



PendoTECH PressureChecker™

The PressureChecker™ is a calibrated device that can be used to verify proper functioning and accuracy of PendoTECH Single Use Pressure Sensors™ and monitors non-invasively. It can be used to test the sensors in-situ without the requirement to access the fluid path. In its small, hand-held enclosure are all the devices necessary to perform the required function. PendoTECH Pressure Sensors are 100% tested at several points in the manufacturing process, however, this device gives the ability to verify the performance of the sensor by the end-user. It also has an internal pressure sensor simulator and can be used to verify proper functioning of monitors such as the PressureMAT®, PendoTECH Process Control Systems, or 3rd party monitors.



Features

The PressureChecker incorporates a specially designed pressure cylinder and precision solid-state transducer for generating and measuring static pressure from -6 to +10psi. The adjustment knob is used to regulate the pressure, and the pressure value is shown on the liquid crystal display. A built-in pneumatic port provides the external connection for fittings to connect to the sensor test port.

- Verify proper functioning of sensor and monitors
- Verify proper function of sensor in-situ by accessing the atmospheric reference side of sensor
- NIST Traceable
- Can be returned for Annual Calibration
- Battery operated for portability



Pneumatic port for testing sensors



Precision pneumatic cylinder for generating pressure & vacuum

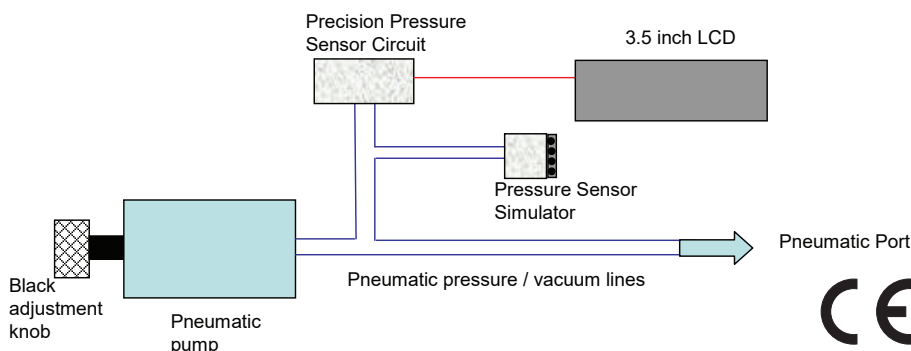


Sensor simulator port for testing monitors only

How it Works

Positive and vacuum pressures can be generated within PressureChecker and applied to a system under test. The pressure delivered is indicated on PressureChecker's liquid crystal display for quick comparison to the monitor. By applying a vacuum to the sensor test port, the linearity, and accuracy of the pressure sensor can be tested. Since the pressure sensor is a true differential device (measures gauge pressure relative to atmosphere), applying vacuum is equivalent to applying a pressure to the fluid path so the system can be checked to verify calibration very easily without accessing the fluid path or breaking sterility in the case of a bioreactor. Even though it may not be possible to test the entire range of the pressure sensor, the proper function and sensor output accuracy of 0.2584mV/psi/V can be verified to be within accuracy specification because this applies across the range of sensor pressures.

The pressure sensor simulator, which is housed inside PressureChecker's monitor connector, is a pressure sensor of the same type as that used in the PendoTECH Single User Pressure Sensor. When using the exclusive simulator feature of the PressureChecker, the pressure sensor is replaced with a device having the same operating characteristics and not with a device which "simulates" only some of its operating characteristics. A pressure (or vacuum) generated internally by PressureChecker's pneumatic pump, is applied to both the precision pressure transducer (which is connected to the 3.5 inch display) and to the pressure sensor simulator. Referencing the diagram, the signal from the precision pressure transducer is sent to the panel meter circuit, where it is converted from an analog voltage to a digital number and displayed in psi on the LCD readout. The signal from the sensor simulator is sent to the monitor to which it is connected, and from which it receives its excitation power. The monitor and LCD are then compared.

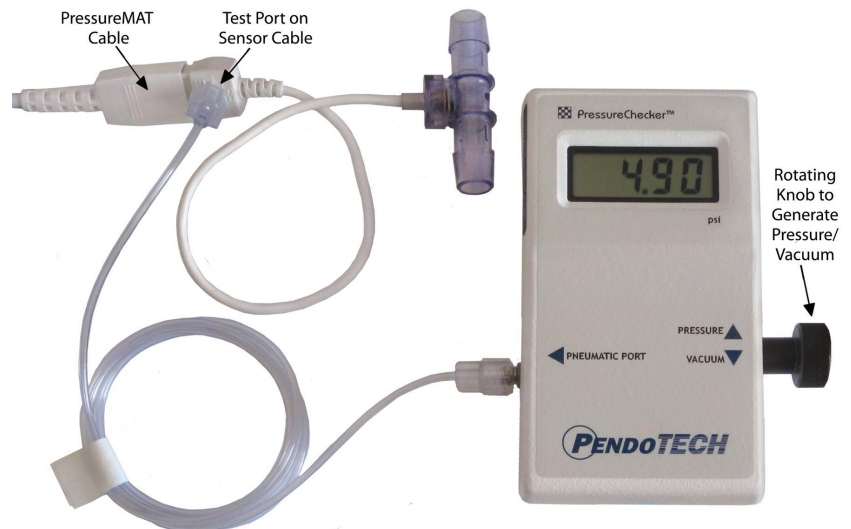


Example of Testing a Monitor

Monitor cable connected here



Example of Noninvasive Testing of a Sensor



The actual values of the Pressure Monitor and PressureChecker are compared to verify the monitor is functioning properly.

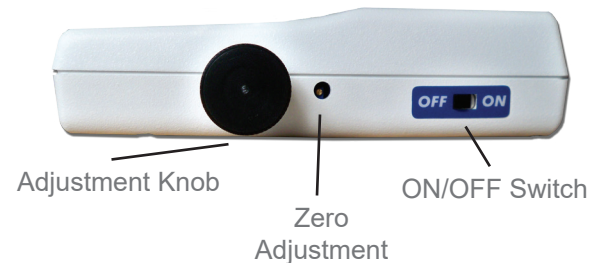
Test range: -7 to 10.5psi
Certified range: -6 to +6psi

Specifications

Certified Operating Pressure Range	-6 to +10psi, 0.01psi resolution -400 to 700mbar, 1mbar resolution
Temperature	Operating 15°C to 40°C Storage -20°C to 65°C
Operating Humidity	80% RH Max., Non-condensing
Accuracy	± 1% (± 2% above 7.50psi) or ± .02psi which ever is greater ± 1% (± 2% above 600mbar) or ± 1mbar which ever is greater
Repeatability / Hysteresis	+/- 0.15% of full scale output
Over Pressure Rating	14.5psi; 1000mbar
Pressure Sensor Simulator	Sensitivity: 0.2584mV/psi/volt +/- 1% Excitation: 2 to 10VDC Input Impedance: 350Ohms +/- 10% Output Impedance: <4000ohms Asymmetry: < 1% Unbalance: 1.45psi
Power Requirements	One 9 Volt battery
Battery Life	150 hours constant use, 15 months intermittent use, low battery indicator (BAT) appears when voltage drops below 7.2volts
Display	3.5inch LCD with 0.5inch high digits and negative polarity indicator (for vacuum indication)
Dimensions	5.75 x 1.5 x 3.1inches (L x D x W) 146 x 38 x 79mm
Weight	9.7 Ounces (275grams)

The absolute values of the pressure monitor and PressureChecker are compared to verify the sensor function.

Test Range: -7 to +7psi
Certified Range: -6 to +6psi



Ordering Information

PDKT-650-950	PressureChecker pressure sensor and monitor verification tool Includes PDKT-650-905
PDKT-650-950B	PressureChecker pressure sensor and monitor verification tool, millibar Includes PDKT-650-905
Replacement parts:	
PDKT-650-905	4foot connecting tube with luer slip

For warranty information see our website at <http://www.pendotech.com/warranty>
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