

Physical properties and operating specifications



Enclosure: IP40, 4.625" L x 2.125" W x 1.25" H, aluminum case
316LSS pressure manifold
Weight: 10.5 oz for DN, GI, CI or AI pressure types, 16 oz for DI type

Mounting: Panel and DIN rail mounting hardware are standard

Temperature Limits

Operating: -4 to 122°F (-20 to 50°C)
Storage: -40 to 185°F (-40 to 85°C)

Humidity Limits: 5 – 95% Rh

Shock: 100g's per IEC 770

Vibration: 30g's per IEC 770

Certification:  (pending)

Firmware Features

Programming features supported through Meriam Serial Protocol and Modbus RTU: pressure zero, reset factory zero, sensor damping, pressure units select, analog output span set (Upper Sensor Value, Lower Sensor Value), tare on / off, field recalibration, PROD (precision right of decimal), AROD (accuracy right of decimal), Get/Set baud rate. The following information commands are available through Meriam Serial Protocol and Modbus RTU: *serial number, pressure module class and type, firmware version, LSL (lower sensor limit), USL (upper sensor limit), instrument temperature.*

Field Recalibration: All M1500 transmitters can be recalibrated in the field using suitable reference standards.

CONTACT US TO LEARN MORE.

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M1500 shown attached to a Meriam Laminar Flow unit.

M1500 Digital Pressure Transmitter



M1500 + Meriam = Performance you can rely on!

Meriam's compact, new M1500 Digital Pressure Transmitters are ideal for pressure measurement needs from 10" H2O (pending) to 3000 PSI Full Scale. Output options include digital (RS-232, RS-485 and USB) or analog (mA or V DC). Choose from differential (dry/dry or wet/wet), gauge, compound or absolute pressure types – see the table inside for complete details.

Typical NIST traceable digital accuracy is ±0.025% of F.S. including all affects of linearity, repeatability, hysteresis and

temperature from -20° to +50° C (-4° to +122° F).

Digital output options for the M1500 deliver accurate pressure measurement to compatible receiving devices. Choose RS-232 single point or RS-485 for networks up to 255 devices. M1500 connections are made with a 7 position terminal block or DB-9 serial port. The USB digital communication option also powers the M1500 via high power USB ports or powered USB hubs.

Software is included for initial setup and support. Meriam Serial Protocol (MSP) or Modbus RTU protocol can be used to send and receive information. Implementation Guides for MSP and Modbus RTU are available at www.meriam.com (see Resources / Application Notes).

Analog output options are also available. Output accuracy is typically ±0.035% of F.S. The user may configure the M1500 for 0 – 5 VDC or 4 – 20 mA output. Two SPST alarm switches are included. Analog units are configured using the RS-232 terminals and the included M1500 Measurement & Configuration Software. The software supports initial configuration, zeroing, recalibration and other functions.



Meriam Process Technologies

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experience matters

With nearly 100 years of pressure measurement experience Meriam is the clear choice. We set the standard for high accuracy over the largest operating temperature range.



Available Pressure Ranges

Specify M1500-“Sensor Code with Range” shown below:

Sensor	Application	Available Pressure Ranges	Wetted Parts
DNxxxx	Differential, Nonisolated	0010 (pending), 0028, 0200, 0415, 2000" H ₂ O	Brass, 316L SS, Silicon
DIxxxx	Differential, Isolated	0001, 0005, 0015, 0030, 0100, 0300, 0500 PSID	316L SS, Viton
GIxxxx	Gauge, Isolated	0015, 0030, 0050, 0100, 0300, 0500, 1000, 3000 PSIG	316L SS
CIxxxx	Compound, Isolated	(-14.7 to) 0015, 0030, 0050, 0100, 0300, 0500, 1000, 3000 PSIG	316L SS
AIxxxx	Absolute, Isolated	0017, 0038, 0100, 1000 PSIA	316L SS

Examples: M1500-DN0415 = M1500, Differential Non-isolated, 0 - 415" H₂O full scale measurement
 M1500-GI1000 = M1500, Gauge Isolated, 0 - 1000 PSIG full scale measurement
 M1500-CI0100 = M1500, Compound Isolated, -14.7 to +100 PSIG full scale measurement

EPI / THE EMBEDDED PRESSURE INSTRUMENT

The EPI™ is a fully compensated instrument capable of measuring applied pressures and providing an accurate and fully characterized digital output. The Meriam M1500 Pressure Transmitter, as well as other pressure products from Meriam, are powered by the EPI™. This ensures you are getting a highly-accurate device capable of ±0.025% FS including all effects of linearity, hysteresis, repeatability and temperature over specified operating temperature range. NIST traceable certification is standard. The EPI™ provides true 14 samples per second data rate of accurate pressure readings.



Easy
DIN Rail
Mounting

SPECIFICATIONS:
BEST IN CLASS ACCURACY

Pressure

NIST Traceable Accuracy

- Digital: ±0.025% of Full Scale including all affects of linearity, repeatability, hysteresis and temperature
- Analog: ±0.035% of Full Scale including all affects of linearity, repeatability, hysteresis and temperature

Temperature Spec.: Accuracy statements include all affects of temperature from -20° to +50° C (-4° to +122° F)

Pressure Measurement Update Rate: 14 readings per second, maximum (consult factory for faster update rates)

Engineering Units: 32 selectable pressure units plus two user units (pending)

Limits

DN sensors: 2x range when pressurized on P1 (HI) side only, 150 PSI when applied simultaneously to P1 (HI) & P2 (LO) sides.

DI sensors: 3x range when pressurized on P1 (HI) side only, 3x range or 150 PSI (whichever is less) on P2 (LO) side only, 1000 PSI when applied simultaneously to P1 (HI) & P2 (LO) sides.

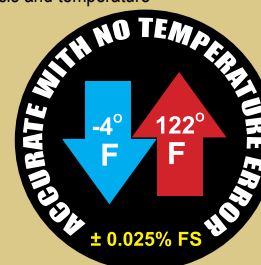
GI, CI & AI sensors: 2x range

Media Compatibility

DN sensors: Non-isolated for clean, dry, non-corrosive gases only (Brass, 316L SS, Silicon gel)

DI sensors: Isolated for fluids compatible with 316L SS and Viton®

GI, CI, AI sensors: Isolated for fluids compatible with 316L SS



M1500 Transmitter

Field Recalibration: All M1500 transmitters can be recalibrated in the field using suitable reference standards.

Applications

- Lab data acquisition
- Test and monitoring applications
- Barometric pressure reference
- Production skids
- Pneumatic / hydraulic go, no go testing
- Pressure leak testing
- Process control applications
- Plant instrumentation
- OEM applications
- Laminar Flow Systems
- Wet / wet differential monitoring and control
- Head type flow metering:
(Orifice plate, Venturi, Accutube, Wedge)
- Clean room pressure monitoring

Standard Accessories

P/N Z9A000003PN06 Support Disk for M1500 including:

- M1500 Measurement & Configuration Software
- Meriam Serial Protocol Implementation Guide
- Modbus RTU Implementation Guide
- USB Device Driver & Installation Instructions

Optional Accessories

P/N Z9P337 Analog Starter Kit, DB-9 (female) cable, 6 ft., by bare wire ends, for configuration through PC software

P/N ZA900447-00052 DB-9 connector cable, 6 ft., female by male

P/N Z7621 RS-485 to RS-232 interface adapter, DIN rail mounted

P/N Z7621-1 RS-485 to RS-232 interface adapter, PC port mounted and powered

Output Options

Digital (use Meriam Serial Protocol or Modbus RTU Protocol)

RS-232: 19200 baud (adjustable), 8 data bits, 1 stop bit, no parity

RS-485: half duplex, 3-wire TR-1, TR-0, signal ground, 19200

baud (adjustable), 1 start bit, 1 stop bit, no parity. Multi-drop

addressing for up to 255 devices (MSP) or 246 devices

(Modbus RTU)

USB: USB 2.0



USB type B connector



Easy rear panel access

Analog

4 – 20 mA: 2-wire loop powered, 3-wire, 4-wire systems.

0 – 5 VDC Analog: 3-wire, 1 – 5 VDC is user configurable

Two SPST alarm switches, 80V DC, 100 mA maximum, 3-or 4-wire systems only

Connections

Pressure: 1/8" NPT (female)

Electrical / Communications / Output:

Power: 7 position terminal block; 1.3 mm diameter holes for 16 – 25 gauge solid or stranded wire

RS-232: DB-9 (female) Serial Connector or 7 position terminal block

RS-485: DB-9 (female) Serial Connector or 7 position terminal block

USB: USB type B female connector

Analog: 7 position terminal blocks, two each

Power Requirements

RS-232, RS-485: 8 – 36 VDC, 20 mA minimum

USB: high power (500 mA) USB port or USB hub (PC USB ports and USB hubs with power adapters are typically high power)

mA, 2-wire: 15 – 36 VDC, 50 mA minimum

mA, 4-wire: 8 – 36 VDC, 50 mA minimum

V, 3-wire: 8 – 36 VDC, 50 mA minimum

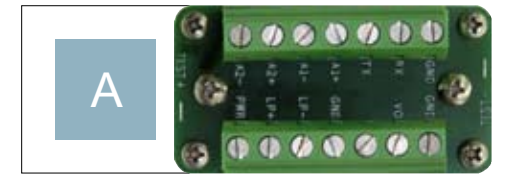
Power Consumption

RS-232: 110 mW (maximum)

RS-485: 110 mW (maximum)

USB: 100 mW (maximum)

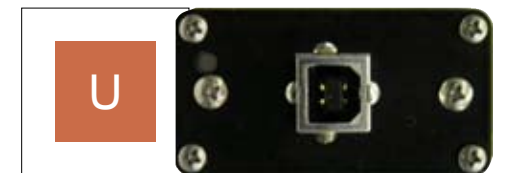
MAKING THE RIGHT CONNECTIONS AVAILABLE M1500 CONNECTION OPTIONS



Analog connectors



RS-232 / RS-485 communication connectors



USB type B connector



Convenient Panel Mounting