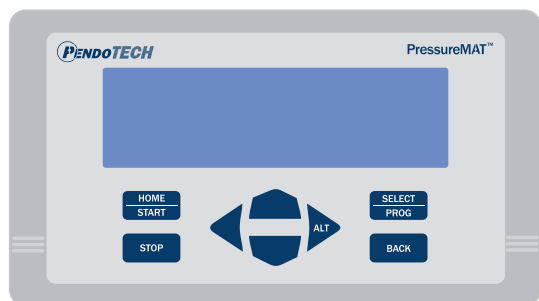




PressureMAT® Sensor Monitor



- Designed for PendoTECH Single Use Pressure Sensors™
- Perfect for use with filtration and chromatography processes, as well as bioreactor pressure monitoring
- Data output capability to a PC or control system
- User configurable min/max set-points with alarm output signal
- Panel mount option with IP66/NEMA4X Front Panel
- High Resolution (HR) model available for low pressure applications that achieves 10x the accuracy of the standard unit
- IQ/OQ Protocol available
- Range of regulatory approvals

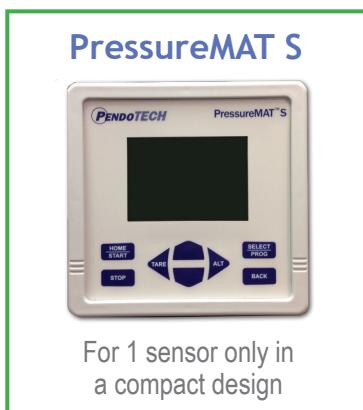
The PressureMAT (PMAT) is a monitor, alarm, and transmitter unit designed for use with the PendoTECH Single Use Pressure Sensors. This lightweight, portable unit can easily be moved around a lab or pilot plant to the location where pressure measurement is required. The monitors use state of the art, solid state electronics, which require no calibration or maintenance. The output options simplify integration to PCs or higher level control systems and a relay switch enables interfacing with pumps and valves. Options include models with up to four pressure sensor inputs. The PMAT3 and PMAT4 models can optionally display Delta-Pressure of P1-P2 or trans-membrane pressure (TMP) for filtration processes. These calculated values can also have alarm set-points and the values can be transmitted.

Monitor - pressure values are displayed on the LCD. There is one-touch zero tare to atmospheric pressure.

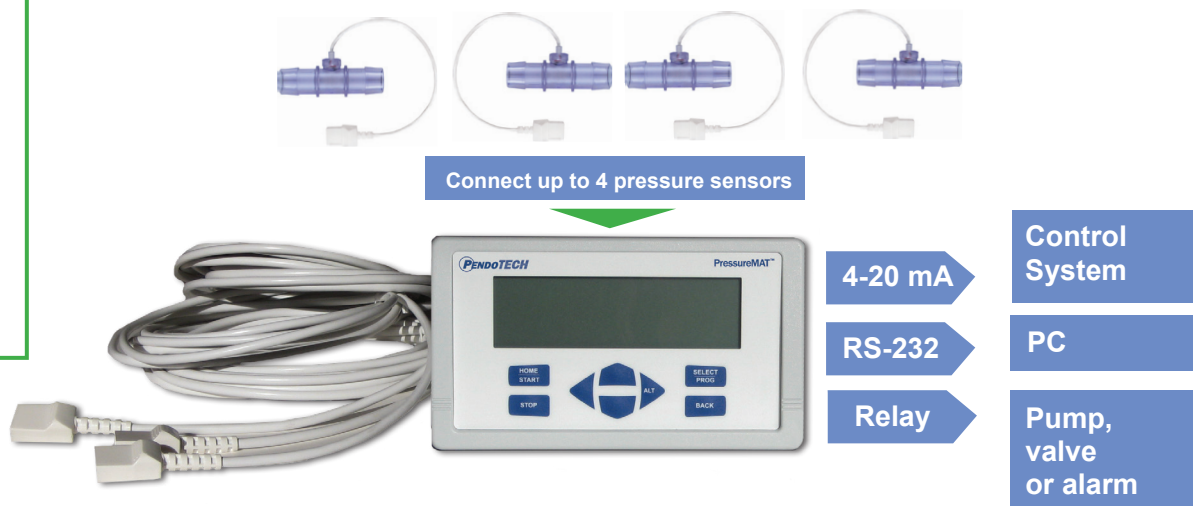
Alarm - minimum and maximum pressure values are entered on the key pad and if the process pressure goes below the minimum setting or above the maximum setting, the system will go into an alarm state. The alarm state may be tied to the relay output to help safeguard the integrity of a process.

Transmitter - the transmitter function delivers a 4-20 milliamp output signal corresponding to the pressure reading on the display. The RS-232 data output to a PC is available for data collection to the PendoTECH PMAT Data Acquisition Software.

Applications - there are numerous applications in biopharmaceutical production processes where the unit can be used to monitor pressure, including filtration, chromatography, bioreactor monitoring, perfusion, and fill finish operations.



PressureMAT - for Monitoring up to Four Sensors



Each PressureMAT Model Includes:

- PressureMAT Unit
- Cable(s) for connection of pressure sensor(s) - 12ft / 4 meters
- Power Supply with blades for country
- Connectors for field wiring
- Mounting Screws
- User Guide

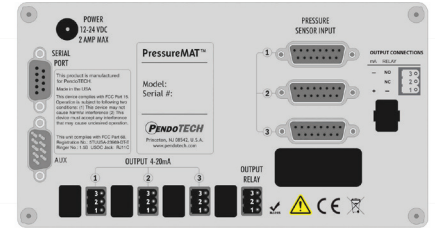
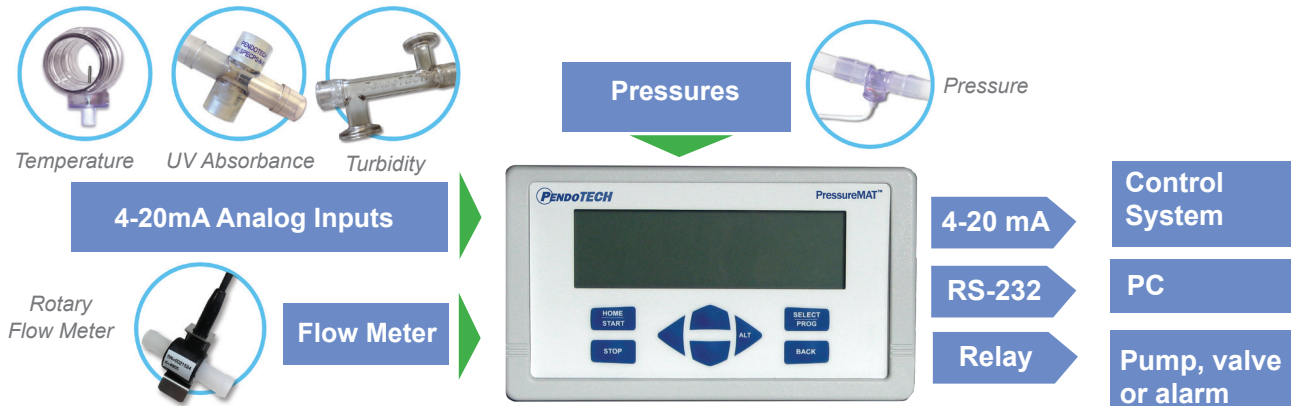


Illustration: Back panel schematic of PMAT3

System Specifications

| System Component | Specifications |
|--|---|
| Enclosure | WxHxD: 7.86inch x 4.47inch x 2.25inch (19.96 x 11.35 x 5.72cm) Approximate weight: 1.3 lbs (0.65 kg), Material: ABS Plastic IP66 / NEMA 4X front panel; panel and wall mount optional |
| Keypad | 8 button keypad with LEXAN® overlay |
| Display | 8 line LCD backlit blue, pressure displayed as X.X psi/X.XX bar; PMAT2HR & PMAT-SHR X.XXX psi/X.XXX bar |
| Power Inlet | 2.5 mm Circular Power Jack (center post positive) or D9 12-24 volts DC, 4 watts (powered by wall supply) |
| Pressure Sensors Input (s) Models offered with 1-4 inputs | Range of -11.5 to 75.0 psi; (-0.793 bar to 5.171 bar) PMAT2HR & PMAT-SHR -0.7 to 7.5 psi (-0.0483 bar to 0.510 bar) Configured for PendoTECH Single Use Pressure Sensors™, Connector: DA15 (includes 12 ft reusable cables) |
| Relay Outputs(s) [Up to 4 outputs available as a combination of Relay and Analog outputs] | Specifications for relay used for the alarm output: • Normally CLOSED or OPEN via wiring • 1 amp closure, 2 amps maximum current • Screw terminal connector • 28 Volt AC/DC Maximum • 20 millisecc max turn on/off time |
| Analog Output(s) [4-20 mA] [up to 4 outputs available as a combination of Relay and Analog outputs] | Screw terminal connector 4-20 mA Range: -10 to 75 psi (-0.689 bar to 5.171 bar); PMAT2HR & PMAT-SHR -1 to 3 psi (-0.069 bar to 0.207 bar) Accuracy: 0.1% of full scale Sourcing with Maximum Load: 400 ohms Load Impedance: Zero Ohm minimum resistance, 22 mA maximum output |
| RS232 Output | Data output to a PC at frequency up to approx every 2 seconds Optional Internal Data Logger: Part# PDKTP-DLOG (logger not available with PMAT-S) |
| Regulatory Compliances | CE Mark EN61326-1:2013; EN61010-1:2010; EN/ISO13489-1:2009; EN60204-1:2009 FCC Part 15 Class B verified FCC Part 68 5TUUSA-23969-DT-E RoHS and REACH Compliant UL Listed |

Also Available the PressureMAT Plus



Accessories

A variety of water-tight enclosures available:



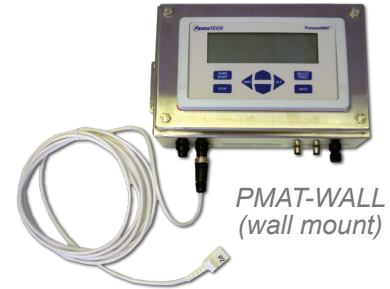
PMAT-WALL-2
(wall mount for pressure and conductivity monitor)



PMAT-BNCH-IP-L
(benchtop model)



PMAT-ULT4X-W1
(window kit)



PMAT-WALL
(wall mount)



PMAT-STND



PMAT-S-DIN: DIN rail mounting kit for PMAT



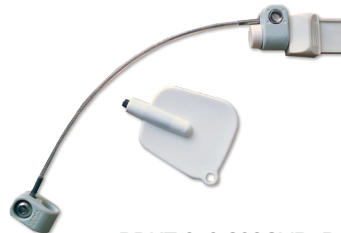
PMAT-STND-MFLS:
PressureMAT stand to mount on top of Masterflex L/S Pump



PMAT Cart



PDKT-650-950: PressureChecker™ Pressure Sensor and Monitor Verification Tool



PDKT-650-298CVR: Pressure sensor cable dust cover / zero simulator for PressureMAT



PMAT-TCA: Test cable assembly for PressureMAT accuracy check



Pneumatic pinch valve with signal from PressureMAT and power supplied via connector on rear for remote control of valve



Electric pinch valve with signal from PressureMAT and power supplied via connector on rear for remote control of valve



PMAT-EXT-12F: Pressure Sensor Extension Cable (12ft)






Universal power supply included

Ordering Information

| MODEL NUMBER | NUMBER OF INPUTS | NUMBER OF OUTPUTS | OUTPUTS |
|--------------|------------------|-------------------|---------------------------------------|
| PMAT-S* | 1 | 2 | 1 Relay / 1 Analog |
| PMAT-SHR* | 1 | 2 | 1 Relay / 1 Analog |
| PMAT2 | 2 | 4 | 2 Relays / 2 Analog or 4 Relays |
| PMAT2HR | 2 | 4 | 2 Relays / 2 Analog or 4 Relays |
| PMAT3 | 3 | 4 | 3 Analogs / 1 Relay (for all sensors) |
| PMAT4A | 4 | 4 | 4 Analogs |
| PMAT4R | 4 | 4 | 4 Relays |

*Comes standard with remote tare input

Accessories for Ingress Ratings

| INGRESS RATING | EXAMPLE | NOTES |
|----------------------------------|--|--|
| NEMA4X/IP66 (Front panel only) |  | Every PMAT model has a NEMA4X/IP66 rated front panel |
| NEMA4X/IP66 (When panel mounted) |  | Every PMAT model is NEMA4X/IP66 rated when panel-mounted with panel mounting kit (PMAT-PANEL) and additional silicone sealant (PDKT-SIL-SEAL1) |
| UL Type 4X |  | Every PMAT model is rated UL type 4X when mounted with a specific window kit accessory (PMAT-ULT4X-W1) |

SOFTWARE

| | |
|------------|--|
| PMATP-GUI | Data Acquisition and Trending Software for PressureMAT and CMONT with 2 USB/serial cables to connect to a PC |
| PDKTP-DLOG | PressureMAT Internal Data Logger (not available with PMAT-S) |

STANDS/CART

| | |
|----------------|---|
| PMAT-STND | PressureMAT Benchtop Stand for all models |
| PMAT-STND-MFLS | PressureMAT stand to mount on top of Masterflex L/S Pump |
| PMAT-STND-WM5 | PressureMAT stand to mount on top of Watson Marlow 500 Series (green) Pump |
| PMAT-CART4 | PressureMAT water-tight box (PMAT NOT included) with water-tight cable connections and cart with power strip & filter holder with optional touch-screen PC with Data Acq Software |

WATER TIGHT ENCLOSURES

| | |
|-----------------|---|
| PMAT-WALL | PressureMAT water-tight wall mount box with water-tight cable connections |
| PMAT-BNCH-IP-L | PressureMAT water-tight bench top stainless steel box with water-tight cable connections for PMAT on left side |
| PMAT-WALL2 | PressureMAT water-tight wall mount box with water-tight cable connections - holds 2 PressureMATs |
| PMAT-WALL-S | PressureMAT-S single channel water-tight wall mount box with water-tight cable connections for PMAT |
| PMAT-BNCH-COMBO | PressureMAT, CMONT with UV Optional water-tight bench top stainless steel box with water-tight cable connections on left side |
| PMAT-ULT4X-W1 | PressureMAT UL Type 4X Deep-Hinged window kit with a viewing area of 8inch X 9inch (UL®) |
| PDKT-SIL-SEAL1 | PressureMAT Silicone Sealant cartridge, clear, 10.1oz for panel mount installation |

CABLES

| | |
|---------------------|---|
| PDKTP-RS232U | RS232 Cable for PressureMAT data output (6 feet / 2M) for USB input to PC |
| PMAT-650-298 | Cable adaptor with D15 for Single Use Pressure Sensor for PMAT (12ft/4M) |
| PMAT-650-298-24F | Cable Adapter with D15 for Single Use Pressure Sensor for PressureMAT(24 feet/7M) |
| PMAT-EXT-12F | Pressure Sensor Extension Cable (12ft) |
| PMAT-WALL-RS232USB | RS232 Serial to USB adapter, for PMAT Wall/ Benchtop box, 7 FT |
| PMAT-PWR-WALL-24VDC | PMAT Enclosure Box replacement power supply, 12VDC w/ global plug blades |

| PUMP START/STOP CABLES | |
|------------------------|--|
| PMAT-CB-MF9B | Interface cable for Masterflex LS pump- D9 connector to PMAT to start/stop function, 6 feet (2meters) |
| PMAT-CB-MF15 | Interface cable for Masterflex LS pump- D15 connector to PMAT to start/stop function, 6 feet (2meters) |
| PMAT-CB-MF18 | Interface cable for Masterflex IP pump- 18 pin connector to PMAT to start/stop function, 6 feet (2meters) |
| PMAT-CB-MF25 | Interface cable for Masterflex LS pump- D25 connector to PMAT to start/stop function, 6 feet (2meters) |
| PMAT-CB-MF31 | Interface cable for Masterflex IP pump- 31 pin connector to PMAT to start/stop function, 6 feet (2meters) |
| PMAT-CB-WM15 | Interface cable for Watson Marlow 120U/DV pump- D15 connector to PMAT to start/stop function, 6 feet (2meters) (Also works on the 101 model) |
| PMAT-CB-WM25 | Interface Cable for Watson Marlow pump D25 connector to PMAT to start/stop function, 6 ft (2meters) |
| PMAT-CB-Q1200HT | Interface cable for QuattroFlow Q1200HT to PMAT start/stop function, 6 feet (2meters) |
| ACCESSORIES | |
| PKDT-650-950 | Pressure Checker pressure sensor and monitor verification tool, psi |
| PKDT-650-950B | Pressure Checker pressure sensor and monitor verification tool, millibar |
| PMAT-TCA | Test cable assembly for PressureMAT accuracy check |
| PKDT-650-298CVR | Pressure sensor cable dust cover / zero simulator for PressureMAT |
| PMAT-S-DIN | DIN rail mounting kit for PMAT-S |
| PMAT-IQ/OQ | Installation qualification/operation qualification protocol documentation |
| PMAT-PANEL-2-C | PMAT Panel mount kit - 2 gaskets, 4 mounting brackets, 2 sensor cables, and input connectors for sensors and power |
| PMAT-PANEL-3-C | PMAT Panel mount kit - 2 gaskets, 4 mounting brackets, 3 sensor cables, and input connectors for sensors and power |
| PMAT-PANEL-4-C | PMAT Panel mount kit - 2 gaskets, 4 mounting brackets, 4 sensor cables, and input connectors for sensors and power |
| PMAT-PANEL-S-C | PMAT Panel mount kit - 2 gaskets, 4 mounting brackets, 1 sensor cable, and input connectors for sensor and power |
| PMAT-PANEL-2-U | PMAT2 Panel mount kit UPGRADE - 2 gaskets, 4 mounting brackets, 2 sensor cables (in replacement of standard cable), and input connectors for sensors and power |
| PMAT-PANEL-3-U | PMAT3 Panel mount kit UPGRADE - 2 gaskets, 4 mounting brackets, 3 sensor cables (in replacement of standard cable), and input connectors for sensors and power |
| PMAT-PANEL-4-U | PMAT4 Panel mount kit UPGRADE - 2 gaskets, 4 mounting brackets, 4 sensor cables (in replacement of standard cable), and input connectors for sensors and power |
| PMAT-PANEL-S-U | PMAT-S Panel mount kit UPGRADE- 2 gaskets, 4 mounting brackets, sensor cable (in replacement of standard cable), input connectors for sensor and power |
| PMAT-PWR | PendoTECH PressureMAT Power supply with circular barrel connector, 12VDC, 1amp with plugs blades for destination |
| PKDT-PVE2-PMAT-S | Pinch Valve Pair- 24VDC supply & relay input for each normally closed valve- Small for 1/8inch ID |
| PKDT-PVE2-PMAT-M | Pinch Valve Pair- 24VDC supply & relay input for each normally closed valve- Medium for 1/4inch ID |
| PKDT-PVE-PMAT-S | Pinch Valve- 24VDC supply & relay input for normally closed valve- Small for 1/8inch ID |
| PKDT-PVE-PMAT-M | Pinch Valve- 24VDC supply & relay input for normally closed valve- Medium for 1/4inch ID |

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