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The Series 644 Industrial Pressure Transmitter is a robust transmitter designed for high accuracy pressure applications. Boasting an accuracy of ±0.05% FS RSS (<±0.25% TEB), the 644 is intended for precise measurements in critical applications of calibration technology, hydraulic/pneumatic controls, and many more laboratory and industrial settings. The Series 644 offers multiple measurement options with two output choices (VDC or mA) and ten psig pressure ranges (optional 0 to 15 psia). The robust and compact all stainless steel Series 644 is available with either a 1/4˝ male NPT, or 7/16˝-20 male SAE process connections. Each transmitter is provided with an 11 point NIST traceable calibration certificate.

### FEATURES
- **High accuracy:** ±0.05% FS RSS
- **15 to 1000 psig ranges (optional 0 to 15 psia)**
- **Two output options**
- **Low thermal error over wide temperature range**

### APPLICATIONS
- Calibration equipment
- Test benches
- Pulp and paper mills
- Hydraulic/pneumatic controls
- Transportation
- Power generation

### SPECIFICATIONS
- **Service:** Compatible gases and liquids.
- **Wetted Materials:** 17-4 PH SS.
- **Accuracy:** ±0.05% FS RSS.
- **Total Error Band (Includes all thermal effects):** <±0.25% FS over entire temperature compensated range.
- **Stability:** < 0.15% FS/year.
- **Temperature Limits:** -40 to 185°F (-40 to 85°C).
- **Pressure Limits:** Proof pressure and burst pressure: See pressure limits table below.
- **Compensated Temperature Range:** -4 to 140°F (-20 to 60°C).
- **Power Requirements:**
  - 9 to 30 VDC for current output;
  - 15 to 30 VDC for voltage output.
- **Minimum Supply Voltage:**
  - Min. supply voltage (VDC) for current output = 9 + 0.02 x loop resistance (loop resistance = line resistance + receiver resistance).
- **Output Signal:**
  - 0 to 10 VDC (4-wire);
  - 4 to 20 mA (2-wire).
- **Response Time:** < 10 ms (voltage output), < 80 ms (current output).
- **Max Current Consumption:**
  - 4 to 20 mA: 22 mA;
  - 0 to 10 VDC: 20 mA.
- **Electrical Connections:** 3 ft cable or 6-pin male bayonet connector.
- **Process Connection:** 1/4˝ male NPT or 7/16˝-20 male SAE with O-Ring.
- **Enclosure Rating:** NEMA 4X (IP65).
- **Mounting Orientation:** Vertical.
- **Weight:** 9 oz (254 g).
- **Agency Approval:** CE.

### ACCESSORIES
- A-495, 6-pin female bayonet male connector

### MODEL NUMBERING

<table>
<thead>
<tr>
<th>Model</th>
<th>Electrical Connection</th>
<th>Signal Output</th>
<th>Process Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>644</td>
<td>-L</td>
<td>0 to 10 volt</td>
<td>1/4˝ male NPT</td>
</tr>
<tr>
<td></td>
<td>-B</td>
<td>4 to 20 mA</td>
<td>7/16˝-20 SAE male</td>
</tr>
</tbody>
</table>

### PRESSURE LIMITS

<table>
<thead>
<tr>
<th>Number</th>
<th>Range</th>
<th>Proof Pressure</th>
<th>Burst Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>0 to -14.7 psig</td>
<td>30 psig</td>
<td>3000 psig</td>
</tr>
<tr>
<td>01</td>
<td>0 to 15 psig</td>
<td>30 psig</td>
<td>3000 psig</td>
</tr>
<tr>
<td>02</td>
<td>0 to 25 psig</td>
<td>50 psig</td>
<td>3000 psig</td>
</tr>
<tr>
<td>03</td>
<td>0 to 50 psig</td>
<td>100 psig</td>
<td>8000 psig</td>
</tr>
<tr>
<td>04</td>
<td>0 to 100 psig</td>
<td>200 psig</td>
<td>10000 psig</td>
</tr>
<tr>
<td>05</td>
<td>0 to 150 psig</td>
<td>300 psig</td>
<td>10000 psig</td>
</tr>
<tr>
<td>06</td>
<td>0 to 200 psig</td>
<td>400 psig</td>
<td>10000 psig</td>
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<tr>
<td>07</td>
<td>0 to 300 psig</td>
<td>600 psig</td>
<td>10000 psig</td>
</tr>
<tr>
<td>08</td>
<td>0 to 500 psig</td>
<td>800 psig</td>
<td>10000 psig</td>
</tr>
<tr>
<td>09</td>
<td>0 to 750 psig</td>
<td>1200 psig</td>
<td>10000 psig</td>
</tr>
<tr>
<td>10</td>
<td>0 to 1000 psig</td>
<td>1500 psig</td>
<td>10000 psig</td>
</tr>
<tr>
<td>11</td>
<td>0 to 15 psia</td>
<td>30 psig</td>
<td>3000 psig</td>
</tr>
</tbody>
</table>

**Ex. 644-L-V-00-P**
The Series DX is a differential pressure switch that makes a contact output based on the differential between two pressure sources. Wetted materials of brass and fluoroelastomer are suitable for use with most gases and water based solutions. The switch can be used for low differential pressure indication with set point on a decrease of pressure as low as 1 psid (0.07 bar). Differential set point ranges are available from 2.5 to 75 psid (0.17 to 5.17 bar) on increasing differential pressure and 1.0 to 67 psid (0.07 to 4.62 bar) on decreasing differential pressure. Unit features a high static pressure rating of 200 psig (13.8 bar) for higher static pressure applications. Standard is a weatherproof, UL type 4X, enclosure for dust laden, outdoor, or wash-down installation environments. Series DX incorporates an externally adjustable set point, integral mounting flange and a removable electrical terminal block for quick and easy installation. The DX uses opposing diaphragms to sense the high and low pressure with a pivot mechanism that transfers the difference of the two pressures to the SPDT switch.

APPLICATIONS

- Indicating filter differential pressure. For example initiating water filter backwash as the filter becomes clogged on increasing differential pressure.
- Proof of flow indicator monitoring differential pressure from a sensing device. For example sensing the pressure across an orifice plate to prove water flow.
- Proving flow through a pump by sensing the pressure across the pump to make sure the pump does not run dry.
- Proving flow through a chiller. Often called evaporator water pressure drop.
- Proving flow through a heat pump or AC unit. Often called condenser water lock-out switch.

**SPECIFICATIONS**

- **Service:** Compatible gases and liquids.
- **Wetted Materials:** Connection: Brass; Diaphragm: Fluoroelastomer.
- **Temperature Limits:** 30 to 140°F (-1 to 60°C).
- **Pressure Limits:** 200 psig (13.8 bar).
- **Enclosure Rating:** Weatherproof UL type 4X (IP65).
- **Repeatability:** ±2% of full range.
- **Switch Type:** SPDT snap switch.
- **Electrical Rating:** 5A @ 125/250 VAC (～), 5A res. @ 30 VDC (～).
- **Electrical Connection:** Removable terminal block.
- **Conduit Connection:** 0.871˝ diameter hole for 1/2˝ conduit fitting.
- **Process Connection:** 1/4˝ NPT female. Continuous single side only pressure should not exceed 1.25 x full differential range.
- **Mounting Orientation:** Ports on horizontal plane, ±10°.
- **Set Point Adjustment:** External screw.
- **Housing Materials:** Body: Aluminum; Housing: Polycarbonate; Cover: 300 SS.
- **Vibration and Shock:** Set point repeats after 2.5 Gs, 5 to 500 Hz. Set point repeats after a 15 Gs, 10 millisecond duration.
- **Altitude Limit:** 6560 ft (2000 m).
- **Humidity Limit:** 80% (non-condensing).
- **Pollution Degree:** 2.
- **Environment:** Intended for indoor and outdoor use.
- **Weight:** 1 lb 3 oz (0.54 kg).
- **Agency Approvals:** CE, UL.

**Adjustable Differential Range (on increase)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Adjustable Differential Range (on increase)</th>
<th>Fixed Deadband At Low Set Point</th>
<th>Fixed Deadband At High Set Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>DXW11-153-1</td>
<td>2 to 10 (0.14 to 0.69)</td>
<td>1.5 (0.10)</td>
<td>2.5 (0.17)</td>
</tr>
<tr>
<td>DXW11-153-2</td>
<td>10 to 25 (0.69 to 1.72)</td>
<td>2.5 (0.17)</td>
<td>3.5 (0.24)</td>
</tr>
<tr>
<td>DXW11-153-3</td>
<td>25 to 50 (1.72 to 3.45)</td>
<td>3.5 (0.24)</td>
<td>6.0 (0.41)</td>
</tr>
<tr>
<td>DXW11-153-4</td>
<td>50 to 75 (3.46 to 5.17)</td>
<td>6.0 (0.41)</td>
<td>8.5 (0.55)</td>
</tr>
</tbody>
</table>

**Note:** Set points on a decrease will be the range minus the deadband.
One of our most popular differential pressure switches is now available with a DPDT switch and manual reset. The 1831 combines small size with 4% set point repeatability. Absolutely no power is required to operate the DPDT switch. Set point adjustment on the switch is easily accessible for modifying the set point.

The Series 1831 DPDT Low Differential Pressure Switches with Manual Reset eliminate common problems associated with typical high duct static cutout installations. Since the 1831 requires absolutely no power to drive its outputs, a separate power loop and its associated additional wiring and conduit is alleviated, reducing material and labor installation costs. Both control contacts of the Series 1831 activate at the same time. The potential of the lead switch shutting down the fan preventing the lag switch from sending an alarming signal to the DDC is no longer a probable system liability. Potential costly maintenance calls are diminished. Unlike typical switches that possess only a single conduit entry for both control loops, the Series 1831 provides two conduit connections simplifying wiring while eliminating additional conduit tees. The Series 1831’s specifications and features make it the superior choice for high duct static cutout applications.

FEATURES
• Both contacts activate and reset at the same time
• No power required to operate
• Dual conduit openings for each control loop
• Included bracket for mounting quickly

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Range (in w.c.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1831-1-RA-S</td>
<td>Manual reset DPDT, activate on increase</td>
<td>2.5-9</td>
</tr>
<tr>
<td>1831-2-RA-S</td>
<td>Manual reset DPDT, activate on increase</td>
<td>7.5-23</td>
</tr>
</tbody>
</table>

SPECIFICATIONS
Service: Air and non-combustible, compatible gases.
Wetted Materials: Consult factory.
Temperature Limits: -30 to 180°F (-34 to 82.2°C).
Pressure Limits: 10 psig (68.95 kPa) continuous, 25 psig (172.4 kPa) surge.
Switch Type: 2 SPDT.
Actuation Time Difference: 1 millisecond maximum actuation delay between contacts.
Repeatability: ±4% max.
Electrical Rating: 4A @ 125/250 VAC.
Electrical Connections: Screw type terminal block.
Process Connections: 1/8˝ female NPT.
Mounting Orientation: Diaphragm in vertical position. Consult factory for other position orientations.
Set Point Adjustment: Screw type inside mounting spud.
Weight: 1 lb 2 oz (522 g).
The Series BDPA Adjustable Differential Pressure Alarm is designed for overpressure, vacuum, and differential pressure applications. The scaled adjustment knob allows changes to the switching pressure to be made without a pressure gage. The BDPA is available with settings from 0.08 in w.c. (20 Pa) to 20 in w.c. (5000 Pa). The silicone diaphragm and PA 6.6 body make the Series BDPA perfect for use with air and other noncombustible gases.

The Series BDPA Adjustable Differential Pressure Alarms offer a versatile range of configurations allowing utilization of their many features. The BDPA can be powered by battery or 24 VDC/VAC line power. If connecting line power, the battery can act as back-up power in case of power outage. When set point threshold is reached, a local loud audible buzzer and bright LED will indicate periodically notifying of set point activation. An SPDT contact may also be wired to send a signal remotely to a DDC or building management system. A snooze button located through an opening in the cover can be pressed by the user to manually disengage the audible and visual indication until a maintenance operation is performed. If the instrument is mounted where it is difficult to access, a remote contact may be connected allowing the user to deactivate the buzzer and LED at the remote contact location.

The Series BDPA Differential Pressure Alarm’s great functional versatility makes it perfect for filter, fan, and ventilation applications or any retrofit job where installing electrical wiring proves cost-prohibitive.

ACCESSORIES
A-288, “L” type metal mounting bracket with screws
A-289, “S” type metal mounting bracket with screws
A-468, Spare battery for BDPA Pressure Alarm
A-480, Plastic static pressure tip
A-481, Installer kit. Includes 2 plastic static pressure tips and 7 ft (2.1 m) of PVC tubing tip

<table>
<thead>
<tr>
<th>Model</th>
<th>Set Point Range in w.c. (Pa)</th>
<th>Approx. Dead Band @ Min Set Point in w.c. (Pa)</th>
<th>Approx. Dead Band @ Max Set Point in w.c. (Pa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDPA-08-2-N</td>
<td>0.08 to 1.20 (20-300)</td>
<td>0.04 (10)</td>
<td>0.05 (12)</td>
</tr>
<tr>
<td>BDPA-04-2-N</td>
<td>0.12 to 1.60 (30-400)</td>
<td>0.06 (19)</td>
<td>0.09 (23)</td>
</tr>
<tr>
<td>BDPA-03-2-N</td>
<td>0.20 to 2.00 (50-500)</td>
<td>0.08 (20)</td>
<td>0.09 (23)</td>
</tr>
<tr>
<td>BDPA-05-2-N</td>
<td>0.80 to 4.00 (200-1000)</td>
<td>0.4 (100)</td>
<td>0.5 (130)</td>
</tr>
<tr>
<td>BDPA-06-2-N</td>
<td>2.00 to 10.00 (600-2500)</td>
<td>0.6 (150)</td>
<td>0.8 (200)</td>
</tr>
<tr>
<td>BDPA-07-2-N</td>
<td>4.00 to 20.00 (1000-5000)</td>
<td>1.0 (250)</td>
<td>1.4 (350)</td>
</tr>
</tbody>
</table>

Note: For optional 1/2” NPT connection, change -2-N to -1-N.
The Series DPT Digital Pressure Transmitter with Switches combines a large, 14-segment LED display with two programmable solid state switches into one compact unit. A unique, 3-way rotating design allows the DPT to meet specific installation requirements without any retrofitting. The display and electrical connection can be rotated independently to maximize visibility while still orienting the electrical connection in the best position for the cable connector. Large, ergonomically designed push buttons allow for quick/easy programming and thin-film piezoresistive sensor technology guarantees long-term reliability and stability.

FEATURES
- Single or dual PNP solid state switches
- 14-segment red LED display
- User-friendly, intuitive 3-key operation
- Rotating design:
  - 330° display rotation
  - 180° display electronic rotation

APPLICATIONS
- Calibration
- Hydraulics and pneumatics
- Machine tools
- Compressors and pumps
- Machine building

ACCESSORY
A-195, 6’ (2 m) shielded cable with 5 pin female M-12 connections

SPECIFICATIONS
Service: Compatible gases, liquids or vapors.
Wetted Materials:
- Pressure connection: 316 L SS
- Pressure sensor: 316 L SS (13-8 PH for ranges above 150 psi)
- Housing: 316 L lower body, heat and chemical resistant fiberglass reinforced plastic (PBT) plastic head, TPE-E keyboard, PC display window.
- Accuracy: 1.0% F.S. (includes non-linearity, hysteresis, zero point).
- Pressure Limit: See table.
- Temperature Limits: 32 to 176°F (0 to 80°C).

SWITCH SPECIFICATIONS
Switch Type: PNP.
Electrical Rating: 250 mA.
Electrical Connections: M 12x1, 5-pin.
Mounting Orientation: Mount in any position.

TRANSMITTER SPECIFICATIONS
Temperature Limits: 32 to 176°F (0 to 80°C).
Thermal Effect: 0.2% FS / 10k.
Power Requirements: 15 to 35 VDC.
Output Signal: DPT-A: 4 to 20 mA; DPT-V: 0 to 10 VDC.
Loop Resistance: DPT-A: ≤ 0.5k; DPT-V: > 10k.
Power Consumption: ≤ 100 mA.
Electrical Connections: M 12x1, 5-pin.
Enclosure Rating: IP67.
Agency Approvals: CE.

<table>
<thead>
<tr>
<th>Model</th>
<th>4 to 20 mA</th>
<th>Range (psig)</th>
<th>Maximum Pressure (psig)</th>
<th>Burst Pressure (psig)</th>
<th>Pressure Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 10 VDC</td>
<td>1-1/2</td>
<td>1-33/64</td>
<td>3-23/64</td>
<td>1-5/32</td>
<td></td>
</tr>
<tr>
<td>DPT-V01</td>
<td>DPT-A01</td>
<td>0 to 15</td>
<td>30</td>
<td>1.034</td>
<td>103.4</td>
</tr>
<tr>
<td>DPT-V02</td>
<td>DPT-A02</td>
<td>0 to 25</td>
<td>60</td>
<td>1.724</td>
<td>172.4</td>
</tr>
<tr>
<td>DPT-V03</td>
<td>DPT-A03</td>
<td>0 to 30</td>
<td>150</td>
<td>2.068</td>
<td>206.8</td>
</tr>
<tr>
<td>DPT-V05</td>
<td>DPT-A05</td>
<td>0 to 100</td>
<td>500</td>
<td>6.895</td>
<td>689.5</td>
</tr>
<tr>
<td>DPT-V06</td>
<td>DPT-A06</td>
<td>0 to 160</td>
<td>900</td>
<td>11.03</td>
<td>1103</td>
</tr>
<tr>
<td>DPT-V10</td>
<td>DPT-A10</td>
<td>0 to 1000</td>
<td>1740</td>
<td>68.95</td>
<td>6895</td>
</tr>
</tbody>
</table>

*feet of seawater @ 4°C
The Series MDPC is a slim, gas pressure sensor that is small in size and light in weight. This pressure controller supports many installation methods and features high measurement accuracy. This small controller yields excellent stability, high shock and vibration resistance. The MDPC also provides good overload capacity and heat resistance. It can be utilized in many industries such as high-tech electronics, general processing, food packaging and automatic assembly. The MDPC features 6 user selectable pressure units and a large, LED 3-color display with selectable color options that allow for easy reading. Changing units is simple, and by using the included unit stickers, the pressure unit displayed becomes very clear. The fast parameter copy function makes copying parameters to other MDPC pressure controllers effortless. The key lock mode also prevents any unnecessary changes to the parameters, which can have an effect on the operation. Another characteristic of this multi-talented pressure controller is its ability to detect both positive and negative pressure. The MDPC is available in NPN, PNP, analog voltage or current output control modes.

FEATURES
- Energy saving mode
- 3-color display with selectable color options: green, red and orange
- Analog output function
- Parameter copy function
- Unit conversion function: inHg, psi, kPa, mmHg, kg/cm² and bar
- 10 sets of user selectable output response times
- Fast zero reset

SPECIFICATIONS
- Service: Non-corrosive gas.
- Wetted Materials: Brass with nickel plating.
- Housing Materials: Polycarbonate, polybutylene terephthalate.
- Accuracy: ±3% of full range.
- Pressure Limits:
  - MDPC-1: 29 psi (200 kPa);
  - MDPC-2: 217.6 psi (1500 kPa).
- Temperature Limits:
  - Operating: -40 to 185°F (-40 to 85°C);
  - Storage: -4 to 149°F (-20 to 65°C);
  - Ambient: 32 to 122°F (0 to 50°C).
- Display:
  - 2-line LCD display, 4 digits for measured value and 3.5 digits for setup display.
- Power Requirements: 12 to 24 VDC ±10% no isolations.
- Power Consumption: 40 mA max.; Current output type 60 mA max.
- Process Connections: 1/8˝ NPT, inner connection M5, for 1/8˝ PT contact factory.
- Weight: 1.3 oz (36.85 g).

SWITCH SPECIFICATIONS
- Switch Type: NPN or PNP.
- Electrical Rating: 100 mA @ 30 VDC.
- Response Time: Programmable to 2ms, 4ms, 10ms, 30ms, 50ms, 100ms, 250ms, 500ms, 1000ms or 5000ms.
- Display Cycle: Programmable to 100ms, 250ms, 500ms or 1000ms.

TRANSMITTER SPECIFICATIONS
- Output Signal:
  - 1 to 5 V: Minimum output load resistance 1000 Ω;
  - 4 to 20 mA: Maximum output load resistance 400 Ω.
- Zero and Span Adjustments: Menu scalable within the range.
The Series PFG2 Process Filter Gage is designed for determining the state of an in-line filter. The differential pressure indicator determines the pressure drop on either side of a filter through its 1/8˝ female NPT pressure connections, and relates the value to one of three zones: clean (green), change (yellow), or dirty (red). The Series PFG2 is perfectly suited for filter applications, line loss, valve drop, and many other differential pressure applications where a simple indicator is needed. The direction of process flow is indicated on the dial, with the arrow pointing to the low pressure port. In order to change the high and low pressure connections, simply remove the indicator from the mounting base and rotate 180°. The PFG2 can be connected in-line through the side process connections, but can also be directly mounted through the outlet/inlet connections by removing the mounting block.

### SPECIFICATIONS

**Service:** Liquids/gases compatible with SS, GFN, and fluoropolymer.

**Wetted Materials:** Aluminum, SS, glass filled nylon, and fluoropolymer.

**Accuracy:** ±5% F.S.

**Temperature Limit:** 200°F (93°C).

**Pressure Limit:** 300 psig (20.7 bar).

**Materials:**
- Body: Glass filled nylon;
- Mounting Block: Aluminum;
- Lens: Polyester;
- Elastomers: Fluorocarbon.

**Process Connection:** 1/8˝ female NPT.

**Mounting Orientation:** Any orientation with 10-32 threaded holes 3/4˝ apart.

**Weight:** 9.6 oz (272.2 g).

### Models and Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Full Range</th>
<th>Green Zone</th>
<th>Yellow Zone</th>
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The AQStick™ Ambient Volatile Organic Compound (VOC) Monitor monitors ambient air quality by detecting the VOC content in the air. Some common sources of VOC contamination are carpets, building materials, paints, cleaners, and tobacco smoke. Even low concentrations of these compounds can affect building occupants’ comfort. A computer’s USB port provides power for the sensor and the LED lights which change color in accordance with the ambient air quality. In order to correspond with ASHRAE’s standards for air quality, the VOC reading from the monitor is converted from a percentage contaminated to an equivalent PPM reading of CO₂. The percentage contaminated multiplied by 2000 PPM of CO₂ gives the equivalent concentration of CO₂. From the factory, the LED is green under 1000 PPM CO₂, yellow for 1000 to 1500 PPM CO₂ and red above 1500 PPM CO₂. These factory values can be changed using the free online software. When using the free online software, the AQStick™ ambient VOC monitor can log and graph how building conditions change over time.

**SPECIFICATIONS**
- VOC’s Detected: Alcohols, aldehydes, ketones, organic acids, aliphatic and aromatic hydrocarbons.
- Sensor: MEMS metal oxide semiconductor.
- Power: Powered from PC USB port.
- Temperature Limits: 32 to 122°F (-10 to 50°C).
- Humidity Limits: 5 to 95% RH (non-condensing).
- Agency Approval: CE.

AQStick™ is a trademark of Dwyer Instruments, Inc.

The new Series AVFS Adjustable Air Flow Switch complements the Dwyer Instruments line of thermo-anemometer transmitters and handheld instruments. The AVFS is specifically designed to monitor air flow in ducts and provides a 3A contact output to indicate a change or loss of flow. Simply turn on the fan or air handling unit and adjust the set-point via the potentiometer to show normal status. Then alter a damper or decrease fan speed to activate the AVFS. The AVFS will signal a loss of flow and the N.O. SPST output will indicate the detected decrease. For ease of installation and system trouble-shooting, the Series AVFS possesses a red/green LED indication to provide local status if the air flow is above (green) or below (red) the set-point. The AVFS provides a ±5% set-point repeatability across a full scale range of 1-10 m/s (197-1969 fpm) and includes a mounting bracket for quick duct mounting. The AVFS Series Adjustable Air Flow Switches come in a compact, rugged PBT enclosure that is rated IP65, making them ideal for any ventilation system installation or similar BAS application.

**APPLICATIONS**
- Fan monitoring
- Filter monitoring
- Damper feedback
- Air handlers

**SPECIFICATIONS**
- Air Velocity Range: 197-1969 FPM (1-10 m/s).
- Temperature Limits: 5 to 122°F (-10 to 50°C).
- Humidity Limits: 0-90% RH.
- Wetted Materials: PBT body, titanium sensor.
- Pressure Limit: 14.7 psig (1 bar).
- Housing: PBT.
- Repeatability: ±5% FS.
- Switch Type: N.O. SPST.
- Electrical Rating: 3 A @ 30 VDC/250 VAC.
- Response Time: 3-60 seconds. Varies with flow and set point.
- Power Requirement: AVFS-1: 80 to 250 AC/DC (47 to 63 Hz AC); AVFS-2: 24 VDC ±25%.
- Power Consumption: 3 VA.
- Electrical Connection: 6.5 ft (2 m) cable.
- Enclosure Rating: IP65.
- Display: 1 Red LED/1 Green LED.
- Weight: 7.2 oz (203 g).
- Agency Approvals: CE.

Model AVFS-1, 80-250 AC/DC Power Thermo Air Flow Switch
Model AVFS-2, 24 VDC Power Thermo Air Flow Switch
The Series DF7 MERV 7 Pleated Filters are ideal for nearly all commercial, industrial, and health care applications where an efficient, long-life filter is desired. An automated construction process provides the quality, consistency, and performance that other hand assembled pleated filters simply cannot match. Utilizing premium, synthetic material and an advanced design, the DF7 is able to withstand considerable abuse from shipping and handling without damage. The thermally bonded synthetic media is not adversely affected by high humidity applications, as is typically the case in conventional cotton blend/resin bonded pleat media. A square pleat tip design allows for both rigidity and increased surface contact. A center support strut adds strength and eliminates breaching. The DF7 is suitable for a variety of environments ranging from dry to high humidity.

**FEATURES**
- 100% metal free design
- MERV 7
- Square pleat tip design for increased surface contact and rigidity
- Dense synthetic media

**APPLICATIONS**
The DF7 can be used as a primary filter or as a prefilter to higher efficiency final filters in nearly all commercial, industrial, and health care applications.

<table>
<thead>
<tr>
<th>Model</th>
<th>Nominal Size (L x W x D)</th>
<th>Capacity (CFM)</th>
<th>Medium</th>
<th>High</th>
<th>Case Quantity</th>
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The Series DF8 MERV 8 Pleated Filters are designed for applications requiring higher levels of air filtration such as in the protection of HVAC components from dust/dirt or in the prevention of airborne irritants in sensitive settings. An expanded metal grid on the air exiting side and a die-cut frame provides exceptional strength during both installation and operation. The 100% synthetic media inhibits biological growth and allows for low resistance operation making the DF8 a practical, cost-effective filtration option. The frame is constructed of 100% recyclable moisture resistant paperboard.

**FEATURES**
- Low resistance improves air flow and can greatly reduce energy costs
- 100% recyclable moisture resistant paperboard frame
- 100% synthetic media inhibits biological growth
- MERV 8
- Initial resistance of 0.19" w.g. @ 500 fpm

**APPLICATIONS**
Designed for use in commercial buildings, hotels, industrial filtration, airports, schools and universities.

**SPECIFICATIONS**
- **Service:** Air
- **Filtration Efficiency:** MERV 8
- **Temperature Limit:** 200°F (93.3°C) continuous operating temperature.
- **Recommended Final Resistance:** 1.0" w.g.

**INITIAL RESISTANCE**

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<th>Capacity (CFM)</th>
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**INITIAL RESISTANCE**

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Designed for use in commercial buildings, hotels, industrial filtration, airports, schools and universities.

**FEATURES**
- Low resistance improves air flow and can greatly reduce energy costs
- 100% recyclable moisture resistant paperboard frame
- 100% synthetic media inhibits biological growth
- MERV 10
- Initial resistance of 0.17” w.g. @ 500 fpm

**APPLICATIONS**
Designed for use in commercial buildings, hotels, industrial filtration, airports, schools and universities.

---

**INITIAL RESISTANCE**

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<tr>
<td>DF10-22x22x2</td>
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<td>1675</td>
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<tr>
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<td>25x25x5</td>
<td>1625</td>
<td>2150</td>
<td>6</td>
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</tbody>
</table>

**SPECSIFICATIONS**
- Service: A2
- Filtration Efficiency: MERV 10
- Temperature Limit: 200°F (93.3°C) continuous operating temperature.
- Recommended Final Resistance: 1.0” w.g.
The Series DF13 MERV 13 Pleated Filters deliver the high efficiency of a MERV 13 filter without the size and retrofitting requirements of most filters reaching this standard. Designed for direct installation with absolutely no modifications to existing equipment. Utilizing a synthetic media consisting of charged fibers in combination with time-tested filtration principles, the DF13 immediately begins catching airborne contaminants upon installation. This initial layer of dust further enhances the filtering process.

FEATURES
- Charged fibers
- Exceeds LEED®/Green requirements of MERV 13 filtering efficiency
- 100% recyclable paperboard frame

APPLICATIONS
- Great option for earning points toward LEED® certification in new construction.
- Hospitals, universities, industry, commercial applications, and other settings where high efficiency air filtration is a necessity.

### FEATURES

<table>
<thead>
<tr>
<th>Model</th>
<th>Nominal Size (L x W x D)</th>
<th>Capacity (CFM)</th>
<th>Case Quantity</th>
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</thead>
<tbody>
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<td>10x20x1</td>
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<td>925</td>
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<td>24x24x1</td>
<td>1500</td>
<td>6</td>
</tr>
<tr>
<td>DF13-25x25x1</td>
<td>25x25x1</td>
<td>1625</td>
<td>6</td>
</tr>
</tbody>
</table>

### APPLICATIONS

- Hospitals, universities, industry, commercial applications, and other settings where high efficiency air filtration is a necessity.
The Series APM has a unique, rugged, NEMA 4X front panel design that makes it nearly impenetrable in typical applications. The weatherproof, UV resistant, large, dual line display allows for more information making it easier to read and even simpler to program. The intensity of the display can be adjusted allowing this meter to be utilized in dark rooms as well as outdoors, due to its sunlight readable display. It features up to eight visual alarm set points to trigger certain events and three function keys which can be programmed to provide direct menu access. With up to four relays available, the APM features latching, non-latching, sampling, pump alteration control, and a failsafe action. Offering programmable delay time, this meter prevents recognition of false maximum or minimum reading which may be caused by the start-up or unusual process events. The APM provides three security passwords that restrict modification of programmed settings. This unit has the ability to obtain non-linear input signals and linearize them with simple to use math functions such as square-root extractor, weirs and flumes exponential linearizer, horizontal round tank linearizer or general purpose 32-point linearizer. Unit accepts 0 to 20 mA, 4 to 20 mA, 0 to 5V, or ±10V inputs and requires 85-265 VAC or 12/24 VDC power supply. Choose from RS-232, RS-422/485 serial communication options or any available expansion modules, accessories, and enclosures.

The APM is a 1/8 DIN digital panel meter specifically designed for displaying flow rate and total from a flow meter with an analog output such as 4 to 20 mA or 0 to 10V. The APM is particularly well suited for flow applications and can be programmed for a wide variety of display configurations. The upper line can display either flow rate, total or grand total, and the lower line can display either flow rate, total, grand total, or engineering units. It is possible to display flow rate and total at the same time, a very unique feature on a 1/8 DIN digital panel meters.

FEATURES
• Three levels of password protection
• Math functions for flow & round horizontal tanks
• 32-point linearization, square root or programmable exponent
• Multi-pump alteration control
• Rate displayed as units per second, minute, hour, or day
• Total, grand total or non-resettable grand total
• Two or four relays & isolated 4 to 20 mA output options
• External 4-relay & digital I/O expansion modules
• Removable screw terminal blocks accept 12 to 22 AWG wire, RJ45 for external relays, digital I/O, and serial communication adapters.

OPEN CHANNEL FLOW CAPABILITY
Series APM when utilized with an ultrasonic level transmitter, such as the Mercoid Series ULT, provides an economical way to measure open channel flow.

DIFFERENTIAL PRESSURE FLOW
The APM can display flow rate and total by extracting the square root from the 4 to 20 mA signal from a differential pressure transmitter, such as the Dwyer 629, that is being used with a flow element such as Dwyer orifice plate Series OP or TE. The user-selectable, low-flow cut-off feature gives a reading of zero when the rate is below a user selectable value.

PUMP CONTROL
With the two or four contact output option the APM can be used as a programmable pump controller when used with a Dwyer level transmitter. The unit also has programmable on and off points for up to four pumps, quadrexel pumping systems with alteration capability. When using the 4-relay model with the four external relay accessory, the APM can do 8 contacts for any combination of pump control and 8 programmable alarms.
The Series MPM has a unique, rugged, NEMA 4X front panel design that makes it nearly impenetrable in typical applications. The weatherproof, UV resistant, large, dual line display allows for more information, making it easier to read and simpler to program. The intensity of the display can be adjusted allowing this meter to be utilized in dark rooms as well as outdoors, due to its sunlight readable display. It features up to eight visual alarm set points to trigger certain events and three function keys, which can be programmed to provide direct menus access. With up to four relays available, the MPM features latching, non-latching, sampling, pump alteration control, and a fail-safe action. Offering programmable delay time, this meter prevents recognition of false maximum or minimum reading which may be caused by the start-up or unusual process events. The MPM provides three security passwords that restrict modification of programmed settings. The MPM has the ability to obtain non-linear input signals and linearize them with simple to use math functions such as square-root extractor, weirs and flumes exponential linearizer, horizontal round tank linearizer or general purpose 32-point linearizer. Unit accepts 0 to 20 mA, 4 to 20 mA, 0 to 5 V, or ±10 V inputs and requires 85 to 265 VAC or 12/24 VDC power supply. Choose from RS-232, RS-422/485 serial communication options or any available expansion modules, accessories and enclosures.

**FEATURES**
- Three levels of password protection
- Math functions for flow & round horizontal tanks
- 32-point, square root or exponential linearization
- Multi-pump alternation control
- Two or four relays & isolated 4 to 20 mA output options
- External 4-relay & digital I/O expansion modules
- RS-232, RS-422/485 serial communication options

**PUMP CONTROL**
Providing two or four contact output options, the MPM can be used as a programmable pump controller when used with any Dwyer level transmitter. The relay capabilities of this meter expand its usefulness beyond simple indication to provide the user with alarm and pump control.

**ACCESSORIES**
See Series PMA

**ENCLOSURES**
See Series PME

**SPECIFICATIONS**
- **Input:** 0 to 20 mA, 4 to 20 mA, 0 to 5 V, 1 to 5 V or ±10 V.
- **Input Impedance:** 50 to 100 Ω.
- **Accuracy:** ±0.03% of calibrated span ±1 count, square root & programmable exponent accuracy range: 10 to 100% of calibrated span.
- **Power Requirements:** 85 to 265 VAC 50/60 Hz; 90 to 265 VDC, 20 W max or 12 to 24 VDC ± 10%, 15 W max.
- **Display:** Dual-line 6-digit display, 0.60˝ & 0.46˝.
- **Decimal Points:** 5-position, user selectable.
- **Temperature Limits:** Operating: -40 to 149°F (-40 to 65°C); Storage: -40 to 185°F (-40 to 85°C);
- **Enclosure Rating:** NEMA 4X, IP65 front.
- **Electrical Connections:** Removable screw terminal blocks accept 12 to 22 AWG wire, RJ45 for external relays, digital I/O, and serial communication adapters.
- **Output Signal:** 4 to 20 mA.
- **Switch Rating:** 2 or 4 SPDT (Form C) internal and/or 4 SPST (Form A) external; rated 3A @ 30 VDC and 125/250 VAC resistive load; 1/14 HP @ 125/250 VAC for inductive loads.
- **Time Delay:** 0 to 999.9 seconds, on & off relay time delays programmable and independent for each relay.
- **Shipping Weight:** 9.5 oz (269 g).
- **Agency Approvals:** CE, UL, RoHS.

<table>
<thead>
<tr>
<th>Model</th>
<th>Power</th>
<th>Output 1</th>
<th>Output 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPM-100</td>
<td>85 to 265 VAC</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>MPM-101</td>
<td>85 to 265 VAC</td>
<td>None</td>
<td>4 to 20 mA</td>
</tr>
<tr>
<td>MPM-120</td>
<td>85 to 265 VAC</td>
<td>2 relays</td>
<td>None</td>
</tr>
<tr>
<td>MPM-121</td>
<td>85 to 265 VAC</td>
<td>2 relays</td>
<td>4 to 20 mA</td>
</tr>
<tr>
<td>MPM-140</td>
<td>85 to 265 VAC</td>
<td>4 relays</td>
<td>None</td>
</tr>
<tr>
<td>MPM-141</td>
<td>85 to 265 VAC</td>
<td>4 relays</td>
<td>4 to 20 mA</td>
</tr>
<tr>
<td>MPM-200</td>
<td>12 to 24 VDC</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>MPM-201</td>
<td>12 to 24 VDC</td>
<td>2 relays</td>
<td>None</td>
</tr>
<tr>
<td>MPM-220</td>
<td>12 to 24 VDC</td>
<td>2 relays</td>
<td>4 to 20 mA</td>
</tr>
<tr>
<td>MPM-221</td>
<td>12 to 24 VDC</td>
<td>4 relays</td>
<td>None</td>
</tr>
<tr>
<td>MPM-240</td>
<td>12 to 24 VDC</td>
<td>4 relays</td>
<td>None</td>
</tr>
<tr>
<td>MPM-241</td>
<td>12 to 24 VDC</td>
<td>4 relays</td>
<td>4 to 20 mA</td>
</tr>
</tbody>
</table>
The Series PPM has a unique, rugged, NEMA 4X front panel design that makes it nearly impenetrable in typical applications. The weatherproof, UV resistant, large, dual line display allows for more information, making it easier to read and simpler to program. The intensity of the display can be adjusted allowing this meter to be utilized in dark rooms as well as outdoors, due to its sunlight readable display. It features up to eight visual alarm set points to trigger certain events and three function keys which can be programmed to provide direct menu access. With up to four relays available, the PPM features latching, non-latching, sampling, pump alteration control, and a failsafe action. Offering programmable delay time, this meter prevents recognition of false maximum or minimum reading which may be caused by the start-up or unusual process events. The PPM provides three security passwords that restrict modification of programmed settings. This unit has the ability to obtain non-linear input signals and linearize them with a general purpose 32-point linearizer. Choose from RS-232, RS-422/485 serial communication options or any available expansion modules, accessories, and enclosures.

The PPM displays flow rate and total simultaneously, with a programmable relay and 4 to 20 mA option for flow rate or flow total. The PPM is a 1/8 DIN digital panel meter specifically designed for displaying flow rate and total from a pulsed input provided by open collector, NPN, PNP, TTL, switch contact, sine wave, or square wave.

FEATURES
- Three levels of password protection
- Gate function for rate display of slow pulse rates
- Rate displayed as units per second, minute, hour, or day
- K-factor calibration or scale with up to 32-point linearization
- Total, grand total or non-re-settable grand total
- Two or four relays & isolated 4 to 20 mA output options
- External 4-relay & digital I/O expansion modules
- RS-232, RS-422/485 serial communication options

FLOW RATE
The PPM is particularly well-suited for flow applications because its six-digit, dual-line display can be programmed for a wide variety of display configurations. For instance, the upper line can display either flow rate, total or grand total, and the lower line can display flow rate, total, grand total, or engineering units. Among other things, this makes it possible to display either flow rate and total, or total and grand total at the same time, a very unique feature on 1/8 DIN digital panel meters.

SPECIFICATIONS
Input: Field selectable: Pulse or square wave 0 to 5V, 0 to 12V, or 0 to 24V @ 30 kHz; TTL; open collector 4.7 kΩ pull-up to 5V @ 30 kHz; NPN or PNP transistor, switch contract 4.7 kΩ pull-up to 5V @ 40 Hz.
Input Impedance: 50 to 100 Ω.
Accuracy: ±0.03% of calibrated span ±1 count.
Power Requirements: 85 to 265 VAC 50/60 Hz, 90 to 265 VDC, 20 W max or 12 to 24 VDC ± 10%, 15 W max.
Display: Dual-line 6-digit display, 0.60” and 0.46”, 0.60” is brighter and easier to read.
Decimal Points: 5-positions, user selectable.
Temperature Limits:
- Operating: -40 to 149°F (-40 to 65°C);
- Storage: -40 to 185°F (-40 to 85°C).
Enclosure Rating: NEMA 4X, IP65 front.
Electrical Connections: Removable screw terminal blocks accept 12 to 22 AWG wire, RJ45 for external relays, digital I/O, and serial communication adapters.
Output Signal: 4 to 20 mA.
Switch Rating: 2 or 4 SPDT (Form C) internal and/or 4 SPST (Form A) external; rated 3A @ 30 VDC and 125/250 VAC resistive load; 1/14 HP @ 125/250 VAC for inductive loads.
Power Supply:
- 85 to 265 VAC models: 200 mA @ 24 VDC;
- 12 to 24 VDC models: 100 mA @ 24 VDC;
- Second supply with output 2 models: 40 mA @ 24 VDC.
Time Delay: 0 to 999.9 seconds, on & off relay time delays programmable and independent for each relay.
Shipping Weight: 9.5 oz (269 g).
Agency Approvals: CE, UL, RoHS.

<table>
<thead>
<tr>
<th>Model</th>
<th>Power</th>
<th>Output 1</th>
<th>Output 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPM-100</td>
<td>85 to 265 VAC</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>PPM-101</td>
<td>85 to 265 VAC</td>
<td>None</td>
<td>4 to 20 mA</td>
</tr>
<tr>
<td>PPM-120</td>
<td>85 to 265 VAC</td>
<td>2 relays</td>
<td>None</td>
</tr>
<tr>
<td>PPM-121</td>
<td>85 to 265 VAC</td>
<td>2 relays</td>
<td>4 to 20 mA</td>
</tr>
<tr>
<td>PPM-140</td>
<td>85 to 265 VAC</td>
<td>4 relays</td>
<td>None</td>
</tr>
<tr>
<td>PPM-141</td>
<td>85 to 265 VAC</td>
<td>4 relays</td>
<td>4 to 20 mA</td>
</tr>
<tr>
<td>PPM-200</td>
<td>12 to 24 VDC</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>PPM-201</td>
<td>12 to 24 VDC</td>
<td>None</td>
<td>4 to 20 mA</td>
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<tr>
<td>PPM-220</td>
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<td>PPM-221</td>
<td>12 to 24 VDC</td>
<td>2 relays</td>
<td>4 to 20 mA</td>
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<tr>
<td>PPM-240</td>
<td>12 to 24 VDC</td>
<td>4 relays</td>
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</tr>
<tr>
<td>PPM-241</td>
<td>12 to 24 VDC</td>
<td>4 relays</td>
<td>4 to 20 mA</td>
</tr>
</tbody>
</table>
Series P72 Flowmeters

Perfect for Wastewater and Water Treatment Facilities Dealing with Water, Caustics and Chlorines

The Series P72 Flowmeters are heavy bodied meters for corrosives, gases, and high purity fluids. These meters are designed specifically for demanding applications. They are economically priced meters ideal for caustic solutions as well as liquid chlorine, sodium hypochlorite and chlorine gas. The Series P72 Flowmeters are suited for water treatment facilities that deal with these aggressive types of gases and fluids. The P72-A is comprised of P72 and polysulfone, while the P72-B has all P72 wetted components for maximum corrosion resistance. Units have a full-scale accuracy of ±2% and can be disassembled quickly without the meter being removed from the pipeline for easy cleaning. The Series P72 Flowmeters are available with standard 3/4˝, 1-1/2˝, 3˝, and 4˝ flange connections. Optional NPT connections are also available.

OPERATING LIMITS FOR SERIES P72 FLOWMETERS

Maximum Non-Shock Working Pressure, PSIG @ °F (bar @ °C)

<table>
<thead>
<tr>
<th>Flange</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>ØK</th>
<th>ØL</th>
<th># of Bolt Holes</th>
<th>Flange Opening Diameter</th>
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<tbody>
<tr>
<td>3/4</td>
<td></td>
<td></td>
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<td>3-5/8</td>
<td>4-1/16</td>
<td>2-3/4</td>
<td>3-7/8</td>
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<tr>
<td>1-1/2</td>
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<td>9-1/8</td>
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<td>3</td>
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<td>15-11/16</td>
<td>18-11/16</td>
<td>22-11/16</td>
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<td>4</td>
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<td>22-11/16</td>
<td>26-11/16</td>
<td>30-11/16</td>
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</table>

<table>
<thead>
<tr>
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<th>70°F (21°C)</th>
<th>80°F (26°C)</th>
<th>100°F (37°C)</th>
<th>120°F (48°C)</th>
<th>140°F (60°C)</th>
<th>160°F (71°C)</th>
<th>180°F (82°C)</th>
<th>210°F (98°C)</th>
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</thead>
<tbody>
<tr>
<td>3/4 P72-NPT connection</td>
<td>270 (19)</td>
<td>270 (19)</td>
<td>250 (17)</td>
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<td>150 (10)</td>
<td>130 (9)</td>
<td>80 (6)</td>
<td>50 (3)</td>
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<tr>
<td>1-1/2 P72-NPT connection</td>
<td>180 (12)</td>
<td>180 (12)</td>
<td>170 (11)</td>
<td>145 (10)</td>
<td>115 (8)</td>
<td>75 (5)</td>
<td>50 (3)</td>
<td>30 (2)</td>
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<tr>
<td>3/4 P72-Flange connection</td>
<td>150 (10)</td>
<td>150 (10)</td>
<td>150 (10)</td>
<td>135 (9)</td>
<td>110 (8)</td>
<td>90 (6)</td>
<td>70 (5)</td>
<td>40 (2)</td>
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<td>150 (10)</td>
<td>150 (10)</td>
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<td>150 (10)</td>
<td>150 (10)</td>
<td>135 (9)</td>
<td>110 (8)</td>
<td>90 (6)</td>
<td>70 (5)</td>
<td>40 (2)</td>
</tr>
</tbody>
</table>

SPECIFICATIONS

Service: Compatible gases or liquids.

Wetted Materials:

P72-A: P72, polysulfone;
P72-B: P72.

Temperature Limits: See operating limits.

Pressure Limits: See operating limits.

Accuracy: ±2% of full scale.

Repeatability: ±1/2% of indicated flow rate.

Process Connections: 3/4˝, 1-1/2˝, 3˝ and 4˝ flange connection with optional NPT connection available.

Weight: 3 lb (1.4 kg) for 3/4˝, 9 lb (4.1 kg) for 1-1/2˝, 14 lb (6.4 kg) for 3˝, and 18 lb (8.2 kg) for 4˝.
For all P72 construction, change “A” to “B”. Consult website or factory for ordering code and pricing.

### P72-A000 to P72-A152
- **Model:** P72-A000 to P72-A152
- **Range:** 0.03 to 0.82 GPM CI to 11.5 to 230 GPM CI
- **Connection:** 3/4" to 4"

### P72-A154 to P72-A215
- **Model:** P72-A154 to P72-A215
- **Range:** 0.50 to 410 to 4.62 to 115 SCFM CI to 150.0 to 3500 SCFM CI
- **Connection:** 3/4" to 3/4" to 4" to 4" (Flange)

### P72-A216 to P72-A329
- **Model:** P72-A216 to P72-A329
- **Range:** 0.09 to 1.89 to 0.05 to 0.92 to 0.07 to 1.39 to 0.06 to 1.20 to 0.05 to 0.82 Range
- **Connection:** 3/4" to 4" to 1-1/2" to 1-1/2" to 3/4" to 4" (Flange)

### P72-A330 to P72-A440
- **Model:** P72-A330 to P72-A440
- **Range:** 15.5 to 195 to 9.5 to 394 to 3.10 to 489 to 1.50 to 55.00 to 4.70 to 110 Range
- **Connection:** 3/4" to 3/4" to 1-1/2" to 3/4" to 1-1/2" to 3/4" (Flange)

### Note:
For all P72 construction, change “A” to “B”. Consult website or factory for ordering code and pricing.

Meters available with optional 3/4" and 1-1/2" female NPT connections instead of flange.

**Contact Information:**
- **U.S. Phone:** 219 879-8000
- **U.K. Phone:** (+44) (0)1494-461707
- **Australia Phone:** (+61) (0) 2 4272 2055

**New Products**

---

**Model:** P72-A000 to P72-A152
- **Range:** 0.03 to 0.82 GPM CI to 11.5 to 230 GPM CI
- **Connection:** 3/4" to 4"
New Products

Series TDMT

Thermal Dispersion Flow Meter
No Moving Parts, 4 to 20 mA Output

The Series TDMT Flow Meter is for use in industrial applications, and can be easily installed virtually non-intrusively into any pipe. This non-intrusive installation allows flow-sensing without obstruction of the pipe diameter. It is completely encapsulated in epoxy resin and is compact, rugged, shock and vibration resistant. It provides proven reliability and long-term stability, even under the harshest environmental conditions. The TDMT is made of stainless steel with a titanium option making it resistant to aggressive media. In addition to its small and compact size, the TDMT also comes with a choice of a 1” unit with 1” NPT union nut or a 1-1/4” unit with 1-1/4” union nut, as well as available extensions that can be used for pipes sized up to 10” in diameter. With an optional temperature output, this meter provides the user with a very broad range of usage. When trying to decide on the correct length, use the 1/7th law (the TDMT’s probe length needs to be 1/7th of the pipe diameter).

PRINCIPLES OF OPERATION
The TDMT operates according to a new calorimetric principle, allowing for a wide measuring range. This meter also provides a very short integration time, even at low flow rates, making it ideal for quick control loops. Its measurement accuracy at low flow rates is considerably better than all other competing measurement devices.

SPECIFICATIONS

Service: Water, oil, compatible liquids, paste, glue, sludge and grease.
Wetted Materials: 316 SS, optional titanium.
Flow Range:
Min: 0 to 0.66 ft/s (0 to 20 cm/s);
Max: See model chart.
Accuracy: <3% of full range.
Response Time: 10 seconds.
Temperature Limits:
Process: 14 to 176°F (-10 to 80°C);
Ambient: 14 to 140°F (-10 to 60°C).
Pressure Limits: 435 psi (30 bar).
Process Connections:
1” unit: 1” NPT union nut;
1-1/4” unit: 1-1/4” NPT union nut.
Output Signal:
4 to 20 mA for flow, optional 4 to 20 mA for temperature.
Power Requirements: 24 VDC ±10%.
Resistive Load: 0 to 600 Ω.
Current Consumption: Approx. 100 to 200 mA (max. flow).
Electrical Connection: 6.5 ft (2 m) moulded oilflex cable with three 21 AWG (0.5 sq mm) wires.
Enclosure Rating: NEMA 4X (IP65).
Shipping Weight:
1” unit: 5.6 oz (158.76 g);
1-1/4” unit: 13.4 oz (379.88 g).

FEATURES
• No moving parts
• Non-intrusive sensing
• Adjustable measuring range
• Base model works for pipe sizes up to 4” in diameter
• Weatherproof construction for wide application usage
• 316 SS for excellent chemical compatibility
• Optional titanium for high corrosive media
• Optional secondary output for temperature

Example | TDMT W | S | 1 | 1 | 0 | 1 | TDMT-W-1101
--- | --- | --- | --- | --- | --- | --- | ---
Series | TDMT | Thermal Dispersion Flow Meter
Base Type | W | L | Water based fluids | Oil based fluids
Wetted Material | S | T | 316 SS | Titanium
Range | 0 | 1 | 0 to 6.56 ft/s (0 to 2 m/s)
| 2 | 0 to 9.84 ft/s (0 to 3 m/s)
| 3 | 0 to 13.12 ft/s (0 to 4 m/s)
Fitting | 1 | 1 unit with 1” NPT union nut (up to 4” inner pipe diameter)
| 2 | 1-1/4” unit with 1-1/4” NPT union nut (4” to 10” inner pipe diameter)
Extension | 0 | None
| 1 | +7.87” (+ 200 mm)
Output | 1 | 1 flow output
| 2 | 1 flow output plus 1 temperature output (only available with 1” NPT unit)
The Series TDT is an excellent alternative to turbine and paddlewheel insertion flow meters, with the ability to deliver high accuracy over a wide range of pipe sizes. This unit has the same insertion mounting into a 1-1/2” NPT but no moving parts to wear, break, or clog. This transmitter has available extensions that can be used for pipes sized up to 75” in diameter. The TDT Dispersion Transmitter measures even very low flow rates due to the applied calorimetric principle, and can be used for the metering of all fluid media such as water, oil, aggressive media, paste, glue, sludge, grease, etc. Optional titanium allows this transmitter to be used with an even wider range of corrosive media, and the optional output allows the user to measure both flow and temperature. When deciding on the correct length, use the 1/7th law (the TDT’s probe length needs to measure 1/7th of the pipe diameter).

**SPECIFICATIONS**

- **Service:** Water, oil, compatible liquids, paste, glue, sludge and grease.
- **Wetted Materials:** 316 SS, optional titanium.
- **Flow Range:**
  - Min: 0 to 0.66 ft/s (0 to 20 cm/s);
  - Max: See model chart.
- **Temperature Range:** (For optional output only) 32 to 212°F (0 to 100°C).
- **Accuracy:** <3% of full range.
- **Repeatability:** <1%.
- **Response Time:** 10 seconds.
- **Temperature Limits:**
  - Process: 32 to 176°F (0 to 80°C);
  - Ambient: -4 to 160°F (-20 to 70°C).
- **Pressure Limits:** 261 psi (18 bar).
- **Process Connections:** 1-1/2˝ male NPT.
- **Output Signal:** 4 to 20 mA for flow, optional 4 to 20 mA for temperature.
- **Power Requirements:** 24 VDC +10 to 15%.
- **Resistive Load:** 0 to 600 Ω.
- **Current Consumption:** Approx. 100 to 200 mA (max. flow).
- **Electrical Connection:** 6.5 ft (2 m) moulded oilflex cable with three 21 AWG (0.5 sq mm) wires.
- **Enclosure Rating:** NEMA 4X (IP65).
- **Shipping Weight:** 2 lb (907 g).

**FEATURES**

- No moving parts
- Low pressure drop
- Base model works for pipe sizes of 1 to 24˝ inner diameter, with adjustable insertion mounting
- Adjustable zero and span
- Weatherproof construction for wide application usage
- 316 SS for excellent chemical compatibility
- Optional titanium for high corrosive media
- Optional secondary output for temperature

**Example Series TDT W S 1 0 1 TDT-WS-101**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDT-WS-301</td>
<td>Water base, 316 SS, 0 to 6.56 ft/s (0 to 2 m/s)</td>
</tr>
<tr>
<td>TDT-WS-401</td>
<td>Water base, 316 SS, 0 to 9.84 ft/s (0 to 3 m/s)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example</th>
<th>TDT</th>
<th>W</th>
<th>S</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>TDT-WS-101</th>
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<td>Series</td>
<td>TDT</td>
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<td>Thermal Dispersion Transmitter</td>
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<td>T</td>
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<td>316 SS Titanium</td>
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<td>0</td>
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<td>1.64 ft/s (0 to 6.5 m/s)</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>3.28 ft/s (0 to 1 m/s)</td>
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<td></td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6.56 ft/s (0 to 2 m/s)</td>
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<tr>
<td></td>
<td></td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9.84 ft/s (0 to 3 m/s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>12.47 ft/s (0 to 3.8 m/s)</td>
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<td>Extension</td>
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<td></td>
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<td>+10.28” (+261 mm)</td>
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<td></td>
<td>+15.75” (+400 mm)</td>
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<tr>
<td>Output</td>
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<td></td>
<td>1 flow output</td>
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<tr>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 flow output plus 1 temperature output</td>
</tr>
</tbody>
</table>
New Products

**Magnetic Surface Thermocouples**

Attach to Any Ferrous Metal Surfaces

The Series M Magnetic Surface Thermocouples are commonly used for temporary measurements of surface temperatures of ferrous materials. A powerful Alnico Magnet presses the spring-loaded sensor tip against the surface to be measured. The magnet has a holding force of 30 lbs and can withstand up to 1000°F (535°C) without any degradation.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sensor Type</th>
</tr>
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<tbody>
<tr>
<td>MJ10-072-03</td>
<td>J</td>
</tr>
<tr>
<td>MK10-072-03</td>
<td>K</td>
</tr>
</tbody>
</table>

**SPECIFICATIONS**

- **Sensor Type:** J or K type thermocouple.
- **Accuracy:** ±4°F (±15°C).
- **Temperature Range:** 32 to 1000°F (0 to 535°C).
- **Probe Material:** Alnico Magnet and 304 SS sensing tip.
- **Extension Material:** Fiberglass.
- **Mounting:** Magnetically surface mounts.
- **Weight:** 2.9 oz (81 g).

---

**Solar Powered Industrial Thermometer**

Adjustable Stem and Display Housing, °F/°C Switchable

The Series SIT Solar Powered Industrial Thermometer accurately measures temperature with no batteries or power cables. For the best possible viewing angle, the stem can be adjusted 180° in the vertical plane and the display housing can be adjusted 180° in the horizontal plane providing a full 360° rotation. Engineering units are field selectable with an external dip switch enabling the thermometer to read from -50 to 300°F (-45 to 150°C). In addition, the large 1/2˝-digit display allows measurements to be easily read across the room. Rated as low as 10 lux, the Series SIT solar thermometer is excellent for reading in low light applications.

**SPECIFICATIONS**

- **Temperature Range:** -50 to 300°F (-45 to 150°C).
- **Accuracy:** 1% of reading or 1°F/°C whichever is greater.
- **Resolution:** 0.1° between -19.9 to 199.9°F (-28 to 93°C).
- **Lux Rating:** 10 lux.
- **Display:** 3-digit LCD.
- **Response Time:** 10 seconds.
- **Sensor:** Glass passivated thermistor – NTC.
- **Temperature Limits:** -30 to 140°F (-35 to 60°C).
- **Humidity Limits:** 0 to 100% (non-condensing).
- **Power Requirements:** Solar powered.
- **Housing Material:** Hi-impact ABS plastic.
- **Weight:**
  - Model SIT-935: 8.5 oz (0.24 kg);
  - Model SIT-960: 17 oz (0.48 kg).

**ACCESSORIES**

- Model IT-W01, 3-1/2˝ Brass Thermowell
- Model IT-W11, 3-1/2˝ 304 SS Thermowell
- Model IT-W21, 3-1/2˝ 316 SS Thermowell
- Model IT-W04, 6˝ Brass Thermowell
- Model IT-W14, 6˝ 304 SS Thermowell
- Model IT-W24, 6˝ 316 SS Thermowell
- Model IT-W07, 3-1/2˝ Brass Thermowell with 2-1/2˝ Lag
- Model IT-W17, 3-1/2˝ 304 SS Thermowell with 2-1/2˝ Lag
- Model IT-W27, 3-1/2˝ 316 SS Thermowell with 2-1/2˝ Lag

VISIT OUR WEBSITES:  www.dwyer-inst.com  •  www.dwyer-inst.co.uk  •  www.dwyer-inst.com.au
Low-Cost Plastic Enclosure

SPECIFICATIONS
Material: Thermoplastic polyester.
Ratings: NEMA 4X (IP66).
Dimensions: 5.9 in x 7.9 in x 6.3 in (150 mm x 200 mm x 160 mm).
Weight: 1.75 lb (0.79 kg).

PME-01, For 1 Meter

Plastic Enclosures

SPECIFICATIONS
Material: Thermoset polyester.
Ratings: NEMA 4X (IP66).
Dimensions: PME-11: 8.8 in x 6.7 in x 4.3 in (224 mm x 170 mm x 110 mm); PME-12, -13: 11.8 in x 7.9 in x 7.0 in (300 mm x 201 mm x 178 mm).
Weight: PME-11: 1.45 lb (0.66 kg); PME-12, -13: 3.15 lb (1.43 kg).

PME-11, For 1 Meter
PME-12, For 2 Meters
PME-13, For 3 Meters

Plastic Enclosures

SPECIFICATIONS
Material: Thermoplastic.
Ratings: NEMA 4X (IP66).
Dimensions: PME-21: 7.7 in x 6.4 in x 5.1 in (196 mm x 163 mm x 130 mm); PME-22: 9.7 in x 6.4 in x 5.1 in (246 mm x 163 mm x 130 mm); PME-23: 11.7 in x 8.4 in x 5.1 in (297 mm x 213 mm x 130 mm).
Weight: PME-21: 1.60 lb (0.70 kg); PME-22: 2.20 lb (1.00 kg); PME-23: 3.00 lb (1.40 kg).

PME-21, For 1 Meter
PME-22, For 2 Meters
PME-23, For 3 Meters

Stainless Steel Enclosures

SPECIFICATIONS
Material: 304 SS.
Ratings: NEMA 4X (IP66).
Dimensions: PME-31: 7.5 in x 6.9 in x 4.0 in (191 mm x 176 mm x 102 mm); PME-32: 9.5 in x 6.9 in x 3.5 in (241 mm x 176 mm x 89 mm); PME-33: 11.5 in x 6.9 in x 4.0 in (292 mm x 227 mm x 102 mm).
Weight: PME-31: 3.80 lb (1.70 kg); PME-32: 5.10 lb (2.30 kg); PME-33: 7.90 lb (3.60 kg).

PME-31, For 1 Meter
PME-32, For 2 Meters
PME-33, For 3 Meters

Steel Enclosures

SPECIFICATIONS
Material: Steel.
Ratings: NEMA 4X (IP66).
Dimensions: PME-41: 7.5 in x 6.9 in x 4.0 in (191 mm x 176 mm x 102 mm); PME-42: 9.5 in x 6.9 in x 3.5 in (241 mm x 176 mm x 89 mm); PME-43: 11.5 in x 6.9 in x 4.0 in (292 mm x 227 mm x 102 mm).
Weight: PME-41: 3.80 lb (1.70 kg); PME-42: 5.10 lb (2.30 kg); PME-43: 7.90 lb (3.60 kg).

PME-41, For 1 Meter
PME-42, For 2 Meters
PME-43, For 3 Meters

Note: Make sure panel meter dimensions fit enclosure size.
The Series DTM is a manual, no electricity required indicator that is compact, providing uninterrupted liquid level indication for use in storage tanks or vessels. With a sturdy, lightweight design, the DTM is ideal for 30 or 55 gallon tanks. Stem and mounting fixtures are available in 316 SS or brass. Strong brass or stainless steel units are perfect for the use in water and oils offering the best temperature and pressure capabilities. The float and stem are the only parts of the DTM that make contact with the liquid, so the indication tape is always clean and easy to read. It is simple to customize the DTM level indicator in order to meet a particular application requirement. A custom configurable DTM is available in lengths ranging from 6 in (15.2 cm) up to 6 ft (182.9 cm). This level indicator is ideal for quick readouts taken periodically. The DTM is accurate to 1/16 of an inch or 1 mm, and is especially useful in remote areas where power is unavailable, or undesirable.

**PRINCIPLE OF OPERATION**

The float located on the DTM is equipped with a magnet that moves with the liquid level, vertically, along the stem, inside the storage vessel. Level reading is acquired by simply removing the protective cap located on the top of the unit and lifting the calibrated measuring tape until the magnetic interlock with the float causes a slight pull. The indicator tape remains at this point while the level is read where the calibration aligns with the top of the mounting. The indicator tape can then be lowered back inside the unit stem for storage and protection.

**SPECSIFICATIONS**

**Service:** Compatible liquids.

**Wetted Materials:** See model chart.

**Temperature Limits:**
- Buna N: -40 to 230°F (-40 to 110°C) for oil, up to 180°F (82.2°C) for water;
- 316 SS: -40 to 300°F (-40 to 148.8°C).

**Pressure Limits:** See model chart.

**Mounting Orientation:** Vertically in either vertical or horizontal tanks.

**Indication Markings:** 1/16 in or 1 mm increments.

---

**Model | Description**
---
DTM-B1F1N-17.50 | Brass, Buna N float, 2” NPT, 30 gallon horizontal drum, 17.5“
DTM-B1F1N-22.00 | Brass, Buna N float, 2” NPT, 55 gallon horizontal drum, 22”
DTM-B1F1N-26.50 | Brass, Buna N float, 2” NPT, 30 gallon vertical drum, 26.5”
DTM-B1F1N-33.00 | Brass, Buna N float, 2” NPT, 55 gallon vertical drum, 33”
DTM-S1F2N-17.50 | 316 SS, 2” NPT, 30 gallon horizontal drum, 17.5”
DTM-S1F2N-22.00 | 316 SS, 2” NPT, 55 gallon horizontal drum, 22”
DTM-S1F2N-26.50 | 316 SS, 2” NPT, 30 gallon vertical drum, 26.5”
DTM-S1F2N-33.00 | 316 SS, 2” NPT, 55 gallon vertical drum, 33”

---

**Example**

<table>
<thead>
<tr>
<th>Series</th>
<th>DTM</th>
<th>B</th>
<th>F1</th>
<th>N</th>
<th>6.00</th>
<th>DTM-B1F1N-6.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stem &amp; Connection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dip Tape Metal</td>
</tr>
<tr>
<td>Material</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Brass (not available with conn. type 2)</td>
</tr>
<tr>
<td>316 SS</td>
<td>S</td>
<td>C</td>
<td>2” NPT</td>
<td>3” 150 # ANSI flange</td>
<td></td>
<td></td>
</tr>
<tr>
<td>316 SS with carbon steel flange</td>
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<td></td>
<td></td>
<td></td>
<td>(not available with conn. type 1)</td>
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<td>F1</td>
<td>Buna N</td>
<td>0.45</td>
<td>300 psi (21 bar)</td>
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<tr>
<td>2</td>
<td>F2</td>
<td>316 SS</td>
<td>0.67</td>
<td>750 psi (52 bar), 2” NPT</td>
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<td>Indication Markings</td>
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<td>150 psi (10 bar), 3” 150 # ANSI flange</td>
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<tr>
<td>Length</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Inches, 1/16 in increments</td>
</tr>
</tbody>
</table>

*Order length must be in inches.*
The Series DTP is a manual, no electricity required indicator that is compact, providing uninterrupted liquid level indication for use in storage tanks or vessels. With a sturdy, lightweight design, the DTP is ideal for 30 or 55 gallon tanks. Stem and mounting fixtures are available in PVC, PVDF, or polypropylene. With a choice of three highly resistive, engineered plastic materials, and large floats, the DTP provides rugged durability in almost any chemical tank. The float and stem are the only parts of the DTP that make contact with the liquid, so the indication tape is always clean and easy to read. It is simple to customize the DTP level indicator in order to meet a particular application requirement. A custom configurable DTP is available in lengths ranging from 6 in (15.2 cm) up to 6 ft (182.9 cm). This level indicator is ideal for quick readouts taken periodically. The DTP is accurate to 1/16 of an inch or 1 mm, and is especially useful in remote areas where power is unavailable, or undesirable.

PRINCIPLE OF OPERATION
The float located on the DTP is equipped with a magnet that moves with the liquid level, vertically, along the stem, inside the storage vessel. Level reading is acquired by simply removing the protective cap located on the top of the unit and lifting the calibrated measuring tape until the magnetic interlock with the float causes a slight pull. The indicator tape remains at this point while the level is read where the calibration aligns with the top of the mounting. The indicator tape can then be lowered back inside the unit stem for storage and protection.

**SPECIFICATIONS**
Service: Compatible liquids.
Wetted Materials: See model chart.
Temperature Limits: 40 to 140°F (4.4 to 60°C).
Pressure Limit: See model chart.
Mounting Orientation: Vertically in either vertical or horizontal tanks.
Indication Markings: 1/16 in or 1 mm increments.

### Example Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>DTP</th>
<th>Material</th>
<th>Type</th>
<th>Connection</th>
<th>Indication Markings</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DTP</td>
<td>PVC (only available with F1)</td>
<td>1</td>
<td>3&quot; NPT</td>
<td>Inches, 1/16 in increments</td>
<td>00.00 to 72 (15.2 to 182.9 cm)*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Polypropylene (only available with F2)</td>
<td>2</td>
<td>3&quot; 150 # ANSI flange</td>
<td>Centimeters, 1 mm increments</td>
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<td></td>
<td></td>
<td>PVDF (only available with F3)</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Order length must be in inches.
(Consult factory for pricing)
The Series DTV is a manual, no electricity required indicator that is compact, providing uninterrupted liquid level indication for use in storage tanks or vessels. With a sturdy, lightweight design, the DTV is ideal for 30 or 55 gallon tanks. Stem and mounting consists of PVC. Ideal for chemical storage tanks, our PVC indicator offers one of our best values for liquid level monitoring. This light duty version is recommended for use in calm liquids and ambient temperature and pressure levels. The float and stem are the only parts of the DTV that make contact with the liquid, so the indication tape is always clean and easy to read. It is simple to customize the DTV level indicator in order to meet a particular application requirement promptly and affordably. A custom configurable DTV is available in lengths ranging from 6 in (15.2 cm) up to 6 ft (182.9 cm).

PRINCIPLE OF OPERATION

The float located on the DTV is equipped with a magnet that moves with the liquid level, vertically, along the stem, inside the storage vessel. Level reading is acquired by simply removing the protective cap located on the top of the unit and lifting the calibrated measuring tape until the magnetic interlock with the float causes a slight pull. The indicator tape remains at this point while the level is read where the calibration aligns with the top of the mounting. The indicator tape can then be lowered back inside the unit stem for storage and protection.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTV-1N-17.50</td>
<td>PVC, 2&quot; NPT, 30 gallon horizontal drum, 17.5&quot;</td>
</tr>
<tr>
<td>DTV-1N-22.00</td>
<td>PVC, 2&quot; NPT, 55 gallon horizontal drum, 22&quot;</td>
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<tr>
<td>DTV-1N-26.50</td>
<td>PVC, 2&quot; NPT, 30 gallon vertical drum, 26.5&quot;</td>
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<tr>
<td>DTV-1N-33.00</td>
<td>PVC, 2&quot; NPT, 55 gallon vertical drum, 33&quot;</td>
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<table>
<thead>
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<th>Example</th>
<th>DTV</th>
<th>N</th>
<th>6.00</th>
<th>DTV-1N-6.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>DTV</td>
<td></td>
<td></td>
<td>Dip Tape PVC</td>
</tr>
<tr>
<td></td>
<td>PVC</td>
<td></td>
<td>Min. s.g.</td>
<td>Max. Pressure</td>
</tr>
<tr>
<td></td>
<td>0.65</td>
<td></td>
<td>15 psi (1 bar)</td>
<td></td>
</tr>
<tr>
<td>Connection Type</td>
<td>1</td>
<td>2</td>
<td>3&quot; 150 lb ANSI flange</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indication Markings</th>
<th>PVC Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>6 Holes (0.75&quot;) equally spaced on a (6.000 B.C.)</td>
</tr>
</tbody>
</table>

*Order length must be in inches.
The Series CCS Current Switches are ideal for monitoring the operating status of fans, pumps, and motors. These self-powered switches can be hung or tied directly to cables or wires. For use on existing installations, split core models can be installed without disconnecting cables. LED indicators provide a visual confirmation that the current is flowing through the core. Both fixed and adjustable set points are available. The adjustable models utilize a potentiometer to easily adjust the set point.

### SPECIFICATIONS

**Amperage Range:** 0 to 200 A AC

**Maximum Switch Rating:**
- For fixed set point models: 0.3 A @ 135 VAC/DC
- For adjustable set point models: 1 A @ 240 VAC

**Output:** Normally open NPN

**Power Requirements:** None, self-powered

**Temperature Limits:** -22 to 158ºF (-30 to 70ºC)

**Humidity Limits:** 0 to 95% (non-condensing)

**Isolation Voltage:** 2000 V

**Frequency:** 40 to 400 Hz

**Enclosure Rating:** UL, 94 V-O flammability rated, ABS plastic housing

**Approvals:** CE, UL

### Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Case</th>
<th>Set Point</th>
<th>Minimum Set Point</th>
<th>LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCS-121050</td>
<td>Solid core</td>
<td>Fixed</td>
<td>0.50</td>
<td>Red</td>
</tr>
<tr>
<td>CCS-111100</td>
<td>Solid core</td>
<td>Adjustable</td>
<td>1.00</td>
<td>Red/Green</td>
</tr>
<tr>
<td>CCS-221100</td>
<td>Split core</td>
<td>Fixed</td>
<td>1.00</td>
<td>Red</td>
</tr>
<tr>
<td>CCS-211150</td>
<td>Split core</td>
<td>Adjustable</td>
<td>1.50</td>
<td>Red/Green</td>
</tr>
</tbody>
</table>
The Series CCT40/50 Current Transformers are a low cost alternative for measuring power and monitoring the operation of fans, pumps, or other equipment. For use on existing installations, split core models can be installed without disconnecting cables. Each model offers three jumper selectable ranges and a choice of three different outputs.

### SPECIFICATIONS
- **Amperage Range:** Field selectable; up to 200 A (depending on model).
- **Output:** 0 to 5 V, 0 to 10 V, or 4 to 20 mA (depending on model).
- **Power Requirements:** Self powered or 15 to 42 VDC loop powered (depending on model).
- **Accuracy:** 1%.
- **Temperature Limits:** -22 to 158ºF (-30 to 70ºC).
- **Humidity Limits:** 0 to 95% (non-condensing).
- **Response Time:** 250 ms to 90%.
- **Isolation Voltage:** 2000 V.
- **Frequency:** 10 to 400 Hz.
- **Enclosure Rating:** UL, 94 V-O flammability rated, ABS plastic housing.
- **Approvals:** CE, UL.

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Output</th>
<th>Power Requirements</th>
<th>Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCT40-200</td>
<td>10/20/50 A</td>
<td>0 to 5 V</td>
<td>Self Powered</td>
<td>Solid core</td>
</tr>
<tr>
<td>CCT50-200</td>
<td>100/150/200 A</td>
<td>0 to 5 V</td>
<td>Self Powered</td>
<td>Solid core</td>
</tr>
<tr>
<td>CCT40-102</td>
<td>10/20/50 A</td>
<td>0 to 5 V</td>
<td>Self Powered</td>
<td>Split core</td>
</tr>
<tr>
<td>CCT50-102</td>
<td>100/150/200 A</td>
<td>0 to 5 V</td>
<td>Self Powered</td>
<td>Split core</td>
</tr>
<tr>
<td>CCT40-203</td>
<td>100/150/200 A</td>
<td>0 to 10 V</td>
<td>Self Powered</td>
<td>Solid core</td>
</tr>
<tr>
<td>CCT50-203</td>
<td>100/150/200 A</td>
<td>0 to 10 V</td>
<td>Self Powered</td>
<td>Solid core</td>
</tr>
<tr>
<td>CCT40-200</td>
<td>100/150/200 A</td>
<td>4 to 20 mA</td>
<td>15 to 42 VDC, Loop Powered</td>
<td>Solid core</td>
</tr>
<tr>
<td>CCT50-200</td>
<td>100/150/200 A</td>
<td>4 to 20 mA</td>
<td>15 to 42 VDC, Loop Powered</td>
<td>Solid core</td>
</tr>
<tr>
<td>CCT40-100</td>
<td>100/150/200 A</td>
<td>4 to 20 mA</td>
<td>15 to 42 VDC, Loop Powered</td>
<td>Split core</td>
</tr>
<tr>
<td>CCT50-100</td>
<td>100/150/200 A</td>
<td>4 to 20 mA</td>
<td>15 to 42 VDC, Loop Powered</td>
<td>Split core</td>
</tr>
</tbody>
</table>

The Series CCT60/70 True RMS Current Transformers are a low cost alternative for providing true RMS outputs on distorted AC waveforms. True RMS outputs are ideal for nonlinear loads or noisy circuits. For existing installations, split core models can be installed without disconnecting cables. Each model offers three jumper selectable ranges to reduce the risk of ordering the wrong model.

### SPECIFICATIONS
- **Amperage Range:** Up to 200 A (depending on model).
- **Output:** 4 to 20 mA, true RMS.
- **Power Requirements:** 24 VDC nominal.
- **Accuracy:** 1%.
- **Temperature Limits:** -22 to 158ºF (-30 to 70ºC).
- **Humidity Limits:** 0 to 95% (non-condensing).
- **Response Time:** 250 ms to 90%.
- **Isolation Voltage:** 2000 V.
- **Frequency:** 10 to 400 Hz.
- **Enclosure Rating:** UL, 94 V-O flammability rated, ABS plastic housing.
- **Approvals:** CE, UL.

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCT60-200</td>
<td>10/20/50 A</td>
<td>Solid core</td>
</tr>
<tr>
<td>CCT70-200</td>
<td>100/150/200 A</td>
<td>Solid core</td>
</tr>
<tr>
<td>CCT70-100</td>
<td>100/150/200 A</td>
<td>Split core</td>
</tr>
</tbody>
</table>
New Products

The Series LTI Temperature Panel Meters can be configured in a variety of configurations to provide visual indication and control of a process temperature. Field pluggable modules are available to add additional relay outputs, digital I/O ports, and serial communications. Utilizing an easy-to-read, dual 6-digit display, more descriptive programming parameters are displayed to simplify initial setup. A set of parameters can be copied from one panel meter to another for applications that require multiple panel meters programmed with the same parameters. The industry standard 1/8 DIN housing can be panel mounted or mounted in one of the NEMA 4X panel meter enclosures. All of the Series LTI panel meters come with universal thermocouple and RTD inputs.

### SPECIFICATIONS

**Inputs:** Thermocouple J, K, T, E, R, S, B, N, C; RTD 100 Ω platinum, 10 Ω copper, 120 Ω nickel, 1000 Ω platinum.

**Input Impedance:** Greater than 100 kΩ.

**Output:** 4 to 20 mA.

**Power Requirements:** 85 to 265 VAC 50/60 Hz, 90 to 265 VDC or jumper selectable 12 to 24 VDC ±10%.

**Power Consumption:**
- 90 to 265 VAC models: 20 W max;
- 12 to 24 VDC models: 15 W max.

**Display:** Dual-line, 6-digit display.

**Resolution:** 1° (up to four digits) or 0.1° (up to five digits).

**Temperature Limits:**
- Operating: -4 to 149°F (-20 to 65°C);
- Storage: -40 to 185°F (-40 to 85°C).

**Humidity Limits:** 0 to 90% (non-condensing).

**Front Panel Rating:** NEMA 4X, IP65.

**Weight:** 9.5 oz (269 g).

**Agency Approvals:** CE, UL, RoHS.

### ACCESSORIES

Refer to Series PMA

### ENCLOSEMENTS

Refer to Series PME

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTI-100</td>
<td>85 to 265 VAC, no relays, no transmitter</td>
</tr>
<tr>
<td>LTI-101</td>
<td>85 to 265 VAC, no relays, 4 to 20 mA transmitter</td>
</tr>
<tr>
<td>LTI-120</td>
<td>85 to 265 VAC, 2 relays, no transmitter</td>
</tr>
<tr>
<td>LTI-121</td>
<td>85 to 265 VAC, 2 relays, 4 to 20 mA transmitter</td>
</tr>
<tr>
<td>LTI-140</td>
<td>85 to 265 VAC, 4 relays, no transmitter</td>
</tr>
<tr>
<td>LTI-141</td>
<td>85 to 265 VAC, 4 relays, 4 to 20 mA transmitter</td>
</tr>
<tr>
<td>LTI-200</td>
<td>12 to 24 VDC, no relays, no transmitter</td>
</tr>
<tr>
<td>LTI-201</td>
<td>12 to 24 VDC, no relays, 4 to 20 mA transmitter</td>
</tr>
<tr>
<td>LTI-220</td>
<td>12 to 24 VDC, 2 relays, no transmitter</td>
</tr>
<tr>
<td>LTI-221</td>
<td>12 to 24 VDC, 2 relays, 4 to 20 mA transmitter</td>
</tr>
<tr>
<td>LTI-240</td>
<td>12 to 24 VDC, 4 relays, no transmitter</td>
</tr>
<tr>
<td>LTI-241</td>
<td>12 to 24 VDC, 4 relays, 4 to 20 mA transmitter</td>
</tr>
</tbody>
</table>

### Input Range and Accuracy

<table>
<thead>
<tr>
<th>Type</th>
<th>Range (°F)</th>
<th>Range (°C)</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>-200 to 2600</td>
<td>-129 to 1193</td>
<td>±1°C</td>
</tr>
<tr>
<td>K</td>
<td>-200 to 2400</td>
<td>-129 to 1316</td>
<td>±1°C</td>
</tr>
<tr>
<td>T</td>
<td>-200 to 752</td>
<td>-129 to 400</td>
<td>±1°C</td>
</tr>
<tr>
<td>E</td>
<td>-200 to 1800</td>
<td>-129 to 982</td>
<td>±1°C</td>
</tr>
<tr>
<td>R</td>
<td>-50 to 3000</td>
<td>-46 to 1649</td>
<td>±2°C</td>
</tr>
<tr>
<td>S</td>
<td>-50 to 3000</td>
<td>-46 to 1649</td>
<td>±2°C</td>
</tr>
<tr>
<td>B</td>
<td>752 to 3300</td>
<td>400 to 1816</td>
<td>±2°C</td>
</tr>
<tr>
<td>N</td>
<td>-100 to 2300</td>
<td>-73 to 1260</td>
<td>±2°C</td>
</tr>
<tr>
<td>C</td>
<td>32 to 4100</td>
<td>0 to 2260</td>
<td>±2°C</td>
</tr>
<tr>
<td>10 Ω</td>
<td>-328 to 500</td>
<td>-200 to 260</td>
<td>±0.1°C</td>
</tr>
<tr>
<td>100 Ω</td>
<td>-328 to 1562</td>
<td>-200 to 850</td>
<td>±0.4°C</td>
</tr>
<tr>
<td>120 Ω</td>
<td>-110 to 500</td>
<td>-79 to 260</td>
<td>±0.1°C</td>
</tr>
<tr>
<td>1000 Ω</td>
<td>-328 to 900</td>
<td>-200 to 482</td>
<td>±0.4°C</td>
</tr>
</tbody>
</table>
**New Products**

**PMA-01 RS-232 Serial Adapter**

**SPECIFICATIONS**
- **Compatibility:** EIA-232.
- **Connectors:** PC compatible 9-pin D subminiature connector (DB9) and RJ11 (adapter to meter).
- **Cable:** 3 ft (0.9 m) standard CAT5e cable provided with adapter.
- **Distance:** Adapter to panel meter: 6 ft (1.8 m) max; Adapter to computer: 50 ft (15 m) max; Serial interface cable not provided.
- **Power:** Powered by panel meter M-LINK connection.
- **Status Indication:** Separate LEDs for power (P), transmit (TX), and receive (RX).

**PMA-02 Meter Copy Cable**

**SPECIFICATIONS**
- **Cable:** 3 ft (0.9 m) standard modular cable.

**PMA-03 RS-422/485 Serial Adapter**

**SPECIFICATIONS**
- **Compatibility:** EIA-422 and EIA-485.
- **Connectors:** Removable screw terminal connector and RJ11 (adapter to meter).
- **Cable:** 3 ft (0.9 m) standard CAT5e cable provided with adapter.
- **Distance:** Adapter to panel meter: 6 ft (1.8 m) max; Adapter to computer: 3937 ft (1200 m) max.
- **Power:** Powered by panel meter M-LINK connection.
- **Status Indication:** Separate LEDs for power (P), transmit (TX), and receive (RX).

**PMA-04, PMA-05 RS-232 to RS-422/485 Converters**

**SPECIFICATIONS**
- **Compatibility:** EIA-232, EIA-422, and EIA-485.
- **Connectors:** Screw terminal connector and DB9.
- **Distance:** RS-232 connection: 50 ft (15 m) max; RS-422/485 connection: 3937 ft (1200 m) max.
- **Number of Units:** Up to 31 RS-485 compatible devices.
- **Power:** 9 to 12 VDC; 115 VAC/12 VDC adapter included.
- **Isolation:** PMA-04: 1500 VAC between data lines; 700 VDC input/output-to-power; PMA-05: 1500 VAC between data lines only.

**PMA-06 USB to RS-232 Non-Isolated Converter**

**SPECIFICATIONS**
- **Compatibility:** USB 1.1, USB 2.0, EIA-232.
- **Connectors:** PC compatible 9-pin D subminiature connector (DB9) and USB type A.
- **Drivers:** Windows® 98/2000/Me/XP operating systems.
- **Distance:** USB connection: 50 ft (15 m) max; RS-232 connection: 50 ft (15 m) max.
- **Power:** USB port.

**PMA-07, PMA-08 USB to RS-422/485 Converters**

**SPECIFICATIONS**
- **Compatibility:** USB 1.1, USB 2.0, EIA-422, and EIA-485.
- **Connectors:** Screw terminal connector and USB Type B.
- **Drivers:** Windows® 98/2000/Me/XP operating systems, Linux 2.4 & greater.
- **Distance:** USB connection: 10 ft (3 m) max; RS-422/485 connection: 3937 ft (1200 m) max.
- **Number of Units:** Up to 31 RS-485 compatible devices.
- **Power:** USB port.
- **Isolation:** PMA-07: 1500 VAC between data lines, 700 VDC input/output-to-power; PMA-08: 1500 VAC between data lines only.

**PMA-09 Snubber**

**SPECIFICATIONS**
- **Capacitance Value:** 0.01 µF.
- **Resistor Value:** 470 Ω.
- **Voltage:** 250V.

**PMA-10 DIN Rail Mounting Kit for Two Expansion Modules**

**SPECIFICATIONS**
- **Rail:** 6 in (15.24 cm) long.
- **Mounting Clips:** 4 plastic mounting clips with adhesive strips.
- **Total Capacity:** 2 expansion modules.

**PMA-11 4 Relay Expansion Module**

**SPECIFICATIONS**
- **Relays:** Four form A (SPST); Rated 3 A @ 30 VDC and 125/250 VAC for resistive loads 1/14 HP @ 125/250 VAC for inductive loads.
- **Cable:** Standard CAT5e cable; provided with module.
- **Connectors:** RJ45.
- **Tightening Torque:** Screw terminal connectors: 5 lb-in (0.56 Nm).
- **Enclosure:** ABS-94HB material, UL94HB.
- **Overall Dimensions:** 2.286 in x .924 in x 3.624 in (58.06 mm x 23.47 mm x 92.05 mm) (w x h x d).
- **Power:** Panel meter M-LINK connection.
- **Weight:** 2.4 oz (68 g).

**PMA-12 4 Digital Inputs and 4 Digital Outputs Module**

**SPECIFICATIONS**
- **System:** Up to 2 modules for a total of 8 inputs, outputs.
- **Digital Input Logic:** High: 3 to 5 VDC; Low: 0 to 1.25 VDC.
- **Digital Output Logic:** High: 4.75 to 5 VDC; Low: 0 to 0.4 VDC.
- **Current:** Source: 10 mA max.; Sink: 1.5 mA min.
- **Cable:** Standard CAT5e cable; Provided with module.
- **Connectors:** RJ45.
- **Tightening Torque:** Screw terminal connectors: 5 lb-in (0.56 Nm).
- **Enclosure:** ABS-94HB material, UL94HB.
- **Power:** Panel meter M-LINK connection.
- **Weight:** 2.2 oz (62 g).

Windows® is a registered trademark of Microsoft Corporation.
**New Products**

**Series DW-USB**

**Compact USB Data Logger**

Measure Temperature, Humidity, Dew Point, Current, Voltage, or Carbon Monoxide

The compact design of the DW-USB Series data loggers allows the user to monitor temperature, humidity, dew point, voltage, current, or carbon monoxide almost anywhere. The user can select the sampling rate, start time, high/low alarm settings, and temperature unit parameters with easy to install Windows®-based application. Stored data is downloaded by simply plugging the module into a PC's USB port with no cable required. Alarm status and low battery is indicated via built-in flashing LED's. When the protective cap is fitted, the data logger resists moisture to IP67 standards. These features make the data logger ideal for calibration labs, pharmaceutical plants, environmental chambers, and storage warehouses.

**SPECIFICATIONS**

- **Memory Size:** 16,382 temperature; 16,382 each temperature and RH; 32,764 readings for voltage, current, and thermocouple; and 32,510 for carbon monoxide.
- **Sampling Mode:** Stop on memory full.
- **Sampling Rate:** Selectable from 10 sec to 12 hrs (DW-USB-1, DW-USB-2, DW-USB-2-HA), 1 sec to 12 hrs (DW-USB-3, DW-USB-4, DW-USB-5, DW-USB-5-LR) and 10 sec to 5 min (DW-USB-6).
- **Computer Requirements:** Windows® 98, Windows® 2000, Windows® XP, Windows NT®, Windows® 7 or Windows Vista® 32-bit or 64-bit operating systems.
- **Power Requirements:** 3.6V lithium battery.
- **Housing:** ABS plastic blend.
- **Alarms:** Programmable high/low.
- **Interface:** USB port.
- **Weight:** 1.5 oz (43 g).
- **Agency Approvals:** CE, RoHS.

**ACCESSORY**

Model DW-USB-CASE, Waterproof case for DW-USB-1

**MODEL DW-USB-X**

<table>
<thead>
<tr>
<th>Model</th>
<th>Overall Length (X)</th>
<th>Overall Length (Y)</th>
<th>Body/Clip</th>
<th>Cap</th>
<th>LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>DW-USB-1</td>
<td>3-55/64”</td>
<td>4-1/16”</td>
<td>Standard</td>
<td>Standard</td>
<td>Clear/Red</td>
</tr>
<tr>
<td>DW-USB-2</td>
<td>3-55/64”</td>
<td>4-1/16”</td>
<td>Standard</td>
<td>Vented</td>
<td>Clear/Clear</td>
</tr>
<tr>
<td>DW-USB-3</td>
<td>2-27/64”</td>
<td>4-1/16”</td>
<td>Standard</td>
<td>Vented</td>
<td>Clear/Clear</td>
</tr>
<tr>
<td>DW-USB-4</td>
<td>2-27/64”</td>
<td>2-27/64”</td>
<td>Standard</td>
<td>Standard</td>
<td>Red/Green</td>
</tr>
<tr>
<td>DW-USB-5</td>
<td>2-59/64”</td>
<td>2-59/64”</td>
<td>Standard</td>
<td>Vented</td>
<td>Red/Green</td>
</tr>
<tr>
<td>DW-USB-6</td>
<td>2-21/32”</td>
<td>1-5/32”</td>
<td>Standard</td>
<td>Standard</td>
<td>Red/Green</td>
</tr>
</tbody>
</table>

**Input Type**

<table>
<thead>
<tr>
<th>Model</th>
<th>Input Type</th>
<th>Range</th>
<th>Accuracy</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>DW-USB-1</td>
<td>Temperature</td>
<td>-31 to 176°F (-35 to 80°C)</td>
<td>±2°F (±1°C)</td>
<td>1°F (0.5°C)</td>
</tr>
<tr>
<td>DW-USB-2</td>
<td>Temperature/Humidity</td>
<td>-31 to 176°F (-35 to 80°C); 0 to 100% RH</td>
<td>±1°F (±0.5°C), 3% RH</td>
<td>1°F (0.5°C), 0.5% RH</td>
</tr>
<tr>
<td>DW-USB-3</td>
<td>Temperature/Humidity</td>
<td>-31 to 176°F (-35 to 80°C); 0 to 100% RH</td>
<td>±0.6°F (±0.3°C), 2% RH</td>
<td>50 mVDC</td>
</tr>
<tr>
<td>DW-USB-4</td>
<td>Current</td>
<td>4 to 20 mA</td>
<td>±1%</td>
<td>0.05 mA</td>
</tr>
<tr>
<td>DW-USB-5</td>
<td>Carbon Monoxide</td>
<td>0 to 1000 ppm</td>
<td>±4%</td>
<td>0.5 ppm</td>
</tr>
<tr>
<td>DW-USB-5-LR</td>
<td>Low Range Carbon Monoxide</td>
<td>0 to 300 ppm</td>
<td>±1.5°F (±1°C)</td>
<td>0.6°F (0.5°C)</td>
</tr>
<tr>
<td>DW-USB-6</td>
<td>Thermocouple</td>
<td>-328 to 300°F (-200 to 1350°C); J-type: -202 to 1652°F (-130 to 900°C); K-type: -328 to 2372°F (-200 to 1300°C); T-type: -328 to 662°F (-200 to 350°C)</td>
<td>±1%</td>
<td>1°F (0.5°C), 0.5% RH</td>
</tr>
</tbody>
</table>

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**New Products**

**NPB-40 I**

**Compact USB Data Logger With Display**

**Integral LCD Display, LED Status Indication**

The Portable Series DW-USB-LCD USB Data Loggers displays and records temperature, humidity and dew point. The easy-to-read LCD display shows the current temperature or humidity along with the minimum and maximum reading since last reset. For applications that require more accuracy, a high accuracy temperature and humidity model is available. Thermocouple models can accept any J, K, or T type thermocouple with a mini-plug connector. Series DW-USB-LCD data loggers include a Windows® based software which allows selection of the sampling rate, start time, high/low alarm settings, and temperature unit application. For quick downloading of data, the data logger can be plugged directly into a PC’s USB port with no cable required. Downloaded data can then be graphed, printed, or exported to other spreadsheet applications.

**Model DW-USB-2-LCD**
- Temperature, humidity, and dew point USB data logger with display

**Model DW-USB-2-HA-LCD**
- High accuracy temperature, humidity, and dew point USB data logger with display

**Model DW-USB-6-LCD**
- Thermocouple USB data logger with display

**ACCESSORIES**
- 1818-0074, Immersion temperature probe
- 1818-0078, Penetration temperature probe
- 1818-0082, Surface temperature probe
- 1818-0085, Air duct temperature probe
- 1718-0077, Remote temperature probe handle

**SPECIFICATIONS**

**Range:**
- DW-USB-2-LCD: Temperature: -31 to 176°F (-35 to 80°C);
  Humidity: 0 to 100% RH;
- DW-USB-2-HA-LCD: Temperature: -31 to 176°F (-35 to 80°C);
  Humidity: 0 to 100% RH;
- DW-USB-6-LCD: K-type: -328 to 2372°F (-200 to 1300°C), J-type: -202 to 1652°F (-130 to 900°C), T-type: -328 to 662°F (-200 to 350°C).

**Accuracy:**
- DW-USB-2-LCD: Temperature ±1°F (±0.5°C) Humidity ±3.0%;
- DW-USB-2-HA-LCD: Temperature ±0.6°F (±0.3°C), Humidity ±2.0%;
- DW-USB-6-LCD: ±2°F (±1°C).

**Resolution:**
- Temperature: 1°F (0.5°C); Humidity: 0.5% RH.

**Memory Size:**
- Thermocouple models: 32510 readings;
- Temperature/humidity models: 16382 readings.

**Sampling Mode:** Continuous with data rollover.

**Sampling Rate:** Selectable from 10 seconds to 12 hours for temperature/humidity models; 1 second to 12 hours for thermocouple models.

**Display:** 2.5 digit LCD.

**Computer Requirements:** Windows® 2000, Windows® XP, Windows® 7, Windows Vista® 32-bit or 64-bit operating systems.

**Power Requirements:** 3.6 1/2 AA battery (included).

**Housing:** ABS plastic blend.

**Alarms:** Programmable high/low.

**Interface:** USB port.

**Weight:** Temperature/humidity models 1.6 oz (45.4 g); Thermocouple models 1.8 oz (51 g).

**Agency Approval:** CE, RoHS.

Windows® and Windows Vista® are registered trademarks of Microsoft Corporation.
The Series MTL Miniature USB Data Logger measures and records accurate readings for temperature or temperature/humidity/dew point in a wide range of applications. Sampling intervals and high/low alarm settings are user selectable through the included easy to use Windows® based software. On models ordered with an integral display, the temperature and humidity readings alternate on the display. The series MTL can be software configured to begin measuring based on a time delayed-start or by push-button. The logger can store up to 43,344 readings and can be set to stop on memory full or for continuous recording. Stored data is downloaded by plugging the unit into a PC’s USB port (cable included). The loggers provide measurements for many environment conditions, which make them ideal for refrigeration systems, laboratories, and medical storage facilities.

**SPECIFICATIONS**

**Temperature Range:**
- MTL20: -40 to 185°F (-40 to 85°C)
- MTL30: -40 to 160°F (-40 to 70°C), 0% to 99% RH (non condensing).

**Accuracy:**
- MTL20: ±1°F (±0.5°C)
- MTL30: ±1°F (±0.5°C), ±2% RH from 10% to 90% RH.

**Resolution:**
- Non-LCD models: 0.01°F (0.01°C), 0.01% RH
- LCD models: 0.1°F (0.1°C), 0.1% RH

**Memory Size:**
- 43,344 temperature; 21,672 each temperature and RH.

**Sampling Mode:**
- Stop on memory full or memory rollover for continuous recording.

**Sampling Rate:**
- 1 sec. to 18 hrs.

**Computer Requirements:**
- Windows® based application software included.

**Power Requirements:**
- 3.0 V lithium battery (included).

**Alarms:**
- Programmable high/low

**Interface:**
- USB port (cable included).

**Weight:**
- 1 oz (28 g).

**Agency Approvals:**
- CE.

**Windows®** is a registered trademark of Microsoft Corporation

<table>
<thead>
<tr>
<th>Model</th>
<th>Input Type</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTL-20</td>
<td>Temperature</td>
<td>No</td>
</tr>
<tr>
<td>MTL-30</td>
<td>Temperature</td>
<td>No</td>
</tr>
<tr>
<td>MTL-20-LCD</td>
<td>Temperature</td>
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<tr>
<td>MTL-30-LCD</td>
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<td></td>
<td>Temperature/Humidity</td>
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<td>Dew Point</td>
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<td>Temperature/Humidity</td>
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<tr>
<td></td>
<td>Dew Point</td>
<td></td>
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</tbody>
</table>
The Model 450A-1 Digital Pocket Size Carbon Monoxide Meter measures the ambient concentration of carbon monoxide (CO) in the environment and displays the measurement on the two line digital LCD screen. Besides the measurement, the maximum recorded CO value since the last reset is shown. An audible carbon monoxide alarm gives warning of CO levels above 25 ppm. For viewing in poorly lit environments, the built-in backlight brightens the display. Model 450A includes soft carrying case with belt loop, wrist strap, and three AAA batteries.

**SPECIFICATIONS**

- **Range:** 0 to 999 ppm.
- **Accuracy (at 20 ±5°C, 50 ±20% RH):** ±20% @ 0 to 100 ppm; ±15% @ 100 to 500 ppm.
- **Resolution:** 1 ppm.
- **Display:** Dual digital LCD display.
- **Response Time:** Less than 60 seconds.
- **Sensor:** Electrochemical carbon monoxide sensor.
- **Temperature Limits:** -10 to 60°C (14 to 140°F).
- **Humidity Limits (Non-Condensing):** 5 to 99% RH.
- **Power Requirements:** 3 AAA alkaline batteries.
- **Battery Life:** 250 hours with backlight off; 35 hours with backlight on.
- **Weight:** 4.23 oz (120 g).
- **Alarms:** Audible, preset at 25 ppm.
- **Agency Approval:** CE.

The Model 472A-1 Dual Input Thermocouple Thermometer precisely measures up to two temperature measurements simultaneously. The large LCD display shows both temperature inputs or one temperature input and the differential temperature. Any J, K, or T type thermocouple with a mini-jack connector can be used as an input. For viewing in poorly lit environments, the built-in back light brightens the display. A hold button allows the user to freeze temperature data displayed. Minimum and maximum readings can be recorded over a set time period. Model 472A-1 includes a hard carrying case, battery, and one K type thermocouple.

**SPECIFICATIONS**

- **Inputs:** Type J, K, T thermocouples.
- **Power Requirements:** 9 V battery.
- **Ranges:**
  - J-type: -328 to 1400°F (-200 to 760°C);
  - K-type: -328 to 2498°F (-200 to 1370°C);
  - T-type: -328 to 734°F (-200 to 390°C).
- **Accuracy:** ±0.1% reading + 1.4°F (0.7°C).
- **Temperature Limits:** 32 to 122°F (0 to 50°C).
- **Humidity Limits (Non-Condensing):** 5 to 99% relative humidity.
- **Power Requirements:** 3 AAA alkaline batteries.
- **Battery Life:** 250 hours with backlight off; 35 hours with backlight on.
- **Weight:** 4.23 oz (120 g).
- **Agency Approval:** CE.

Model 450A-1, Digital Pocket Size Carbon Monoxide Meter

Model 472A-1, Digital Input Thermocouple Thermometer
The Model 1205B Gas Analyzer accurately measures the concentration of carbon monoxide (CO) and carbon dioxide (CO2) in a duct or space. The Gas Analyzer displays the measurement on a two line digital LCD display with backlight. The unit’s memory stores up to 255 sets of readings that are logged manually or auto-logged with 1 to 10 minute intervals. Besides measurement recording, Model 1205B can provide a summary of average and maximum levels reached during recording. Results then can be printed via an optional infrared printer. Model 1205B includes batteries, 120V power supply, protective rubber boot with integral magnet, sampling probe, and a canvas carrying case.

Model 1205B-0, Gas Analyzer and Logger for CO and CO2

ACCESSORIES
Model 1205B-US, 120 VAC Power Adapter for 1205B
Model 1205B-EU, 240 VAC Power Adapter for 1205B
Model 1205B-PR, Replacement probe for 1205B

SPECIFICATIONS
Ranges:
- CO: 0 to 1000 ppm, overflow 2000 ppm;
- CO2: 200 to 4000 ppm, overflow 9999 ppm.
Accuracy:
- CO: ±5 ppm<100 ppm;
  ±5%>100 ppm;
  ±10%>1000 ppm;
- CO2: ±20 ppm<400 ppm;
  ±5%<4000 ppm;
  ±10%>4000 ppm.
Resolution:
- CO: 1 ppm;
- CO2: 1 ppm.
Display: Dual LCD display.
Temperature Limits: 32 to 104°F (0 to 45°C).
Humidity Limits (Non-Condensing): 10 to 90% RH.
Power Requirements: 100 to 240 VAC, 50 to 60 Hz or N. MH batteries (included).
Battery Life: 6 hours with full charge and pump on.
Weight: 2.21 lb (1 kg).
Agency Approvals: CE.
Monitoring the environmental conditions is more convenient with the Model EMMA multifunction meter. Humidity, temperature, air velocity, air flow, sound and light measurements are combined in one easy to use instrument. The large, dual-line 4-digit LCD display shows both the current and average reading. For reading measurements in dimly lit areas, the display has a built-in back light. Besides measuring the current and average reading, the Model EMMA allows the user to read the minimum, maximum and differential measurement for each of the parameters. Included with the meter is the carrying case, rubber boot, battery and tripod.

**Model EMMA, Multifunction Environmental Meter**

**SPECIFICATIONS**

**Range:**
- Temperature: 14 to 140°F (-10 to 60°C);
- Relative humidity: 0 to 100% RH;
- Sound level: 30 to 130 dB(A), 35 to 130 dB(C);
- Illumination: 0 to 50,000 lux;
- Wind speed: 96 to 5913 fpm;
- Air flow: 0 to 999,900 cfm (0.5 to 30 m/s).

**Accuracy:**
- Temperature: ±2.7°F (1.5°C);
- Relative humidity: ±3% RH (20 to 80% @ 25°C);
- Sound level: ±1.5 dB;
- Illumination: ±5% of reading + 10;
- Wind speed: ±3% of reading + 10;
- Air flow: ±3% of reading + 10.

**Display:** Dual line, 4-1/2 digit LCD display.

**Temperature Limits:** 14 to 140°F (-10 to 60°C).

**Resolution:**
- Temperature: 0.1°F/°C;
- Relative humidity: 0.1%;
- Sound level: 0.1 dB;
- Illumination: 1 up to 2,000 lux; 10 up to 20,000 lux; 100 up to 50,000 lux.

**Power Requirement:** 9V battery.

**Response Time:** 500 msec.

**Weight:** 15.5 oz (430 g).

**Agency Approvals:** CE.
Model 8901 Vane Thermo-Anemometer is ideal for balancing air conditioning and heating ducts or checking the operation of fans and blowers. Model 8901 measures air volume in cubic feet per minute and cubic centimeters per second, as well as air velocity in ft/min, m/sec, knots, km/hr and mph with ±2% accuracy. The multifunction LCD can simultaneously display air velocity and temperature or air flow and temperature in selectable units. Built-in temperature sensor provides measurements with an accuracy of ±2 °F with the capability to display the results in °F/°C. Model 8901 can either store measurements or transfer the data to a PC via RS-232 communication. Additional features include data hold, as well as the ability to record minimum, maximum and average readings. These units also feature a detachable probe for easy replacement, if necessary. Model 8901 includes 9 V battery, carrying case and instruction manual.

Model 8901, Vane Thermo-Anemometer

SPECIFICATIONS
AIR VELOCITY
Range: 80 to 6900 ft/min (0.4 to 35 m/s).
Accuracy: ±2% of reading or last significant digit (whichever is greater).
Resolution: 1 ft/min (0.01 m/s).
Response Time: 1 second.

AIR VOLUME
Range: 9999 (CFM, m³/s).
Accuracy: ±3% of reading or last significant digit (whichever is greater).
Resolution: 0.1 (0 to 999.9) or 1 (1000 to 9999).
Response Time: 1 second.

TEMPERATURE
Range: 14 to 122°F (-10 to 50°C).
Accuracy: ±1°F (±0.6°C).
Resolution: 0.1°F/°C.
Response Time: 60 seconds.

Serial Communications: 2400 bps, 8 data bits.
Power Requirements: 9 V battery.
Battery Life: 100 hours.
Vane Diameter: 2-7/8" (70 mm).
Weight: 6 oz (170 g).
Agency Approvals: CE.

APPLICATIONS
This meter is most ideal for measuring heat, ventilation, air conditioning, refrigerating wind flow and temperature.

Model 8904, Integral Vane Thermo-Anemometer

Simultaneously measure air velocity and temperature with the Model 8904 Integral Vane Thermo-Anemometer. The large 1.3˝ (34 mm) display allows users to easily view readings. User-selectable wind speed units include ft/min, m/sec, knots, mph and km/hr. Additionally, a built-in sensor records ambient temperature in °F or °C. Model 8904 features include data hold, the ability to record minimum, maximum and average readings on a single point and an RS-232 interface setting. The units can also record and average up to 2 hours of data while displaying the continuous running average. Model 8904 includes hard carrying case, one 9 V battery and instruction manual. This compact meter is ideal for HVAC inspection, energy audits and balancing applications.

APPLICATIONS
This meter is most ideal for measuring heat, ventilation, air conditioning, refrigerating wind flow and temperature.

Model 8904, Integral Vane Thermo-Anemometer

SPECIFICATIONS
AIR VELOCITY
Range: 90 to 5900 ft/min (0.4 to 30 m/s).
Accuracy: ±3% of reading or last significant digit (whichever is greater).
Resolution: 1 ft/min (0.01 m/s).
Response Time: 1 second.

TEMPERATURE
Range: 14 to 122°F (-10 to 50°C).
Accuracy: ±1°F (±0.6°C).
Resolution: 0.1°F/°C.
Response Time: 60 seconds.
Display: 1.3 x 1.6" (34 x 40 mm).
Serial Communications: 2400 bps, 8 data bits.
Power Requirements: 9 V battery.
Battery Life: 100 hours.
Vane Diameter: 2-7/8" (70 mm).
Weight: 5.3 oz (150 g).
Agency Approvals: CE.
New Products

Model 9671, Vane Thermo-Anemometer

Measures Air Velocity, Air Volume, Temperature, Humidity, and BTU; Built-In Datalogging

SPECIFICATIONS

AIR VELOCITY
Range: 118 to 6299 ft/min (0.6 to 32 m/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 ft/min (0.1 m/s).
Response Time: 1 second.

TEMPERATURE
Range: -7.6 to 158°F (-22 to 70°C).
Accuracy: ±1°F (-0.6°C).
Resolution: 0.1°F/°C.
Response Time: 60 seconds.

RELATIVE HUMIDITY
Range: 0 to 100%.
Accuracy: ±3% @ 25°C from 10 to 90% RH. Outside this range: ±5%.
Resolution: 0.1%.
Response Time: 60 seconds.

AIR VOLUME
Range: 0 to 99999 (CFM or m³/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 ft³/minute (0.1 m³/s).
Response Time: 1 second.

WET BULB
Range: -7.6 to 158°F (-22 to 70°C).
Resolution: 0.1°F/°C.
Display: 1 x 1.8” (28 x 45 mm).
Serial Communications: 9600 bps, 8 data bits, no parity.
Power Requirements: 4 AAA batteries.
Battery Life: 100 hours.
Vane Diameter: 3” (77 mm).
Weight: 6 oz (170 g).
Agency Approvals: CE.

Model 9671, Vane Thermo-Anemometer

ACCESSORY
A-551, Replacement Probe with Vane

Dwyer

Measures Air Velocity, Air Volume, Temperature, Humidity, and BTU

Model 9671, Vane Thermo-Anemometer

Vane Thermo-Anemometer

 Measures Air Velocity, Air Volume, Temperature, Humidity, and BTU

Model 9671

AIR FLOW / RH / TEMP.  9671

DATALOGGING

AIR VELOCITY
Range: 118 to 6299 ft/min (0.6 to 32 m/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 ft/min (0.1 m/s).
Response Time: 1 second.

TEMPERATURE
Range: -7.6 to 158°F (-22 to 70°C).
Accuracy: ±1°F (-0.6°C).
Resolution: 0.1°F/°C.
Response Time: 60 seconds.

RELATIVE HUMIDITY
Range: 0 to 100%.
Accuracy: ±3% @ 25°C from 10 to 90% RH. Outside this range: ±5%.
Resolution: 0.1%.
Response Time: 60 seconds.

AIR VOLUME
Range: 0 to 99999 (CFM or m³/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 ft³/minute (0.1 m³/s).
Response Time: 1 second.

WET BULB
Range: -7.6 to 158°F (-22 to 70°C).
Resolution: 0.1°F/°C.
Display: 1 x 1.8” (28 x 45 mm).
Serial Communications: 9600 bps, 8 data bits, no parity.
Power Requirements: 4 AAA batteries.
Battery Life: 100 hours.
Vane Diameter: 3” (77 mm).
Weight: 6 oz (170 g).
Agency Approvals: CE.

Model 9671, Vane Thermo-Anemometer

ACCESSORY
A-551, Replacement Probe with Vane

Dwyer

Measures Air Velocity, Air Volume, Temperature, Humidity, and BTU

Model 9671, Vane Thermo-Anemometer

Vane Thermo-Anemometer

 Measures Air Velocity, Air Volume, Temperature, Humidity, and BTU

Model 9671

AIR FLOW / RH / TEMP.  9671

DATALOGGING

AIR VELOCITY
Range: 118 to 6299 ft/min (0.6 to 32 m/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 ft/min (0.1 m/s).
Response Time: 1 second.

TEMPERATURE
Range: -7.6 to 158°F (-22 to 70°C).
Accuracy: ±1°F (-0.6°C).
Resolution: 0.1°F/°C.
Response Time: 60 seconds.

RELATIVE HUMIDITY
Range: 0 to 100%.
Accuracy: ±3% @ 25°C from 10 to 90% RH. Outside this range: ±5%.
Resolution: 0.1%.
Response Time: 60 seconds.

AIR VOLUME
Range: 0 to 99999 (CFM or m³/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 ft³/minute (0.1 m³/s).
Response Time: 1 second.

WET BULB
Range: -7.6 to 158°F (-22 to 70°C).
Resolution: 0.1°F/°C.
Display: 1 x 1.8” (28 x 45 mm).
Serial Communications: 9600 bps, 8 data bits, no parity.
Power Requirements: 4 AAA batteries.
Battery Life: 100 hours.
Vane Diameter: 3” (77 mm).
Weight: 6 oz (170 g).
Agency Approvals: CE.

Model 9671, Vane Thermo-Anemometer

ACCESSORY
A-551, Replacement Probe with Vane

Dwyer

Measures Air Velocity, Air Volume, Temperature, Humidity, and BTU

Model 9671, Vane Thermo-Anemometer

Vane Thermo-Anemometer

 Measures Air Velocity, Air Volume, Temperature, Humidity, and BTU

Model 9671

AIR FLOW / RH / TEMP.  9671

DATALOGGING

AIR VELOCITY
Range: 118 to 6299 ft/min (0.6 to 32 m/s).
Accuracy: ±5% of reading or last significant digit (whichever is greater).
Resolution: 0.1 ft/min (0.1 m/s).
Response Time: 1 second.

TEMPERATURE
Range: -7.6 to 158°F (-22 to 70°C).
Accuracy: ±1°F (-0.6°C).
Resolution: 0.1°F/°C.
Response Time: 60 seconds.

RELATIVE HUMIDITY
Range: 0 to 100%.
Accuracy: ±3% @ 25°C from 10 to 90% RH. Outside this range: ±5%.
Resolution: 0.1%.
Response Time: 60 seconds.
The Series MVA Mini-Vane Thermo-Anemometer has the ability, depending on the model, to measure air velocity, volume flow, temperature, relative humidity, and barometric pressure. With its 1.18” diameter (30 mm) vane, the Series MVA is ideal for spot measurements at air outlets. The MVA-02 is capable of detecting air flows up to 4921 ft/min (25 m/s) and temperatures up to 140°F (60°C). The MVA-03 additionally detects humidity from 0 to 100% with high accuracy. The MVA-04 can do all three of the above functions, plus adds the feature of measuring absolute pressure from 10.3 to 32˝ Hg (350 to 1100 hPa). The Series MVA anemometers include a wide variety of user selectable units. These units feature a 4-digit LCD display, data hold, ability to record maximum and minimum, storage up to 99 air velocity records, and an auto-shutoff to prolong life. The Series MVA also has a detachable probe for convenient replacing, if necessary. The unit includes a 6 blade mini-vane probe, nylon case, and a 9V battery.

SPECIFICATIONS

RANGES

Air Velocity: 79 to 4921 fpm, 0.4 to 25 m/s; 1.5 to 90 km/hr; 0.9 to 55 mph; 0.8 to 48 knots; 1 to 10 Beaufort.

Air Volume: 0 to 9999 CFM & CMM.

Temperature: -4 to 140°F (-20 to 60°C).

Humidity: 0 to 100%.

Barometric Pressure: 10.3 to 32˝ Hg; 350 to 1100 hPa; 263 to 825 mm Hg.

ACCURACY

Air Velocity: ±2% FS (+0.2% of reading m/s; +0.8% of reading km/hr; +0.4% of reading mph and knots; +40% of reading fpm).

Relative Humidity: 20 to 80%; 3.5%; 0 to 20% and 80 to 100%; 5%.

Temperature: ±1.8°F; ±1°C.

Barometric Pressure: ±0.1 in Hg; ±3 hPa; ±1.5 mm Hg.

RESOLUTION

Air Velocity: 0.1 for ft/min and Beaufort).

Air Volume: 1.

Temperature: 0.1°C.

Humidity: 0.1%.

Barometric Pressure: 0.1.

RESPONSE TIME

Air Velocity: 2 seconds.

Air Volume: 2 seconds.

Temperature: 1 second.

Humidity: 5 minutes to stabilize.

Barometric Pressure: 1 minute.

LCD Size: 1.65” x 1.30” (42 x 33 mm).

Power Requirements: 9 volt battery.

Battery Life: 50 hours continuous use.

Vane Diameter: 1.18” (30 mm).

Cable Length: 35.4” (90 cm).

Weight: 9.2 oz (260 g).

Agency Approvals: CE.
New Products

The Model AQH-20 Indoor Air Quality Meter reduces the number of instruments a contractor has to carry by measuring the carbon dioxide concentration, air temperature, and humidity percentage in one device. A large backlit LCD display shows all three parameters simultaneously. The Model AQH-20 can display dew point or wet bulb temperatures in place of the ambient temperature. Minimum, maximum, and average readings are easily accessible through the function buttons. By pressing the hold key, the current values are held so that they can be recorded. An audible alarm warns the user that the current ambient conditions are becoming hazardous. The Model AQH-20 includes a hard carrying case and four AA alkaline batteries.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Model</th>
<th>CO₂ Range</th>
<th>Humidity Range</th>
<th>Temperature Range</th>
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</thead>
<tbody>
<tr>
<td>AQH-20</td>
<td>0 to 2000 ppm</td>
<td>0.0 to 99.9%</td>
<td>14 to 140°F (-10 to 60°C)</td>
</tr>
</tbody>
</table>

**ACCESSORY**

- TH-CAL, 33% and 75% Calibration Salt Kit

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The Model LPCP Low Pressure Calibration Pump is a low air pressure source with the ability to easily adjust and stabilize. This hand pump possesses a pressure range of ± 5.8 psig; uses air as the media, and can adjust the pressure easily with great stability. The LPCP has a heat-insulator between the cover and pressure chamber to lessen the heat effect during the micro-pressure calibration. The adjusting resolution is up to 0.01 Pa (0.0001 mbar). These features make the LPCP ideal for calibrating pressure transducers, precision pressure gages, and other pressure instruments.

**FEATURES**

- Portable
- Pressure resolution: 0.01 Pa; 0.0001 mbar
- Heat insulation and heat preservation, no negative side effects from temperature changes
- Open structure for convenient maintenance of the pumps
- Easy to operate: pressure is precisely set with a simple turn of the handle, allowing you to calibrate gages quickly and accurately
- Great seal performance: minimum leakage

**SPECIFICATIONS**

- **Media:** Air
- **Generated Pressure Range:** 5.8 psig (0.4 bar) vacuum to 5.8 psig (0.4 bar) positive pressure.
- **Pressure Resolution:** 0.01 Pa; 0.0001 mbar.
- **Material:**
  - Ram adapters: 316 SS
  - Body: Steel/aluminum
  - Seals: Buna-N
- **Test Gage Connection:** M20*1.5; 1/2” NPT with included adapters.
- **Reference Gage Connection:** M20*1.5; 1/2” NPT with included adapters.
- **Dimensions:**
  - Height: 5.7” (145 mm)
  - Base: 6.09” (155 mm) x 3.73” (95 mm)
- **Weight:** 2.21 lb (1.0 kg)

Model LPCP-2, Low Pressure Calibration Pump

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**Low Pressure Calibration Pump**

High Resolution for Calibrating Low Pressure Gages and Transmitters
Model SM-100 Digital Sound Meter

Measures Noise Levels From 30 to 130 dB

Model SM-100 Digital Sound Meter is ideal for measuring noise levels from 30 to 130 dB with accuracy of ±1.5 dB. Model SM-100 has a frequency of 31.5 Hz to 8 kHz, three different dB ranges, and a 1/2” condenser microphone. The SM-100 has two frequency weightings: the “A” weighting ranges from 30 to 130 dB, while the “C” weighting ranges from 35 to 130 dB. The four digit LCD backlit display has the ability to update in 0.5 seconds when the unit is set to fast response. Model SM-100 features data hold, ability to record maximum/minimum, auto ranging, auto power-off, and a dynamic range of 50 dB. The compact size of the SM-100 makes it very easy to operate and store. Each unit includes 9V battery, carrying case, black foam cover to protect the sensor, and instruction manual. The SM-100 is ideal for technicians measuring and recording sound levels in zones or rooms of buildings, musical halls, theaters and near equipment or machinery on the plant floor.

SPECIFICATIONS
- Dynamic Range: 50 dB.
- Measuring Level Range:
  - A weighting: 30 to 130 dB;
  - C weighting: 35 to 130 dB.
- Accuracy: ±1.5 dB (at 94 dB @ 1 kHz).
- Frequency Range: 31.5 Hz to 8 kHz.
- Temperature Limits:
  - Operating: 41 to 104°F (5 to 40°C);
  - Storage: 14 to 140°F (-10 to 60°C).
- Humidity Limits:
  - Operating: Below 80% RH;
  - Storage: Store below 70% RH.
- Elevation Limit: Maximum 6562 ft (2000 m) above sea level.
- Display: 4 digit LCD with 0.5 second update when set to fast response.
- Resolution: 0.1 dB.
- Power Requirement: One 9V battery.
- Battery Life: Approximately 50 hours with alkaline battery.
- Size: 7.8˝ L x 2.1˝ W x 1.5˝ H (200 L x 55 W x 38 H mm).
- Weight: 6 oz (170 g).
- Agency Approval: CE.

Model SMC-1 Sound Calibrator

Set Standard Noise Levels at Either 94 or 114 dB

Model SMC-1 Sound Calibrator is ideal for setting standard noise levels at 94 dB and 114 dB. The SMC-1 has an output frequency of 1 kHz ±4%. This unit functions best when environment conditions have a temperature of 68°F (20°C), relative humidity of 65%, and an atmospheric pressure of 29.9” Hg (1013 mbar). The SMC-1 features a measuring accuracy of ±0.5 dB, a low battery indicator, and a 1/2” microphone adapter. This calibrator has a compact design that allows the user to conveniently operate and store the product. At 10 oz (283 g) including the battery, the SMC-1 is also extremely lightweight. Each unit includes carrying case, 9V battery, and instruction manual. This calibrator is ideal for calibrating sound meters such as the Dwyer Series SM-100.

SPECIFICATIONS
- Selectable Sound Output Level: 94 dB or 114 dB.
- Output Frequency: 1 kHz ±4%.
- Accuray: ±0.5 dB.
- Temperature Limits:
  - Operating: 32 to 104°F (0 to 40°C);
  - Storage: 14 to 140°F (-10 to 80°C).
- Humidity Limits:
  - Operating: 10 to 70% RH;
  - Storage: 10 to 90% RH.
- Elevation Limit: Maximum 6562 ft (2000 m) above sea level.
- Power Requirement: Included 9 V battery.
- Battery Life: Approximately 20 hours with alkaline battery.
- Size: 1.89˝ diameter x 4.92˝ length (48 mm diameter x 125 mm length).
- Weight: 10 oz (283 g).
Series BBV-1 Block Manifold can be used over a broad range of industrial applications including oil refineries, nuclear power stations, petrochemical processing, and more. The Series BBV-1 body is forged from 316 stainless steel bar stock and designed to withstand repeated open and close operations. Suited to control oil, water, toxic fluids, chemicals, air, and steam; the 3-valve block manifold has (2) isolate and (1) equalizing valves. Each valve stem is precision machined with hard seats to reduce operating torque.

The flanged model is designed to mount to an industrial differential pressure transmitter. The BBV-1F comes with four 7/16-20 UNF mounting bolts and two PTFE gaskets, and the BBV-1D comes with eight 7/16-20 UNF mounting bolts and four PTFE gaskets.

**SPECIFICATIONS**

**Service:** Compatible liquids, gases, or steam.

**End Connections:**
- Process connection: No flange: 1/2˝ female NPT; Flange: DIN 19213 flange.
- Instrument connection: No flange: 1/2˝ female NPT; Flange: DIN 19213 flange.
- Vent/Test: 1/4˝ female NPT.

**Wetted Materials:** Body, stem, valve assembly: 316 SS; Stem packing: PTFE.

**Pressure Limit:** 6000 psi (400 bar).

**Temperature Limit:** 464°F (240°C).

**Other Material:** Handle: 304 SS.

**Model** | **Description**
---|---
BBV-1 | 3-valve block manifold
BBV-1F | Flanged 3-valve block manifold
BBV-1D | Double flanged 3-valve block manifold

*Please see website for dimensional drawing*
Series BBV-2 Block and Bleed Manifold is ideal for use over a broad range of industrial applications including oil refineries, nuclear power stations, petrochemical processing, and more. The Series BBV-2 body is forged from 316 stainless steel bar stock and designed to withstand repeated open and close operations. Suited to control oil, water, toxic fluids, chemicals, air, and steam; the 5-Valve Block and Bleed Manifold has (2) isolate, (1) equalizing, and (2) vent valves. Each valve stem is precision machined with hard seats to reduce operating torque.

Flanged models are designed to mount to an industrial differential pressure transmitter. The BBV-21F and BBV-22F come with four 7/16-20 UNF mounting bolts and two PTFE gaskets. The BBV-23F comes with eight 7/16-20 UNF mounting bolts and two PTFE gaskets.

### SPECIFICATIONS
- **Service:** Compatible liquids, gases, or steam.
- **End Connections:**
  - Process connection: No flange: 1/2˝ female NPT; Flange: DIN 19213 flange;
  - Instrument connection: No flange: 1/2˝ female NPT; Flange: DIN 19213 flange;
  - Vent/test: 1/4˝ female NPT.
- **Wetted Materials:** Body, stem, valve assembly: 316 SS; Stem packing: PTFE.
- **Pressure Limit:** 6000 psi (400 bar).
- **Temperature Limit:** 464°F (240°C).
- **Other Materials:** Handle: 304 SS.

### Model and Description

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>BBV-21</td>
<td>5-valve manifold with side mounted vent valves</td>
</tr>
<tr>
<td>BBV-21F</td>
<td>Flanged 5-valve manifold with side mounted vent valves</td>
</tr>
<tr>
<td>BBV-22</td>
<td>5-valve manifold with top mounted vent valves</td>
</tr>
<tr>
<td>BBV-22F</td>
<td>Flanged 5-valve manifold with top mounted vent valves</td>
</tr>
<tr>
<td>BBV-23F</td>
<td>Double flanged 5-valve manifold with top mounted vent valves</td>
</tr>
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</table>
**New Products**

**Series A-3000 Quick Connect Pneumatic Fittings**

**SPECIFICATIONS**

**Service:** Air (no other gases or liquids).

**Pressure Limits:** -29.5 in Hg (-750 mm Hg) to 150 psi (10.3 bar).

**Temperature Limits:** 32 to 140°F (0 to 60°C).

**Wetted Materials:** Polyurethane, polyethylene and nylon.

**Weight:** 0.4 oz (11 g) to 0.7 oz (19 g).

---

### Series A-3025 Fittings:
**Quick Coupling Straight**

<table>
<thead>
<tr>
<th>Model</th>
<th>Coupling (O.D.) x Coupling (O.D.)</th>
</tr>
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<tbody>
<tr>
<td>A-3025-0</td>
<td>3/16” x 3/16”</td>
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<tr>
<td>A-3025-1</td>
<td>1/4” x 1/4”</td>
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<tr>
<td>A-3025-2</td>
<td>5/16” x 5/16”</td>
</tr>
<tr>
<td>A-3025-3</td>
<td>3/8” x 3/8”</td>
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### Series A-3027 Fittings:
**3 Way Quick Coupling**

<table>
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<th>Model</th>
<th>Coupling (O.D.)</th>
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<tr>
<td>A-3027-0</td>
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</tr>
<tr>
<td>A-3027-1</td>
<td>1/4”</td>
</tr>
<tr>
<td>A-3027-2</td>
<td>5/16”</td>
</tr>
<tr>
<td>A-3027-3</td>
<td>3/8”</td>
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### Series A-3028 Fittings:
**4 Way Quick Coupling**

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<tr>
<th>Model</th>
<th>Coupling (O.D.)</th>
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<tbody>
<tr>
<td>A-3028-0</td>
<td>3/16”</td>
</tr>
<tr>
<td>A-3028-1</td>
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</tr>
<tr>
<td>A-3028-2</td>
<td>5/16”</td>
</tr>
<tr>
<td>A-3028-3</td>
<td>3/8”</td>
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### Series A-3029 Fittings:
**Quick Coupling Adapter**

<table>
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<tr>
<th>Model</th>
<th>Coupling (O.D.) x Coupling (O.D.)</th>
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<tr>
<td>A-3029-0</td>
<td>1/4” x 3/16”</td>
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<tr>
<td>A-3029-1</td>
<td>5/16” x 1/4”</td>
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<tr>
<td>A-3029-2</td>
<td>3/8” x 1/4”</td>
</tr>
<tr>
<td>A-3029-3</td>
<td>3/8” x 5/16”</td>
</tr>
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### Series A-3030 Fittings:
**3 Way Quick Coupling Adapter**

<table>
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<tr>
<th>Model</th>
<th>Coupling (O.D.) x Coupling (O.D.)</th>
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<tbody>
<tr>
<td>A-3030-0</td>
<td>1/4” x 1/4” x 3/16”</td>
</tr>
<tr>
<td>A-3030-1</td>
<td>5/16” x 5/16” x 1/4”</td>
</tr>
<tr>
<td>A-3030-2</td>
<td>3/8” x 3/8” x 1/4”</td>
</tr>
<tr>
<td>A-3030-3</td>
<td>3/8” x 3/8” x 5/16”</td>
</tr>
</tbody>
</table>

*Please contact factory for metric sizes.*
**Quick Connect Pneumatic Fittings**

**NPB-40 I**

**Series A-3000**

**Quick Coupling to NPT Straight**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
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<tbody>
<tr>
<td>A-3021-1</td>
<td>0.79 [20.3]</td>
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</tr>
<tr>
<td>A-3021-2</td>
<td>0.86 [21.8]</td>
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</tr>
<tr>
<td>A-3021-3</td>
<td>0.82 [20.9]</td>
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<tr>
<td>A-3021-4</td>
<td>0.88 [22.4]</td>
<td></td>
</tr>
<tr>
<td>A-3021-5</td>
<td>1.01 [25.7]</td>
<td></td>
</tr>
<tr>
<td>A-3021-6</td>
<td>0.95 [24.2]</td>
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**Quick Coupling to NPT 90 Degree**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-3022-1</td>
<td>1.08 [27.5]</td>
<td>1.26 [32]</td>
</tr>
<tr>
<td>A-3022-2</td>
<td>1.02 [25.9]</td>
<td>1.30 [33]</td>
</tr>
<tr>
<td>A-3022-3</td>
<td>1.09 [27.7]</td>
<td>1.41 [35.8]</td>
</tr>
<tr>
<td>A-3022-4</td>
<td>1.13 [28.8]</td>
<td>1.45 [36.8]</td>
</tr>
<tr>
<td>A-3022-5</td>
<td>1.23 [31.3]</td>
<td>1.53 [38.9]</td>
</tr>
<tr>
<td>A-3022-6</td>
<td>1.26 [32]</td>
<td>1.57 [39.9]</td>
</tr>
</tbody>
</table>

**Series A-3021**

- Quick Coupling to NPT Straight

**Series A-3022**

- Quick Coupling to NPT 90 Degree

**Series A-3023**

- 3 Way-Quick Coupling by Quick Coupling to NPT

**Series A-3024**

- 3 Way-Quick Coupling by NPT to Quick Coupling

**Specifications**

- **Service:** Air (no other gases or liquids).
- **Wetted Materials:** Polyurethane, polyethylene and nylon. **Note:** (A-3021 nickel plated brass).
- **Pressure Limits:** -29.5 in Hg (-750 mm Hg) to 150 psi (10.3 bar).
- **Temperature Limits:** 32 to 140°F (0 to 60°C).
- **Weight:** 0.4 oz (11 g) to 0.7 oz (19 g).

*Please contact factory for metric sizes.*
**New Products**

**Series A-4000 Quick Connect Pneumatic Valves**

**NPB-40 I**

**Series A-4002 Valves:**
**Tubing to Male NPT**

<table>
<thead>
<tr>
<th>Model</th>
<th>Tubing (O.D.) x NPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-4002-0</td>
<td>5/32” x 1/8”</td>
</tr>
<tr>
<td>A-4002-1</td>
<td>5/32” x 1/4”</td>
</tr>
<tr>
<td>A-4002-2</td>
<td>1/4” x 1/8”</td>
</tr>
<tr>
<td>A-4002-3</td>
<td>1/4” x 1/4”</td>
</tr>
<tr>
<td>A-4002-4</td>
<td>5/16” x 1/8”</td>
</tr>
<tr>
<td>A-4002-5</td>
<td>5/16” x 1/4”</td>
</tr>
<tr>
<td>A-4002-6</td>
<td>3/8” x 1/8”</td>
</tr>
<tr>
<td>A-4002-7</td>
<td>3/8” x 1/4”</td>
</tr>
</tbody>
</table>

**Specifications**
- **Service:** Air (no other gases or liquids).
- **Wetted Materials:** Polyurethane, polyethylene and nylon.
- **Pressure Limits:** -29.5 in Hg (-750 mm Hg) to 150 psi (10 bar).
- **Temperature Limits:** 32 to 140°F (0 to 60°C).
- **Weight:** A-4002: 1 oz (28 g).

**Series A-4022 Valves:**
**Tubing to Male NPT with Extension**

<table>
<thead>
<tr>
<th>Model</th>
<th>Tubing (O.D.) x NPT with Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-4022-2</td>
<td>1/4” x 1/8” with Extension</td>
</tr>
<tr>
<td>A-4022-4</td>
<td>5/16” x 1/8” with Extension</td>
</tr>
</tbody>
</table>

**Specifications**
- **Service:** Air (no other gases or liquids).
- **Wetted Materials:** Polyurethane, polyethylene and nylon.
- **Pressure Limits:** -29.5 in Hg (-750 mm Hg) to 150 psi (10 bar).
- **Temperature Limits:** 32 to 140°F (0 to 60°C).
- **Weight:** A-4022: 1.3 oz (36 g).
The Series A-5000 3-Way Shut-Off Valve is constructed of solid gray PVC, has Buna-N seals, and a rotating flag handle. The A-5000 can withstand a maximum operating pressure of 125 psi (8.6 bar) and a maximum temperature of 140°F (60°C). The handle has a 180° rotation and lies directly over the open port. When the handle is rotated 90° from either port, flow is shut off to both outlet ports. Since the bottom port on the valve is common, the Series A-5000 can be used as a diverter or a selecting valve. These valves can be used to conveniently hook up 3 instruments together,以及 as well as testing various gauges and transmitters.

**SPECIFICATIONS**

**Service:** Air and compatible gases.  
**Temperature Limit:** 140°F (60°C).  
**Pressure Limit:** 125 psi (8.6 bar).  
**Weight:** 1 oz (28 g).

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-5001-1</td>
<td>PVC 1/8˝ hose barb inlet x 1/8˝ hose barb outlet x 1/8˝ hose barb outlet</td>
</tr>
<tr>
<td>A-5002-2</td>
<td>PVC 1/4˝ hose barb inlet x 1/4˝ hose barb outlet x 1/4˝ hose barb outlet</td>
</tr>
<tr>
<td>A-5003-3</td>
<td>PVC 1/8˝ female NPT inlet x 1/8˝ female NPT outlet x 1/8˝ female NPT outlet</td>
</tr>
<tr>
<td>A-5003-5</td>
<td>PVC 1/8˝ male NPT inlet x 1/8˝ female NPT outlet x 1/8˝ female NPT outlet</td>
</tr>
<tr>
<td>A-5004-4</td>
<td>PVC 1/4˝ female NPT inlet x 1/4˝ female NPT outlet x 1/4˝ female NPT outlet</td>
</tr>
<tr>
<td>A-5004-6</td>
<td>PVC 1/4˝ male NPT inlet x 1/4˝ female NPT outlet x 1/4˝ female NPT outlet</td>
</tr>
<tr>
<td>A-5005-3</td>
<td>PVC 1/8˝ female NPT inlet x 1/8˝ male NPT outlet x 1/8˝ male NPT outlet</td>
</tr>
<tr>
<td>A-5006-4</td>
<td>PVC 1/4˝ female NPT inlet x 1/4˝ male NPT outlet x 1/4˝ male NPT outlet</td>
</tr>
</tbody>
</table>

*Contact factory for a variety of inlet/outlet combinations.
Building Automation
System Integration with Open Protocols
By American Technical Publishers, Inc., 2009

- Obtain knowledge in building automation systems, such as HVAC, lighting, security systems, functions of sensors, actuators, and other control equipment used in commercial buildings
- Learn about electrical, plumbing, fire protection, security, access control, voice-data-video (VDV), and elevator systems control devices and applications
- Create a solid foundation for a comprehensive training program in building automation

A CD-ROM is included that serves as a self-study aid to enhance the text content, it features Quick Quizzes®, Illustrated Glossary, Flash Cards, Test Tool Procedures, IAQ Survey Checklists, IAQ Equipment Forms, Virtual Meters, Media Clips, and a link to ATPeResources.com.

Order Number: BK-0018
ISBN: 9780826920126, Pages: 408, Hardback

Indoor Air Quality Solutions for Stationary Engineers
By American Technical Publishers, Inc., 2009

- Obtain an overview of what IAQ (Indoor Air Quality) is, instruments and testing procedures, and how to maintain IAQ in institutional and commercial facilities
- Learn required safety practices, environmental protection, and common building stationary engineering applications
- Contains references to ANSI, EPA, and ASHRAE standards

A CD-ROM is included that serves as a self-study aid to enhance the text content, it features Quick Quizzes®, Illustrated Glossary, Flash Cards, Test Tool Procedures, IAQ Survey Checklists, IAQ Equipment Forms, Virtual Meters, Media Clips, and a link to ATPeResources.com.

Order Number: BK-0015
ISBN: 9780826907189, Pages: 390, Paperback

Managing Indoor Air Quality
Fourth Edition
By H.E. Burroughs, C.I.A.Q.P. & Shirley J. Hansen, Ph.D., 2008

- Gain a comprehensive approach to managing indoor air quality and mitigating indoor air quality problems
- Learn about building security and mold-related issues
- Contains expanded coverage of ASHRAE standards

This practical desk reference is structured to serve as a guide and information resource, both on treating existing indoor air problems effectively and on preventing costly IAQ problems from occurring in the first place.

Order Number: BK-0029
ISBN: 0881735698, Pages: 356, Hardback

HVAC
Heating, Ventilating, and Air Conditioning
Third Edition
By S. Don Swenson, 2004

- Gain knowledge in HVAC fundamentals, types of HVAC units, load calculations, residential and commercial controls, with maintenance, troubleshooting, and servicing procedures of residential and commercial HVAC systems
- Contains information on HVAC unit operation, HVAC unit mechanical, electrical, and pneumatic systems, and the safety practices
- Learn technology in combustion of fuels, heat pumps, control systems, and system design

A CD-ROM is included that serves as a self-study aid to enhance the text content, it features Quick Quizzes®, Illustrated Glossary, Media Clips, and a link to ATPeResources.com.

Order Number: BK-0040

HVAC Control Systems
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By Ronnie J. Auvil, 2007

- Learn all aspects of HVAC control systems used in the industry specifically designed for HVAC and building maintenance technicians
- Obtain knowledge in HVAC fundamentals, energy sources, and control principles as well as pneumatic, electromechanical, and electronic components and control systems
- Contains technology in energy efficiency practices, building automation systems, networking, direct digital control, building automation system retrofitting, maintenance management, and troubleshooting principles

A CD-ROM is included that serves as a self-study aid to enhance the text content, it features Quick Quizzes®, Illustrated Glossary, Physical Properties of Substances Tables, Media Clips, and a link to ATPeResources.com.

Order Number: BK-0041
ISBN: 9780826907578, Pages: 405, Hardback
Testing & Balancing HVAC Air & Water Systems
Fourth Edition
By Samuel C. Sugarman, 2006

• Gain all the information you will need to evaluate and balance the air and water sides of any HVAC system
• Contains information of pneumatic, electric, electronic, direct digital and proportional, integral and derivative control systems
• Learn every aspect of testing, adjusting and balancing, as well as all types of instruments required, and specific methods to adjust constant volume, single zone, dual duct, induction, and variable air volume systems

This book provides complete details for the full scope of system components, including fans, pumps, motors, drives and electricity, as well as for balancing devices and instrument usage as well as on testing and balancing clean rooms and HVAC system commissioning.

Order Number: BK-0030
ISBN: 0881735345, Pages: 325, Hardback

HVAC Fundamentals
Second Edition
By Samuel C. Sugarman, 2007

• Clearly understand how HVAC systems operate by learning about the latest technology advances and terminology, as well as the full range of HVAC systems used in today's facilities
• Learn why one component or system may be chosen over another with respect to design, application, energy conservation, indoor air quality, and cost
• Fully examine heat flow fundamentals, heat flow calculations used in selecting equipment, determine system operating performance and costs, as well as fluid flow fundamentals and equations, basics of system testing and verification of system performance

This book separates out each of the major HVAC system components and controls for air, water, heating, ventilating and air conditioning, clearly illustrating the way each system, subsystem, control or component contributes to providing the desired indoor environment.

Order Number: BK-0028
ISBN: 0881735590, Pages: 326, Hardback

Refrigeration Systems and Applications
Second Edition
By Ibrahim Dincer & Mehmet Kanoglu, 2010

• Learn to install and service pumps for nearly any application
• See how pumps are used in robotics, taking advantage of hydraulics to lift larger, heavier loads
• Know the appropriate servicing schedule for different types of pumping equipment

This book is a highly useful reference for HVAC engineers and technicians and those who work on domestic hot and cold-water services, gas supply, and steam services.

Order Number: BK-0049
ISBN: 9780470747407, Pages: 780, Hardback

Chemical Resistance Guide for Plastics
By Compass Publications

• Determine if your product is compatible in under 30 seconds
• Covers 1,454+ chemical or harsh environments with many synonyms listed to help you find any of the 43,330 covered combinations of corroding agents vs. plastic materials
• Lists 1,460+ liquid or dry chemicals, gases, lubricants, household fluids, foods and many other environments

This book is a great addition for anyone working with plastics of any type.

Order Number: BK-0022
ISBN: 1889712035, Pages: 682, Hardback

Chemical Resistance Guide for Metals & Alloys
By Compass Publications

• Covers 72 metals and alloys
• 963 chemical or harsh environments with many synonyms listed to help you find any of the 29,000 covered combinations of corroding agents vs. metals, metal alloys and carbon
• Features an expanded galvanic series that covers 120 metals

This book is a great addition for anyone working with alloys of any type.

Order Number: BK-0023
Chemical Resistance Guide for Elastomers III
By Compass Publications

- Determine if your product is compatible in under 30 seconds
- Covers 100,000+ combinations of corrodents vs. rubber and other elastometric compounds
- Lists 3,000+ liquid or dry chemicals, gases, lubricants, household fluids, foods and many other environments

This reference is a great addition for anyone working with elastomers of any type.

Order Number: BK-0024
ISBN: 1889712043, Pages: 780, Hardcover

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Third Edition
By Denis Green & Jonathan F. Gosse, 2010

- Learn procedures commonly practiced in the real-world industry and trade for maintenance management, energy efficiency, troubleshooting, and occupational health and safety
- Service electrical, electronic, refrigeration, boiler, HVAC, mechanical and fluid power systems
- Contains a glossary that defines over 840 technical terms used throughout the textbook

A CD-ROM is included that serves as a self-study aid to enhance the text content, it features Quick Quizzes®, Illustrated Glossary, Maintenance Forms, Media Clips, and Reference Material.

Order Number: BK-0014
ISBN: 9780826956417, Pages: 423, Hardcover

Managers Guide Preventative Building Maintenance
By Ryan Cruzan, 2009

- Develop an effective preventive maintenance program for any facility
- Contains information about facility inspection and assessment, effective lubrication practices, commercial roofing repair, indoor air quality management, applicable government codes, standards and regulations, detailed preventive maintenance procedures, and maintenance scheduling
- Learn maintenance approaches for more than 100 types of equipment and building components, as well as the economic value of preventive maintenance, management and motivation of the preventive maintenance team, and setting up a computerized maintenance management system (CMMS)

Order Number: BK-0034
ISBN: 0881736198, Pages: 304, Hardcover

Industrial Process Control Systems
Second Edition
By Stephen W. Fardo and Dale R. Patrick, 2009

- Learn about manufacturing and how it deals with the transformation of materials into marketable products
- Gain knowledge in specific manufacturing operations such as: systems that respond to temperature, pressure, flow, level, and analytical procedures are commonly used in an industrial setting to manufacture a product
- Contains information on operating system, process control, pressure systems, thermal systems, level determining systems, flow process systems, analytical process systems, microprocessor systems, automated processes and robotic systems

This book covers the systems concept that will serve as the basic approach to understanding and effectively applying industrial process control.

Order Number: BK-0037
ISBN: 0881735914, Pages: 445, Hardcover

Facility Managers Handbook
By Joseph F. Gustin, 2003

- Learn about the main issues of facility management such as HVAC, lighting, electrical, plumbing, space allocation, security and grounds maintenance
- Gain a multitude of tested ideas, procedures and examples for successfully and cost-effectively managing facility operations
- Contains a wealth of illustrations, tables and graphs

This book is written in a easily understood language, is reader-friendly, and provides a panoramic view of the process by isolating the key areas the facility manager must address, including real estate, space and change management, indoor air quality, emergency preparedness and response planning, communications systems, and regulatory mandates.

Order Number: BK-0038
ISBN: 0881733539, Pages: 349, Hardcover

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New Products

Mechanical and Electrical Systems
For Construction Managers
Second Edition
By American Technical Publishers, Inc., 2010

- Understand all aspects of a wide range of mechanical, electrical, and plumbing systems
- Gain an overview of these systems aimed at general contractors, construction managers, supervisors, and those desiring to enter the construction industry
- Learn the latest information on building automation systems, including control devices, signals, and logic

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Order Number: BK-0044
ISBN: 9780826936015, Pages: 678, Paperback

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Second Edition

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- Learn key concepts that are discussed using a simplified approach that enhances learning
- Contains minimal use of mathematics and is discussed through applications and illustrations

This book is an easy-to-understand introductory text for those wishing to grasp the basic fundamentals of electricity and electronics.

Order Number: BK-0031
ISBN: 0881736015, Pages: 302, Hardback

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Third Edition
By Glen A. Mazur & Thomas E. Proctor, 2010

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