Meriam Process Technologies
Line Card

Established in 1911 as a manufacturer of U-Type Manometers, the company is now recognized as a leading supplier of instrumentation and test and calibration equipment utilizing the latest advances in technology and design while delivering superior performance. Meriam products are used around the world in industries as diverse as Chemical, Petrochemical, Oil & Gas, Utilities, Automotive and Laboratory. We are committed to providing uncompromising quality products with an impeccable support experience.

5150x IS and 5150 non-IS HART ® Communicators

The MFC5150 HART® Communicator is Meriam's latest addition to our line of calibrators and communicators. Available in ATEX (intrinsically safe) and non-ATEX models, the MFC5150 directly reads Device Descriptions without any translations or subscriptions, enabling communication to take place with any registered or unregistered HART® device, ensuring your HART® transmitter will connect, regardless of brand or model. The MFC5150 is built on the HART® SDC-625 infrastructure and runs Windows CE. With a 1GHz processor and 4GB Micro SD card, this communicator is ideal for all your data storage needs. The 4.3 inch touchscreen provides excellent anti-glare viewing, allowing the user comfortable use in darkness or in bright sunlight. All functions are easily navigated via the full QWERTY keyboard and intuitive icons similar to that of a smart phone. There are also hyperlink menu paths, teachable device specific shortcuts, HART® hot key, instant on, multiple languages, help context, videos and TAB access to panes just like on a computer.

Standard Features Include

- Rechargeable Battery with 10 hrs continuous, 20 hrs standard use and 200 hrs standby/hibernate
- Charging cradle with USB connection
- No subscriptions required
- Full color touchpad display (480x272)
- Ability to store 1000's of configuration files

Optional

- Class I Div I, Class I Zone 0 certifications

Typical Applications

- Commission devices
- Re-ranging and trimming devices
- Reconfiguration for process changes
- Troubleshoot devices with HART®

To place an order or to receive more information, please contact Meriam, or your nearest Meriam distributor

10920 Madison Avenue ▪ Cleveland, Ohio 44102 ▪ 216.281.1100 ▪www.meriam.com

meriam
a Scott Fetzer company

4150x IS and 4150 non-IS HART ® Communicators

Meriam's MFC 4150 is an ideal low-cost portable hand held HART® communicator for commissioning, configuring, and maintaining HART® field devices. The MFC 4150 supports all HART® devices at the Universal and Common Practice command levels, plus a list of over 500 devices at the Device Specific command level.

Standard Features Include

- 13-line, 128 x 128 graphic, backlit display
- 60 hours battery life (w/o backlight)
- DPC Manager Utility for updating the 4150

Optional

- Class I Div I, Class I Zone 0 certifications

Typical Applications

- Commission devices
- Reconfiguration for process changes
- Troubleshoot devices with HART®
- Re-ranging and trimming devices

Ease of Use

- Quick start up and connect
- Review / Edit on the fly Document and store 200 Configurations

Series M200 SMART Digital Manometer

Meriam has earned the reputation as an industry leading manufacturer of calibrators and digital manometers. We offer a full line of products covering a wide variety of applications and accuracy requirements at a value price. Digital or "smart" manometers are well suited for field measurement and process control. Features include min/ max capture, data record, averaging and timed pressure tests. Meriam's M2 Series Smart Manometers bring high precision and value to handheld, digital manometer users. The M2 features NIST traceable accuracy of + 0.025% of F.S., independent of temperature effect, at the lowest costs. Pressure ranges from 10" H2O F.S. to 3000 PSIG F.S. are available. M2 pressure sensors are also available to measure gauge, compound, differential, absolute or vacuum pressure. The display can read out in any of eleven pressure units or can be linearly scaled for special user units. Differential models offer a square root flow function to display flow rate in user defined units. An adjustable dampening feature minimizes the effects of pulsating pressures. A Min/Max function captures the extremes of pulsating or varying pressure signals and a hold function can freeze the display at any point of interest. Auto Record documents up to 240 readings for future recall.

M200DI Wet/Wet Differential Pressure Smart Manometer

Meriam's M200-DI handheld Smart Manometer for liquids brings high accuracy to wet/wet differential pressure applications. Potentially corrosive or wet gasses are also handled by the M200-DI. Wetted parts are 316L SS with Viton O-rings (consult factory for other materials). The M200-DI features NIST traceable accuracy of ± 0.05% FS (± 0.025% FS optional) independent of temperature effect from 23° to 122 °F for Intrinsically Safe models. The accuracy statement is good from -4 ° to 122 °F for general purpose models. Pressure ranges are available from 0 - 1 PSID to 0 -500 PSID. All ranges are rated for 1000 PSI common mode pressure. HI side overpressure rating is 3X F.S. while the LO side overpressure rating is 3X F.S. or 150 PSI, whichever is less. Optional flushing ports allow solvent clean-out of P1 and P2 ports or can be used to vent air from the connecting tubing of liquid applications.

Accuracy

- Accuracy of ±0.05% Full Scale
- Optional Accuracy of ±0.025% Full Scale
- No temperature effect over operating range

M201 Rotary Gas Meter Tester

Differential testing of rotary meters offers two key advantages. First, the test equipment is much less expensive than a transfer prover; second and most importantly, the actual test can be performed much faster than with a transfer prover, thus achieving significant savings in time and resources. The new Measure Mode enables the M201 to be used as a conventional differential pressure measurement device. You will appreciate the live pressure display as you check the handheld's zero or observe DP across rotary gas meters. When a drop test is made, the M201 uses an internal stop watch to measure the test length. You only have to start and stop the test; the M201 reports both the test time and the average differential pressure measured during the test. Toggle the Min/Max key to see the minimum and maximum DP measured during the test. It has been proven for several years now that the differential testing of rotary meters is an effective supplementary or even primary field proving method. These tests can, in some instances, be completed in just a few minutes and can save a utility thousands of dollars. Using this proven testing method and test equipment on a more frequent basis than transfer proving can and will prove beneficial to any utility, large or small.

meriam
a Scott Fetzer company

M202 Precision Absolute Manometer Calibrator

Meriam's model M202 Precision Absolute Manometer brings calibration bench accuracy to a portable, handheld unit. This combination of accuracy and fluid compatibility makes the M202 ideal for environmental, test or real-time process measurements of pressure relative to absolute zero. General Purpose (G.P.) and Intrinsically Safe (I.S.) models are available.
The M202 includes features for minimum and maximum (Min/Max) value capture, tare readings and user selectable engineering units. A selectable altitude function allows users to enter site altitude above sea level in order to display local barometric pressure or barometric pressure corrected to sea level. User referenced altitude (referenced to map or trig markers) or altitude based on US Standard Atmosphere of 1962 can be selected for display. Using the altitude function with the Min/Max and Tare features makes the M202 very useful also as a surveyor's tool.

Applications Include

- Measure changes in altitude testing
- Measuring pressures relative to absolute zero

M203 Altimeter Indicated Air Speed Tester

The M203 Altimeter / Indicated Air Speed Tester accurately measures pressure from 0 – 900 mm Hg (17.40 PSI) relative to absolute zero. Selecting the "ALT / IAS" unit from Program Mode converts the M203 to Altitude Mode for use in checking altimeter instrumentation. Pressing the ALT / IAS button toggles the M203 to Indicated Air Speed Mode for checking air speed instrumentation. Pressing the ALT / IAS button again returns to the Altitude display. English or S.I. units for Altitude and Indicated Air Speed are user selectable.
A timed leak test function is standard for Pressure, Altitude and Indicated Air Speed modes. The user sets the test period and starts the tests. The M203 displays Minimum, Maximum and instant values during the test period and then the leak rate per minute upon completion. Other features include Minimum / Maximum value capture, selectable damp rate, back light, programmable auto-off timer and record function. Four "AA" alkaline batteries provide more than 100 hours of continuous use.

Accuracy

- 0 - 17.403 PSIA (0 - 900.00 mm Hg Abs)
- -2000.0 to +36,000.0 Feet (-609.6 to +10,973.0 Meters)
- 0 - 496.4 Knots (0 - 571.3 MPH, 0 - 919.4 km/h)

M200LS Lab Standard Smart Manometer

Meriam's M200LS Lab Standard Smart Manometer offers the best available pressure measurement accuracy in a portable, handheld format. The NIST traceable accuracy is typically ±0.01% of F.S. and is independent of temperature effect over an operating temperature range of 59°to 86°F. Pressure ranges from 28" H2O F.S. to 500 PSIG F.S. are available.
M2 pressure sensors are available to measure gauge, differential, absolute or vacuum pressure. The display can read out in any of eleven pressure units or can be linearly scaled for special user units. An adjustable damping feature minimizes the effects of pulsating pressures. A Min/Max function captures the extremes of pulsating or varying pressure signals and a hold function can freeze the display at any point of interest. Auto Record documents up to 240 readings for future recall.

Accuracy

- Accuracy of ±0.25% Full Scale (independent of temperature effect)
- Pressure ranges from 10" H2O F.S. to 3000 PSIG F.S.

MFT4000 CE and 4010 IS Multi Function Modular Calibrator / HART® Communicator

The MFT 4000 Calibrator is a base unit for calibration work with selected NIST traceable sensor modules and an integral voltage/current meter. The MFT 4010 Calibrator with HART® is a base unit for modules and full device specific HART® communications. The MFT incorporates Quick Cal displays, HART® PV and AO along with MFT's NIST traceable measurements. Combined with a documenting memory which stores up to 200 HART® configuration files and over 100 calibration results, this an indispensable calibration tool.

Features Include

- Modules for: Differential, gauge, vacuum and absolute pressures. Temperature, and voltage/ current.
- Accommodates three modules at any time**.** Voltage and current meter is integral to the base unit. All HART® field devices can be configured, polled and trimmed using HART®.

meriam
a Scott Fetzer company

M4 Series Precision Calibrator Data Logger

Meriam's M4 Series Handheld Precision Calibrator / Data Logger delivers an impressive array of features, functions and an impressive accuracy specification. The M400 includes one pressure sensor and one mA/V instrument. Choose from differential, gauge, compound or absolute pressure types and ranges from 10" H2O to 3000 PSIG full scale.

Need two ranges for wider utility? The M402 can be configured with any two compound or absolute type sensors. A high level of Accuracy is achieved; ±0.025% of Full Scale and is maintained over operating temperatures from -20° to +50° C (-4° to +122° F). Data Logging is standard on all models. With its impressive accuracy and handheld convenience, the M4 Series Calibrator/Data Logger is used where accuracy is important; such as in medical device and pharmaceutical calibration and manufacturing

Accuracy

- Accuracy is ±0.025% of Full Scale
- Accuracy maintained over wide temperature range
- Wide range of pressure options

Data Logging Capabilities

- Log data to dedicated 4GB SD card and retrieve via USB port
- Free PC Application for creating standard .csv files

M1 Series Digital Manometer Calibrator

The M1 Series of handheld manometers combines form, fit and function to deliver precision pressure measurement for field, plant or lab use. For reference indication and shirt pocket convenience, select the low cost M100 Digital Manometer with its +/- 0.25% FS accuracy. Or specify the M101 Calibrator when better accuracy is needed for more exacting measurements. The M101 delivers +/- 0.10% FS accuracy and additional features normally found on higher priced instruments. Both models are available in absolute, differential and gauge pressure.

Accuracy

- Accuracy of ±0.25% Full Scale for M100
- Accuracy of ±0.10% Full Scale for M101
- No temperature effect over operating range 14° F to 122° F (-10° C to +50° C)

Averaging Pitot Tubes

Meriam manufactures the widest range of Averaging Pitot Tubes for gases, liquids and steam with bi-directional flow capability. Under the Accutube brand name there are four standard models; Inline, Insertion, Flanged and Wet Tap which can provide a flow solution for your toughest applications. To provide the complete flow solution that meets your specific needs, we can provide DP or Multivariable transmitters from the brand of your choice, or we will recommend the best fit for your application. These transmitters can be installed on the Accutube and configured to your specific flow requirements here at Meriam by qualified technicians, reducing your expense and time.

Ease of Use & Installation

- Perfect for gas, liquid, vapors and steam
- Bi-directional flow sensing
- 10:1 Turndown
- Flow straighteners available
- Low permanent head loss saves energy and cost
- Multiple tube design offers superior strength and clog resistance.
- Works with a variety of DP and Multivariable Transmitters
- Low Pressure and High Pressure models
- Custom materials for corrosive application

Orifice Plates and Flanges

Orifice plates are engineered for each application, and are precision bored to exact dimensions with a sharp upstream edge to ensure accuracy and longevity. Orifice information is stamped on the unique handle. This handle is designed to facilitate storage of the plate without damage to the orifice bore. Pair a Meriam orifice plate with an orifice flange to provide a convenient, accurate method for installing orifice plates.

Features

- Impressive Accuracy
- Proven Design
- Universal familiarity
- Relatively inexpensive
- Flexibility in designing a specific output

Gauges and Transmitters

Meriam offers a wide variety of mechanical and digital pressure gauges for process measurement and indication. Terrific accuracy specifications and little-to-no temperature effect set these instruments apart from the competition. Many of our digital gauge products have multiple output options to increase their versatility in today's changing control schemes. Mechanical gauges have been the reliable standard in pressure measurement and still have their place in today's industrial environment. They excel in areas where digital units cannot function, such as in very cold environments.

M1500 Pressure Transmitters are available as either Analog or Digital and are ideal for a variety of pressure and flow measurement applications from 10" H20 to 3000 PSI Full Scale. The user may configure the M1500 for 0 – 5 VDC or 4 – 20mA output. Two SPST opto switches are included. Choose from differential (dry/dry or wet/wet), gauge, compound or absolute pressure types. Typical digital accuracy is ±0.035% of F.S. including all effects of linearity, repeatability, hysteresis and temperature from -20° to +50° C (-4° to +122° F). Accuracies are NIST traceable.

For wider pressure range requirements, the M1502 with digital output incorporates two pressure sensors. Most combinations of AI or CI type pressure sensors are supported. The M1502 reduces purchase price and installation costs when multiple pressure measurements are needed.

Meriam Model 1120 Differential Pressure Unit is a proven and reliable sensing element used in all Meriam Bellows Gauges. It is available in ranges as low as 0-30" w.c. or as high as 0-500 PSI. The light weight and compact differential pressure unit incorporates a rupture-proof and leak-proof bellows plus other features that ensure ruggedness and reliability. This basic unit is suitable for activating indicators, recorders, transmitters, switches, and controllers and is available as a separate assembly for that purpose.

Z200 and Z300 series pressure (bourdon tube) gauges offer economy, reliability, and durability. These gauges provide accurate indication and switch capability for process control and monitoring applications. Explosion-proof switches and portable indicators are also available. Custom linear and non-linear scales (flow, level applications) are available.

Line Traps, Bubblers and Hand Pumps

932 Series Line Traps are an inexpensive means to keep manometers and indicating fluids clean and are recommended for all installations. When installed in the line ahead of the manometer they permit entrained solids to settle out before they reach the manometer. When used with gases or vapors they trap moisture.

931 Series Sight Feed Bubblers provide a visual indication of flow by showing air or gas bubbles discharging from a dip tube immersed in a liquid in a transparent bowl. The bubble rate is controlled by a stainless steel needle valve in the head casting.

Portable Hand pumps are essential for hydraulic field testing and calibration of field devices such as pressure transmitters, gauges or switches. Meriam's line of ergonomically engineered, high quality hand pumps are designed for ease of use and reliability. All models provide the high performance required for your complete range of applications; from very low to high pneumatic pressures and for very high pressure hydraulic systems.

MH-600KT Pneumatic Calibration Pump uses a fully adjustable stroke control to allow for fast priming or filling of test systems. This gives the operator the ability to switch as needed to a smaller stroke for easier pumping at high pressure. Each MH-600KT includes a black padded canvas case and a 2ft non-stretch hose and fittings. It is backed-up with a 2 year warranty.

MH-10KT Hydraulic Calibration Pump uses a fully adjustable stroke control to allow for fast priming or filling of test systems. This gives the operator the ability to switch as needed to a smaller stroke for easier pumping at high pressure. Each MH-10KT includes a black padded canvas case, 3ft high pressure hose, fittings, adapters, test point and (3) spare filters. It is backed-up with a 2 year warranty.

MP-100KT Hydraulic Calibration Pump uses a fully adjustable stroke control to allow for fast priming or filling of test systems, giving the operator to switch as needed to a smaller stroke for easier pumping at high pressure.

meriam
a Scott Fetzer company

Laminar Flow Elements and Systems

With inherently high accuracy, stable calibration, excellent response time and repeatability, Laminar Flow Elements (LFEs) excel in critical gas and air flow measurements and are frequently utilized in validating calibration standards. Standard models are available to measure as little as 0.2 SCCM (5.9 E-06 SCFM) to as much as 2250 SCFM at standard conditions. Custom models for up to 15,000 SCFM of air are available; flow rates of gas mixtures can also be measured when the percentages of component gases and mixture properties are known. Higher accuracies can be achieved when used in conjunction with the Meriam MDT500 multivariable transmitter and software package. Stainless steel or aluminum materials make LFEs compatible with most gases.

The LFE matrix is made from individual SS tubes or windings of SS foil. These tubes are long enough, relative to their inside diameter to cause laminar flow to occur inside each tube; the result is a near linear relationship between DP and flow rate. The Differential Pressure generated across the matrix responds very quickly to changes in flow and pressure loss to the system is reduced as each LFE is sized to produce no greater than 8" water column at maximum flowing conditions. The individual tube diameters are very small, so flowing gases need to be clean and dry to preserve the calibration. Filtered inlet versions of most LFE models are available to keep the matrix clean and the calibration constant.

The MDT500 Flow Measurement System is designed to allow users to accurately measure air and gas flow rates. The direct mounted, multivariable transmitter mounts to any Meriam LFE Model. LabVIEW® Drivers and Software Development Kit are included to make using the MDT500 even easier. When using LabVIEW® executable ACFM, SCFM and mass flow can be displayed on your PC. The MDT500 delivers impressive system accuracy of +/- 0.8% FS and a response time of less than 0.1 second. With long term stability and no moving parts the unit is maintenance free. The MDT500 provides a wide flow range, while maintaining accuracy and there is no drift over time and temperature. It delivers the best repeatability and is also independent of orientation. The MDT500 offers linear response and a low head loss model is also available.

Applications Include

- Process Air and Gas Measurement
- Engine Air Intake Measurement
- Flow Benches
- Calibration Reference Standards
- Leak Detection

Manometers

U-Tube Manometers

The U-tube manometer is the most basic and widely used style of manometer, it is a versatile, economical instrument for the measurement of both liquids and gasses. There are no cams, gears, or levers to operate in the manometer, measurements are functions of gravity, therefore it does not require re-calibration. Due to these physical properties and it's simplicity of operation, it is recognized by NIST as a primary standard.

Well Type Manometers

Well manometers are a direct reading device designed for process monitoring, general purpose production testing or laboratory measurement. Designed for a maximum line pressure of 250 PSI (500 PSI optional) these instruments may also be used for tank level, flow measurement and leak detection.

Inclined Manometers

Inclined manometers provide greater readability by stretching a vertical differential along an inclined indicating column, giving more graduations per unit of vertical height, effectively increasing the sensitivity and accuracy of the manometer. Scales are typically graduated to the hundredth of an inch. The Model 40HEX inclined manometer is individually calibrated and the angle of inclination is set relative to the instrument level mounted above the channel. It is also capable of operating with 350-PSI line pressure.

Service and Repair

Let Meriam's factory trained technicians repair and re-calibrate your calibrators and instrumentation to original specifications in our NIST traceable facility. Quick turnaround is available when required. Visit our website for an online form or downloadable PDF to start the process.