, select *Calibration Due* and set the new calibration date for the instrument.

4.2 Procedures (Pressure P1/P2)

1. Connect the instrument to the pressure standard (Figure 2).
2. Let the equipment get to a stable temperature (minimum: 30 minutes since the last power on).
3. Use the calibration menu (Table 6) to do a two-point calibration (Zero and +FS) or a three-point calibration (-FS, Zero and +FS). Refer to Table 7. The display shows the applicable instructions to complete the calibration.

Table 7: Calibration Pressures

Ranges: g/d	Nominal Applied Pressure psi (mbar)		
	-FS ^a	Zero	+FS
≤ 10.0 psi (700 mbar)	-FS	0	+FS
> 10.0 psi (700 mbar)	-13.1 (-900)	0	+FS

a. For a three-point calibration, do not apply more than -90% of the specified FS for the unit.

Ranges: a	Nominal Applied Pressure psi (mbar)	
	Zero	+FS
5.00 psi (350 mbar)	< 0.02 (1.0)	+FS

Ranges: a	Nominal Applied Pressure psi (mbar)	
	Zero	+FS
30.0 psi (2 bar)	< 0.07 (5.0)	+FS
100.0 psi (7 bar)	< 0.29 (20.0)	+FS
300.0 psi (20 bar)	< 0.73 (50.0)	+FS

Ranges: sg	Nominal Applied Pressure psi (mbar)	
	Zero	+FS
≥ 5000 psi (350 bar)	Use atmospheric pressure as zero.	+FS

4. To make sure that the calibration is correct, select the applicable pressure task (Table 2) and apply these pressure values:
 - Ranges g/d or sg: 0, 20, 40, 60, 80, 100 (%FS)
Then: Go back to 0 in the same steps.
Then (three-point calibration only): -20, -40, -60, -80, -100 (%FS).
Then: Go back to 0 in the same steps.
 - Ranges a: 0, 20, 40, 60, 80, 100 (%FS)
Then: Go back to 0 in the same steps.
5. Make sure that the error is in the specified limits:
 - Standard accuracy:
The specified accuracy (refer to "Specification Data" on page 22) includes an allowance for temperature changes, reading stability for one year, and the uncertainty of the standard used for calibration.
In step 4, make sure that the error between the applied pressure and the reading on the unit is not more than 0.015% FS.
 - Premier precision:
The specified precision (refer to "Specification Data" on page 22) includes an allowance for temperature changes and the uncertainty of the standard used for calibration.
In step 4, make sure that the error between the applied pressure and the reading on the unit is not more than the specified value for *Premier precision*.

4.3 Procedures (mA input)

1. DPI 802/802P only. Connect the instrument to the calibration equipment (Figure 7).
2. Let the equipment get to a stable temperature (minimum: 5 minutes since the last power on).
3. Use the calibration menu (Table 6) to do a three-point calibration (-FS, Zero and +FS). The display shows the applicable instructions to complete the calibration.
4. To make sure that the calibration is correct, select the applicable mA task (Table 2) and apply these values:
 - mA: -55, -40, -24, -18, -12, -6, 0 (open circuit)
Then: 0, 6, 12, 18, 24, 40, 55.

5. Make sure that the error is in the specified limits (Table 8).

Table 8: mA Input Error Limits

Applied mA	Calibrator Error (mA)	Permitted DPI 800/802 Error (mA)
±55	0.0022	0.005
±40	0.0018	0.004
±24	0.0014	0.003
±18	0.0004	0.003
±12	0.0003	0.002
±6	0.0002	0.002
0 (open circuit)	n/a	0.001

4.4 Procedures (IDOS UMM)

Refer to the user manual for the IDOS UMM.

When the calibration is complete, the instrument automatically sets a new calibration date in the UMM.

5. Specification Data

All accuracy statements are for one year.

5.1 General

Item	Specification
Languages	English [Default]
Operating temperature	14 ... 122°F (-10 ... 50°C)
Storage temperature	-4 ... 158°F (-20 ... 70°C)
Humidity	0 to 90% without condensation (Def Stan 66-31, 8.6 cat III)
Shock/Vibration	EN 61010; Def Stan 66-31, 8.4 cat III
EMC	EN 61326-1
Safety	Pressure Equipment Directive - Class: Sound Engineering Practice (SEP) CE Marked
Size (L: W: H)	Maximum: 7.5 x 3.3 x 2.0 in (190 x 85 x 50 mm)
Weight	19 oz (530 g)
Power supply	3 x AA alkaline batteries
Duration (Measure)	P1: ≈ 50 hours P1 + mA: ≈ 5 hours (24 V Source at 12 mA)

5.2 Pressure Measurement

The % full scale (FS) statements for Standard accuracy and Premier precision are only applicable if there is a regular zero correction by the IDOS instrument.

Ranges: Gauge and Differential Operation (g/d), Sealed Gauge (sg), Absolute (a)	Type	Standard Accuracy ^a % FS	Premier Precision ^b % FS	Notes
+/- psi: 0.36 (+/- mbar: 25)	g/d	0.1	0.03	1/2
+/- psi: 1, 3, 5, 10 (+/- mbar: 70, 200, 350, 700)	g/d	0.075	0.03	1/2
psi: -15 to [15 or 30] (bar: -1 to [1 or 2])	g/d	0.05	0.01	1/2
psi: -15 to [50, 100, 150, or 300] (bar: -1 to [3.5, 7, 10, or 20])	g/d	0.05	0.01	1/3
psi: 500, 1000, 1500, 2000, 3000 (bar: 35, 70, 100, 135, 200)	g/d	0.05	0.01	1/3
psi: 5 (mbar: 350)	a	0.1	-	2
psi: 30 (bar: 2)	a	0.075	-	2
psi: 100, 300 (bar: 7, 20)	a	0.075	-	3
psi: 5000, 10000 (bar: 350, 700)	sg	0.05	-	3

- a. Standard accuracy is for 32 ... 122°F (0 ... 50°C);
Stability: 1 year
- b. Premier precision is for 65 ... 82°F (18 ... 28°C);
Stability: ≤ 10 psi (700 mbar) = 0.02% of reading/Year
Stability: > 10 psi (700 mbar) = 0.01% of reading/Year
Premier precision for 41 ... 113°F (5 ... 45°C):
≤ 10 psi (700 mbar): 0.075% FS
> 10 psi (700 mbar): 0.014% FS

Notes

Reference port media: Non-corrosive, dry gas.

+ Port media: Non-corrosive, non-conductive liquid or Non-corrosive, dry gas.

+ Port media: Media applicable to stainless steel.

Table 9: DPI 800 Series Pressure Connections

Ranges	Pressure Connections (One IDOS Range)	Pressure Connections (Two IDOS Ranges)
g/d: ≤ 30 psi g (2 bar g) Standard or Premier	1/8 NPT female (+ port) + 1/8 NPT female reference port OR G1/8 female (+ port) + G1/8 female reference port	Two 1/8 NPT female (+ port) + 10-32 UNF reference port OR Two G1/8 female (+ port) + M5 reference port
g/d: > 30 psi g (2 bar g) Standard only	1/8 NPT female (+ port) OR G1/8 female (+ port)	Two 1/8 NPT female (+ port) OR Two G1/8 female (+ port)
g/d: > 30 psi g (2 bar g) Premier only	1/8 NPT female (+ port) + 10-32 UNF reference port OR G1/8 female (+ port) + M5 reference port	Two 1/8 NPT female (+ port) + 10-32 UNF reference port OR Two G1/8 female (+ port) + M5 reference port
sg or a: all ranges	G1/8 female (+ port) OR 1/8 NPT female (+ port)	Two 1/8 NPT female (+ port) OR Two G1/8 female (+ port)

Table 10: Maximum Pressure (+ port)

Ranges: g/d, sg, a	MWP	Maximum Transient / Intermittent Pressure
≤ 5 psi (350 mbar)	2 x FS	4 x FS
> 5 psi (350 mbar)	1.2 x FS	2 x FS

Table 11: Maximum Pressure (Reference Port)

Ranges: g/d Only	MWP
≤ 5 psi (350 mbar)	2 x FS
10 to 15 psi (700 mbar to 1 bar)	1.2 x FS
≥ 30 psi (2 bar)	30 psi (2 bar)

Table 12: Pressure Units and Conversion Factors

Pressure Units	Factor (hPa)	Pressure Units	Factor (hPa)
mbar	1.0	cmH ₂ O @ 20°C	0.978903642
bar	1000.0	mH ₂ O @ 20°C	97.8903642
Pa (N/m ²)	0.01	kg/m ²	0.0980665
hPa	1.0	kg/cm ²	980.665
kPa	10.0	torr	1.333223684
MPa	10000.0	atm	1013.25
mmHg @ 0°C	1.333223874	psi	68.94757293
cmHg @ 0°C	13.33223874	lb/ft ²	0.4788025898
mHg @ 0°C	1333.223874	inH ₂ O @ 4°C	2.4908891
inHg @ 0°C	33.86388640341	inH ₂ O @ 20°C	2.486413
mmH ₂ O @ 4°C	0.0980665	inH ₂ O @ 60°F	2.487641558
cmH ₂ O @ 4°C	0.980665	ftH ₂ O @ 4°C	29.8906692
mH ₂ O @ 4°C	98.0665	ftH ₂ O @ 20°C	29.836983
mmH ₂ O @ 20°C	0.097890364	ftH ₂ O @ 60°F	29.8516987

To convert from pressure Value 1 (in pressure Units 1) to pressure Value 2 (in pressure Units 2), calculate as follows:

$$Value2 = \frac{Value1 \times Factor1}{Factor2}$$

5.3 Electrical Connectors (Figure A2)

Item	Specification
Range (Measure)	0 to ± 55 mA
Accuracy	0.02% of reading + 3 counts
Temperature coefficient	
14 ... 50°F, 86 ... 122°F (-10 ... 10°C, 30 ... 50°C)	0.0011% FS / °F (0.002% FS / °C)
Switch detection	Open and closed. 2 mA current.
Loop power output	24 V $\pm$ 10%
HART® resistor	250 Ω (menu selection)
Connectors (Figure A2)	Three 0.16" (4 mm) sockets

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