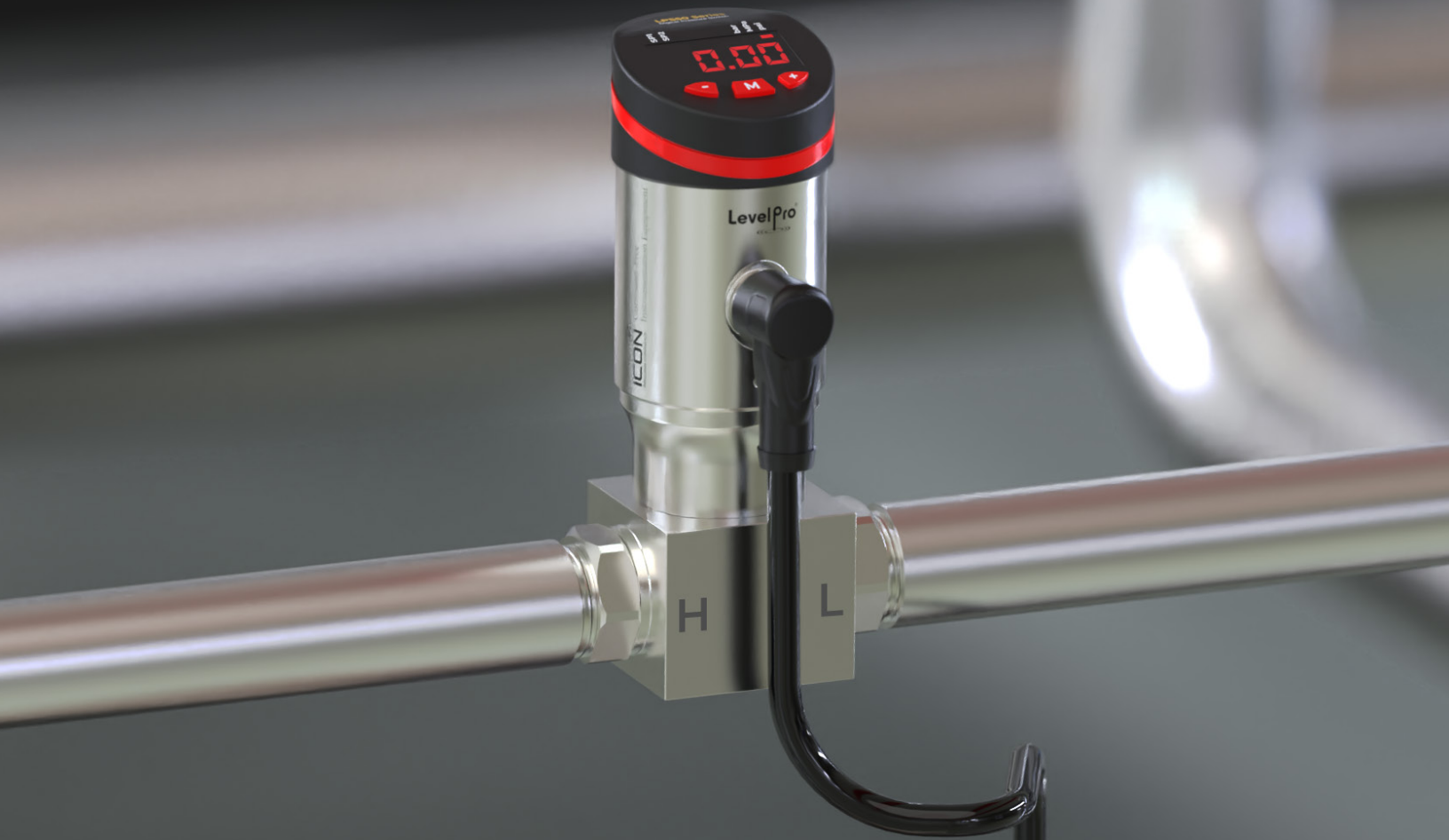


Quick Start Manual



Read the user's manual carefully before starting to use the unit.
Producer reserves the right to implement changes without prior notice.

LevelPro® – DPS50i Series

Digital Differential Pressure Sensor

Safety Instructions

- ✓ Only qualified personnel should perform installation, electrical wiring, and maintenance.
- ✓ Always comply with workplace safety regulations and national standards.
- ✓ Do not modify the device or attempt unauthorized repairs.
- ✓ Never install or remove the pressure switch under pressure or while powered.
- ✓ Ensure compatibility with fluid type, pressure, and temperature before installation.



- ✓ It must be ensured that the values given for voltage, current, and power are not exceeded.
- ✓ When switched on, a load must be connected in series.
- ✓ The electrical details apply to ohmic loads. (Capacitive or inductive loads must be operated using a protective circuit.)

Introduction

The LevelPro® DPS50i Differential Pressure Sensor uses a diffused silicon diaphragm for precise differential pressure measurement. The rugged metal housing and bright LED display suit demanding environments. A three-button interface with a user-friendly menu simplifies operation. Dual connection options and a 330° rotatable display ensure flexible installation and optimal viewing from any angle.

IO-Link

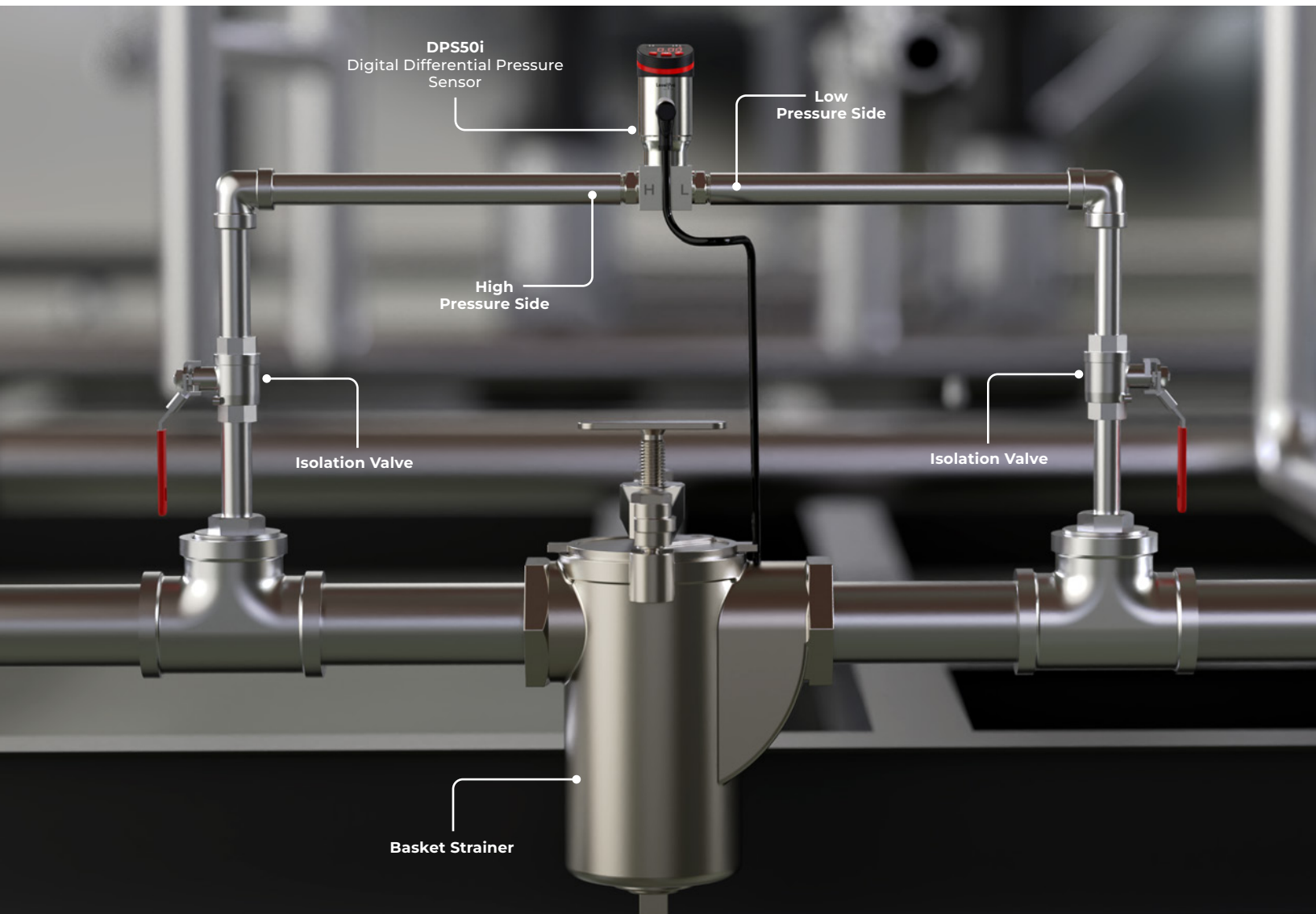


LevelPro® – DPS50i Series

Digital Differential Pressure Sensor

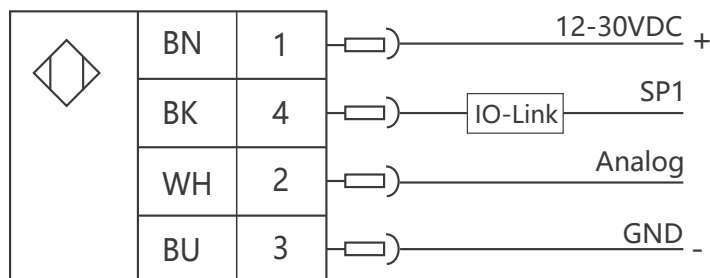
Specifications

Supply Voltage	12~30VDC	Linearity	≤±0.5% of Range
No-Load Current Consumption	Max. 40mA, 24VDC Power Supply	Communication Output	IO-Link RS-485 (Optional)
Switch Output Type	PNP / NPN NO / NC Programmable	Display	4-Digit 12mm high LED
Switching Load	<200mA 24VDC	Display Range	-1999 ~ 9999
Response Time	<0.01 ~2s (Factory Default)	Ambient Temperature	-4 ~ 176°F -20 ~ 80°C
Wiring Protection	Inverted Phase, Overload, Short Circuit Protection	Storage Temperature	-22 ~ 176°F -30 ~ 80°C
Accuracy	≤±0.5% of Range	Medium Temperature	-4 ~ 185°F -20 ~ 85°C
Switching Accuracy	≤±0.5% of Range	Stability (Annual Drift)	≤±0.3% of Range
Analog Output Accuracy	≤±0.5% of Range	Maximum Static Pressure	<10MPa <1450psi
Analog Output	4-20mA	Housing & Wetted Part	SS304 (Std.) SS316 (opt.)
Load RA	≤500Ω	Flame Retardant Grade	UL-94 V-0
		Protection Class	IP67

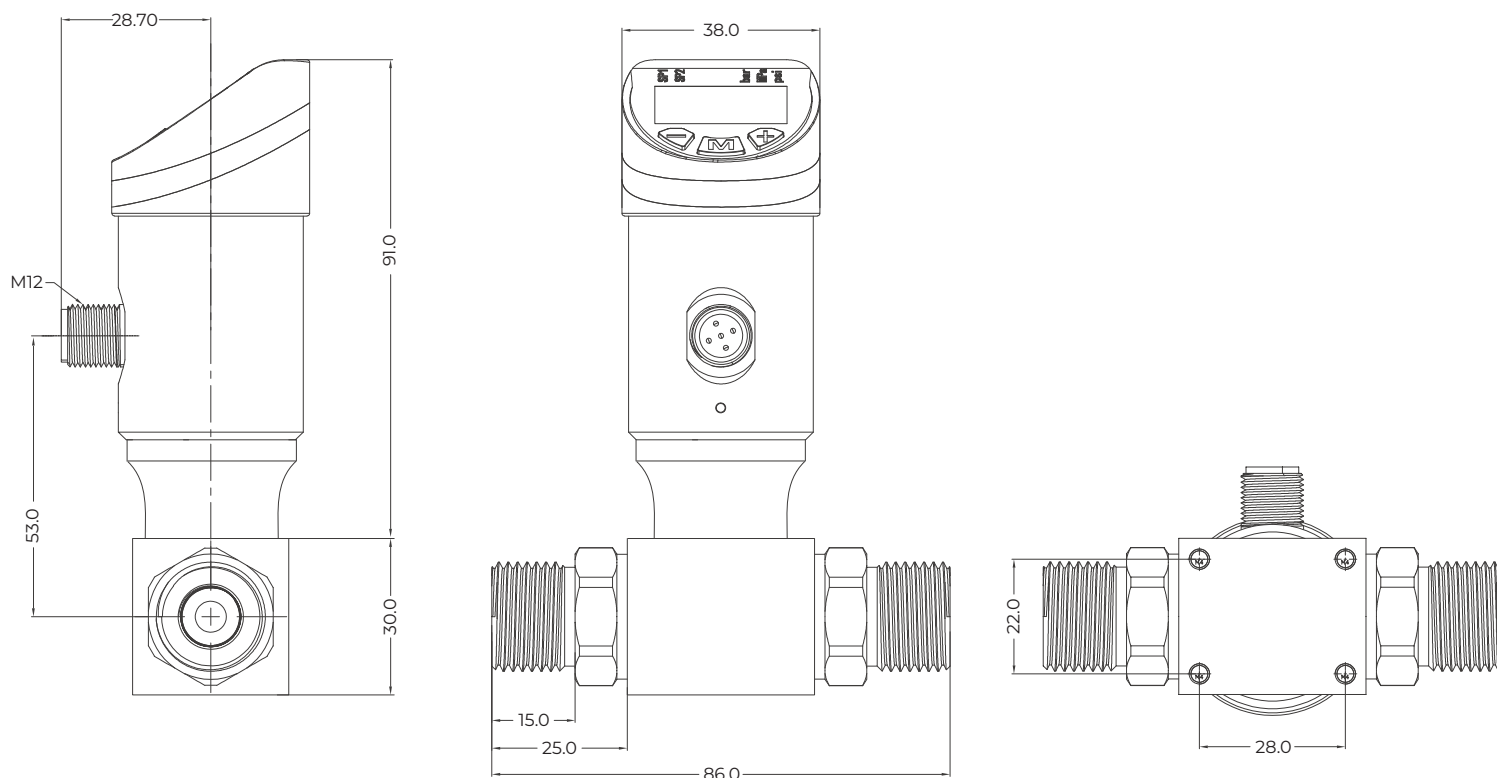


Wiring Diagram

Color	Pin	Description
Brown	1	+12~30VDC
Black	4	SP1 Switch PNP (Default) SP1 Switch NPN IO-Link
White	2	4-20mA
Blue	3	-VDC



Dimensions (mm)



Switching Function

If the pressure rises above or falls below the set switching limits (SP, rP), the output changes state. The following switch functions are available:

- ✔ Hysteresis function normally open: = [Hno] (→ Figure 1)
- ✔ Hysteresis function normally closed: = [Hnc] (→ Figure 1)

Set the switch point (SP) first, then set the reset point (rP).
If you adjust SP later, the hysteresis will automatically adjust with it.

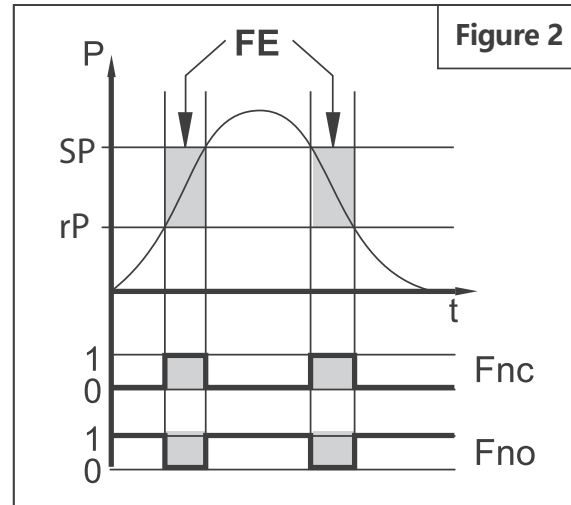
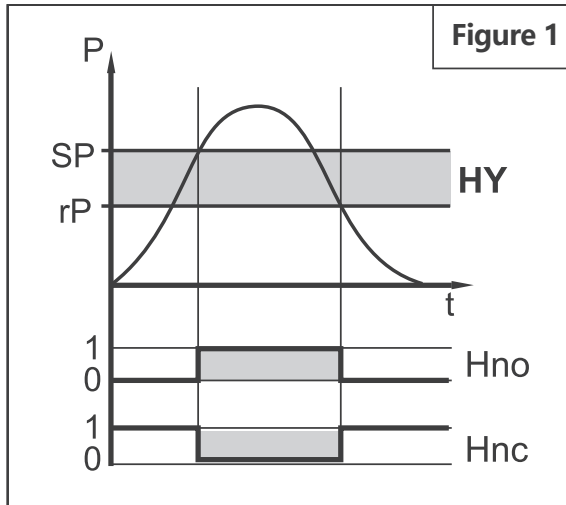
- ✔ Window function normally open: = [Fno] (→ Figure 2)
- ✔ Window function normally closed: = [Fnc] (→ Figure 2)

LevelPro® – DPS50i Series

Digital Differential Pressure Sensor

The width of the window can be set by the difference between SP and rP.

SP = Upper Limit Value | rP = Lower Limit Value



P = System pressure | HY = Lag | FE = Window

Installation



Caution

Avoid vibration or shock during transport. Even if the housing appears intact, internal damage may occur and lead to failure.



Danger

Only install sensors/switches in systems that stay within the rated maximum pressure (Pmax). Always install with power off — electrical, hydraulic, or pneumatic.



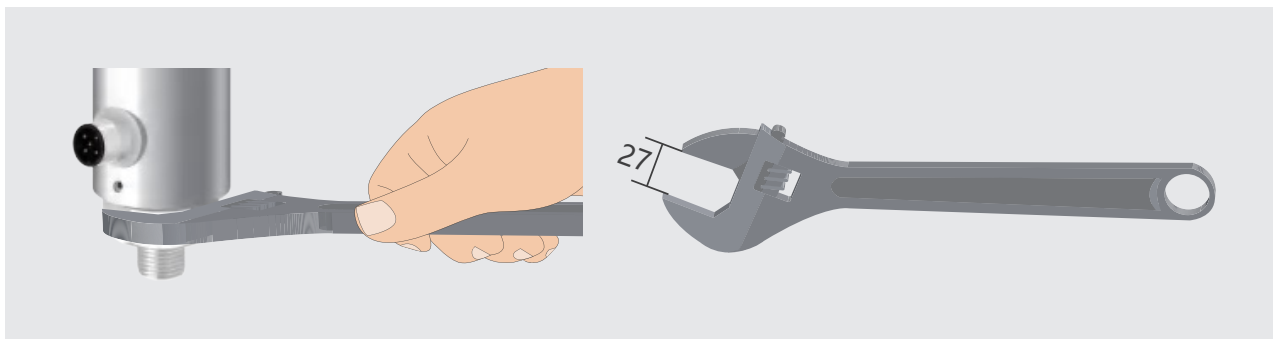
Important:

Ensure the system is fully depressurized before installing or removing the sensor.



Installation Steps:

- Connect the sensor to the selected process port.
- Tighten securely using a torque of 25–35 Nm.
- For high-vibration or shock environments, use a miniature hose to mechanically decouple the pressure connection.










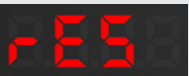



LevelPro® – DPS50i Series

Digital Differential Pressure Sensor

Programming


M Menu Selection | Save **-** or **+** Hold 2 Sec to start edit | Change Values

STEPS	DISPLAY	OPERATION
1 Home Screen  (Press M to enter the parameter)		Home Screen
2 Alarm Value  (Press M to enter the parameter)		Switch 1 Alarm Value Sets the pressure level where Switch 1 activates. (Factory Default: 20% of the full range)  (Hold + for 2 sec to edit) (Press M to save)
3 Reset Value  (Press M to enter the parameter)		Switch 1 Reset Value Sets the pressure level where Switch 1 turns back to its normal state after an alarm. (Factory Default: SP1 - 0.05)  (Hold + for 2 sec to edit) (Press M to save)
4 Lower Range Limit  (Press M to enter the parameter)		Lower Range Limit Sets the minimum pressure value the sensor uses for measurement. (Factory Default: Full-Scale Lower Limit)  (Hold + for 2 sec to edit) (Press M to save)
5 Upper Range Limit  (Press M to enter the parameter)		Upper Range Limit Sets the maximum pressure value the sensor uses for measurement. (Factory Default: Full-Scale Upper Limit)  (Hold + for 2 sec to edit) (Press M to save)
6 Expand Functionality 		Expand Functionality Access Level 2 Menu Opens the advanced settings menu (Level 2) (Press M to enter Level 2) (Press + to Exit)
Level 2 Menu		
7 Factory Data Reset  (Press M to enter the parameter)		Factory Data Reset Restores all settings back to the original factory defaults. (Hold + to confirm reset)
8 Output Mode  (Press M to enter the parameter)		Output Mode Selects how Switch 1 behaves when the pressure reaches its set point. Options: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Hno – Hysteresis, normally open <input checked="" type="checkbox"/> Hnc – Hysteresis, normally closed <input checked="" type="checkbox"/> Fno – Window, normally open <input checked="" type="checkbox"/> Fnc – Window, normally closed <input checked="" type="checkbox"/> ioLK – IO-Link (Factory Default: HNO)  (Hold + for 2 sec to edit) (Press M to save)

LevelPro® – DPS50i Series

Digital Differential Pressure Sensor






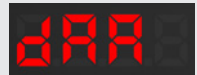










M Menu Selection | Save **-** or **+** Hold 2 Sec to start edit | Change Values

STEPS	DISPLAY	OPERATION
9 ON Delay  (Press M to enter the parameter)		Switch 1 ON Delay Time Sets how long the pressure must stay above SP1 before Switch 1 turns ON. (Factory Default: 0 Sec)  (Hold + for 2 sec to edit) (Press M to save)
10 OFF Delay  (Press M to enter the parameter)		Switch 1 OFF Delay Time Sets how long the pressure must stay below rP1 before Switch 1 turns OFF again. (Factory Default: 0 Sec)  (Hold + for 2 sec to edit) (Press M to save)
11 Display Unit  (Press M to enter the parameter)		Display Unit Selects the pressure unit Options: Bar KPa psi (Factory Default: psi)  (Hold + for 2 sec to edit) (Press M to save)
12 Decimal Point  (Press M to enter the parameter)		Decimal Points Sets how many decimal places are shown on the display.  (Hold + for 2 sec to edit) (Press M to save)
13 PNP NPN Selection  (Press M to enter the parameter)		PNP NPN Selection Sets the output type for the switch signals. (Factory Default: PNP)  (Hold + for 2 sec to edit) (Press M to save)
14 Minimum Pressure Value  (Press M to enter the parameter)		Minimum Pressure Value (Low Peak) Shows the lowest pressure value the sensor has recorded since the last reset.  (Hold + for 2 sec to edit) (Press M to save)
15 Maximum Pressure Value  (Press M to enter the parameter)		Maximum Pressure Value (High Peak) Shows the highest pressure value the sensor has recorded since the last reset.  (Hold + for 2 sec to edit) (Press M to save)
16 Damping  (Press M to enter the parameter)		Switch Point Damping/Process Data Flow Sets how much the display and output are smoothed to reduce rapid fluctuations. (Factory Default: 0.06)  (Hold + for 2 sec to edit) (Press M to save)
17 Display Refresh Rate  (Press M to enter the parameter)		Display Refresh Rate Sets how quickly the display refreshes the measured value d1 – Every 10ms d2 – Every 100ms d3 – Every 600ms (Factory Default: d1)  (Hold + for 2 sec to edit) (Press M to save)

LevelPro® – DPS50i Series

Digital Differential Pressure Sensor

M Menu Selection | Enter  or  Hold 2 Sec to start edit | Change Values

STEPS	DISPLAY	OPERATION
18 Zero Excision  (Press M to enter the parameter)		Zero Excision Sets the zero excision value as a percentage of full scale. (Factory Default: 0.5 % of full scale)  (Hold  for 2 sec to edit) (Press M to save)
19 Display Refresh Time (Analog)  (Press M to enter the parameter)		Display Refresh Time (Analog) Sets how quickly the analog display value is refreshed. (Factory Default: 0.10 Sec)  (Hold  for 2 sec to edit) (Press M to save)
20 Analog Output  (Press M to enter the parameter)		Analog Switch Output Selects the analog output type and scaling. (Factory Default: 4-20mA)  (Hold  for 2 sec to edit) (Press M to save)
21 Expand Functionality 		Expand Functionality Access Level 2 Menu (Press  to Exit)
22 Home Screen		Home Screen

Model Selection

DPS50i – Digital Differential Pressure Sensor

Part Number	Material	Output	Switch Output
DPS50i-PB-A-X-T	PBT 316SS	4-20mA IO-Link 1 Switch	NPN PNP — NC/NO Programmable
DPS50i-PB-R-X-T	PBT 316SS	RS485	-

X = Pressure Range

- N01** ▶ 0.0 - 1.45 psi (0 - 0.1 bar)
- C01** ▶ 0.0 - 2.90 psi (0 - 0.2 bar)
- E01** ▶ 0.0 - 7.25 psi (0 - 0.5 bar)
- 001** ▶ 0.0 - 14.5 psi (0 - 1 bar)
- 005** ▶ 0.0 - 72.5 psi (0 - 5 Bar)

- 003** ▶ 0.0 - 87.0 psi (0 - 6 bar)
- 010** ▶ 0.0 - 145 psi (0 - 10 bar)
- 016** ▶ 0.0 - 232 psi (0 - 16 bar)
- 025** ▶ 0.0 - 362.6 psi (0 - 25 bar)

T = Process Thread Connection

- 04M** ▶ ¼" MNPT
- 04F** ▶ ¼" FNPT
- 05M** ▶ ½" MNPT
- 05F** ▶ ½" FNPT

Warranty, Returns and Limitations

Warranty

Icon Process Controls Ltd warrants to the original purchaser of its products that such products will be free from defects in material and workmanship under normal use and service in accordance with instructions furnished by Icon Process Controls Ltd for a period of one year from the date of sale of such products. Icon Process Controls Ltd obligation under this warranty is solely and exclusively limited to the repair or replacement, at Icon Process Controls Ltd option, of the products or components, which Icon Process Controls Ltd examination determines to its satisfaction to be defective in material or workmanship within the warranty period. Icon Process Controls Ltd must be notified pursuant to the instructions below of any claim under this warranty within thirty (30) days of any claimed lack of conformity of the product. Any product repaired under this warranty will be warranted only for the remainder of the original warranty period. Any product provided as a replacement under this warranty will be warranted for the one year from the date of replacement.

Returns

Products cannot be returned to Icon Process Controls Ltd without prior authorization. To return a product that is thought to be defective, go to www.iconprocon.com, and submit a customer return (MRA) request form and follow the instructions therein. All warranty and non-warranty product returns to Icon Process Controls Ltd must be shipped prepaid and insured. Icon Process Controls Ltd will not be responsible for any products lost or damaged in shipment.

Limitations

This warranty does not apply to products which:

1. are beyond the warranty period or are products for which the original purchaser does not follow the warranty procedures outlined above;
2. have been subjected to electrical, mechanical or chemical damage due to improper, accidental or negligent use;
3. have been modified or altered;
4. anyone other than service personnel authorized by Icon Process Controls Ltd have attempted to repair;
5. have been involved in accidents or natural disasters; or
6. are damaged during return shipment to Icon Process Controls Ltd

Icon Process Controls Ltd reserves the right to unilaterally waive this warranty and dispose of any product returned to Icon Process Controls Ltd where:

1. there is evidence of a potentially hazardous material present with the product;
2. or the product has remained unclaimed at Icon Process Controls Ltd for more than 30 days after Icon Process Controls Ltd has dutifully requested disposition.

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If any portion of this warranty is held to be invalid or unenforceable for any reason, such finding will not invalidate any other provision of this warranty.

For additional product documentation and technical support visit:

www.iconprocon.com | e-mail: sales@iconprocon.com or support@iconprocon.com | Ph: 905.469.9283