OPERATIONS MANUAL

DPL5000

Portable Low Range Dew Point Analyzer



Please read, understand, and follow these instructions before operating this equipment. Super Systems, Inc. is not responsible for damages incurred due to a failure to comply with these instructions. If at any time there are questions regarding the proper use of this analyzer, please contact us at 513-772-0060 for assistance.

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Contents

Product Description: 3
Calibration 4
Sensor Technology: 4
Special Features: 4
Getting Started: 4
DPL5000 Components: 6
External Documentation 6
Onboard Documentation 7
Revision History 9

Product Description:

This device is used to measure very low dew points with high accuracy and excellent long-term stability. It can be used across a wide range of temperatures and pressures, and it measures dew point in a variety of non-corrosive gases including Nitrogen and Argon.

General Specifications:

Total Measurement Range:	-112°F to -4°F (-80°C to -20°C)
Optimal Measurement Range:	-112°F to +3.6°F (-80°C to -40°C)
Accuracy (Within Optimal Range):	+/- 3.6°F (+/- 2°C)
Accuracy (Outside Optimal Range):	+/- 5.4°F (+/- 3°C)
Operating Temperature Range:	-40°F to +158°F (-40°C to +70°C)
Operating Pressure Range:	0-725 psi / 0-50 bar
Operating Humidity:	Non-Condensing
Sensor Housing Classification:	IP65 – NEMA4 (AISI316L)
Display Housing Classification:	IP40
Display Weight:	385 grams
Power:	Rechargeable lithium-ion battery or 45 W USB-C AC adapter
Battery Recharging Time:	Approximately 2 hours
Battery Charger Input Requirements:	100-240 VAC/ 50-60Hz / 1.2A
Run Time on Battery Power:	10 Hours – Continuous use / Up to 30 days - Data logging only
Output Units:	Dew Point /Frost Point, ppm & ppb (by volume), ppm (by weight)
Languages Supported:	Ten Possible Languages (See "Language" section)
Data Logging Capacity:	Up to 5.5 million real-time data values
Data Logging Interval Options:	1s, 5s, 15s, 30s, 1min, 5min, 15min, 30min, 1h, 3h, 12h
Logging Duration Options:	1min, 5min, 15min, 30min, 1h, 3h, 12h, 24h, 7d, 31d, Memory Full

Calibration

It is suggested that this device should be calibrated on a routine basis, such as once per year or as prescribed by the user's quality system requirements.

However, the DPL5000 *handheld display/data logger unit* does not require calibration since it only displays measurement data provided by the sensor/probe. Therefore, the handheld display/data logger unit does not need to be sent to SSi with the sensor/probe for calibration.

Sensor Technology:

The dew point measurement is based on a capacitive thin film polymer. Water molecules in the surrounding air or gas diffuse into the polymer layer through the permeable upper electrode, which changes the capacitance of the sensor. Changes in capacitance can be directly correlated to the quantity of water molecules in the gas.

Special Features:

The dew point sensor in the DPL5000 performs two functions that provide increased accuracy and response time.

- Automatic Calibration – The sensor warms itself and performs an offset (zero point) correction. This is performed automatically at start up and after every 45 minutes of continuous use.
- Sensor Purge – This function evaporates all excess moisture molecules from the sensor to significantly increase the response time when the sensor goes from a wet condition to a dry condition. This is performed automatically at startup and after every 24 hours of continuous use. A Sensor Purge will also be initiated automatically when the sensor detects a large wet-to-dry environmental change.

Getting Started:

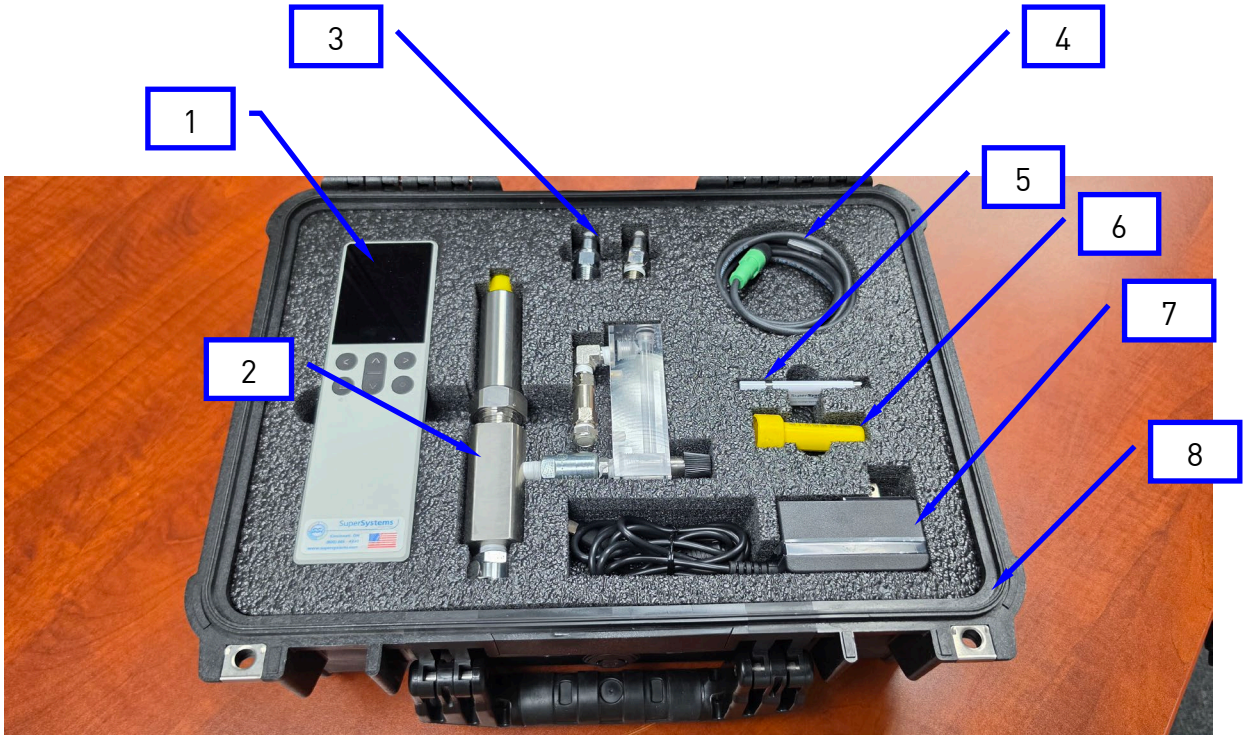
To begin taking measurements with the DPL5000:

- Connect a ¼" Male NPT quick-disconnect fitting (supplied) to the gas source. This fitting will not allow the gas to flow until the mating quick-disconnect fitting has been connected.
- Attach the sensor sampling assembly to the gas source using the quick disconnect fitting at the base.
- Start the flow of gas. A 0 – 20 scfh flow meter has been supplied in order to measure the flow. Loosening and tightening the knob on the front of the flow meter will adjust the flow. The flow can be anything between 2 and 20 scfh.

Consistently setting the flow to the same value for each verification will provide the best indication when there is a change in the gas dew point. With that said, the flow to the sensor should have no effect on the measurement accuracy.

- Connect the small end of the Sensor Communication Cable to the port on the back of the sensor that is labeled "II". This will be the port without the rubber boot.
- Connect the other end of the cable to the handheld display using either one of the ports on the bottom.
- Turn on the power on the handheld display unit.
- If desired, change the environmental settings (selecting "NO" will use the default values).
- The instrument will need to go through some diagnostic tests including an automatic calibration and one or more sensor purges. During this time, the readings on the display will either indicate all dashes, or a dew point value that does not move. This condition will exist for between 5 and 15 minutes, depending on the dew point of the measured gas and the dew point that the sensor was exposed to prior to installation.

DPL5000 Components:



1. Handheld Display / Data Logger (PN 31443)
2. Sensor Assembly with Flow Meter
3. ¼" Male NPT Quick Disconnect Fittings with Shutoff (2) (PN 34664)
4. Sensor Communication Cable (PN 31444)
5. Software USB (PN 31673)
6. Sensor Cap
7. Handheld Power Cable
8. Carrying Case

External Documentation

User documentation for the DPL5000 handheld device can be found here.

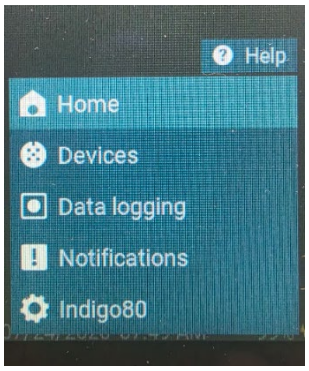
Onboard Documentation

The DPL5000 also includes onboard documentation of use and functions. To access this documentation, power on the handheld device by pressing the Menu button.



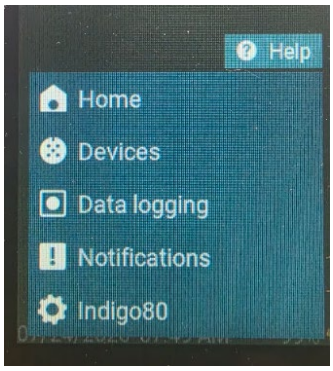
Once the DPL5000 is powered on, press the Menu button again to bring up the Main Menu.





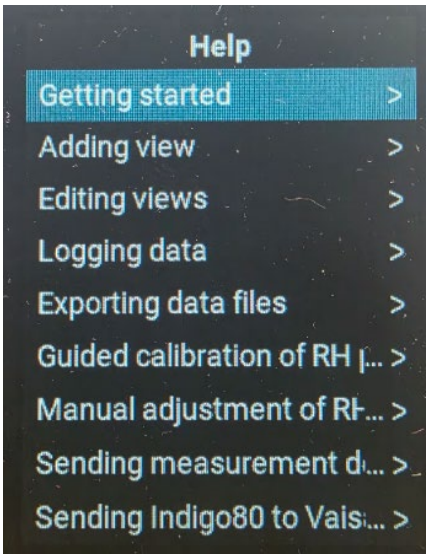
Press the Up button to highlight the Help tab.





Then press the Select button to open the Help Menu.





Use the Arrow buttons and Select button to navigate the onboard documentation. To return to the main display screen at any time, press the Menu button and select "Home."

Revision History

Rev.	Description	Date	MCO #
-	First release	8/10/2026	2382
A	Increased sample flow range allowed; updated Getting Started section	10/23/2026	2387