Spend less time and money on cleaning and validating

- Cost-effective single-use monitoring and data collection for bioprocess applications
- Seamlessly integrate into your process control and data acquisition systems
- Single use but may be repeatedly cleaned and reused
- Sensors meet USP Class VI requirements
- Manufactured in a cleanroom in an FDA registered, ISO 13485 facility
- Wide range of sensor sizes and types available
- Perfect for filtration and chromatography processes, monitoring of glass and disposable bioreactors, filling operations, and more

Each pressure sensor comes individually packaged and labeled in a Tyvek® pouch.

1-800-637-3739
1-847-381-7050
Masterflex.com
PendoTECH® Pressure Monitoring and Transmitting System

Monitor process pressure accurately

1. Monitors

1A. PressureMAT™ DPG Handheld Monitor

– Battery operated for field use; lasts up to 14 hours

Use this stand-alone portable monitor to take local readings from an in-line pressure sensor. Monitor features Min/Max readings and simple one-touch button for sensor tare at 0 psi. No calibration is required when used with the PendoTECH single-use pressure sensors. Includes one 12-ft (3.7-m) cable to connect to the sensor.

Specifications

– Max pressure: 75 psi (5.2 bar)
– Display: 1-line LCD, 0.1 resolution
– Accuracy: ±2% from 0 to 6 psi, ±3% from 6 to 30 psi
– Power: one 9 V battery (included)

1B. PressureMAT™ Monitors

– Data output capability to a PC or control system
– Relay switch enables interfacing with pumps and valves
– User-configurable Min/Max alarm set points with alarm output signal
– Solid-state electronics require no calibration or maintenance

The PressureMAT combines a pressure monitor, alarm, and transmitter in one simple control box—designed for use with the PendoTECH single-use pressure sensors. These lightweight units can easily be moved around a lab or pilot plant to the location where pressure measurement is required. Use optional stand 19406-95 for benchtop use.

Each channel takes pressure readings once per second. Process pressure is displayed on the easy-to-read LCD. System is calibrated to zero through a single button. Transmit output via a 4 to 20 mA signal or provide RS-232 data transfer for use in common PC applications, such as the PressureMAT Data Acquisition Software or Excel®, through WinWedge or Hyper Terminal software. Monitors includes one 12-ft (3.7-m) cable per input to connect to the sensor.

Specifications

– Max pressure: 75 psi (5.2 bar)
– Display: 8-line LCD, backlit
– Accuracy: ±0.1% full-scale
– Power: 12 to 24 VDC from 110/220 VAC power supply (included)

Number of sensor inputs | Number of outputs | Units of measure | Catalog number
--- | --- | --- | ---
1 pressure | — | psi | MK-19406-60

Connect up to 4 pressure sensors

1. Accessories

MK-19406-82 RS-232 cable connects PressureMAT output to a computer; 12 ft (3.6 m)
MK-19406-87 Interface cable connects PressureMat output to a Masterflex® L/S® pump; 6 ft (1.8 m) cable
MK-19406-50 Test cable assembly for PressureMAT accuracy check
MK-19406-95 Benchtop stand

1-800-637-3739 | 1-847-381-7050
Masterflex.com
2. Single-Use Pressure Sensors

- Economical alternative to stainless steel sensors currently in the market
- Sensors priced for single-use systems but may be reused

Sensors measure static and dynamic process pressure and are perfect components for disposable systems requiring sterilization but also minimal downtime. Sensors feature an integral flow sensor with no dead legs and no fluid path obstructions. All pressure sensors are manufactured in a FDA-registered, ISO 13485-certified facility; in an ISO Class 8 cleanroom. Sensors are made from USP Class VI-compliant polycarbonate or caustic-resistant polysulfone. Both materials are gamma stable. Sensors are 100% tested for accuracy and leaks during the manufacturing process. Maximum pressure of 75 psi (5.2 bar).

**Process-Scale Sensors** connect directly to the tubing line and are available up to 1" hose barb or sanitary flange.

**Small-Scale Sensors** are available with luer connections and may connect directly to the fluid line with luer adapters or indirectly by using a ¼" or ½" barbed adapter tee.

### Accessories

**MK-19406-34 Adapter tee**, ¼" hose barb x ¼" hose barb x male luer, PC
**MK-19406-35 Adapter tee**, ½" hose barb x ½" hose barb x male luer, PC
**MK-19406-36 Adapter tee**, ¾" hose barb x ¾" hose barb x male luer, PC
**MK-19406-49 Three-way stopcock**, with male/female luer inlet/outlet, F branch, PSF

**MK-19406-80 Sensor cable** connects pressure sensor to a third party device that accepts the four identified leads; 12 ft (3.6 m)

**MK-19406-85 Sensor cable** connects pressure sensor to a SciLog® brand pump, with RJ12 jack; 6 ft (1.8 m)

**MK-19406-86 Sensor cable** connects pressure sensor to a Midgee brand monitor, with RJ12 jack; 6 ft (1.8 m)

### Material Connection Catalog number

<table>
<thead>
<tr>
<th>Material</th>
<th>Connection</th>
<th>Catalog number</th>
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<tr>
<td>Polycarbonate, nonsterile</td>
<td>¼&quot; hose barb</td>
<td>MK-19406-21</td>
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<tr>
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<td>½&quot; hose barb</td>
<td>MK-19406-23</td>
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<td>1&quot; hose barb</td>
<td>MK-19406-31</td>
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<td></td>
<td>½&quot; sanitary flange to ¾&quot; hose barb</td>
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</table>

| **Small-scale sensors** |                      |                |
| Poly carbonate, sterile | Female luer           | MK-19406-32    |
| Poly carbonate, nonsterile | Female luer         | MK-19406-20    |

Note: The single-use sensors will work with third-party pressure monitors. Please contact us for more information about adapting the sensors to existing monitors.
PendoTECH® Single-Use Temperature Sensors

Eliminates cross-contamination and extensive cleaning protocols

- High sensitivity to temperature change
- Better than ±0.2°C accuracy in specified range of 0 to 70°C
- Can be sterilized by gamma irradiation for reuse
- Certificate of quality included

Choose sensors with either a hose barb or luer fitting to easily connect to process tubing. If you need to measure temperature in a water bath or vessel, we offer a temperature sensor enclosed in the tip of a 3-ft long dip probe. The temperature sensing element is a thermistor embedded in a stainless steel tip. No calibration is required because the temperature versus resistance for the thermistor element is well-defined within the specified accuracy range.

The hose barb fitting sensor imparts no obstruction on the fluid path that can cause a pressure drop and there is no dead-leg at the point where the temperature is measured. The luer fitting sensor is ideal for lab scale development applications and can connect to a variety of fittings to securely adapt to tubing or other devices.

Use the cable with a ¼" headphone plug (19406-15) to connect the sensor directly to a suitable monitor such as the Digi-Sense® handheld thermometer (91428-05) or a temperature sensor transmitter (19406-45). The temperature sensor transmitter with a linear 4 to 20 mA output signal allows a temperature reading to be displayed in another location such as process controller. To transmit temperature readings to a data logger, choose from three benchtop transmitter options (19406-47, -57 and -58).

The sensors all have a three-year shelf life and all product contact materials pass the USP Class VI testing with the exception of the polycarbonate connector for luer sensor and the temperature sensor dip probe.

<table>
<thead>
<tr>
<th>Material</th>
<th>Connector type</th>
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<th>Sensor material</th>
<th>Catalog number</th>
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<tr>
<td>Polysulfone</td>
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<tr>
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<td>Luer fitting</td>
<td>Yes</td>
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<td>MK-19406-12</td>
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<td></td>
<td>Dip probe</td>
<td>Yes</td>
<td>—</td>
<td>MK-19406-44</td>
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</table>

Note: The single-use sensors will work with third-party pressure monitors. Please contact us for more information about adapting the sensors to existing monitors.

Accessories

- MK-19406-15 Reusable temperature sensor cable with ¼" phone jack for hose barb sensors, 10 ft (3 m)
- MK-91428-05 Digi-Sense® handheld single-input thermistor thermometer
- MK-19406-45 Temperature sensor transmitter with 4–20 mA output
- MK-19406-46 DIN rail mounting kit for transmitter 19406-45
- MK-19406-47 Single-channel temperature sensor benchtop transmitter with 4–20 mA output in ABS plastic box with 24 VDC wall supply
- MK-19406-57 Dual-channel temperature sensor benchtop transmitter with 4–20 mA output in ABS plastic box with 24 VDC wall supply
- MK-19406-58 Four-channel temperature sensor benchtop transmitter with 4–20 mA output in ABS plastic box with 24 VDC wall supply

Where can I use PendoTECH products?

A better question is where can’t you use PendoTECH pressure monitors! The single-use design for sensors make them an easy addition both upstream and downstream:

- Line pressure before and after a chromatography column
- Back pressure monitoring in filtration feed lines
- Inlet pressure for a circulation pump during filtration
- Line pressure monitoring to a filtrate vessel
- Vent line gas pressure from a bioreactor
- Centrifugation output
- Perfusion

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