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Dwyer Instruments, Inc. produces a broad range of competitively priced precision instruments for measuring, transmitting and controlling pressure, temperature, level and flow.

Many of these instruments are widely known by their individual brand names, such as Magnehelic® and Spirahelic® pressure gages, Photohelic® switch/gages, Rate-Master®, Mini-Master® and Visi-Float® flowmeters, Slack Tube® and Flex-Tube® manometers, and Dwyer® pressure switches.

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Founded in 1931, Dwyer Instruments, Inc. moved its manufacturing and headquarters from Chicago, Illinois, in 1955, to newly constructed, greatly-expanded facilities in Michigan City, Indiana. The company has since added three more Indiana facilities in Wakarusa, Kingsbury and Wolcott as well as manufacturing facilities in Anaheim, California; Fergus Falls, Minnesota; and Kansas City, Missouri.

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Dwyer Instruments, Inc.

Magnesense® II Differential Pressure Transmitter

Monitors Pressure, Air Velocity & Air Flow, BACnet/Modbus® Communications

The Series MS2 Magnesense® II Differential Pressure Transmitter combines the proven stable Hall Effect sensing technology of our original Series MS with additional features to reduce installation time and simplify ordering. In this second generation transmitter, we have added additional field selectable pressure ranges so that each model can have four selectable ranges along with four additional bidirectional ranges. When using the plug-in integral display or the portable remote display tool, both Metric and English engineering units can be selected via on board dip switches. Dual current and voltage outputs allow users to simultaneously take either a current or voltage output to their building controller and have a local test circuit for verification of the output reading. The voltage output can be selected to be either 0 to 5 VDC or 0 to 10 VDC, while the current is always 4 to 20 mA. Both the current and voltage output can be inverted. The MS2 can also be ordered with either a BACnet® or MODBUS® Communications protocol output that will allow the transmitters to be daisy-chained together.

Like the original Series MS, the second generation transmitter can be used as a linear pressure output or a linear velocity output with the square root extraction done in the transmitter. Additional parameters have been included to expand the square root capability to include flow measurements.

### Model Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>in w.c.</th>
<th>Pa</th>
<th>mm w.c.</th>
<th>kPa</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS2-W101</td>
<td>0.10, 0.15, 0.25, 0.50</td>
<td>25, 40, 50, 125</td>
<td>2.5, 4, 8, 10</td>
<td>0.025, 0.04, 0.05, 0.125</td>
<td>$89.00</td>
</tr>
<tr>
<td>MS2-W111</td>
<td>±10, ±15, ±25, ±50</td>
<td>±25, ±40, ±50, ±125</td>
<td>±25, ±4, ±125</td>
<td>±25, ±0.04, ±0.05, ±0.125</td>
<td>$104.00</td>
</tr>
<tr>
<td>MS2-W102</td>
<td>1, 2, 3, 5</td>
<td>250, 500, 750, 1250</td>
<td>25, 50, 75, 125</td>
<td>0.25, 0.5, 0.75, 1.25</td>
<td>$89.00</td>
</tr>
<tr>
<td>MS2-W103</td>
<td>10, 16, 25, 50</td>
<td>2500, 3500, 5000, 6975</td>
<td>250, 350, 500, 6975</td>
<td>2.5, 3.5, 5.0, 6.975</td>
<td>$96.00</td>
</tr>
</tbody>
</table>

*Models can be changed in the field to have zero centered ranges at reduced accuracy.

### Options

- Add-LCD to end of model numbers for units with display
- Add -BC to end of model numbers for BACnet Communications
- Add -MC to end of model numbers for Modbus® Communications
- Add -NIST to end of model numbers for NIST Traceable Certificate
- Add -FC to end of model numbers for Factory Calibration Certificate
- Change W to D for Duct Mount Static Probe
- Change W to N for DIN Rail Mounting

Accessories

- A-151, Cable gland for 5 to 10 mm diameter cable: $2.50
- A-345-A, Remote Display Tool: $65.00
- A-480, Plastic Static Pressure Tip: $0.80
- A-481, Installer kit includes 2 plastic static pressure tips and 7 ft (2.1 m) of PVC tubing: $4.25
- A-489, 4” 303 SS Straight Static Pressure Tip with Flange: $6.67
- A-502-A, 4” 303 SS Static Pressure Tip with mounting flange: $9.10
- SCD-PS, 100 to 240 VAC/VDC to 24 VDC Power Supply: $30.00

Modbus® is a registered trademark of Schneider Automation, Inc.
One Unit for all your Building Pressure Applications
The Industry Standard for Building Automation

- **Field Upgradable LCD.** No need to order two separate transmitters. Simply stock a transmitter and display and you can satisfy any customer’s requests. Simply remove cover and snap the LCD onto the board.

- **Large Integral LCD.** Second generation Magnesense® has a larger LCD that includes the engineering units. Display also has 5 digits allowing measurements up to 99,999 to be displayed directly.

- **Remote Display Tool reduces** instrument cost by eliminating need for each transmitter to have its own display. The buttons on the display tool also provide a means to zero and span the units without reaching into the transmitter.

- **Removeable Terminal Block** ease installation by allowing for the wiring to be done outside of the housing where the installer has more room.

- **Simultaneous Current/Voltage Output** reduces inventory by combining 0 to 10 V, 0 to 5 V and 4 to 20 mA models into one model. Both outputs are always present allowing field selection of which signal to use and the other signal can be used for local diagnostic without interrupting system.

- **Digital Push Button Zero and Span.** Reduces calibration time significantly over other transmitters that utilize potentiometers. Lowers maintenance time and costs.

- **Field Selectable Ranges in metric or English.** Lowers stock and inventory requirements. You’ll always have the right transmitter for every job.

- Field Selectable Air Velocity and Flow Modes for fan and blower applications. Unit provides square root output that accurately tracks fpm or m/s for velocity measurements. Now area can be programmed to directly display cfm or m³/hr for volumetric flow measurements. No need for a smart programmable indicator or PLC to convert pressure to air flow. Reduces components and installation time lowering overall costs.

CALL TO ORDER | 800/872-9141 7
The Series MFS2 Magnetic Inductive Flow Sensor is a compact, lower cost plastic alternative to the Series MPS. Unlike sensors with moving parts, the MFS2 can be used in applications dealing with contaminated media. This series provides a reliable measuring technique, an obstruction free pipe cross-section, as well as a quick response time, making this series ideal for interference free operation. Any change in temperature, density, viscosity, concentration or electrical conductivity of the liquid, does not affect the output signal of this Magnetic Inductive Flow Sensor. This, in addition to its long life cycle and PVDF process connection, makes this series perfect for accurate reversible gauging of volume flow of conductive liquids in closed piping.

**Principles of Operation**

The measuring pipe is in a magnetic field. If an electrically conductive medium with a certain flow passes through the pipe, it passes at a right-angle to the magnetic field, creating a voltage that is proportional to the average flow velocity and picked up by two electrodes within the MFS2. A frequency output signal is obtained that is proportional to the flow (analog output option available).

**FEATURES**

- No moving parts
- No mechanical wear
- Maintenance-free

<table>
<thead>
<tr>
<th>Model</th>
<th>Range GPM (LPM)</th>
<th>Process Connection</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFS2-1</td>
<td>0.14 to 1.3 (0.25 to 5)</td>
<td>1/2&quot; male NPT</td>
<td>$625.00①</td>
</tr>
<tr>
<td>MFS2-2</td>
<td>0.4 to 5.3 (1.0 to 20)</td>
<td>1/2&quot; male NPT</td>
<td>$625.00①</td>
</tr>
<tr>
<td>MFS2-3</td>
<td>0.66 to 13.2 (2.5 to 50)</td>
<td>3/4&quot; male NPT</td>
<td>$625.00①</td>
</tr>
<tr>
<td>MFS2-4</td>
<td>2.64 to 26.4 (5.0 to 100)</td>
<td>1&quot; male NPT</td>
<td>$625.00①</td>
</tr>
<tr>
<td>MFS2-5</td>
<td>8.5 to 52.8 (150 to 200)</td>
<td>1&quot; male NPT</td>
<td>$725.00①</td>
</tr>
<tr>
<td>MFS2-6</td>
<td>3.3 to 66.0 (12.5 to 250)</td>
<td>1-1/4&quot; male NPT</td>
<td>$694.00①</td>
</tr>
</tbody>
</table>

**SPECIFICATIONS**

- **Service:** Compatible, non-coating, conductive liquids.
- **Range:** See model chart.
- **Wetted Materials:**
  - Grounding Rings and Electrodes: 316 SS;
  - Process Connections: PVDF;
  - O-rings: EPDM.
- **Accuracy:** ±1% of reading.
- **Repeatability:** 1%.
- **Temperature Limits:**
  - Process: 14 to 140°F (-10 to 60°C);
  - Ambient: 41 to 140°F (5 to 60°C).
- **Pressure Limits:**
  - 145 psi (10 bar) @ 68°F (20°C);
  - 116 psi (8 bar) @ 140°F (60°C);
  - 67 psi (5 bar) @ 140°F (60°C).
- **Response Time:** < 100 ms.
- **Power Requirements:** 24 VDC ±15%.
- **Power Consumption:** 0.6 W.
- **Output:** Frequency: Square-wave, NPN or PNP.
- **Flow Indication:** LED green, flow proportional blinking.
- **Enclosure Rating:** IP65.
- **Enclosure Material:** ABS plastic.
- **Process Connection:** See model chart.
- **Electrical Connection:** Plug connector M12x1.
- **Conductivity:** > 20 μS/cm min.
- **Weight:**
  - MFS2-1: -2.3 -0.4 -5.6 oz (226.6 g);
  - MFS2-6: 1 lb (455 g).
- **Agency Approvals:** CE.

**ACCESSORIES**

- MFS-C3, 4-Pin Cable Socket M12x1 Connect, 9.8 ft (3 m) ... $54.00①
- MFS-C5, 4-Pin Cable Socket M12x1 Connect, 16.4 ft (5 m) ... $63.00①
- MFS-C10, 4-Pin Cable Socket M12x1 Connect, 32.8 ft (10 m) ... $99.50①

① Items are subject to Schedule B discounts.
Model UFM Compact Ultrasonic Flowmeter is a low-cost clamp-on, ultrasonic flowmeter. The Model UFM implements the transit-time difference to measure flow rates in pipes non-invasively. It is a compact and lightweight design, featuring an easily installed, all-in-one clamp-on unit. This unit can measure velocity and flow in pipes with outside diameters ranging from 0.96 to 4.62" (24.49 to 117.35 mm). The screen offers easy-to-read text with a convenient backlight for visual comfort. This model comes with a volume pulse and 4 to 20 mA flow rate output.

PRINCIPLES OF OPERATION
Two sensors located in the guideway are placed on the exterior of the pipe, and each transmits an ultrasonic pulse through the pipe and fluid to the other. The velocity of the liquid flowing through the pipes causes the pulse to accelerate or decelerate. The difference in the transit times of the two pulses is used to calculate the flow rate. The use of transit time allows the flowmeter to be unaffected by pressure or temperature changes.

APPLICATIONS
- Flow measurement for heat metering
- Chilled water metering and monitoring
- Potable water metering and monitoring
- Process water metering and monitoring

Kit Includes:
- Converter w/ adjustable guideway
- Set of 1.81 to 2.75" (48 to 70 mm) clamps
- Set of 2 to 5" (51 to 127 mm) clamps
- Set of small pipe adaptor circle clamps
- Set of small pipe adaptor V clamps
- Ultrasonic coupling grease

SPECIFICATIONS
- Service: Clean water with <3% by volume of particulate content.
- Range: 0.33 to 32.8 lbs (0.1 to 10 m/s).
- Display: Backlit: 3.27" H x 0.74" W (83.5 mm x 18.8 mm), 2 line x 16 characters.
- Accuracy: ±3% of flow reading for > 0.05 ft/s (> 0.3 m/s).
- Power Requirements: 12 to 24 VDC or VAC.
- Power Consumption: 7 W max.
- Temperature Limits:
  - Process: 32 to 185°F (0 to 85°C);
  - Ambient: 32 to 122°F (0 to 50°C).
- Outputs:
  - Analog: 1 opto-isolated: 4 to 20 mA;
  - Error current: 3.5 mA;
  - Load resistance: 620 Ω max;
  - Pulse: 1 opto-isolated MOSFET relay, 500 mA max, 166 pps max, 200 Hz max.
- Enclosure Rating: IP64.
- Enclosure Material: Plastic polycarbonate.
- Repeatability: ±0.5% of measured value,
- Electrical Connections: 16.4" (5 m) cable.
- Response Time: < 1 s.
- Weight: 2.9 lb (1.315 kg).
- Agency Approvals: CE.

ADDITIONAL SPECIFICATIONS
- Applicable Pipe Material: Steel, copper, or plastic.
- Pipe Outside Diameter: 0.98 to 4.62" (24.99 to 117.35 mm).
- Applicable Pipe Lining: None.
- Pipe Wall Thickness: 0.02 to 0.39" (0.5 to 10 mm).

Model UFM-1, Compact Ultrasonic Flowmeter $1830.00

* Items are subject to Schedule B discounts.

CALL TO ORDER | 800/872-9141
The Series WD3 Water Leak Detector protects equipment from water damage by detecting the presence of water in drip pans in air handler units, under raised floors in data centers, or on floors around sump pumps and drains. Water is detected once it reaches a level that bridges the two conductive strips on the bottom of the housing. Depending on the model ordered, audible and visual alerts provide local indication of the alarm condition and an internal switch will give remote indication or control to prevent further build up of water.

For applications where power is not available, the Model WD3-BP-D1A is battery powered. Otherwise, either AC or DC supply voltages can be used to power the water detector. The sensing height can be adjusted to as low as 1/32” using the included adjustable mounting bracket. The mounting bracket can attach to any flat surface by either using the attached adhesive strips or mounting screws.

<table>
<thead>
<tr>
<th>Model</th>
<th>Output</th>
<th>Power</th>
<th>Audible Alarm</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>WD3-BP-D1A</td>
<td>SPST NO SSR</td>
<td>Battery</td>
<td>Yes</td>
<td>$22.50</td>
</tr>
<tr>
<td>WD3-LP-D2</td>
<td>DPDT Relay</td>
<td>11 to 27 VAC/DC</td>
<td>No</td>
<td>34.00</td>
</tr>
<tr>
<td>WD3-LP-D2A</td>
<td>DPDT Relay</td>
<td>11 to 27 VAC/DC</td>
<td>Yes</td>
<td>35.50</td>
</tr>
</tbody>
</table>

ACCESSORY
A-WD3-BRK, Replacement Mounting Bracket .................................. $3.50⑧
⑧ Items are not priced and are not subject to any discount.

SPECIFICATIONS
Service: Water or conductive fluids.
Minimum Sensing Gap: 1/32”
Switch Type: Battery Powered Models: SPST NO SSR, External Powered Models: DPDT relay.
Electrical Ratings:
Battery Powered Model: Pilot duty rating 250 mA @ 24 VDC; External Powered Models: 1A @ 24 VAC/DC.
Audible Alarm: At least 85 dB @ 1 foot distance (depends on model).
Visual Alarm: Red LED for water level; Yellow LED for low battery (battery powered models only); Green LED for power condition (external powered models only).
Temperature Limits: 32 to 122°F (0 to 50°C).
Power Requirements:
Battery Powered Model: 3V CR2450 lithium metal battery, installed functional, user replaceable; External Powered Models: 11 to 27 VAC/DC.
Power Consumption:
Battery Powered Model: 0.9 mA steady state / 3.0 mA during alarm condition; External Powered Models: 30 mA steady state / 85 mA during alarm condition.
Battery Life: 5 years steady state / 48 hours during alarm condition.
Electrical Connections: 4.9” (1.5 m), 22 AWG, PVC, UL plenum rated cable.
Enclosure Material: ABS and polycarbonate with flammability classification UL 94 V-O.
Enclosure Rating:
Audible Alarm Models: Water-tight up to 3/4 of the body height;
Non-Audible Alarm Models: NEMA 6P (IP 68) submersible.
Weight: 4.85 oz (137.5 g).
Agency Approvals: CE, RoHS.
Ultrasonic Level Sensor

18" (5.5 m) Measuring Range, Non-Contact Transmitter, 4 SPST Programmable Relays

The Model ULSL Ultrasonic Level Sensor provides non-contact, continuous ultrasonic level measurement of fluids for short range applications. Ultrasonic technology paired with automatic temperature compensation provides accurate and reliable measurements in almost all conditions. The Model ULSL has failsafe logic that is easily configured to custom applications via free software removing the need for target calibration. Using the free software, the Model ULSL can be programmed to transmit an output signal as well as set the four relays for control applications. This rugged design comes with a NEMA 6P submersible enclosure rating to ensure a long lasting unit.

FEATURES
- Selectable deadband
- Fail-safe logic for control applications
- Four programmable relays
- Narrow beam width and short dead band
- Automatic temperature compensation

APPLICATIONS
- Dirty, corrosive, or sticky fluids
- Bulk containers
- Sump and process tanks

SPECIFICATIONS
- Service: Compatible fluids.
- Wetted Materials: Sensor: PVDF; O-ring: FKM.
- Ranges: 18" (5.5 m).
- Accuracy: ±0.2% of range.
- Resolution: 0.070" (2 mm).
- Blind Zone: 8" (20 cm).
- Beam Width: 3" (7.62 cm).
- Temperature Limits:
  - Process: 20 to 140°F (-7 to 60°C);
  - Ambient: -31 to 140°F (-25 to 60°C).
- Temperature Compensation: Automatic.
- Pressure Limits: 30 psi (2 bar).
- Power Requirement: 12 to 28 VDC.
- Output Signal: 4 to 20 mA, 2-wire.
  - Invert: 4 to 20 mA or 20 to 4 mA;
  - Fail-safe: 4 mA, 20 mA, 21 mA, 22 mA, or hold last.
- Loop Resistance: 400 Ω max.
- Electrical Connections: 4" (1.2 m) 9 conductor shielded cable.
- Contact Type: 4 SPST relays.
- Contact Rating: 1 A max & 28 VDC max.
- Deadband: Selectable (no hysteresis, 1/16", 1/2", 1", 1/2 cm, 1 cm, 2 cm, 5 cm or not available).
- Process Connection: 2" NPT, 2" BSPP (optional).
- Enclosure Material: Polycarbonate; Gland: TPE.
- Mounting Orientation: Vertical.
- Memory: Non-volatile.
- Fail-safe:
  - Contact: Power loss: Hold last contact;
  - Power on: Open, close, or last contact.
- Programming: Free PC software download (USB adapter required).
- Weight: 3 lb (1.36 kg).
- Agency Approvals: CE, RoHS.

<table>
<thead>
<tr>
<th>Model</th>
<th>Range (5.5 m)</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ULSL-10</td>
<td>18 ft</td>
<td>$550.00</td>
</tr>
</tbody>
</table>

*USB adapter necessary for calibration. One adapter can program multiple units.

ACCESSORIES
- ULS-ACC-USB, USB Adapter for Calibration, PVC ........................... $53.50
- ULS-ACC-131, 3" x 2" NPT Reducer Bushing Fitting (Sch. 40), PVC  ...... $36.00
- ULS-ACC-132, 3" x 2" NPT Reducer Bushing Fitting (Sch. 80), PVC ...... $70.50
- ULS-ACC-142, 4" x 2" NPT Reducer Bushing Fitting (Sch. 80), PVC .......... $141.00
- ULS-ACC-231, 3" Socket x 2" NPT Reducer Bushing Fitting (Sch. 40), PVC ...... $15.50
- ULS-ACC-232, 3" Socket x 2" NPT Reducer Bushing Fitting (Sch. 80), PVC .......... $116.00
- ULS-ACC-241, 4" Socket x 2" NPT Reducer Bushing Fitting (Sch. 40), PVC ...... $28.25
- ULS-ACC-242, 4" Socket x 2" NPT Reducer Bushing Fitting (Sch. 80), PVC ...... $205.00
- ULS-ACC-520, 2" NPT Polypropylene Side Mount Bracket ...................... $45.00

* Items are subject to Schedule B discounts.
Ultrasonic Level Sensor
9.8’ (3 m) Measuring Range, Non-Contact
Transmitter, 4 SPST Programmable Relays

The Model ULSM Ultrasonic Level Sensor provides non-contact, continuous ultrasonic level measurement of fluids for medium range applications. Ultrasonic technology paired with automatic temperature compensation provides accurate and reliable measurements in almost all conditions. The Model ULSM has fail-safe logic that is easily configured to custom applications via free software removing the need for target calibration. Using the free software, the Model ULSM can be programmed to transmit an output signal as well as set the four relays for control applications. This rugged design comes with a NEMA 6P submersible enclosure rating to ensure a long lasting unit.

FEATURES
- Selectable deadband
- Fail-safe logic for control applications
- Four programmable relays
- Narrow beam width and short dead band
- Automatic temperature compensation

APPLICATIONS
- Dirty, corrosive, or sticky fluids
- Bulk containers
- Sump and process tanks

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
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<tr>
<td>ULSM-10*</td>
<td>9.8 ft (3 m)</td>
<td>$450.00</td>
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*USB Adapter necessary for calibration. One adapter can program multiple units.

ACCESSORIES
- ULS-ACC-USB, USB Adapter for Calibration $53.50
- ULS-ACC-121, 1” x 1” NPT Reducer Bushing Fitting (Sch. 40), PVC $16.00
- ULS-ACC-122, 1” x 1” NPT Reducer Bushing Fitting (Sch. 80), PVC $45.00
- ULS-ACC-221, 2” Socket x 1” NPT Reducer Bushing Fitting (Sch. 40), PVC $10.25
- ULS-ACC-222, 2” Socket x 1” NPT Reducer Bushing Fitting (Sch. 80), PVC $38.50
- ULS-ACC-510, 1” NPT Polypropylene Side Mount Bracket $45.00

SPECIFICATIONS
- Service: Compatible fluids.
- Wetted Materials: Sensor: PVDF; O-ring: FKM.
- Ranges: 9.8’ (3 m).
- Accuracy: ±0.2% of range.
- Resolution: 0.039” (1 mm).
- Blind Zone: 4” (10 cm).
- Beam Width: 2” (5 cm).
- Temperature Limits:
  - Process: 20 to 140°F (-7 to 60°C);
  - Ambient: -31 to 140°F (-35 to 60°C).
- Temperature Compensation: Automatic.
- Pressure Limits: 30 psig (2 bar).
- Power Requirement: 12 to 28 VDC.
- Output Signal: 4 to 20 mA, 2-wire;
  - Invert: 4 to 20 mA or 20 to 4 mA;
- Fail-safe: 4 mA, 20 mA, 21 mA, 22 mA, or hold last.
- Loop Resistance: 400 Ω max.
- Electrical Connections: 4’ (1.2 m) 9 conductor shielded cable.
- Contact Type: 4 SPST relays.
- Contact Rating: 1 A max @ 28 VDC max.
- Deadband: Selectable (no hysteresis, 1/4”, 1/2”, 1”, 1/2 cm, 1 cm, 2 cm, 5 cm or not available).
- Process Connection: 1” NPT, 1” BSPP (optional).
- Enclosure Material: Polycarbonate; Gland: TPE.
- Mounting Orientation: Vertical.
- Memory: Non-volatile.
- Fail-safe:
  - Contact: Power loss: Hold last contact;
  - Power on: Open, close, or last contact.
- Programming: Free PC software download (USB adapter required).
- Weight: 1.5 lb (0.68 kg).
- Agency Approvals: CE, RoHS.
The Model ULSS Ultrasonic Level Sensor provides non-contact, continuous ultrasonic level measurement of fluids for short range applications. Ultrasonic technology paired with automatic temperature compensation provides accurate and reliable measurements in almost all conditions. The Model ULSS has fail-safe logic that is easily configured to custom applications via free software removing the need for target calibration. Using the free software, the Model ULSS can be programmed to transmit an output signal as well as set the four relays for control applications. This rugged design comes with a NEMA 6P submersible enclosure rating to ensure a long-lasting unit.

**FEATURES**
- Selectable deadband
- Fail-safe logic for control applications
- Four programmable relays
- Narrow beam width and short dead band
- Automatic temperature compensation

**APPLICATIONS**
- Dirty, corrosive, or sticky fluids
- Bulk containers
- Sump and process tanks
- Small tanks

---

**SPECIFICATIONS**
- **Service:** Compatible fluids.
- **Wetted Materials:** Sensor: PVDF; O-ring: FKM.
- **Ranges:** 4.1’ (1.25 m).
- **Accuracy:** 0.125” (0 mm).
- **Resolution:** 0.019” (0.5 mm).
- **Blind Zone:** 2” (5 cm).
- **Beam Width:** 2” (5 cm).
- **Temperature Limits:**
  - Process: 20 to 140°F (-7 to 60°C).
  - Ambient: -31 to 140°F (-35 to 60°C).
- **Temperature Compensation:** Automatic.
- **Pressure Limit:** 30 psi (2 bar).
- **Power Requirement:** 12 to 28 VDC.
- **Output Signal:** 4 to 20 mA, 2-wire; Invert: 4 to 20 mA or 20 to 4 mA; Fail-safe: 4 mA, 20 mA, 21 mA, 22 mA, or hold last.
- **Loop Resistance:** 400 Ω max.
- **Electrical Connections:** 4” (1.2 m) 9 conductor shielded cable.
- **Contact Type:** 4 SPST relays.
- **Contact Rating:** 1 A max @ 28 VDC max.
- **Deadband:** Selectable (no hysteresis, 1/4”, 1/2”, 1”, 1/2 cm, 1 cm, 2 cm, 5 cm or not available).
- **Process Connection:** 1” NPT, 1” BSPP (optional).
- **Enclosure Rating:** NEMA 6P (IP66).
- **Enclosure Material:** Polycarbonate; Gland: TPE.
- **Mounting Orientation:** Vertical.
- **Memory:** Non-volatile.
- **FailSafe:**
  - Contact: Power loss: Holds Last contact.
  - Power on: Open, close, or last contact.
- **Programming:** Free PC software download (USB adapter required).
- **Weight:** 1 lb (0.45 kg).
- **Agency Approvals:** CE, RoHS.

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**ACCESSORIES**
- **ULS-ACC-USB**, USB Adapter for Calibration ............................................. **$53.50**
- **ULS-ACC-121**, 1” x 1” NPT Reducer Bushing Fitting (Sch. 40), PVC ........... **$18.00**
- **ULS-ACC-221**, 2” Socket x 1” NPT Reducer Bushing Fitting (Sch. 80), PVC ........ **$45.00**
- **ULS-ACC-222**, 2” Socket x 1” NPT Reducer Bushing Fitting (Sch. 80), PVC ........... **$10.25**
- **ULS-ACC-510**, 1” NPT Polypropylene Side Mount Bracket ........................ **$38.50**

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*Items are subject to Schedule B discounts.*
The Series BGM Digital Bar Graph Meter is extremely durable and can replace a wide range of analog meters. The 4-digit display will significantly reduce the potential for human error in reading by eliminating errors commonly produced by the viewing angle when reading analog meters. This series has a key pad that allows for easy access of features without complex menu structures. With the combined ability to create a wide range of custom footprints and the optional NEMA 4X'x seal, the Series BGM can be used in a variety of applications. The LED bar graph adds a visual indicator of the measured value so that it can be visually analyzed, preventing accidents or system failures from happening.

**SPECIFICATIONS**
- **Inputs:** 0 to ±10 VDC or 4 to 20 mA.
- **Accuracy:** ±0.05% FS.
- **Power Requirements:** 120 VAC 50/60 Hz, 5 to 12 VDC, or 10 to 30 VDC model dependent.
- **Power Consumption:**
  - 120 VAC: 2.4 W @ 20 mA max
  - 5 to 12 VDC: 1.2 W @ 100 mA max
  - 10 to 30 VDC 1.5 W @ 50 mA max
- **Display:**
  - LED Display: 4 red colored digits, 0.3" height.
  - LED Graph: 31 element bar, 0.2" W x 3.1" L
  - (5.08 mm W x 78.74 mm L)
- **Decimal Point:** 3 positions, user selectable.
- **Temperature Limits:**
  - Operating: -13 to 176°F (-25 to 80°C)
  - Storage: -67 to 176°F (-55 to 80°C)
- **Enclosure Rating:** NEMA 1 or NEMA 4X, model dependent IP65 front.
- **Electrical Connections:** Removable screw terminal blocks.
- **Outputs:** 2 SPST relay outputs (optional)
- **Switch Rating:** 1 A @ 200 V.
- **Enclosure Material:**
  - Bezel: Black epoxy enameled steel
  - Window: Acrylic
  - Case and Mounting Bracket: 304 SS
- **Time Delay:** 0.5 sec
- **Weight:** 40 oz (1.13 kg)

**Example**

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</table>

*Note: Contact factory for additional options.

* NEMA 4X option requires A-BGM-RPM for programming.

**ACCESSORY**

A-BGM-RPM, Remote Programmer Module $53.50

Items are subject to Schedule B discounts.
**Model DPFM**

**Flush Mount LCD Digital Panel Meter**

3-1/2 Digit LCD, Surface Mount

The Model DPFM Flush Mount LCD Digital Panel Meter offers high performance and low cost in a compact package. This meter is designed with a 3-1/2 digit, high contrast LCD display. The unit is powered by a 4 to 20 mA DC control loop input. Standard features include adjustable span and zero, and field selectable decimal point position. The flat pack of the panel meter allows for the instrument to be mounted to any flat surface.

**SPECIFICATIONS**

- **Input:** 4 to 20 mA DC.
- **Input Impedance:** 300 Ω nominal.
- **Accuracy:** ±0.1% FS ± 2 count.
- **Power Supply:** Powered by control loop.
- **Span and Zero:** Adjustable (±1999 counts).
- **Display:** 3-1/2 digits, 7 segments, 0.5" (12 mm) H.
- **Decimal Points:** 3-position, user selectable.
- **Polarity:** Automatic, “+” displayed.
- **Operating Temperature:** 32 to 122°F (0 to 50°C).
- **Storage Temperature:** -4 to 158°F (-20 to 70°C).
- **Mounting:** Surface mount.
- **Connection:** Screw terminals.
- **Conversion Rate:** 3 per second
- **Warm-Up:** 10 minutes typical
- **Weight:** 1 oz (34.5 g).
- **Agency Approvals:** RoHS.

Model DPFM, Flush Mount LCD Digital Panel Meter .................................. $70.00

- Items are subject to Schedule B discounts.

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**Series MCS**

**Miniature Current Switch**

Low Cost, Solid or No Core, LED Confirmation, Adjustable Set Point

The Series MCS Miniature Current Switches are ideal for monitoring the current usage in fuse boxes and small control panels. Both models have adjustable set points and LED indication to show there is power to the unit and when the switch activates. Set points can be adjusted using the potentiometer next to the LED’s. Due to the size of the switch, it is only offered in solid core and no core versions. The no core version has terminal blocks which can accept currents up to 1A directly into the unit.

**SPECIFICATIONS**

- **Amperage Range:**
  - MCS-111050: 0.5 to 50A continuous;
  - MCS-111001: 0.01 to 1A continuous;
- **Output Rating:** Isolated, N.O. 0.3 A @ 130 V DC/AC.
- **Power Requirements:** None, self-powered.
- **Hysteresis:** 1%.

**Model**  | **Case**  | **Set Point**  | **Minimum Set Point**  | **LED**  | **Price**
---|---|---|---|---|---
MCS-111050 | Solid Core | Adjustable | 0.50 | Red/Green | $18.00
MCS-111001 | No Core (Terminal Connection) | Adjustable | 0.01 | Red/Green | $18.00

- Response Time: <200 ms.
- **Temperature Limits:** 32 to 122°F (0 to 50°C).
- **Humidity Limits:** 10 to 95% RH (non-condensing).
- **Enclosure Rating:** UL 94V-0 Flammability rated ABS, insulation class 600 V.
- **Weight:** 0.5 oz (14.5 g).
- **Agency Approvals:** CE, RoHS, UL.
The Series WTDL Temperature/Humidity Data Logger is perfect for applications which require real-time monitoring or areas that are not accessible to periodically retrieve the data. The data loggers can transmit up to 500 feet indoors and up to 2000 feet outdoors. The distance can be increased by using additional receivers. Wireless data is transmitted on a 2.4 GHz frequency allowing it to be used anywhere in the world. A network of data loggers can be separated into a smaller subnet. These subnets can all be controlled by a single PC. The Series WTDL data loggers also feature a user-programmable alarm. This alarm can be configured to show an on-screen alarm, send a text message (standard SMS rates apply) or an email if an alarm condition is met.

### Specifications
- **Temperature Range:** WTDL-10/WTDL-20: -4 to 175°F (-20 to 80°C); WTDL-30: -32°F to 50°F (-20°F to 26°C) for probe.
- **Humidity Range:** WTDL-20: 0 to 95% RH.
- **Temperature Accuracy:** WTDL-10/WTDL-20: 0.9°F (0.5°C) from 32 to 122°F (0 to 50°C); WTDL-30: 0.18°F (0.1°C) from -4 to 176°F (-20 to 80°C), 0.9°F (0.5°C) outside of specified range.
- **Humidity Accuracy:** WTDL-20: ±3.0% RH, ±2% typical at 77°F (25°C).
- **Temperature Resolution:** 0.018°F (0.1°C).
- **Humidity Resolution:** WTDL-20 only: 0.1% RH.
- **RF Carrier Frequency:** 2.45 GHz.
- **Band:** ISM band 2.405-2.48 GHz.
- **Maximum Power Output:** 0 dBm typical.
- **Wireless Transmission Range:** 2000’ (610 m) outdoors, line of sight; 500’ (152 m) indoors.
- **Receiver Sensitivity:** -96 dBm typical.
- **Memory Size:** WTDL-10/WTDL-30: 30,000 readings; WTDL-20: 15,000 readings per channel, software configurable memory wrap.
- **Sampling Method:** Stop on memory full or continuous recording.
- **Sampling Rate:** 2 sec to 24 hrs.
- **Temperature Limits:** -4 to 176°F (-20 to 80°C).
- **Humidity Limits:** 0 to 95% RH.
- **Computer Requirements:** Windows® XP SP3, Windows Vista®, Windows® 7.
- **Computer Interface:** WTDL-RX.
- **Power Requirements:** 3.6 V TL-5104 lithium metal battery, installed functional, user replaceable.
- **Battery Life:** 2 years (approx.).
- **Housing Material:** ABS plastic.
- **Weight:** 0.25 lb (113.4 g).
- **FCC Approval:** FCC ID: OA3MRF24J40MA.
- **Agency Approvals:** CE.

### Accessories
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<td>WTDL-10</td>
<td>Temperature data logger</td>
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<tr>
<td>WTDL-20</td>
<td>Temperature data logger with humidity output</td>
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<tr>
<td>WTDL-30</td>
<td>Temperature data logger with probe attachment</td>
<td>$350.00</td>
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</table>

⑥ Items are net priced and are not subject to any discount.
The Series DW-WIFI Wireless Wi-Fi Data Logger measures and records up to 1,000,000 temperature and / or humidity readings and shares the data with any PC or server on the same Wi-Fi network. Software settings allow the user to set the high and low alarms, the sampling rate, and the temperature scale. If the Wi-Fi connection is lost, the sensors will continue to store any records until it can regain communication with the network. Stored data can be viewed at any time after the communications have been restored. Each data logger includes a wall bracket that allows the data loggers to be mounted to any wall or flat surface. Configuration and logging software available for download on our website.

**SPECIFICATIONS**

- **Memory Size:** 1,000,000 readings; 500,000 each for DW-WIFI-TH.
- **Sampling Mode:** Continuous recording.
- **Sampling Rate:** Selectable from 10 s to 12 hrs.
- **Temperature Limits:** -4 to 140°F (-20 to 60°C).
- **Power Requirements:** 4.5 to 5.5 VDC; 3.7 V rechargeable lithium ion battery, installed functional, factory replaceable (cable for charging included).
- **Battery Life:** 1 year (approx).
- **Alarms:** Programmable high/low.
- **Interface:** Wi-Fi connection.
- **Probe Length:** DW-WIFI-TP: 11.5” (30 cm); DW-WIFI-TC: 50” (150 cm).
- **Weight:** 7.2 oz (204 g).
- **Agency Approvals:** CE, RoHS.

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<td>±0.5°C from -10 to 50°C</td>
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<td>0.1°F, 1.0% RH</td>
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<td>DW-WIFI-TP</td>
<td>Remote Temperature Probe</td>
<td>-4 to 257°F (-40 to 125°C)</td>
<td>±1.5°C</td>
<td>1.0°C</td>
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<td>DW-WIFI-TC</td>
<td>Remote Thermocouple</td>
<td>-454 to 2372°F (-270 to 1300°C) (probe dependent)</td>
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**Model UTG Ultrasonic Thickness Gage**

The compact Model UTG Ultrasonic Thickness Gage can measure the thickness of a variety of materials. The UTG has a wide range of applications including industrial, automotive, HVAC, and plumbing. The UTG reads in inches or millimeters and features an adjustable sound velocity to allow for an array of materials to be measured. The UTG is useful when using any pipe-mount ultrasonic transmitter. The UTG allows the user to find the wall thickness of a pipe when programming an ultrasonic transmitter without cutting or removing a section of the pipe to measure it. The UTG is also great for monitoring corrosion in closed vessels such as boilers and chemical tanks.

**SPECIFICATIONS:**

- **Service:** Steel, cast iron, aluminum, red copper, brass, zinc, quartz glass, polyethylene, PVC, gray cast iron, nodular cast iron, other. Selectable option for special materials with known sound propagation rate.
- **Range:** 0.047 to 7.874” (1.2 to 200 mm).
- **Accuracy:** ±0.5%.
- **Resolution:** 0.001” / 0.1 mm.
- **Sound Velocity:** 1118 to 20132 mph (500 to 9000 m/s).
- **Temperature Limits:** 32 to 122°F (0 to 50°C).
- **Humidity Limit:** < 80%.
- **Display:** 4 digits, 0.394” (10 mm) LCD.
- **Power Requirement:** (4) 1.5 V AAA alkaline batteries, not included, user replaceable.
- **Weight:** 5.76 oz (164 g).
- **Agency Approvals:** CE.

Model UTG, Ultrasonic Thickness Gage . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ..

(Items are subject to Schedule B discounts.)

CALL TO ORDER | 800/872-9141 17
The Series AQTI Air Quality Test Instruments combine the versatile Model UHH handheld base with various compatible probes and modules. This versatile combination provides a line of instruments capable of streamlining a technician’s everyday testing by combining all into one product. All compatible probes and modules can be field adapted at any moment and are instantly recognized by any UHH handheld base instrument. The plug and play probes allow a user to run through various tests, eliminating the need to switch instruments and recall how to navigate all the various equipment from multiple vendors, reducing time and simplifying operation. Series AQTI Air Quality Test Instruments come prepackaged in differential pressure, thermo-anemometer, or thermo-hygrometer probe kits. Additional wired and wireless probes may be ordered separately to create any customized test package to suit your needs.

### AQTI Series

<table>
<thead>
<tr>
<th>Model</th>
<th>Parameters</th>
<th>Range</th>
<th>Engineering Units Available</th>
<th>Connection</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQTI-AP1</td>
<td>Pressure</td>
<td>0 to 5 in.w.c.</td>
<td>in.w.c., ft.w.c, in.H2O, psi, oz/in², mm</td>
<td>Wireless</td>
<td>$485.00</td>
</tr>
<tr>
<td>AQTI-AP1</td>
<td>Temperature</td>
<td>0 to 112°F</td>
<td>Velocity, rpm, mph, knots, m/s, kmh, kph</td>
<td>Wired</td>
<td>$485.00</td>
</tr>
<tr>
<td>AQTI-AP1</td>
<td>Humidity</td>
<td>0 to 100% RH</td>
<td>Humidity: %RH, D/P, W/B, F, C</td>
<td>Wired</td>
<td>$485.00</td>
</tr>
<tr>
<td>AQTI-AP1</td>
<td>Temperature</td>
<td>0 to 140°F</td>
<td>Humidity: %RH, D/P, W/B, F, C</td>
<td>Wired</td>
<td>$485.00</td>
</tr>
<tr>
<td>AQTI-AP1</td>
<td>Temperature</td>
<td>0 to 140°F</td>
<td>Velocity, rpm, mph, knots, m/s, kmh, kph</td>
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<td>$485.00</td>
</tr>
<tr>
<td>AQTI-VP1</td>
<td>Pressure</td>
<td>0 to 5 in.w.c.</td>
<td>in.w.c., ft.w.c, in.H2O, psi, oz/in², mm</td>
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<td>Temperature</td>
<td>0 to 140°F</td>
<td>Velocity, rpm, mph, knots, m/s, kmh, kph</td>
<td>Wired</td>
<td>$485.00</td>
</tr>
</tbody>
</table>

### AQTI Series supplied with: UHH, sensing probe with coiled cable, soft carrying case (UHH-C1), hand strap (UHH-STRAP), dual USB charger with international power adapters (UHH-ICHRG), charger cable (UHH-CBL).

<table>
<thead>
<tr>
<th>Model</th>
<th>Parameters</th>
<th>Range</th>
<th>Engineering Units Available</th>
<th>Connection</th>
<th>Price</th>
</tr>
</thead>
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<td>Pressure</td>
<td>0 to 5 in.w.c.</td>
<td>in.w.c., ft.w.c, in.H2O, psi, oz/in², mm</td>
<td>Wireless</td>
<td>$890.00</td>
</tr>
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<td>Temperature</td>
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<td>AQTI-AP1</td>
<td>Humidity</td>
<td>0 to 100% RH</td>
<td>Humidity: %RH, D/P, W/B, F, C</td>
<td>Wired</td>
<td>$890.00</td>
</tr>
<tr>
<td>AQTI-AP1</td>
<td>Temperature</td>
<td>0 to 140°F</td>
<td>Humidity: %RH, D/P, W/B, F, C</td>
<td>Wired</td>
<td>$890.00</td>
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<td>AQTI-AP1</td>
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<td>Velocity, rpm, mph, knots, m/s, kmh, kph</td>
<td>Wired</td>
<td>$890.00</td>
</tr>
</tbody>
</table>

### AQTI Series supplied with: UHH, wireless sensing probe, soft carrying case (UHH-C1), hand strap (UHH-STRAP), dual USB charger with international power adapters (UHH-ICHRG), charger cable (UHH-CBL), 2 GB SD card (UHH-SD), heavy duty hard case with pre-cut foam inserts for additional sensors (UHH-C2), NIST Calibration Certificate.
**Thermo-Hygrometer Probe**

**Specifications**
- **Service:** Clean air.
- **Temperature Limits:**
  - Process: -40 to 176°F (-40 to 100°C);
  - Ambient: 5 to 125°F (-15 to 51°C).
- **Range:**
  - RH: 0 to 100% (non-condensing);
  - Temperature: -20 to 140°F (-29 to 60°C).
- **Accuracy:**
  - RH: ±2% @ 25°C (10 to 90% RH);
  - ±1% (0 to 10, 90 to 100% RH);
  - ±0.3 @ 25°C.
- **Response Time:** 1.5 s.
- **Probe Length:** 8" (203 mm) insertion.
- **Battery Charging Limits:** 32 to 113°F (0 to 45°C). (Wireless Only).

**Power Requirements:** 3.7 V YTS62447 Lithium ion battery, installed functional, user replaceable. (Note: Intended to be operated with power cables less than 3 m in length). (Wireless Only).

**Maximum Wireless Distance:** 50’ (15 m). (Wireless Only).

**Handle Enclosure:** Thermoplastic elastomer over polycarbonate.

**Supplied With:** Wrist strap.

**Weight:** 11.2 oz (317 g).

**Agency Approvals:** CE (not while charging), RoHS, FCC compliant.

---

**Thermo-Anemometer Probe**

**Specifications**
- **Service:** Dry, clean air.
- **Temperature Limits:**
  - Process: -20 to 212°F (-29 to 100°C);
  - Ambient: 5 to 125°F (-15 to 61°C).
- **Range:**
  - Air Velocity: 0 to 6000 FPM (0 to 30 m/s);
  - Volumetric Air: 999,999 in selected flow units;
  - Temperature: -20 to 212°F (-29 to 100°C).
- **Accuracy:**
  - Air Velocity: ±3% FS within temperature range of 40 to 90°F (4 to 32°C);
  - Temperature: ±0.5°F (±0.26°C).
- **Response Time:** 1 s.

**Probe Length:** 8" (203 mm) insertion.

**Battery Charging Limits:** 32 to 113°F (0 to 45°C). (Wireless Only).

**Power Requirements:** 3.7 V YTS62447 Lithium ion battery, installed functional, user replaceable. (Note: Intended to be operated with power cables less than 3 m in length). (Wireless Only).

**Maximum Wireless Distance:** 50’ (15 m). (Wireless Only).

**Handle Enclosure:** Thermoplastic elastomer over polycarbonate.

**Supplied With:** Wrist strap.

**Weight:** 11.2 oz (317 g).

**Agency Approvals:** CE (not while charging), RoHS, FCC compliant.

---

**100 mm Vane Thermo-Anemometer Probe**

**Specifications**
- **Service:** Dry, clean air.
- **Temperature Limits:**
  - Process: -20 to 212°F (-29 to 100°C);
  - Ambient: 5 to 125°F (-15 to 61°C).
- **Range:**
  - Air Velocity: 0 to 6000 FPM (0 to 30 m/s);
  - Volumetric Air: 999,999 in selected flow units;
  - Temperature: -20 to 212°F (-29 to 100°C).
- **Accuracy:**
  - Air Velocity: ±3% FS within temperature range of 40 to 90°F (4 to 32°C);
  - Temperature: ±0.5°F (±0.26°C).
- **Response Time:** 1 s.

**Probe Length:** 8" (203 mm) insertion.

**Battery Charging Limits:** 32 to 113°F (0 to 45°C). (Wireless Only).

**Power Requirements:** 3.7 V YTS62447 Lithium ion battery, installed functional, user replaceable. (Note: Intended to be operated with power cables less than 3 m in length). (Wireless Only).

**Maximum Wireless Distance:** 50’ (15 m). (Wireless Only).

**Handle Enclosure:** Thermoplastic elastomer over polycarbonate.

**Supplied With:** Wrist strap.

**Weight:** 13.6 oz (385 g).

**Agency Approvals:** CE (not while charging), RoHS, FCC compliant.
Thermo-Hygrometer Probe
Wired, Measures Humidity, Temperature, Dew Point, & Wet Bulb Temperatures

SPECIFICATIONS
Service: Clean air.
Temperature Limits:
Process: -40 to 176°F (-40 to 100°C);
Ambient: 5 to 125°F (-15 to 51°C).
Range:
RH: 0 to 100% (non-condensing);
Temperature: -20 to 140°F (-20 to 60°C).
Accuracy:
RH: ±2% @ 25°C (10 to 90% RH); ±4% (0 to 10, 90 to 100% RH);
Temperature: ±0.54°F @ 77°F (±0.3 @ 25°C).
Response Time: 1.5 s.
Probe Length: 8" (203 mm) insertion.
Weight: 12.6 oz (352 g).
Agency Approvals: CE, RoHS.

Thermo-Anemometer Probe
Wired, Measures Velocity, Flow, & Temperature

SPECIFICATIONS
Service: Dry, clean air.
Temperature Limits:
Process: -20 to 212°F (-29 to 100°C);
Ambient: 5 to 125°F (-15 to 51°C).
Range:
Air Velocity: 0 to 6000 FPM (0 to 30 m/s);
Volumetric Air: 999,999 in selected flow units;
Temperature: -20 to 212°F (-29 to 100°C).
Accuracy:
Air Velocity: ±3% FS within temperature range of 40 to 90°F (4 to 32°C);
Temperature: ±0.5°F (±0.28°C).
Response Time: 1 s.
Probe Length: 8" (203 mm) insertion.
Weight: 12.8 oz (352 g).
Agency Approvals: CE, RoHS.

100 mm Vane Thermo-Anemometer Probe
Wired, Measures Velocity, Flow, Humidity, & Temperature

SPECIFICATIONS
Service: Dry, clean air.
Temperature Limits:
Process: -20 to 212°F (-29 to 100°C);
Ambient: 5 to 125°F (-15 to 51°C).
Range:
Air Velocity: 0 to 6000 FPM (0 to 30 m/s);
Volumetric Air: 999,999 in selected flow units;
Temperature: -20 to 212°F (-29 to 100°C).
Accuracy:
Air Velocity: ±3% FS within temperature range of 40 to 90°F (4 to 32°C);
Temperature: ±0.5°F (±0.28°C).
Response Time: 1 s.
Probe Length: 8" (203 mm) insertion.
Weight: 15.2 oz (431 g).
Agency Approvals: CE, RoHS.
Dwyer Series WDPM

Differential Pressure Modules
Wireless, Measures Differential Pressure, Velocity, & Flow

SPECIFICATIONS
Service: Non-corrosive dry gases.
Wetted Materials: Consult factory.
Accuracy: ±0.5% FS span @ 25°C (includes non linearity, hysteresis, and non repeatability).
Pressure Limits: See Table 1.
Engineering Units:
  Pressure: in w.c., ft w.c., in Hg, psi, OzSl, mm w.c., cm w.c., mBar, Pa, hPa, and kPa;
  Velocity: fpm, mph, kn, m/s, m/h, k/h, and fps;
  Flow: cfm, gpm, gph, gpd, m³/s, m³/h, lps, lpm, and lph.
Temperature Limits:
  Compensated: 32 to 140°F (0 to 60°C);
  Process/Ambient: 14 to 140°F (-10 to 60°C).
Thermal Effects: ±0.01% FS/°F (±0.02% FS/°C).
Battery Charging Limits: 32 to 113°F (0 to 45°C).
Power Requirements: 3.7 V YT362447 lithium ion battery, installed functionally, user replaceable.
Wireless Distance: At least 50’ (15 m).
Connections: Two bared connections for use with 1/8” (3.18 mm) or 3/16” (4.76 mm) ID tubing.
Weight: 2.5 oz (70.87 g).
Agency Approvals: CE with CE approved charger, RoHS, FCC.

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Maximum Pressure</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDPM-002</td>
<td>±2 in w.c.</td>
<td>10 psi</td>
<td>$200.00</td>
</tr>
<tr>
<td>WDPM-005</td>
<td>±5 in w.c.</td>
<td>10 psi</td>
<td>200.00</td>
</tr>
<tr>
<td>WDPM-010</td>
<td>±10 in w.c.</td>
<td>10 psi</td>
<td>200.00</td>
</tr>
<tr>
<td>WDPM-020</td>
<td>±20 in w.c.</td>
<td>20 psi</td>
<td>200.00</td>
</tr>
<tr>
<td>WDPM-030</td>
<td>±30 in w.c.</td>
<td>20 psi</td>
<td>200.00</td>
</tr>
<tr>
<td>WDPM-100</td>
<td>±100 in w.c.</td>
<td>15 psi</td>
<td>200.00</td>
</tr>
<tr>
<td>WDPM-200</td>
<td>±200 in w.c.</td>
<td>45 psi</td>
<td>200.00</td>
</tr>
<tr>
<td>WDPM-400</td>
<td>±400 in w.c.</td>
<td>45 psi</td>
<td>200.00</td>
</tr>
</tbody>
</table>

Dwyer Series UHH-ACC
Universal Handheld Accessories

ACCESSORIES
UHH-STRAP, UHH hand strap ........................................... $9.99
UHH-ICHRG, UHH dual USB charger with international adapters (1.0 A) (Not CE approved) ........................................... 21.00
UHH-CBL, USB cable ....................................................... 5.00
UHH-C1, Soft carrying case .............................................. 39.00
UHH-SD, 2 GB SD card ..................................................... 7.99
KF-CC-304, Dual USB CHARGER with North American adapter (1.5 A) ........................................... 13.00
UHH-C2, Heavy duty hard case with pre-cut foam inserts for additional sensors ........................................... 220.00

① Items are subject to Schedule B discounts.
② Items are not priced and are not subject to any discount.
**Model DDM-01**

**Laser Distance Meter**

Measures up to 70 Meters, Class II Laser

The Model DDM-01 Laser Distance Meter offers quick measurement of distances up to 229.7 feet (70 meters) with the push of a button. It is also able to easily make area and space calculations and volume measurements from what it records. Another feature of the Model DDM-01 is that it is able to use the Pythagorean Theorem to indirectly calculate the height of an object. The meter can read out in feet, inches, or meters and includes a backlight for use in dark areas.

**APPLICATIONS**
- HVAC
- Construction/Architecture
- Factory planning

**SPECIFICATIONS**
- Range: 0.16 to 229.7 feet (0.05 to 70 m).
- Accuracy: ±0.005 feet (±1.5 mm).
- Display: Three line LCD (top two with 4 digits/bottom with 5 digits).
- Resolution: 0.001 feet (0.001 m).
- Response Time: 0.5 s.
- Laser Type: 650 nm, class 2, <1 mW.
- Beam Size: 26 mm at 30 m.
- Temperature Limits:
  - Operating: 23 to 104°F (-5 to 40°C).
  - Storage: -4 to 140°F (-20 to 60°C).
- Power Requirements: (2) AA carbon zinc batteries, not included, user replaceable.
- Weight: 21.6 oz (612.35 g).
- Agency Approvals: CE, RoHS.

**Model DDM-01, Laser Distance Meter ............................................. $125.00**

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**Model TAC-L**

**Portable Digital Tachometer**

Contact or Photo Non-Contact Operation, Backlit LCD

Model TAC-L Portable Digital Tachometer measures rotational speed either by contacting a rotatable head to the shaft of the object, or using photo sensor to detect the reflections from the laser. The laser target can record from a distance of up to 20 inches and gives a more accurate measurement than LED targeting. Model TAC-L includes a large LCD with a backlight for use in dark areas. This tachometer is made of a strong, lightweight ABS plastic housing, which is designed to comfortably fit in the hand of the user. Supplied with this model are 3 contact rotational heads, a contact surface wheel, and a protective carrying case.

**APPLICATIONS**
- HVAC fans motors
- Powder & bulk conveyor belts
- Wood cutting saw blades

**SPECIFICATIONS:**
- Accuracy: ±(0.05% + 1 digit).
- Display: Backlit LCD; 5 digits, 7 segments, 0.7” (1.8 cm) H.
- Range:
  - Non-contact (RPM): 2.5 to 99,999 RPM;
  - Contact (RPM): 0.5 to 19,999 RPM;
- Surface Speed (m/min): 0.05 to 1999.9 m/min.
- Resolution:
  - Non-contact (RPM): 0.1 RPM (2.5 to 999.9 RPM),
  - 1 RPM (1000 to 99,999 RPM);
  - Contact (RPM): 0.1 RPM (0.5 to 999.9 RPM),
  - 1 RPM (1000 to 19,999 RPM);
- Surface Speed (m/min): 0.01 m/min (0.05 to 99.99 m/min).
- Non-contact Measuring Distance Range: 2 to 20” (5 to 50 cm).
- Sampling Time: 0.5 s.
- Temperature Limits: 32 to 122°F (0 to 50°C).
- Power Requirements: (4) 1.5 V AA alkaline batteries, included, user replaceable.
- Weight: 1.37 lb (.620 kg).
- Agency Approvals: CE, RoHS.

**Model TAC-L, Contact/Non-Contact Digital Tachometer .................. $75.00**

**ACCESSORY**

TAC-5, Reflective tape, 5” (1.5 m) roll, 1/2” (13 mm) wide ............... $18.25\(\dagger\)

\(\dagger\) Items are subject to Schedule B discounts.
**Immersion Temperature Sensors**

**New Integral Mounting Connection, Welded Thermowells**

The Series TE-I Immersion Style Temperature Sensors accurately measure water temperature in side-chilled and hot water loops in HVAC systems. Sensors can be ordered either with a general purpose or weatherproof enclosure and have an integral 1/2" NPT threaded connection so that the housing mounts flush against the thermowell. All models come standard with a terminal block that ensures a better electrical connection to the sensor. Both housing configurations include a chain that prevents the lid from being lost during installation. Electrical knockouts on the housing can adapt to either a cable gland or conduit. Thermowells are required to protect the electrical connection from the process water and to allow replacement of the sensors without draining the system.

**SPECIFICATIONS**

- **Accuracy:**
  Thermistor Temperature Sensor: ±0.22°C @ 25°C (±0.4°F @ 77°F).
  RTD Temperature Sensor DIN Class A: ±0.15°C @ 0°C (±0.28°F @ 32°F).
- **Temperature Limits:** Operating: -40 to 302°F (-40 to 150°C).
- **Sensor Curves:** See resistance-temperature curves.
- **Housing Material:** Meets UL 94 V-0 polycarbonate plastic.
- **Thermowell Material:** 304 SS.
- **Weight:** 5.3 oz (150.3 g).

### Table: Model TE-ITG-A2544-00 Immersion Probe, 10K Type 3 Thermistor, 4" probe length, 1/4" probe diameter, 4" flying leads, with 1/2" NPT connection.

<table>
<thead>
<tr>
<th>Example</th>
<th>TE</th>
<th>ITG</th>
<th>A</th>
<th>25</th>
<th>4</th>
<th>00</th>
<th>Model</th>
<th>Price</th>
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<tr>
<td>Series</td>
<td>TE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>00</td>
<td>TE-ITG-A2544-00 Immersion Probe, 10K Type 3 Thermistor, 4&quot; probe length, 1/4&quot; probe diameter, 4&quot; flying leads, with 1/2&quot; NPT connection.</td>
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<td>TE-ITG-A2544-00</td>
<td>Immersion in General Purpose Housing</td>
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<td>C</td>
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<td>Probe Length</td>
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<td>2.5&quot;</td>
<td>4&quot;</td>
<td>6&quot;</td>
<td>8&quot;</td>
<td>12&quot;</td>
<td>18&quot;</td>
<td>+3.00</td>
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<td>Probe Diameter</td>
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<td>Cable Configuration</td>
<td>4</td>
<td>4&quot; Flying Leads Terminal Block</td>
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<tr>
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<table>
<thead>
<tr>
<th>Thermowell Model</th>
<th>Material</th>
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<th>Price</th>
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<td>TE-TNS-253N-00</td>
<td>304 SS</td>
<td>2.5&quot;</td>
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<tr>
<td>TE-TNS-043N-00</td>
<td>304 SS</td>
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<td>TE-TNS-063N-00</td>
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<td>TE-TNS-083N-00</td>
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<td>TE-TNS-123N-00</td>
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<td>12&quot;</td>
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<td>TE-TNS-183N-00</td>
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<td>18&quot;</td>
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</table>
The Series WE01 incorporates a full port 2-piece SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted, creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication. The Series WE01 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear trains.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

**FEATURES**
- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring

**SPECIFICATIONS**
**VALVE**
- Service: Compatible liquids and gases.
- Body: 2-piece.
- Line Sizes: 1/2 to 3".
- End Connections: Female NPT.
- Pressure Limits: 20" Hg to 1000 psi (-0.7 to 69 bar).
- Wetted Materials: Body and Ball: 316 SS (CF8M);
  Stem: 316 SS;
  Seat: RTFE/PTFE;
  Seal: Washer and Packing: RTFE.
- Temperature Limits: -20 to 200°C to -29 to 200°F.
- Other Materials:
  - O-ring: Fluoroelastomer;
  - Handle: 304 SS;
  - Washer: 304 SS;
  - Stem Nut: Locking Device;
  - Gland Ring: 304 SS;
  - Handle Sleeve: PVC.

**ACTUATORS**
- Pneumatic “DA” and “SR” Series
  - Type: DA series is double acting and SR series is spring return (rack and pinion).
  - Normal Supply Pressure: DA: 40 to 115 psi (2.7 to 7.9 bar);
    SR: 80 psi (5.5 bar).
  - Maximum Supply Pressure: 120 psi (8.6 bar).
- Air Connections:
  - DA01: 1/8" female NPT;
  - DA02 to DA5: 1/4" female NPT;
  - SR02 to SR07: 1/4" female NPT.
- Housing Material: Anodized aluminum body and epoxy coated aluminum end caps.
- Temperature Limits: -40 to 175°F (-40 to 80°C).
- Accessory Mounting: NAMUR standard.

**Electric “TD” and “MD” Series**
- Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).
- Power Consumption: See manual.
- Cycle Time (per 90°):
  - TD01: 4 s;
  - MD01: 10 s;
  - TD02 and MD02: 20 s;
  - TD03 and MD03: 30 s.
- Duty Rating: 85%.
- Enclosure Rating: NEMA 4X (IP67).
- Temperature Limits: -22 to 140°F (-30 to 60°C).
- Electrical Connection: 1/2" female NPT.
- Modulating Input: 4 to 20 mA.
- Standard Features: Manual override, position indicator, and TD models come with two limit switches.

**Electric “TI” and “MI” Series**
- Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC.
- Power Consumption: See manual.
- Cycle Time (per 90°):
  - TI01 and MI01: 2.5 s;
  - TI02 and MI02: 5 s;
  - TI03 and MI03: 10 s;
  - TI04 and MI04: 15 s;
  - TI05 and MI06: 30 s.
- Duty Rating: Two-Position: TI01-TI06: 25%;
  - Modulating: MI01-MI06: 75%.
- Temperature Limits: -40 to 140°F (-40 to 60°C).
- Electrical Connection: 1/2" female NPT.
- Modulating Input: 4 to 20 mA.
- Standard Features: Position indicator and two limit switches.
## WE01 Hand Operated and Pneumatic Actuator Model Chart

<table>
<thead>
<tr>
<th>Size and Actuator</th>
<th>WE01-EDA02</th>
<th>WE01-EDA02-AA01</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>WE01</td>
<td>WE01-EDA02-AA01</td>
<td>Price</td>
</tr>
</tbody>
</table>
| Size and Actuator | CHD00      | 1/2" Hand Operated | $30.00
| WE01               | DW00       | 3/4" Hand Operated | $45.00
| WE01               | EH00       | 1" Hand Operated | $70.00
| WE01               | FH00       | 1 1/4" Hand Operated | $85.00
| WE01               | GH00       | 1 1/2" Hand Operated | $130.00
| WE01               | HH00       | 2" Hand Operated | $190.00
| WE01               | JDH00      | 2 1/2" Hand Operated | $225.00
| WE01               | JDO0       | 3" Hand Operated | $255.00
| WE01               | CDA01      | 1/2" Double Acting | $180.00
| WE01               | DDA01      | 3/4" Double Acting | $185.00
| WE01               | EDA02      | 1" Double Acting | $200.00
| WE01               | FDA02      | 1 1/4" Double Acting | $205.00
| WE01               | GDA03      | 1 1/2" Double Acting | $255.00
| WE01               | HDA03      | 2" Double Acting | $370.00
| WE01               | JDA04      | 2 1/2" Double Acting | $550.00
| WE01               | CSA01      | 3" Double Acting | $750.00
| WE01               | CSR02      | 1 1/2" Spring Return | $190.00
| WE01               | DSR02      | 3/4" Spring Return | $210.00
| WE01               | SDR03      | 1" Spring Return | $250.00
| WE01               | FSR03      | 1 1/4" Spring Return | $290.00
| WE01               | GSR04      | 1 1/2" Spring Return | $350.00
| WE01               | HSR05      | 2" Spring Return | $450.00
| WE01               | JRS07      | 2 1/2" Spring Return | $650.00
| WE01               | JSR07      | 3" Spring Return | $850.00

### Solenoid
- **N** No Solenoid
- **A** NEMA 4X NAMUR Solenoid +$50.00

### Solenoid Voltage
- **N** No Solenoid
- **A** 110 VAC
- **B** 220 VAC
- **C** 24 VAC
- **D** 24 VDC
- **E** 12 VDC

### Positioner and Switches
<table>
<thead>
<tr>
<th>Positioner and Switches</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 None</td>
<td>$30.00</td>
</tr>
<tr>
<td>01 42AD0 Exp Limit Switch</td>
<td>$320.00</td>
</tr>
<tr>
<td>02 45VD0 Exp Position Transmitter</td>
<td>$552.00</td>
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<tr>
<td>03 42AD0-B ATEX Limit Switch</td>
<td>$302.00</td>
</tr>
<tr>
<td>04 42AD0-IE IECEx Limit Switch</td>
<td>$302.00</td>
</tr>
<tr>
<td>05 VPH-M01 NEMA 4X Limit Switch</td>
<td>$95.00</td>
</tr>
<tr>
<td>06 QV-210101 Poly Limit Switch</td>
<td>$143.00</td>
</tr>
<tr>
<td>07 VPS and P1 Prox Switch</td>
<td>$176.00</td>
</tr>
<tr>
<td>08 2656R-DS Positioner</td>
<td>$620.00</td>
</tr>
<tr>
<td>09 2656R-DS Smart Positioner</td>
<td>$1,389.00</td>
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</tbody>
</table>

### Options
- **NO** Fail Open Spring Return Actuator

## WE01 Electric Actuator Model Chart

<table>
<thead>
<tr>
<th>Size and Actuator</th>
<th>WE01</th>
<th>WE01-GMD02-A</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>WE01</td>
<td>WE01-GMD02-A</td>
<td>Price</td>
</tr>
</tbody>
</table>
| Size and Actuator | CTD01 | 1/2" NEMA 4X Two-Position | $450.00
| WE01              | DT01  | 3/4" NEMA 4X Two-Position | $450.00
| WE01              | EDT01 | 1" NEMA 4X Two-Position | $450.00
| WE01              | FTD01 | 1 1/4" NEMA 4X Two-Position | $450.00
| WE01              | GTD01 | 1 1/2" NEMA 4X Two-Position | $450.00
| WE01              | HTD02 | 2" NEMA 4X Two-Position | $450.00
| WE01              | ITD02 | 2 1/2" NEMA 4X Two-Position | $450.00
| WE01              | JTD03 | 3" NEMA 4X Two-Position | $450.00
| WE01              | CMD01 | 1/2" NEMA 4X Modulating | $450.00
| WE01              | DM01  | 3/4" NEMA 4X Modulating | $450.00
| WE01              | EM01  | 1" NEMA 4X Modulating | $450.00
| WE01              | FM01  | 1 1/4" NEMA 4X Modulating | $450.00
| WE01              | GM02  | 1 1/2" NEMA 4X Modulating | $450.00
| WE01              | HM02  | 2" NEMA 4X Modulating | $450.00
| WE01              | IM02  | 2 1/2" NEMA 4X Modulating | $450.00
| WE01              | JMD03 | 3" NEMA 4X Modulating | $450.00
| WE01              | CTO1  | 1/2" Exp Two-Position | $450.00
| WE01              | DT01  | 3/4" Exp Two-Position | $450.00
| WE01              | ETF02 | 1 Exp Two Position | $450.00
| WE01              | FTO1  | 1 1/4 Exp Two Position | $450.00
| WE01              | GTO1  | 1 1/2 Exp Two Position | $450.00
| WE01              | HT04  | 2 Exp Two Position | $450.00
| WE01              | IT05  | 2 1/2 Exp Two Position | $450.00
| WE01              | JT06  | 3 Exp Two Position | $450.00
| WE01              | CM01  | 1/2" Exp Electric Modulating | $450.00
| WE01              | DM01  | 3/4" Exp Electric Modulating | $450.00
| WE01              | EM01  | 1" Exp Electric Modulating | $450.00
| WE01              | FM02  | 1 1/4" Exp Electric Modulating | $450.00
| WE01              | GM02  | 1 1/2" Exp Electric Modulating | $450.00
| WE01              | HM04  | 2" Exp Electric Modulating | $450.00
| WE01              | IM05  | 2 1/2" Exp Electric Modulating | $450.00
| WE01              | JMD03 | 3" Exp Electric Modulating | $450.00

### Actuator Voltage
- **A** 110 VAC
- **B** 220 VAC
- **C** 24 VAC +$70.00
- **D** 24 VDC +$70.00

#### ACCESSORIES
- **R2-2120**, Air Regulator $30.00
- **AFR2-2**, Instrument Air Filter Regulator $60.00
- **VB-01**, Volume Booster $165.00

*Items are subject to Schedule B discounts.*
The Series WE02 incorporates a full port 3-piece SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316L SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valve allowing for remote position indication.

The Series WE02 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve, and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

**FEATURES**

- Capable of being configured to fit any application.
- Limit switches can be mounted to manual valves for remote monitoring.

**SPECIFICATIONS**

**VALVE**

- **Service:** Compatible liquids and gases.
- **Body:** 3-piece.
- **Line Sizes:** 1/2 to 3”.
- **End Connections:** Female NPT.
- **Pressure Limits:** 20” Hg to 1000 psi (-0.7 to 69 bar).
- **Wetted Materials:** Body and ball: 316 SS (CF8M);
  Stem: 316 SS;
  Seat: RTFE/PTFE;
  Seal, Washer, and Packing: PTFE.
- **Temperature Limits:** -20 to 392°F (-29 to 200°C).
- **Other Materials:** O-ring: Fluoroelastomer;
  Handle: 304 SS;
  Washer: 301 SS;
  Stem Nut: Locking Device;
  Gland Ring: 304 SS;
  Handle Sleeve: PVC.

**ACTUATORS**

- **Pneumatic “DA” and “SR” Series**
  - Type: DA series is double acting and SR series is spring return (rack and pinion).
  - **Normal Supply Pressure:**
    - DA: 40 to 115 psi (2.7 to 7.9 bar);
    - SR: 80 psi (5.5 bar).
  - **Maximum Supply Pressure:** 120 psi (8.6 bar).

  **Air Connections:**
  - DA01: 1/8” female NPT;
  - DA02 to DA5: 1/4” female NPT;
  - SR02 to SR12: 1/4” female NPT.
  - **Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.
  - **Temperature Limits:** -40 to 176°F (-40 to 80°C).
  - **Accessory Mounting:** NAMUR standard.

- **Electric “TD” and “MD” Series**
  - **Power Requirements:** 110 VAC,
    220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).
  - **Power Consumption:** See manual.
  - **Cycle Time (per 90°):**
    - TD01: 4 s;
    - MD01: 10 s;
    - TD02 and MD02: 20 s;
    - TD03 and MD03: 30 s.
  - **Duty Rating:** 85%
  - **Enclosure Rating:** NEMA 4X (IP67).
  - **Housing Material:** Powder coated aluminum.
  - **Temperature Limits:** -22 to 140°F (-30 to 60°C).
  - **Electrical Connection:** 1/2” female NPT.
  - **Modulating Input:** 4 to 20 mA.

- **Electric “TI” and “MI” Series**
  - **Power Requirements:** 110 VAC,
    220 VAC, 24 VAC or 24 VDC.
  - **Power Consumption:** See manual.
  - **Cycle Time (per 90°):**
    - TI01 and MI01: 2.5 s;
    - TI02 and MI02: 5 s;
    - TI03 and MI03: 5 s;
    - TI04 and MI04: 10 s;
    - TI05 and MI05: 15 s.
  - **Duty Rating:**
    - Two-Position: TI01-TI05: 25%;
    - Modulating: MI01-MI05: 75%.
  - **Enclosure Rating:** NEMA 7.
  - **Housing Material:** Powder coated aluminum.
  - **Temperature Limits:** -40 to 140°F (-40 to 60°C).
  - **Electrical Connection:** 1/2” female NPT.
  - **Modulating Input:** 4 to 20 mA.
  - **Standard Features:** Position indicator and two limit switches.
## WE02 Hand Operated and Pneumatic Actuator Model Chart

<table>
<thead>
<tr>
<th>Example WE02</th>
<th>WE02 C5R02</th>
<th>N</th>
<th>09</th>
<th>WE02-C5R02-NN09</th>
<th>3185S 3-Piece NPT</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>Size and Actuators</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>CHD00</td>
<td>1/2&quot; Hand Operated</td>
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<tr>
<td>3/4&quot;</td>
<td>EHD00</td>
<td>1/2&quot; Hand Operated</td>
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<td>1-1/4&quot;</td>
<td>GH000</td>
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<td>190.00&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>2&quot;</td>
<td>JH000</td>
<td>2&quot; Hand Operated</td>
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<td>CD001</td>
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</tbody>
</table>

### Solenoid

<table>
<thead>
<tr>
<th>Voltage</th>
<th>N</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<tbody>
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<td>240 VAC</td>
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</tr>
<tr>
<td>240 VDC</td>
<td>No Solenoid</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Positioner and Switches

| 00 | None | - | - |
| 01 | 22AD0 Exp Limit Switch | +230.00<sup>b</sup> | - |
| 02 | 45/30 Exp Position Transmitter | +525.00<sup>b</sup> | - |
| 03 | 22AD0-BATEX Limit Switch | +325.00<sup>b</sup> | - |
| 04 | 22AD0-E EXEC Limit Switch | +320.00<sup>b</sup> | - |
| 05 | VFI-M01 NEMA 4X Limit Switch | +95.00<sup>a</sup> | - |
| 06 | QV-210101 Poly Limit Switch | +143.00<sup>b</sup> | - |
| 07 | VPS and P1 Prox Switch | +176.00<sup>b</sup> | - |
| 08 | 26SER-05 Positioner | +620.00<sup>b</sup> | - |
| 09 | 26SER-05 Smart Positioner | +1389.00<sup>b</sup> | - |

### Options

| NO | Fall Open Spring Return Actuator | - | - |

## Accessory Models

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<th>ACCESORIES</th>
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<td>AFR-2, Instrument Air Filter Regulator</td>
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<td>VB-01, Volume Booster</td>
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<sup>a</sup> Items are subject to Schedule B discounts.

## WE02 Electric Actuator Model Chart

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<th>WE02 EDT01</th>
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<th>WE02-EDT01-B</th>
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### Actuator Voltage

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<th>C</th>
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<td>220 VAC</td>
<td>No Solenoid</td>
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<tr>
<td>24 VAC</td>
<td>No Solenoid</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>24 VDC</td>
<td>No Solenoid</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

## CALL TO ORDER | 800-872-9141
3-Piece Tri-Clamp Stainless Steel Ball Valve
Cavity Filled, Full Port, Electric or Pneumatic Actuators

The Series WE03 incorporates a full port 3-piece tri-clamp SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valve allowing for remote position indication.

The Series WE03 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

SPECIFICATIONS
VALVE
Service: Compatible liquids and gases.
Body: 3-piece.
Line Sizes: 1/2 to 2”.
End Connections: Tri-clamp ends.
Pressure Limits: 20” Hg to 1000 psi (-0.7 to 69 bar).
Wetted Materials:
  Body and ball: 316 SS (CF8M);
  Stem: 316 SS;
  Seat: RTFE/PTFE;
  Seal: Washer, and Packing: PTFE.
Temperature Limits: -20 to 392°F (-29 to 200°C).
Other Materials:
  O-ring: Fluoroplastic;
  Handle: 304 SS;
  Washer: 301 SS;
  Stem Nut, Locking Device, Gland Ring, 304 SS;
  Handle Sleeve: PVC.

ACTUATORS
Pneumatic “DA” and “SR” Series
Type: DA series is double acting and SR series is spring return (rack and pinion).
Normal Supply Pressure:
  DA: 40 to 115 psi (2.7 to 7.9 bar);
  SR: 80 psi (5.5 bar).
Maximum Supply Pressure: 120 psi (8.6 bar).
Air Connections:
  DA01: 1/8” female NPT;
  DA02: 1/4” female NPT;
  SR02 to SR04: 1/4” female NPT.
Housing Material: Anodized aluminum body and epoxy coated aluminum end caps.
Temperature Limits: -40 to 176°F (-40 to 80°C).
Accessory Mounting: NAMUR standard.

Electric “TD” and “MD” Series
Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).
Power Consumption: See manual.
Cycle Time (per 90°): TD01: 4 s, MD01: 10 s.
Duty Rating: 85%.
Enclosure Rating: NEMA 4X (IP67).
Housing Material: Powder coated aluminum.
Temperature Limits: -22 to 140°F (-30 to 60°C).
Electrical Connection: 1/2” female NPT.
Modulating Input: 4 to 20 mA.
Standard Features: Manual override, position indicator, and TD models come with two limit switches.

Electric “TI” and “MI” Series
Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC.
Power Consumption: See manual.
Cycle Time (per 90°): T101 and M101: 2.5 s, T102 and M102: 5 s.
  Modulating: M101-M102: 75%.
Enclosure Rating: NEMA 7.
Housing Material: Powder coated aluminum.
Temperature Limits: -40 to 140°F (-40 to 60°C).
Electrical Connection: 1/2” female NPT.
Modulating Input: 4 to 20 mA.
Standard Features: Position indicator and two limit switches.
### WE03 Hand Operated and Pneumatic Actuator Model Chart

<table>
<thead>
<tr>
<th>Example</th>
<th>WE03</th>
<th>EDA02</th>
<th>A</th>
<th>A06</th>
<th>WE02-EDA02-AA06</th>
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<td><strong>316 SS 3-Piece Tri-Clamp</strong></td>
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### WE03 Electric Actuator Model Chart

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### ACCESSORIES

- **R2-2120, Air Regulator** | $30.00
- **AFR2-2, Instrument Air Filter Regulator** | $60.00 ⑥
- **VB-01, Volume Booster** | $165.00 ⑥

⑥ Items are subject to Schedule B discounts.
The Series WE04 incorporates a full port 2-piece flanged SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seal for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication. The Series WE04 can be configured with either a pneumatic or electric actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages, and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open, and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve, and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion-free service.

**FEATURES**
- Capable of being configured to fit any application.
- Limit switches can be mounted to manual valves for remote monitoring.

**SPECIFICATIONS**

**VALVE**

Service: Compatible liquids and gases.

Body: 2-piece.

Line Sizes: 1/2 to 3”.

End Connections: 150# ANSI flange.

Pressure Limits: 200 psi (14 bars).

Wetted Materials:
- Body and ball: 316 SS (CF8M).
- Stem: 316 SS.
- Seat, Washer and Packing: TFE.

Temperature Limits: -20 to 350°F (-29 to 180°C).

Other Materials:
- O-ring: Fluorocarbon elastomer.
- Handle: 304 SS.
- Stem Nut, Locking Device, Gland Ring: 304 SS.

**ACTUATORS**

Pneumatic “DA” and “SR” Series

Type: DA series is double acting and SR series is spring return (rack and pinion).

Normal Supply Pressure:
- DA: 40 to 115 psi (2.7 to 7.9 bar).
- SR: 80 psi (5.6 bar).

Maximum Supply Pressure: 120 psi (8.4 bar).

Air Connections:
- DA01: 1/8” female NPT.
- DA02 to DA04: 1/4” female NPT.
- SR02 to SR06: 1/4” female NPT.

Housing Material: Anodized aluminum body and epoxy coated aluminum end caps.

Temperature Limits: -40 to 176°F (-40 to 80°C).

Accessory Mounting: NAMUR standard.

Electric “TD” and “MD” Series

Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).

Power Consumption: See manual.

Cycle Time (per 90°):
- TD01: 4 s.
- MD01: 10 s.
- TD02 and MD02: 20 s.
- TD03 and MD03: 50 s.

Duty Rating: 65%.

Enclosure Rating: NEMA 4X (IP67).

Housing Material: Powder coated aluminum.

Temperature Limits: -22 to 140°F (-30 to 60°C).

Electrical Connection: 1/2” female NPT.

Modulating Input: 4 to 20 mA.

Standard Features: Manual override, position indicator, and TD models come with two limit switches.

Electric “TI” and “MI” Series

Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC.

Power Consumption: See manual.

Cycle Time (per 90°):
- TI01 and MI01: 2.5 s.
- TI02 and MI02: 5 s.
- TI03 and MI03: 5 s.
- TI04 and MI04: 10 s.
- TI05 and MI05: 15 s.

Duty Rating: Two Position: TI01-TI05: 25%.


Housing Material: Powder coated aluminum.

Temperature Limits: -40 to 140°F (-40 to 60°C).

Electrical Connection: 1/2” female NPT.

Modulating Input: 4 to 20 mA.

Standard Features: Position indicator and two limit switches.
### WE04 Hand Operated and Pneumatic Actuator Model Chart

<table>
<thead>
<tr>
<th>Example</th>
<th>WE04</th>
<th>GDA03</th>
<th>A</th>
<th>B</th>
<th>05</th>
<th>WE04-GDA03-AB05</th>
<th>Price</th>
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### WE04 Electric Actuator Model Chart

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<td>Voltage</td>
<td>A</td>
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<td>-</td>
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</tr>
<tr>
<td></td>
<td>B</td>
<td>220 VAC</td>
<td>-</td>
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<tr>
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<td>C</td>
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<td>D</td>
<td>24 VDC</td>
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### ACCESSORIES

- **R2-2120, Air Regulator** ............................................ $30.00
- **AFR2-2, Instrument Air Filter Regulator** .......................... $60.00 ▲
- **VB-01, Volume Booster** .............................................. $165.00 ▲
- **Items are subject to Schedule B discounts.**
3-Way Stainless Steel Ball Valve
Full Port, Vented Ball, Electric or Pneumatic Actuators

The Series WE31 incorporates a full port 3-way SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout-proof stem for added safety, reinforced PTFE seals and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct-mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valve allowing for remote position indication.

The Series WE31 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve, and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve.

Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion-free service.

FEATURES
• Capable of being configured to fit any application
• Limit switches can be mounted to manual valves for remote monitoring

SPECIFICATIONS
VALVE
Service: Compatible liquids and gases
Body: 3-way
Line Sizes: 1/4 to 2”
End Connections: Female NPT
Pressure Limits: 20” Hg to 1000 psi (-0.7 to 69 bar)
Wetted Materials: Body and ball: 316 SS (CF8M);
Stem: 316 SS;
Seal, RTFE/PTFE;
Seal, Washer, and Packing: PTFE.
Temperature Limits: -20 to 392°F (-29 to 200°C)
Other Materials:
O-Ring: Fluorelastomer;
Handle: 304 SS;
Washer: 301 SS;
Stem Nut, Locking Device, Gland Ring: 304 SS;
Handle Sleeve: PVC.

ACTUATORS
Pneumatic “DA” and “SR” Series
Type: DA series is double acting and SR series is spring return (rack and pinion)
Normal Supply Pressure: DA: 40 to 115 psi (2.7 to 7.9 bar);
SR: 80 psi (5.5 bar)
Maximum Supply Pressure: 120 psi (8.6 bar)
Air Connections:
DA01: 1/8” female NPT;
DA02 to DA4: 1/4” female NPT;
SR03 to SR07: 1/4” female NPT
Housing Material: Anodized aluminum body and epoxy coated aluminum end caps
Temperature Limits: -40 to 175°F (-40 to 80°C)
Accessory Mounting: NAMUR standard

Electric “TD” and “MD” Series
Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC)
Power Consumption: See manual
Cycle Time (per 90°):
TD01: 4 s
MD01: 10 s
TD02 and MD02: 20 s
TD03 and MD03: 30 s
Duty Rating: 85%
Enclosure Rating: NEMA 4X (IP67)
Housing Material: Powder coated aluminum
Temperature Limits: -22 to 140°F (-30 to 60°C)
Electrical Connection: 1/2” female NPT
Modulating Input: 4 to 20 mA
Standard Features: Manual override, position indicator, and TD models come with two limit switches.

Electric “TI” and “MI” Series
Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC
Power Consumption: See manual
Cycle Time (per 90°):
TI01 and MI01: 2.5 s
TI02 and MI02: 5 s
TI03 and MI03: 10 s
TI04 and MI04: 20 s
TI05 and MI05: 30 s
Duty Rating:
Two-Position: TI01-TI05: 25%;
Modulating: MI01-MI05: 75%
Enclosure Rating: NEMA 7
Housing Material: Powder coated aluminum
Temperature Limits: -40 to 140°F (-40 to 60°C)
Electrical Connection: 1/2” female NPT
Modulating Input: 4 to 20 mA
Standard Features: Position indicator and two limit switches.
## WE31 Hand Operated and Pneumatic Actuator Model Chart

<table>
<thead>
<tr>
<th>Example</th>
<th>WE31</th>
<th>CSR03</th>
<th>T1</th>
<th>A</th>
<th>A</th>
<th>00</th>
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<td></td>
<td></td>
<td></td>
<td>316 SS 3-Way NPT</td>
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<tr>
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<td></td>
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<tr>
<td></td>
<td>EHD00</td>
<td>1&quot; Hand</td>
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<td></td>
<td></td>
<td></td>
<td>$230.00(3)</td>
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</tr>
<tr>
<td></td>
<td>FHD00</td>
<td>1 1/4&quot; Hand</td>
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<td></td>
<td></td>
<td>$275.00(3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GHD00</td>
<td>1 1/2&quot; Hand</td>
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<td></td>
<td></td>
<td></td>
<td>$350.00(3)</td>
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</tr>
<tr>
<td></td>
<td>HHD00</td>
<td>2&quot; Hand</td>
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<td></td>
<td></td>
<td></td>
<td>$550.00(3)</td>
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</tr>
<tr>
<td></td>
<td>CDA02</td>
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<td>$350.00(3)</td>
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<tr>
<td></td>
<td>FDA03</td>
<td>1 1/4&quot; Double Acting</td>
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<td>$450.00(3)</td>
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<td>GDA04</td>
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<tr>
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<td>HDA04</td>
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<td>$670.00(3)</td>
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<tr>
<td></td>
<td>CSR03</td>
<td>1/2&quot; Spring Return</td>
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<td>HSR07</td>
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<td>$900.00(3)</td>
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### Valve Position
- **T1**: Flow Path A
- **T2**: Flow Path B
- **T3**: Flow Path C
- **T4**: Flow Path D
- **L1**: Flow Path E

### Solenoid Voltage
- **A**: 110 VAC
- **B**: 220 VAC
- **C**: 24 VDC
- **D**: 12 VDC
- **E**: None

### Positioner and Switches
- 00: None
- 01: 42AD0 Exp Limit Switch
- 02: 45VD0 Exp Position Transmitter
- 03: 42AD0-B ATEx Limit Switch
- 04: 42AD0-HE IECEX Limit Switch
- 05: VPI-M01 NEMA 4X Limit Switch
- 06: QV-210101 Poly Limit Switch
- 07: YPS and P1 Prox Switch
- 08: 265ER-D5 Positioner
- 09: 265ER-D5 Smart Positioner

### Accessories
- **R2-1220, Air Regulator**: $30.00
- **AFR2-2, Instrument Air Filter Regulator**: $60.00(8)
- **VB-01, Volume Booster**: $165.00(9)

### Notes
- Items are subject to Schedule B discounts.

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## WE31 Electric Actuator Model Chart

### Valve Position
- **T1**: Flow Path A
- **T2**: Flow Path B
- **T3**: Flow Path C
- **T4**: Flow Path D
- **L1**: Flow Path E

### Actuator Voltage
- **A**: 110 VAC
- **B**: 220 VAC
- **C**: 24 VAC
- **D**: 24 VDC

### Flow Paths

---

### CALL TO ORDER
- **800/872-9141**

---

### New Products

---

### Popular Models

<table>
<thead>
<tr>
<th>Size</th>
<th>Cv (gal/min)</th>
<th>Hand Operated Model</th>
<th>Price</th>
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<td>WE31-FHD00-T1</td>
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<td>1&quot;</td>
<td>10</td>
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<td>1-1/4</td>
<td>43</td>
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<td>1-1/2</td>
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<td>WE31-IHD00-T1</td>
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<td>2&quot;</td>
<td>30</td>
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### Double Acting Pneumatic Model

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<td>$450.00(3)</td>
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<td>$575.00(3)</td>
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<td>$750.00(3)</td>
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### Spring Return Pneumatic Model

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<td>$525.00(3)</td>
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<tr>
<td>$620.00(3)</td>
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<tr>
<td>$850.00(3)</td>
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<td>$1100.00(3)</td>
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### NEMA 4X Two-Position Electric (110 VAC) Model

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<td>$590.00(3)</td>
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<tr>
<td>$620.00(3)</td>
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<tr>
<td>$850.00(3)</td>
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<tr>
<td>$1100.00(3)</td>
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### NEMA 4X Modulating Electric (110 VAC) Model

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<tr>
<td>$590.00(3)</td>
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<tr>
<td>$620.00(3)</td>
</tr>
<tr>
<td>$850.00(3)</td>
</tr>
<tr>
<td>$1100.00(3)</td>
</tr>
</tbody>
</table>
3-Way Tri-Clamp Stainless Steel Ball Valve

Cavity Filled, Electric and Pneumatic Actuators

The Series WE33 incorporates a full port 3-way tri-clamp SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout-proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM F67) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication. The Series WE33 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or close, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

Electric “TD” and “MD” Series

- Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).
- Power Consumption: See manual.
- Cycle Time (per 90°):
  - TD01: 4 s
  - MD01: 10 s
  - TD02 and MD02: 20 s
- Duty Rating: 85%
- Enclosure Rating: NEMA 4X (IP87).
- Temperature Limits: -22 to 140°F (-30 to 60°C).
- Electrical Connection: 1/2” female NPT.
- Modulating Input: 4 to 20 mA.
- Standard Features: Manual override, position indicator, and TD models come with two limit switches.

Electric “TI” and “MI” Series

- Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC.
- Power Consumption: See manual.
- Cycle Time (per 90°):
  - TI01 and MI01: 2.5 s
  - TI02 and MI02: 5 s
  - TI03 and MI03: 5 s
- Duty Rating: Two-Position: TI01-TI03: 25%; Modulating: MI01-MI03: 75%.
- Temperature Limits: -40 to 140°F (-40 to 60°C).
- Electrical Connection: 1/2” female NPT.
- Modulating Input: 4 to 20 mA.
- Standard Features: Position indicator and two limit switches.

SPECIFICATIONS

VALVE

Service: Compatible liquids and gases.
Body: 3-way
Line Sizes: 1/2 to 2”
End Connections: Tri-clamp ends
Pressure Limits: 20” Hg to 1000 psi (-0.7 to 69 bar)
Wetted Materials:
  - Body and ball: 316 SS (CF8M)
  - Stem: 316 SS
  - Seat, Washer, and Packing: PTFE
Temperature Limits: -20 to 392°F (-29 to 200°C)
Other Materials:
  - O-ring: Fluoroelastomer
  - Handle: 304 SS
  - Stem Nut, Locking Device, Gland Ring: 304 SS
  - Handle Sleeve: PVC

ACTUATORS

Pneumatic “DA” and “SR” Series
Type: DA series is double acting and SR series is spring return (rack and pinion).
Normal Supply Pressure:
  - DA: 40 to 115 psi (2.7 to 7.9 bar)
  - SR: 80 psi (5.5 bar)
Maximum Supply Pressure: 120 psi (8.6 bar)
Air Connections:
  - DA01: 1/8” female NPT
  - DA02 to DA03: 1/4” female NPT
  - SR02 to SR04: 1/4” female NPT
Housing Material: Anodized aluminum body and epoxy coated aluminum end caps
Temperature Limits: -40 to 176°F (-40 to 80°C)
Accessory Mounting: NAMUR standard
### WE33 Hand Operated and Pneumatic Actuator Model Chart

<table>
<thead>
<tr>
<th>Size and Actuator</th>
<th>Example WE33</th>
<th>T4 N N707 WE33-CSR02-T4-N07</th>
<th>Price</th>
<th>Series WE33</th>
<th>Solenoid N/A</th>
<th>NEMA 4X Two-Position Electric (110 VAC) Model</th>
<th>Price</th>
<th>NEMA 4X Modulating Electric (110 VAC) Model</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>1/2”</td>
<td>WE33-CHD00-2</td>
<td>1/2” Hand Operated</td>
<td>$375.00</td>
<td>WE33-CSR02-07</td>
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<td>WE33-CSR02-T4-N07</td>
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<td>3/4”</td>
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<td>WE33-CSR02-T4-N07</td>
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<td>WE33-CSR02-T4-N07</td>
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<tr>
<td>1”</td>
<td>WE33-EHD00-2</td>
<td>1” Hand Operated</td>
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<td>WE33-CSR02-T4-07</td>
<td>WE33-CSR02-T4-N07</td>
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<td>$480.00</td>
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<td>1-1/2”</td>
<td>WE33-GHD00-2</td>
<td>1-1/2” Hand Operated</td>
<td>$840.00</td>
<td>WE33-CSR02-07</td>
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<td>2”</td>
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<td>WE33-CSR02-07</td>
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### WE33 Electric Actuator Model Chart

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<td>316 SS 3-Way</td>
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<td>Size and Actuator</td>
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<td>1/2” NEMA 4X Two Position</td>
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<td>DTD01</td>
<td>3/4” NEMA 4X Two Position</td>
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<tr>
<td></td>
<td>ETD01</td>
<td>1” NEMA 4X Two Position</td>
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<tr>
<td></td>
<td>GTD02</td>
<td>1-1/2” NEMA 4X Two Position</td>
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<tr>
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<td>HTD02</td>
<td>2” NEMA 4X Two Position</td>
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<td>CMD01</td>
<td>1/2” NEMA 4X Modulating</td>
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<td>DMD01</td>
<td>3/4” NEMA 4X Modulating</td>
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<td>1” NEMA 4X Modulating</td>
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<td>GMD02</td>
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<td>HMD02</td>
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### Flow Paths

![Flow Paths Diagram](image-url)
3-Way Flanged Stainless Steel Ball Valve
150# ANSI Flange, Vented Ball, Electric or Pneumatic Actuators

The Series WE34 incorporates a full port 3-way flanged SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout-proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valve allowing for remote position indication.

The Series WE34 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

FEATURES
- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring

SPECIFICATIONS
VALVE
- Service: Compatible liquids and gases
- Body: 3-way
- Line Sizes: 1/2 to 3".
- End Connections: 150# ANSI flange
- Pressure Limits: 20" Hg to 275 psi (-0.7 to 19 bar)
- Wetted Materials:
  - Body and ball: 316 SS (CF8M)
  - Stem: 316 SS
  - Seat: RTFE/PTFE
  - Seal, Washer, and Packing: PTFE
- Temperature Limits: -20 to 392°F (-29 to 200°C)
- Other Materials:
  - O-ring: Fluoroelastomer
  - Handle: 304 SS
  - Washer: 301 SS
  - Stem Nut, Locking Device, Gland Ring: 304 SS
  - Handle Sleeve: PVC

ACTUATORS
- Pneumatic "DA" and "SR" Series
  - Type: DA series is double acting and SR series is spring return (rack and pinion)
  - Normal Supply Pressure: DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar)
  - Maximum Supply Pressure: 120 psi (8.6 bar)
- Air Connections:
  - DA01: 1/8" female NPT
  - DA02 to DA6: 1/4" female NPT
  - SR03 to SR09: 1/4" female NPT
- Housing Material: Anodized aluminum body and epoxy coated aluminum end caps
- Temperature Limits: -40 to 176°F (-40 to 80°C)
- Accessory Mounting: NAMUR standard
- Electric "TD" and "MD" Series
  - Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC)
  - Power Consumption: See manual
  - Cycle Time (per 90°):
    - TD01: 4 s
    - TD02 and TD02: 20 s
    - TD03 and TD03: 30 s
    - TD04 and TD04: 40 s
  - Duty Rating: 85%
- Enclosure Rating: NEMA 4X (IP67)
- Housing Material: Powder coated aluminum
- Temperature Limits: -22 to 140°F (-30 to 60°C)
- Electrical Connection: 1/2" female NPT
- Modulating Input: 4 to 20 mA
- Standard Features: Manual override, position indicator, and TD models come with two limit switches

Electric "TI" and "MI" Series
- Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC
- Power Consumption: See manual
- Cycle Time (per 90°):
  - TI01 and MI01: 2.5 s
  - TI02 and MI02: 5 s
  - TI03 and MI03: 5 s
  - TI04 and MI04: 10 s
  - TI05 and MI05: 15 s
  - TI06 and MI06: 20 s
  - Duty Rating: Two-Position:
    - TI01-TI07: 25%
    - TI08: 100%
  - Modulating:
    - MI01-MI07: 75%
    - MI08: 100%
- Enclosure Rating: NEMA 7
- Housing Material: Powder coated aluminum
- Temperature Limits: -40 to 140°F (-40 to 60°C)
- Electrical Connection: 1/2" female NPT
- Modulating Input: 4 to 20 mA
- Standard Features: Position indicator and two limit switches
### Popular Models

<table>
<thead>
<tr>
<th>Size and Actuators</th>
<th>Example</th>
<th>CV (gal/min)</th>
<th>WE34 Hand Operated Model</th>
<th>Price</th>
<th>WE34 Electric Actuator Model Chart</th>
<th>Example</th>
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### ACCESSORIES

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<th>Accessory</th>
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<td>R2-2120</td>
<td>Air Regulator</td>
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<td>AFR-2</td>
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<tr>
<td>VB-01</td>
<td>Volume Booster</td>
<td>$165.00</td>
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</tbody>
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* Items are subject to Schedule B discounts.
Pneumatic and Electric Actuators
Actuators for Valve and Damper Automation

The W.E. Anderson Series ACT Actuators are available in either pneumatic or electric models. The wide range of torques and voltages means there is an actuator for almost any application. The standard ISO 5211 mounting configuration makes installation to any valve or damper quick and simple.

W.E. Anderson pneumatic ACT models are a compact rack and pinion design with a symmetrical structure that ensures fast and steady action, high precision, and high output power. The corrosion resistant anodized aluminum body is designed to withstand the harsh and abusive industrial environments and provide reliable service. We offer double acting and spring return models in a variety of sizes to fit any application.

W.E. Anderson electric ACT models are available in two-position or modulating configurations and NEMA 4X or NEMA 7 rated enclosures. All electric actuators utilize a high grade powder coated aluminum enclosure with visual indicators.

The two-position models come standard with two auxiliary switches, and modulating models offer an output for position monitoring. Certain models are equipped with manual overrides allowing the operator to cycle the valve manually for installation or maintenance checks.

FEATURES
- ISO 5211 Mounting configuration or easy installation
- Pneumatic actuators offer corrosion resistance anodized finish
- NAMUR mounting configuration on pneumatic actuators
- Two-position electric actuators include auxiliary limit switches
- Modulating electric actuators offer an output for position monitoring

SPECIFICATIONS
Pneumatic “DA” and “SR” Series
- Type: DA series is double-acting and SR series is spring return (rack and pinion).
- Normal Supply Pressure:
  - DA: 40 to 115 psi (2.7 to 7.9 bar);
  - SR: 80 psi (5.5 bar).
- Maximum Supply Pressure: 120 psi (8.6 bar).
- Air Connections:
  - DA01: 1/8” female NPT;
  - DA02 to DAS: 1/4” female NPT;
  - SR02 to SR07: 1/4” female NPT.
- Housing Material: Anodized aluminum body and epoxy coated aluminum end caps.
- Temperature Limits: -40 to 176°F (-40 to 80°C).
- Accessory Mounting: NAMUR standard.

Electric “TD” and “MD” Series
- Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).
- Power Consumption: See manual.
- Cycle Time (per 90°):
  - TD01: 4 s;
  - TD02 and MD02: 10 s;
  - TD03 and MD03: 20 s.
- Duty Rating: 85%.
- Enclosure Rating: NEMA 4X (IP67).
- Temperature Limits: -22 to 140°F (-30 to 60°C).
- Electrical Connection: 1/2” female NPT.
- Modulating Input: 4 to 20 mA.
- Standard Features: Position indicator, and TD models come with two limit switches.

Electric “TI” and “MI” Series
- Power Requirements: 110 VAC, 220 VAC, 24 VAC or 24 VDC.
- Power Consumption: See manual.
- Cycle Time (per 90°):
  - TI01 and MI01: 2.5 s;
  - TI02 and MI02: 5 s;
  - TI03 and MI03: 10 s;
  - TI04 and MI04: 15 s;
  - TI05 and MI06: 15 s.
- Duty Rating: Two-Position: TI01-TI06: 25%.
- Modulating Rating: MI01-MI06: 75%.
- Temperature Limits: -40 to 140°F (-40 to 60°C).
- Electrical Connection: 1/2” female NPT.
- Modulating Input: 4 to 20 mA.
- Standard Features: Position indicator and two limit switches.
### Popular Pneumatic Models

<table>
<thead>
<tr>
<th>Pneumatic Models</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
</table>
| ACT-DA01         | Double Acting Pneumatic Actuator, 96 in-lb            | $100.00 |}
| ACT-DA02         | Double Acting Pneumatic Actuator, 207 in-lb           | $125.00 |}
| ACT-DA03         | Double Acting Pneumatic Actuator, 356 in-lb           | $150.00 |}
| ACT-DA04         | Double Acting Pneumatic Actuator, 603 in-lb           | $175.00 |}
| ACT-DA05         | Double Acting Pneumatic Actuator, 792 in-lb           | $200.00 |}
| ACT-DA06         | Double Acting Pneumatic Actuator, 1135 in-lb          | $225.00 |}
| ACT-DA07         | Double Acting Pneumatic Actuator, 1690 in-lb          | $300.00 |}
| ACT-DA08         | Double Acting Pneumatic Actuator, 2993 in-lb          | $350.00 |}
| ACT-DA09         | Double Acting Pneumatic Actuator, 4508 in-lb          | $500.00 |}
| ACT-SR02         | Spring Return Pneumatic Actuator, 95 in-lb            | $130.00 |}
| ACT-SR03         | Spring Return Pneumatic Actuator, 176 in-lb           | $140.00 |}
| ACT-SR04         | Spring Return Pneumatic Actuator, 274 in-lb           | $160.00 |}
| ACT-SR05         | Spring Return Pneumatic Actuator, 381 in-lb           | $190.00 |}
| ACT-SR06         | Spring Return Pneumatic Actuator, 536 in-lb           | $225.00 |}
| ACT-SR07         | Spring Return Pneumatic Actuator, 815 in-lb           | $260.00 |}
| ACT-SR08         | Spring Return Pneumatic Actuator, 1411 in-lb          | $375.00 |}
| ACT-SR09         | Spring Return Pneumatic Actuator, 2460 in-lb          | $580.00 |}
| ACT-SR10         | Spring Return Pneumatic Actuator, 3733 in-lb          | $825.00 |}
| ACT-SR11         | Spring Return Pneumatic Actuator, 6168 in-lb          | $1000.00 |}

**ACCESSORIES**

- R2-2120, Air Regulator .................................................. $30.00
- AFR2-2, Instrument Air Filter Regulator ............................... $60.00
- VB-01, Volume Booster .................................................... $165.00
- SN-3A, 5/2 NAMUR 110 VAC Solenoid .................................... $40.00
- SN-3A, 3/2 NAMUR 110 VAC Solenoid .................................... $40.00

*Items are subject to Schedule B discounts.

### Spring Return Actuator Torque

#### SR Single Acting Pneumatic Actuator (lb-in)

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<th>90° End</th>
<th>0° Start</th>
<th>90° End</th>
<th>0° Start</th>
<th>90° End</th>
<th>0° Start</th>
<th>90° End</th>
<th>0° Start</th>
<th>90° End</th>
<th>0° Start</th>
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<th>Spring Torque</th>
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### Double Acting Actuator Torque

#### DA Double-Action Output Torque (lb-in)

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<th>70 psi</th>
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CERTIFICATE OF CONFORMANCE
A standard Certificate of Conformance is available FREE of charge at the time of order for most products. This document certifies that the product was manufactured to conform to the published specifications in Dwyer Instruments literature.

CERTIFICATE OF CALIBRATION
A standard Certificate of Calibration is available FREE of charge at the time of order for most products. This document certifies that the product was tested to conform to the published accuracy specification published in the specifications in Dwyer Instruments literature.

FACTORY CALIBRATION CERTIFICATE
A Factory Calibration Certificate gives you assurance that the unit has been tested for performance at the time of manufacture. The certificate includes testing points with recorded test data. Factory Calibration Certificates are available for many popular products. Pricing and availability varies by product. Please consult the options listing for the product on the catalog page or see the product on our website for availability.

CERTIFICATE OF NIST CALIBRATION
A Certificate of NIST Calibration is available for most indicating and transmitting instrumentation products at an additional charge. This certificate is created in our testing lab to NIST traceable test instruments and includes test points with recorded data and the reference standard. Pricing and availability varies by product. Please consult the options listing for the product on the catalog page or see the product on our website for availability. For some products customer specified test points can be specified for an additional charge.
### INDUSTRIAL DISCOUNT SCHEDULE

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*Please contact us for discount schedules for other account types.

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### Dwyer Instruments, Inc. - Standard Terms and Conditions of Sale

1. **Prices and Specifications** are subject to change without notice.

2. **Shipping dates** are approximate. They are dependent upon credit approval and subject to delays beyond our control.

3. **Terms**: Net 30 days to companies with established credit rating. In the event Buyer fails to fulfill previous terms of payment, or in case Seller shall have any doubt at any time as to Buyer's financial responsibility, Seller may decline to make further deliveries except upon receipt of cash in advance or other special arrangements.

4. **Liability Point and Title**: All material is sold Ex Works Dwyer Instruments, Inc. Title to all material sold shall pass to buyer upon delivery by Seller to carrier at shipping point.

5. **State and Local Taxes**: Any taxes which the Seller may be required to pay or collect upon or with respect to the sale, purchase, delivery, use or consumption of any of the material covered hereby shall be for the account of the Buyer and shall be added to the purchase price.

6. **Special tooling**, dies, silk screens and molds acquired specially to produce goods for Buyer remain the property of Dwyer Instruments, Inc., and may not be removed. They will be maintained in good condition for a minimum period of three years from the date of the original purchase order.

7. **Export Orders**: Terms, discounts and conditions of sale for purchase orders originating or for shipment to final destinations outside the U.S.A. will be furnished upon request.

8. **Limited Warranty**: The Seller warrants all Dwyer instruments and equipment to be free from defects in workmanship or material under normal use and service for a period of one year from date of shipment. Liability under this warranty is limited to repair or replacement EXW Ex Works Dwyer Instruments, Inc. of any parts which prove to be defective within that time or repayment of the purchase price at the Seller's option provided the instruments have been returned, transportation prepaid, within one year from date of purchase. All technical advice, recommendations and services are based on technical data and information which the Seller believes to be reliable and are intended for use by persons having skill and knowledge of the business, at their own discretion. In no case is Seller liable beyond replacement of equipment EXW Ex Works Dwyer Instruments, Inc or the full purchase price. This warranty does not apply if the maximum ratings label is removed or if the instrument or equipment is abused, altered, used at ratings above the maximum specified, or otherwise misused in any way.

This express limited warranty is in lieu of and excludes all other representations made by advertisements or by agents and all other warranties, both express and implied, there are no implied warranties of merchantability or of fitness for a particular purpose for goods covered hereunder.

9. **Buyer's Remedies**: The Buyer's exclusive and sole remedy on account of or in respect to the furnishing of non-conforming or defective material shall be to secure replacement thereof as aforesaid. The Seller shall not in any event be liable for the cost of any labor expended on any such material or for any special direct, indirect, consequential or incidental damages to anyone by reason of the fact that it shall have been non-conforming or defective.

10. **Acceptance**: All orders shall be subject to the terms and conditions contained or referred to in the Seller's quotation, acknowledgment, and to those listed here and to no others whatsoever. No waiver, alteration or modification of these terms and conditions shall be binding unless in writing and signed by an executive officer of the Seller. All orders are subject to written acceptance by Dwyer Instruments, Inc., Michigan City, Indiana, U.S.A.
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temperature
level
process control
test equipment
valves

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