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At Dwyer it all starts with innovative products designed according to the needs of our customers. We strive to make products optimized for ease of use, dependability and manufacturability. Through our over 80 years of manufacturing excellence, Dwyer has found the means to manufacture products cost effectively to offer the best value to our customers. We supply the highest quality products and stand behind them. Dwyer products are trusted in applications all over the world in almost every industry.
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Wall Mount Humidity/Temperature/Dew Point Transmitter
- Humidity and temperature sensors are field replaceable to reduce service costs
- The polymer capacitance humidity sensor is not affected by condensation, fog, high humidity or contaminants
- Remote display tool allows users to view the measurement on non-display models without opening the enclosure

SERIES CDTA
Communicating Carbon Dioxide Detector
- Field selectable Modbus® RTU and BACnet MS/TP Communications for measuring CO2, humidity, temperature, temperature set point and override
- For improved accuracy, patented Digital Intelligent Temperature Compensation Algorithm (DITCA™) corrects for self heating error found in most combination transmitters
- Single beam dual wavelength non-dispersive infrared (NDIR) sensor technology

SERIES DFMT & DFMT2
Digital Paddlewheel Flow Transmitter
- Simultaneous flow and total indication on large screen eliminates the need to toggle between menus saving time
- PVDF sensor and impeller allow for use even in corrosive process media applications
- IP65 rating keeps the unit protected in high moisture applications

MODEL UFM
Compact Ultrasonic Flowmeter
- Simple menu structure makes set up easy saving on installation time
- Compact body is perfect for applications with limited space
- Cost effective design saves on costs

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MOBILE METER™
Test Instrument App
• Any Android® phone or tablet can become your manometer, thermo-hygrometer, or thermo-anemometer
• Log measurements and email them directly from your phone or tablet
• View the measurement as a digital meter or analog gage

SERIES WDPM
Differential Pressure Modules
• Wireless manometer allows the user to take measurements in the duct while adjusting dampers on the other side of the room
• Measures differential pressure, velocity, & flow
• Measurements can be displayed on the UHH universal handheld or the Mobile Meter™ App

SERIES WE01
2-Piece NPT Stainless Steel Ball Valve
• Capable of being configured to fit any application
• Limit switches can be mounted to manual valves for remote monitoring
• Electric or pneumatic actuators available

SERIES ACT
Pneumatic and Electric Actuators
• 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
NEW! PRODUCTS

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Optional LCD Display, Replaceable Sensors

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NDIR CO₂ Sensor, Universal Outputs, Optional Relay

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SERIES CDTA
Communicating Carbon Dioxide Detector
Measures CO₂, Humidity, Temperature, Temperature Set Point, and Override

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SERIES CDTR
Carbon Dioxide/RH/Temperature Transmitter
NDIR CO₂ Sensor, Universal CO₂/RH Outputs, Optional Relay

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SERIES DFMT
Digital Paddlewheel Flow Transmitter
Flow and Total Indication, Easy to Read LCD Display, 4 to 20 mA or Pulse Output

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SERIES DFMT2
Digital Paddlewheel Flow Transmitter
Flow and Total Indication, Easy to Read LCD Display

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SERIES MFS2
Magnetic Inductive Flow Sensor
Lower Cost PVDF Design, Frequency Output, ±1% Accuracy, Maintenance-Free

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MODEL UFM
Compact Ultrasonic Flowmeter
Cost Effective, Compact & Adjustable Design, Non-Invasive

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MODEL UTG
Ultrasonic Thickness Gage
Ideal For Use with Ultrasonic Flow Transmitters, Adjustable Sound Velocity

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MODEL RVM
Portable Radar Wave Velocity Meter
Non-Contact Measurement, Handheld Meter, Angle Compensation

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SERIES BTT
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SERIES TE-I
Immersion Temperature Sensors
New Integral Mounting Connection, Welded Thermowells

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NEW! PRODUCTS

SERIES TE-E/N
Wall Mount Temperature Sensor
Discrete Wall Mount Housing

SERIES WD3
Water Leak Detector
Battery or External Powered, SPST or DPDT Relays

MODEL ULSS
Ultrasonic Level Sensor
4.1’ (1.25 m) Measuring Range, Non-Contact Transmitter, SPST Programmable Relays

MODEL ULSM
Ultrasonic Level Sensor
9.8’ (3 m) Measuring Range, Non-Contact Transmitter, 4 SPST Programmable Relays

MODEL DPMF
Flush Mount LCD Digital Panel Meter
3-1/2 Digit LCD, Surface Mount

SERIES BGM
Bar Graph Meter
Clear Relative Position & High Resolution In One

SERIES MCS
Miniature Current Switch
Low Cost, Solid or No Core, LED Confirmation, Adjustable Set Point

SERIES APT
AC Power Transformers
40 VA to 100 VA, Single or Dual Hub, Circuit Breaker, UL Class 2

SERIES WTDL
Wireless Temperature/Humidity Data Logger
Transmission up to 400 Feet, Text/Email Alarm Updates

SERIES DW-WIFI
Wireless Wi-Fi Data Logger
Measures Temperature/Humidity, Integral LCD

MOBILE METER™ Test Instrument App
Works with most Android® Phones/Tablets; Wireless Probes
NEW! PRODUCTS

MODEL UHH-BTG
Wireless Mobile Gateway
Converts UHH Probe Wireless Signals to Bluetooth SIG, Inc. Wireless Technology

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MODEL AP1
Thermo-Anemometer Probe
Wired, Measures Velocity, Flow, & Temperature

PAGE 426

MODEL RP1
Thermo-Hygrometer Probe
Wired, Measures Humidity, Temperature, Dew Point, & Wet Bulb Temperatures

PAGE 426

MODEL VP1
100 mm Vane Thermo-Anemometer Probe
Wired, Measures Velocity, Flow, Humidity, & Temperature

PAGE 426

MODEL AP2
Thermo-Anemometer Probe
Wireless, Measures Velocity, Flow, & Temperature

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MODEL RP2
Thermo-Hygrometer Probe
Wireless, Measures Humidity, Temperature, Dew Point, & Wet Bulb Temperatures

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MODEL VP2
100 mm Vane Thermo-Anemometer Probe
Wireless, Measures Velocity, Flow, Humidity, & Temperature

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Universal Handheld Accessories

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SERIES WDPM
Differential Pressure Modules
Wireless, Measures Differential Pressure, Air Velocity, & Flow

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NEW! PRODUCTS

MODEL DDM-01
Laser Distance Meter
Measures up to 70 Meters, Class II Laser

MODEL RLD2
Refrigerant Leak Detector
Audio and Visual Indication, 12’ Flexible Gooseneck Design

MODEL SLR-01
Handheld Solar Power Meter
Measures up to 1999 W/m², Auto-Ranging

SERIES TAC-L
Portable Digital Tachometer
Contact or Photo Non-Contact Operation, Backlit LCD

SERIES WE01
2-Piece NPT Stainless Steel Ball Valve
Full Port, Vented Ball, Electric or Pneumatic Actuators

SERIES WE02
3-Piece NPT Stainless Steel Ball Valve
Full Port, Vented Ball, Electric or Pneumatic Actuators

SERIES WE03
3-Piece Tri-Clamp Stainless Steel Ball Valve
Cavity Filled, Full Port, Electric or Pneumatic Actuators

SERIES BCHP
Low Pressure Hand Pump
Vacuum or Pressure, Generates up to 870 psi

MODEL LUX-01
Digital Light Meter
Silicon Photodiode Sensor, Reads up to 200,000 Lux
NEW! PRODUCTS

SERIES WE04
2-Piece Flanged Stainless Steel Ball Valve
150# ANSI Flange, Vented Ball, Electric or Pneumatic Actuators

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SERIES WE31
3-Way NPT Stainless Steel Ball Valve
Full Port, Vented Ball, Electric or Pneumatic Actuators

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SERIES WE33
3-Way Tri-Clamp Stainless Steel Ball Valve
Cavity Filled, Electric and Pneumatic Actuators

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SERIES WE34
3-Way Flanged Stainless Steel Ball Valve
150# ANSI Flange, Vented Ball, Electric or Pneumatic Actuators

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SERIES ACT
Pneumatic and Electric Actuators
Actuators for Valve and Damper Automation

PAGE 480-481
The Series RHP-E/N Wall Mount Humidity/Temperature/Dew Point Transmitter is the most versatile room transmitter on the market. The stylish housing is well vented to provide air flow across the sensor to improve measurement accuracy. An optional LCD display can be integral to the transmitter or a remote display can be ordered for building balancing or LEED® validation. The LCD display indicates the ambient temperature along with the humidity or dew point. The transmitter has internal dip switches to select the temperature engineering units and whether the transmitter outputs humidity or dew point. The humidity and temperature sensors are field replaceable to reduce service cost and inventory. The humidity and the dew point are measured using a capacitive polymer sensor that completely recovers from 100% saturation. The humidity and dew point can have either a current or voltage output, while the optional temperature output can be a current, voltage, RTD or thermistor. For models with current or voltage for the temperature output, the temperature range is field selectable.

**Options**

- **Output**
  - Humidity/Dew Point Output: 4-20mA/0-5 VDC/10 VDC
  - Temperature Output: 4-20mA/0-5 VDC/10 VDC

- **Series**
  - RHP: 2% Accuracy
  - 3N4A-LCD: 3% Accuracy
  - E: European Wall Mount
  - N: North American Wall Mount

- **Accuracy**
  - RH: ±2% 10-90% RH @ 25°C; ±3% 20-80% RH @ 25°C
  - Temperature: ±0.3°F @ 77°F (±0.2°C @ 25°C)
  - Dew Point Temperature: ±0.9°F @ 77°F (±0.3°C @ 25°C)

- **Temperature Range**
  - Solid state band gap temperature sensors: -20 to 140°F (-28.9 to 60°C); 0 to 100°F (37.8°C to 32.3°C); -4 to 140°F (-20 to 60°C)
  - Thermistor temperature sensor: -40 to 140°F (-40 to 60°C)
  - RTD temperature sensor: -40 to 140°F (-40 to 60°C)

- **Dew Point Temperature Range**
  - Solid state band gap temperature sensor: -20 to 140°F (-28.9 to 60°C)
  - Thermistor temperature sensor: 0 to 100°F (37.8°C to 32.3°C)

- **Humidity Range**
  - 0 to 100% RH

- **Drift**
  - RH: <1% RH/year

- **Specs**
  - Response Time: 15 seconds

**Agency Approvals**

- CE

**Output Load**

- 4-20mA: 5 mA max., 2 channels for humidity/temperature sensor models (loop powered on RH). Switch selectable RH or dew point. Switch selectable normal or reverse output.

**Power Requirements**

- 15 to 35 VDC; 10 to 35 VDC; 15 to 29 VAC

**Solid State Band Gap Temperature Sensor Output Ranges**

- Solid state band gap temperature sensor output range: -20 to 140°F (-28.9 to 60°C); 0 to 100°F (37.8°C to 32.3°C); -4 to 140°F (-20 to 60°C)

**Display**

- Optional LCD; Switch selectable %RH or dew point, °F/°C

**Display Resolution**

- RH: ±1%; Temperature: ±0.1°F (±0.1°C)

**Weight**

- 8 ounces (225 g)

**Enclosure Material**

- European: White polycarbonate
- North American: Warm gray polycarbonate

**Enclosure**

- NIST Traceable calibration certificate

**Accessories**

- A-449, Remote LCD Display allows remote indication of select Dwyer Wall Mount Transmitters for validation or certification purposes

**Specifications**

- **Agency Approvals**: CE

**Contact Information**

- M&M Control Service, Inc.
- www.mmcontrol.com/Dwyer.php
- 800-876-0036 847-356-0566

**Leed®** is a registered trademark of US Green Building Council.

**Call to Order**

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Series CDT Carbon Dioxide and Temperature Transmitters accurately monitor the CO₂ concentration and temperature in occupied and unoccupied buildings. A single-beam, dual-wavelength sensor provides the highest level of accuracy compared to Automatic Baseline Correction methods. The Series CDT includes digital barometric pressure adjustment and the ability to field-calibrate the sensor.

Universal outputs for both carbon dioxide and temperature allow users to select the transmitter output to be 4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC to work with virtually any building management controller. Additionally, a passive thermistor or RTD sensor can be ordered for a temperature output. An optional relay with user-adjustable set points can be used to control exhaust fans, open actuated windows or dampers, or signal a light or horn.

For applications that require visual indication, the Series CDT can be ordered with an integral LCD display. When ordering a duct mount configuration or a wall mount configuration without the display, the Model A-449 or A-449A remote LCD display can plug into the miniature connector port on the transmitter. The display can be configured to display temperature only, CO₂ only, or CO₂ and temperature together. Push buttons are standard on all configurations of the transmitters for access to the menu structure, but wall mount configurations can be ordered without push buttons.

The display can be configured to display temperature only, CO₂ only, or CO₂ and temperature together. Push buttons are standard on all configurations of the transmitters for access to the menu structure, but wall mount configurations can be ordered without push buttons.

**Accessories**

- **A-449**, Remote LCD Display allows remote indication of select Dwyer® Wall Mount Transmitters for validation and certification purposes.
- **A-449A**, Remote LCD Display with buttons allows remote indication and calibration of select Dwyer® Wall Mount Transmitters for validation and certification purposes.

**Specifications**

- Sensor: Single beam, dual-wavelength NDIR
- Range: CO₂: 0 to 2000 or 0 to 5000 ppm (depending on model)
- Temperature: 32 to 122°F (0 to 50°C)
- Accuracy: CO₂: ±40 ppm ±3% of reading; RH: ±2% (10 to 90% RH); Temperature: ±1°C @ 25°C
- Temperature Dependence: ±8 ppm/°C at 1100 ppm
- Non-linearity: ±16 ppm
- Pressure Dependence: 0.13% of reading per mm Hg
- Response Time: 2 min for 99% change

**Configuration Options**

- **NIC** - Factory Calibration Certificate
- **LCD** - LCD display (wall only)
- **FC** - Factory Calibration Certificate
- **RLY** - Relay
- **NBC** - No buttons (wall only)

**Calibration Gas Kit**

- **GCK-200CO2-2000CO2**, Calibration Gas Kit includes a 99.99% Nitrogen gas cylinder for calibrating the zero point and a 200 PPM CO₂ gas cylinder for calibrating the span point on Dwyer’s gas sensing transmitters.

**Agency Approvals**

- CE

- **LEED®** is a registered trademark of the U.S. Green Building Council.
The Series CDTA Communicating Carbon Dioxide Detector combines the function of three room sensors into a single, compact housing. Parameters include carbon dioxide, humidity, temperature, and temperature set point with override. By having field selectable Modbus® and BACnet Communications, only four wires are needed for power and the communication signal. The communicating detectors can be daisy-chained together to further reduce installation cost. In order to reduce the set up time, the RS-485 MAC address is set up using on board dip switches. A second set of dip switches are used to select whether output is Modbus® RTU or BACnet MS/TP communication protocols and to limit access to the set up menu.

Like our Series CDT Carbon Dioxide Transmitter, the Series CDTA uses a Single Beam Dual Wavelength Non-Dispersive Infrared (NDIR) sensor to measure the carbon dioxide level. This technology can be used in installations that will be occupied 24 hours per day. For improved accuracy, the transmitter can be field calibrated to the environmental conditions of the installation. Also, the barometric pressure can be programmed to correct for altitude. The humidity uses a capacitive polymer sensor and the temperature is measured using a 10KΩ thermistor sensor. The humidity sensor is field replaceable without the need for additional calibration.

Optional local and remote displays are available to display any of the parameters. For applications in which the building occupants aren’t familiar with CO₂ concentrations, the LCD can be programmed to display temperature, humidity, or temperature set point instead.

FEATURES
• Field selectable Modbus® and BACnet communications
• Single-beam dual-wavelength CO₂ sensor
• Replaceable humidity/temperature sensor
• Physical hardware lockout
• Optional remote display tool

ACCESSORIES
GCK-200CCO-200CCO₂, Calibration Gas Kit includes a 99.99% Nitrogen gas cylinder for calibrating the zero point and a 200 PPM CO / 2000 PPM CO₂ gas cylinder for calibrating the span point on Dwyer’s gas sensing transmitters .

A-449, Remote LCD Display allows remote indication of select Dwyer Wall Mount Transmitters for validation or certification purposes

A-449A, Remote LCD Display with buttons allows remote indication and calibration of select Dwyer Wall Mount Transmitters for validation and certification purposes

The Series CDTA Communicating Carbon Dioxide Detector measures CO₂, humidity, temperature, temperature set point, and override.

SPECIFICATIONS
Sensor (CO₂): Single-beam, dual-wavelength NDIR;
Humidity: Capacitive polymer;
Temperature: 10KΩ thermistor.
Range:
CO₂: 0 to 2000 or 5000 PPM CO₂ (depending on model);
Humidity: 0 to 100% RH;
Temperature: 32 to 122°F (0 to 50°C).
Accuracy:
CO₂: ±40 ppm ±3% of reading;
RH: ±2% (10 to 90% RH);
Temperature: ±1°C @ 25°C.
Temperature Dependence (CO₂): ±8 ppm / °C at 1100 ppm.
Non-Linearity (CO₂): 16 ppm.
Pressure Dependence (CO₂): 0.13% of reading per mm of Hg.
Response Time (CO₂): 2 minutes for 99% step change.
Temperature Limits:
32 to 122°F (0 to 50°C).
Humidity Limits:
10 to 95% RH (non-condensing).
Power Requirements:
10 to 42 VDC / 10 to 30 VAC.
Power Consumption:
Average: 0.5 watts;
Peak: 1.2 watts.
Output:
2-wire RS-485, Modbus® RTU or BACnet MS/TP communication protocol.
Weight:
4.4 oz (125 g).
Agency Approvals:
BTL, CE, RoHS.

CALL TO ORDER  |  800-876-0036
### Series CDTR Carbon Dioxide/RH/Temperature Transmitter

NDIR CO₂ Sensor; Universal CO₂/RH Outputs, Optional Relay

**Specifications**

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**Carbon Dioxide (CO₂)**

- **Range:** 0 to 2000 ppm CO₂
- **Accuracy:** ±40 ppm + 3% of reading
- **Temperature Dependence:** ±8 ppm / °C at 1100 ppm
- **Non-Linearity:** 0.13% of reading per mm of Hg
- **Response Time:** 2 minutes for 99% step change
- **Humidity Limits:** 10 to 95% RH (non-condensing)
- **Power Requirements:** 16 to 35 VDC / 19 to 26 VAC
- **Voltage:** 0 to 5 VDC or 0 to 10 VDC (min 500 Ω); Relay: SPST NO 2A @ 30 VDC
- **Weight:** 5.6 oz (158.8 g)
- **Agency Approvals:** CE

**CO₂ Output**

- **Type:** 4 to 20 mA / 0 to (5 or 10) VDC
- **Resistance:** 20 KΩ

**Humidity (RH)**

- **Range:** 0 to 2000 ppm CO₂
- **Accuracy:** ±40 ppm + 3% of reading
- **Temperature Dependence:** ±8 ppm / °C at 1100 ppm
- **Non-Linearity:** 0.13% of reading per mm of Hg
- **Response Time:** 2 minutes for 99% step change

**Temperature**

- **Range:** 32 to 122°F (0 to 50°C)
- **Accuracy:** ±0.13°F (depending on model)
- **Power Consumption:** Average: 2 watts; Peak: 3.75 watts
- **Options:**
  - LCD display (wall only)
  - Factory Calibration Certificate
  - Relay
  - NBC

**Options**

- **CO₂ Gas Cylinder:**
  - Calibration Gas Kit includes a 99.99% Nitrogen gas cylinder for calibrating the zero point and a 200 PPM CO₂/2000 PPM CO₂ gas cylinder for calibrating the span point on Dwyer’s gas sensing transmitters

**Configuration**

- **CDTR-2**
- **Configuration:** A = None
- **Temperature Output:** B = 10 KΩ NTC thermistor type III
- **CO₂ Output:** C = 10 KΩ NTC thermistor type II
- **RH Output:** D = 3 KΩ NTC thermistor
- **Power Consumption:** E = P1000 0 RTD
- **Options:** F = P1000 0 RTD
- **Duct Mount:** G = 20 KΩ NTC thermistor

---

**ACCESORIES**

- **A-449:** Remote LCD Display allows remote indication of select Dwyer Wall Mount Transmitters for validation or certification purposes
- **A-449A:** Remote LCD Display with buttons, used when ordering the +"NBC" option, allows remote indication and calibration of Dwyer Wall Mount Transmitters for validation and certification purposes

---

**Series CDTR Carbon Dioxide, Relative Humidity and Temperature Transmitters**

- Reduce the number of sensors mounted on a wall or in a duct. By combining CO₂, RH, and temperature in one device, system integrators are able to lower installation time of mounting multiple housings, while lowering material cost at the same time. Even with the three sensors combined into a single unit, replacement cost is not increased due to the pluggable nature of the humidity sensor, which allows it or the temperature to be replaced at a fraction of the cost of a new CO₂ transmitter.

Like our popular Series CD Carbon Dioxide Transmitter, a single-beam dual-wavelength non-dispersive infrared (NDIR) sensor is used to automatically correct the measurement in both occupied* and unoccupied buildings against light source aging effects. The single-beam dual-wavelength sensor technology provides a higher level of accuracy compared to Automatic Baseline Correction methods which can unintentionally shift the calibration based on CO₂ levels and barometric pressure conditions. In order to achieve the best possible accuracy, the Series CDTR also includes digital barometric pressure adjustment and the ability to field-calibrate the sensor.

Universal outputs for both carbon dioxide and relative humidity allow users to select the transmitter output to be 4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC to work with virtually any building management controller. Additionally, passive thermistor or RTD sensor can be ordered for a temperature output. An optional relay for the carbon dioxide measurement can be used to control exhaust fans, open actuated windows or dampers, or signal a light or horn.

For applications that require visual indication, the wall mount configurations of the Series CDTR can be ordered with an integral LCD display. When ordering a duct mount configuration or a wall mount configuration without the display, the Model A-449 or A-449A remote LCD display can plug into the miniature connector port on the transmitter. The display can be configured to display temperature only, relative humidity only, CO₂ only, CO₂ and humidity, or CO₂ and temperature. Push buttons are standard on all configurations of the transmitters for access to the menu structure, but wall mount configurations can be ordered without the buttons. To prevent tampering, the action of the buttons can be locked out using an internal jumper selection. Menu items that can be accessed via the push buttons include: engineering units, relay output set points, display configuration, transmitter output scaling, ambient barometric pressure, and field calibration of the transmitter.

*For buildings occupied 24 hours per day, it is recommended that calibration be verified every 6 to 12 months depending on application.
**Series DFMT Digital Paddlewheel Flow Transmitter**

**Flow and Total Indication, Easy to Read LCD Display, 4 to 20 mA or Pulse Output**

The Series DFMT Digital Paddlewheel Flow Transmitter provides instantaneous, as well as totalizing flow monitoring, making it ideal for commercial and industrial systems. The large backlit LCD display makes navigating through the menu structure simple. The Series DFMT uses high accuracy paddlewheel technology, offers a user selectable 4 to 20 mA or pulse output, and has a corrosion resistant PVDF sensor giving it a long operation life. Users can reset the totalizer at any time and set a security password protecting the setting from unauthorized changes.

**SPECIFICATIONS**

- **Service:** Compatible clean liquids.
- **Range:** See model chart.
- **Wetted Materials:** Sensor and Impeller: PVDF; Shaft: Ceramic; O-Rings: Fluoroelastomer.
- **Accuracy:** ±1.5% FS.
- **Repeatability:** ±0.5% FS.
- **Output:**
  - Analog: 4 to 20 mA (750 Ω max. loop resistance);
  - Pulse: NPN square wave output; Frequency: 0 to 2 kHz (adjustable); Pulse width: 0 to 1000 ms (adjustable).
- **Electrical Connections:** Removable screw terminal.
- **Temperature Limits:**
  - Process: -4 to 194°F (-20 to 90°C);
  - Ambient: -4 to 149°F (-20 to 65°C).
- **Pressure Limit:** 145 psi (1.0 MPa).
- **Power Requirements:** 12 to 24 VDC.
- **Power Consumption:** 2 W.
- **Display:** 2.38 x 1.25" (60.33 x 31.75 mm) LCD.
- **Totalizing Display Maximum:** 9,999,999,999.
- **Process Connection:** See model chart.
- **Enclosure Rating:** IP65.
- **Enclosure Material:** ABS plastic.
- **Weight:** See model chart.

**Model | Range GPM (m³/h) | Connection | Weight lb (kg)**
--- | --- | --- | ---
DFMT-10A | 0.44 to 7.93 (0.1 to 1.8) | 3/8" NPT | 1.06 (0.48)
DFMT-15A | 0.88 to 17.61 (0.2 to 4) | 1/2" NPT | 1.10 (0.5)
DFMT-20A | 1.32 to 26.42 (0.3 to 6) | 3/4" NPT | 1.15 (0.52)
DFMT-25A | 2.20 to 52.83 (0.5 to 12) | 1" NPT | 1.23 (0.56)
DFMT-40A | 6.61 to 105.67 (1.5 to 24) | 1-1/2" NPT | 1.46 (0.66)
DFMT-50A | 8.81 to 176.11 (2 to 40) | 2" NPT | 1.68 (0.76)
The Series DFMT2 Remote Digital Paddlewheel Flow Transmitter is a two piece digital flow transmitter that provides instantaneous, as well as totalizing flow monitoring. The two piece design allows the user to separate the control panel from the application, making it ideal for industrial use in reverse osmosis water purifying systems and any other applications where space is limited. The large backlit display makes navigating through the menu structure simple. The Series DFMT2 uses high accuracy, industry proven paddlewheel technology, offers a user selectable 4 to 20 mA or pulse output, and has a corrosion resistant PVDF sensor giving it a long operation life. Users can reset the totalizer at any time and set a security password protecting the system settings from unauthorized changes.

**SPECIFICATIONS**

**Service:** Compatible clean liquids.

**Range:** See model chart.

**Wetted Materials:**
- Sensor and Impeller: PVDF;
- Shaft: Ceramic;
- O-Rings: Fluoroelastomer;

**Accuracy:** ±1.5% FS.

**Repeatability:** ±0.5% FS.

**Output:**
- Analog: 4 to 20 mA (750 Ω max. loop resistance);
- Pulse: NPN square wave output;
- Frequency: 0 to 2 kHz (adjustable);
- Pulse width: 0 to 1000 ms (adjustable).

**Electrical Connections:** Removable screw terminal.

**Temperature Limits:**
- Process: -4 to 194°F (-20 to 90°C);
- Ambient: -4 to 149°F (-20 to 65°C).

**Pressure Limit:** 145 psi (1.0 MPa).

**Power Requirements:** 12 to 24 VDC.

**Power Consumption:** 2 W.

**Display:** 2.38 x 1.25" (60.33 x 31.75 mm) LCD.

**Totalizing Display Maximum:** 9,999,999,999.

**Process Connection:** See model chart.

**Enclosure Rating:** IP65.

**Enclosure Material:** ABS plastic.

**Weight:** See model chart.
The Series MFS2 Magnetic Inductive Flow Sensor is a compact, lower cost plastic alternative to the Series MFS. 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 longlife cycle and PVDF process connection, makes this series perfect for accurate reversible gauging of volume flow of conductive liquids in closed piping.

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

**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) @ 104°F (40°C); 87 psi (6 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.
- **Agency Approvals**: CE.
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 0.98 to 4.62˝ (24.89 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 guiderail 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 pipe 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 guiderail
- Set of 1.81 to 2.75˝ (46 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

Model UFM-1, Compact Ultrasonic Flowmeter

OPTION

For NIST traceable calibration certificate, use order code NISTCAL-FU.

SPECIFICATIONS

Service: Clean water with <3% by volume of particulate content.
Range: 0.33 to 32.8 ft/s (0.1 to 10 m/s).
Display: Backlit: 3.27˝ H x 0.74˝ W (83.1 mm x 18.8 mm), 2 line x 16 characters.
Accuracy: ±3% of flow reading for > 0.98 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: IP54.
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˝ (24.89 to 117.35 mm).
Applicable Pipe Lining: None.
Pipe Wall Thickness: 0.02 to 0.39˝ (0.5 to 10 mm).
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 the 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 the wall thickness of the pipe when programming an ultrasonic transmitter without cutting services.

The Series ULF is an ultrasonic continuous flow measurement transmitter perfect for maintenance free, non-contact measurement of open channels. This series operates on ultrasonic technology and offers dependable, highly accurate measurements. The ULF features easy programming with a 4 digit LCD screen and a simple menu format. It is perfect for direct installation over flumes and weirs and compensates for virtually all environmental conditions such as vapors, gases, temperature variations, and wind. The weatherproof NEMA 4 body makes this unit ideal for any flow measurement situation.

**FEATURES**
- High accuracy (0.25% of max. range)
- Automatic ambient temperature compensation
- ABS & UV resistant body
- Programmable with standard weir and flume sizes

**SPECIFICATIONS**
- **Service:** Compatible liquids.
- **Wetted Materials:** Polypropylene; Acoustic window: ECTFE.
- **Ranges:**
  - ULF-X1-XXX: 0.82 to 16.4 ft (0.25 to 5 m).
  - ULF-X2-XXX: 1.96 to 49.2 ft (0.6 to 15 m).
- **Accuracy:** 0.25% of max. range (at 20°C).
- **Resolution:** 0.04” (1 mm).
- **Blind Zone:**
  - ULF-X1-XXX: 0.8 ft (0.25 m);
  - ULF-X2-XXX: 1.96 ft (0.6 m).
- **Beam Angle:** 5° @ 3 db point.
- **Temperature Limits:** -40 to 158°F (-40 to 70°C).
- **Temperature Compensation:** Automatic.
- **Pressure Limits:** 13.5 to 30 psi (0.9 to 2 bar).
- **Power Requirement:** 18 to 28 VDC.
- **Output Signal:** 4 to 20 mA.
- **Loop Resistance:** Max. 727 Ω @ 28 VDC.
- **Electrical Connections:** Screw terminal.
- **Conduit Connection:** 1/2” NPT, cable gland (optional).
- **Enclosure:** Plastic enclosure: ABS & UV resistant body.
- **Enclosure Rating:** NEMA 4 (IP65).
- **Mounting Orientation:** Vertical.
- **Fail Safe:** 3 min delay before transmission of an error signal.
- **Memory:** Non-volatile.
- **Display:** 4 digit LCD.
- **Units:** ft, m (optional).
- **Programming:** 4 button.
- **Weight:** 5.78 oz (164 g).

**CALL TO ORDER | 800-876-0036**
The Model RVM Portable Radar Wave Velocity Meter uses Doppler Radar technology to accurately measure surface velocity of open channel flow. The "point-and-shoot" design along with automatic vertical angle compensation provides easy to use operation. Model RVM also has user-adjustable horizontal angle compensation of 5° increments to further reduce measurement error. Flow velocity can be measured bidirectionally with user-selectable directional modes (flows away, towards, or in both directions). Model RVM features a backlit LCD that indicates flow velocity in feet per second or meters per second. Model RVM includes the meter, rechargeable batteries, 12 VDC car charger, and a rugged case.

**FEATURES**
- High accuracy
- Doppler radar technology
- Works with shallow flow depths
- Field rechargeable

**APPLICATIONS**
- Sewer systems
- Water systems
- Rivers
- Streams
- Hydrologic systems

**SPECIFICATIONS:**
- **Service:** Water.
- **Range:** 0.1 to 43 fps (0.3 to 13 m/s).
- **Display:** Single-line, 5-digit, backlit LCD.
- **Accuracy:** ±5%.
- **Power Requirements:** 6.1 to 8 VDC, (6) 1.2 V AA NiMH batteries, installed functional, user replaceable (12 VDC lighter plug power cable included).
- **Power Consumption:** 0.18 A max.
- **Serial Communications:** RS232 (with purchase of A-RVM-CC).
- **Temperature Limits:** -22 to 158°F (-30 to 70°C).
- **Enclosure Rating:** IP55.
- **Humidity Limit:** 90% RH @ 98.6°F (37°C).
- **Enclosure Material:** ABS polycarbonate blend.
- **Angle Compensation:** Vertical: automatic via tilt sensor; Horizontal: adjustable from 0 to 45° in 5° increments for cosine angle error.
- **Weight:** 2.1 lb (907 g).
The Series BTT Temperature Transmitter can be used for the following applications: monitoring the temperature inside air ducts for HVAC, transmitting temperature inside water lines for chillers, or measuring the outside air temperature of any new or existing facility. Mounting configurations include duct, immersion, and outside air. For duct and immersion models, probes can be ordered from 2.5" up to 18" in length. The OSA models can be ordered with an optional radiation shield that allows the sensor to be mounted in direct sunlight.

**SPECIFICATIONS**

**Temperature Sensor:** Pt1000 RTD.

**Range:** -40 to 140°F (-40 to 60°C).

**Temperature Limits:** 32 to 122°F (0 to 50°C).

**Accuracy:**
- Voltage: 0 to 60°C: ±0.5°C; -40 to 0: ±1.0°C;
- Current: -20 to 50°C: ±0.5°C; -40 to -20°C and 50 to 60°C: ±0.75°C.

**Response Time:** 100 msec.

**Wetted Materials:** 304 SS (probe), polycarbonate (housing), neoprene (gasket).

**Process Connection:** 1/2˝ NPT (immersion models only).

**Conduit Connection:** 1/2˝ NPT.

**Probe Lengths:** 2.5 to 18˝ (depending on configuration).

**Power Requirements:** 13 to 36 VDC.

**Output Signal:** 4 to 20 mA or 0 to 10 VDC (depending on model).

**Enclosure Rating:** NEMA 4X (IP66) (immersions models require thermowell).

**Weight:** 5.11 oz, 145 g (duct/immersion); 8.4 oz (238 g) (OSA without radiation shield); 1 lb 7.4 oz (663.4 g) (OSA with radiation shield).

**Agency Approvals:** CE.
Immersion Temperature Sensors
New Integral Mounting Connection, Welded Thermowells

The Series TE-I Immersion Style Temperature Sensors accurately measure water temperature inside 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 page reference below.

Housing Material: Meets UL, 94 V-O polycarbonate plastic.
Thermowell Material: 304 SS.
Weight: 5.3 oz (150.3 g).

<table>
<thead>
<tr>
<th>Example</th>
<th>TE</th>
<th>ITG</th>
<th>A</th>
<th>25</th>
<th>4</th>
<th>4</th>
<th>00</th>
<th>Model TE-ITG-A2544-00 Immersion Probe, 10K Type Ill Thermistor, 2.5˝ probe length, 1/4˝ probe diameter, 4˝ flying leads, with 1/2˝ NPT connection</th>
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<tbody>
<tr>
<td>Series</td>
<td>TE</td>
<td>ITG</td>
<td>A</td>
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<td>4</td>
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<td>Duct and Immersion Building Automation Temperature Sensor</td>
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<tr>
<td>Mounting</td>
<td>Configuration</td>
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<td>ITW</td>
<td>Immersion in General Purpose Housing</td>
<td>Immersion in NEMA 4X Housing</td>
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Thermowells (Welded)

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<th>Model</th>
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<tr>
<td>TE-TNS-N253N-00</td>
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<td>2.5˝</td>
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<td>TE-TNS-N043N-00</td>
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<td>304 SS</td>
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Resistance vs. Temperature Table: See page 280 (Series TE-OND/RND/OSA)
The Series TE-WSS Stainless Steel Wall Plate Temperature Sensor measures the ambient air temperature in classrooms and industrial environments. With large vents in the housing for proper air flow, the sensor accurately measures the ambient temperature in hotel rooms or office buildings. Multiple mounting holes on the wall plate allow for mounting to numerous surfaces.

**SPECIFICATIONS**

**Accuracy:**
- Thermistor temp sensor: ±0.22°C @ 25°C (±0.4°F @ 77°F)
- RTD temp sensor: DIN Class B ±0.3°C @ 0°C (±54°F @ 32°F)

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

**Housing Material:**
- 304 SS wall plate.

**Weight:**
- 2.3 oz (65 g)

### Model Selection

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<thead>
<tr>
<th>Model</th>
<th>Sensor Type</th>
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<tbody>
<tr>
<td>TE-WSS-A</td>
<td>10K Ω Type III Thermistor</td>
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<td>TE-WSS-B</td>
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<td>TE-WSS-C</td>
<td>3K Ω Thermistor</td>
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<td>TE-WSS-D</td>
<td>Pt100 Ω RTD</td>
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<td>TE-WSS-E</td>
<td>Pt1000 Ω RTD</td>
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<td>TE-WSS-F</td>
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### European Model Selection

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<tr>
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<td>10K Ω Type III Thermistor</td>
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<tr>
<td>TE-END-F</td>
<td>20K Ω Thermistor</td>
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</tbody>
</table>

The Series TE-E/N Wall Mount Temperature Sensor provides a low cost temperature input for any building management system. With large vents in the housing for proper air flow, the sensor accurately measures the ambient temperature in hotel rooms or office buildings. Multiple mounting holes on the wall plate allow for mounting to numerous surfaces.

**SPECIFICATIONS**

**Accuracy:**
- Thermistor temp sensor: ±0.22°C @ 25°C (±0.4°F @ 77°F)
- RTD temp sensor: DIN class B ±0.3°C @ 0°C (±54°F @ 32°F)

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

**Housing Material:**
- ABS plastic.

**Weight:**
- 0.3 lb (136 g)

### Model Selection

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<td>TE-NND-B</td>
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<td>TE-NND-C</td>
<td>3K Ω Thermistor</td>
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<td>TE-NND-D</td>
<td>Pt100 Ω RTD</td>
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<tr>
<td>TE-NND-F</td>
<td>20K Ω Thermistor</td>
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### European Model Selection

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<thead>
<tr>
<th>Model</th>
<th>Sensor Type</th>
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<tr>
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<tr>
<td>TE-END-B</td>
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<td>TE-END-C</td>
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<tr>
<td>TE-END-D</td>
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### North American Model Selection

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<tr>
<td>TE-WSS-A</td>
<td>10K Ω Type III Thermistor</td>
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<tr>
<td>TE-WSS-B</td>
<td>10K Ω Type II Thermistor</td>
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<tr>
<td>TE-WSS-C</td>
<td>3K Ω Thermistor</td>
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<tr>
<td>TE-WSS-D</td>
<td>Pt100 Ω RTD</td>
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<tr>
<td>TE-WSS-E</td>
<td>Pt1000 Ω RTD</td>
</tr>
<tr>
<td>TE-WSS-F</td>
<td>20K Ω Thermistor</td>
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</table>
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-D1-A 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.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>Output</th>
<th>Power</th>
<th>Audible Alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>WD3-BP-D1-A</td>
<td>SPST NO SSR</td>
<td>Battery</td>
<td>Yes</td>
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<tr>
<td>WD3-LP 30</td>
<td>DPDT Relay</td>
<td>11 to 27 VAC/DC</td>
<td>Yes</td>
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<tr>
<td>WD3-LP-D2-A</td>
<td>DPST SSR</td>
<td>11 to 27 VAC/DC</td>
<td>No</td>
</tr>
<tr>
<td>A-WD3-BRK</td>
<td>Replacement  Mounting Bracket</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ACCESSORY

A-WD3-BRK, Replacement Mounting Bracket

---

**Water Detector and Sensor Tape**

**Detects Low Levels Of Conductive Liquids**

---

The small and discreet Model WD Water Detector is designed for dependable detection of low levels of conductive liquids. The module features a sturdy and reliable aluminum enclosure and is powered by 24 VAC or 24 to 30 VDC. Water sensing tape attaches to module and if any liquid comes in contact with the tape the resistance is changed and the alarm will be triggered. The tape is hydrophobic so it does not absorb any of the liquid it is detecting which makes for a faster drying time and faster return to service after a water leak.

The sensing tape is 1˝ wide and can be bought in lengths of 5’, 10’, 15’ and 25’. Multiple tapes can be connected together to extend the coverage area which makes it ideal for domestic as well as commercial applications. Features include power and alarm LED’s, alarm test switch, continuous tape integrity self check and extendable tape sensor.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Power Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>WD</td>
<td>Water Module</td>
<td>35 mA maximum</td>
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<tr>
<td>TP05</td>
<td>5’ (1.52 m) Tape</td>
<td>24 VAC, 24 to 30 VDC</td>
</tr>
<tr>
<td>TP10</td>
<td>10’ (3.05 m) Tape</td>
<td>24 VAC, 24 to 30 VDC</td>
</tr>
<tr>
<td>TP15</td>
<td>15’ (4.57 m) Tape</td>
<td>24 VAC, 24 to 30 VDC</td>
</tr>
<tr>
<td>TP25</td>
<td>25’ (7.62 m) Tape</td>
<td>24 VAC, 24 to 30 VDC</td>
</tr>
</tbody>
</table>

---

**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 failsafe 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˝ (3 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).
- **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.

Scan here to watch product video

**ACCESSORIES**

- ULS-ACC-USB, USB Adapter for Calibration
- ULS-ACC-121, 1˝ x 1˝ NPT Reducer Bushing Fitting (Sch. 40), PVC
- ULS-ACC-122, 1˝ x 1˝ NPT Reducer Bushing Fitting (Sch. 80), PVC
- ULS-ACC-221, 2˝ Socket x 1˝ NPT Reducer Bushing Fitting (Sch. 40), PVC
- ULS-ACC-222, 2˝ Socket x 1˝ NPT Reducer Bushing Fitting (Sch. 80), PVC
- ULS-ACC-510, 1˝ NPT Polypropylene Side Mount Bracket

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

**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 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 (IP68).
- **Enclosure Material:** Polycarbonate; Gland: TPE.
- **Mounting Orientation:** Vertical.
- **Memory:** Non-volatile.
- **Failsafe:**
  - 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.

**ULSM-10**

9.8´ (3 m) Measuring Range, Non-Contact Transmitter,
4 SPST Programmable Relays

**ACCESSORIES**

- **ULS-ACC-USB:** USB Adapter for Calibration.
- **ULS-ACC-121:** 1˝ x 1˝ NPT Reducer Bushing Fitting (Sch. 40), PVC.
- **ULS-ACC-122:** 1˝ x 1˝ NPT Reducer Bushing Fitting (Sch. 80), PVC.
- **ULS-ACC-221:** 2˝ Socket x 1˝ NPT Reducer Bushing Fitting (Sch. 40), PVC.
- **ULS-ACC-222:** 2˝ Socket x 1˝ NPT Reducer Bushing Fitting (Sch. 80), PVC.
- **ULS-ACC-510:** 1˝ NPT Polypropylene Side Mount Bracket.

*USB Adapter necessary for calibration. One adapter can program multiple units.
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 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: 0.079˝ (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 (-35 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.
- 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: 2˝ NPT, 2˝ BSP (optional).
- Enclosure Material: Polycarbonate; Gland: TPE.
- Mounting Orientation: Vertical.
- Memory: Non-volatile.
- Failsafe: 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.

**ACCESSORIES**
- ULS-ACC-USB, USB Adapter for Calibration, PVC
- ULS-ACC-131, 3˝ x 2˝ NPT Reducer Bushing Fitting (Sch. 40), PVC
- ULS-ACC-132, 3˝ x 2˝ NPT Reducer Bushing Fitting (Sch. 80), PVC
- ULS-ACC-142, 4˝ x 2˝ NPT Reducer Bushing Fitting (Sch. 80), PVC
- ULS-ACC-231, 3˝ Socket x 2˝ NPT Reducer Bushing Fitting (Sch. 40), PVC
- ULS-ACC-232, 3˝ Socket x 2˝ NPT Reducer Bushing Fitting (Sch. 80), PVC
- ULS-ACC-241, 4˝ Socket x 2˝ NPT Reducer Bushing Fitting (Sch. 40), PVC
- ULS-ACC-242, 4˝ Socket x 2˝ NPT Reducer Bushing Fitting (Sch. 80), PVC
- ULS-ACC-520, 2˝ NPT Polypropylene Side Mount Bracket
The Series DPMP & DPML LCD Digital Panel Meters provide easy viewing on the 3-1/2 or 4-1/2 digit LCD display. The display segments are available in a choice of amber, black, red or green. The meter features user-selectable engineering units, adjustable span and zero and field-selectable decimal point position. The snap-in bezel mount eliminates mounting hardware for quick installation. A 24 VDC power supply is required for the operation of the backlight.

APPLICATIONS
Used to display process values from pressure, humidity, temperature, voltage, current, watt, or power factor transmitters.

### SPECIFICATIONS

**Input:**
- DPMP-4XX(P): 4 to 20 mA, DPMX-5XX(P): 0 to 200 mA, 0 to 5 VDC, or 0 to 10 VDC.
- Input impedance: DPMP-4XX(P): 300Ω nominal; DPMX-5XX(P): 390Ω nominal.
- Accuracy: ±(0.1% FS + 2 count).
- Power Supply: DPMP-4XX(P): Powered by control loop; DPMX-5XX(P): 12 VDC or 24 VDC.
- Backlight Power Supply: 24 VDC @ 35 mA typical.
- Display: DPMP: 3-1/2 digits, 7 segments, 0.45” (11.4 mm) H; DPML: 4-1/2 digits, 7 segments, 0.45” (11.4 mm) H.

**Decimal Points:**
- DPMP: 3-position, user selectable; DPML: 4-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: Snap-in bezel mount.
- Connection: Screw terminals.
- Conversion Rate: 3 per second.
- Warm-Up: 10 minutes typical.
- Weight: 1 oz (28.3 g).
- Agency Approvals: RoHS.

### ACCESSORIES
- DPM-12P, Regulated 120 VAC to 12 VDC Power Supply
- DPM-24P, Regulated 120 VAC to 24 VDC Power Supply

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*Note: For 4-1/2 digit display change P to L
Example: DPML-401*
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 faceplate and the optional NEMA 4X bezel, 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).

**Accessories**

A-BGM-RPM, Remote Programmer Module

---

**Example**

<table>
<thead>
<tr>
<th>Orientation</th>
<th>BGM</th>
<th>N</th>
<th>V</th>
<th>AE</th>
<th>AO</th>
<th>BGM-H00-NVD-AE-AO</th>
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<tbody>
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<td>5 to 12 VDC</td>
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<td></td>
<td></td>
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<td>Tank Level</td>
</tr>
</tbody>
</table>

| Scale Range* |     |   |   |    |    |                      |
|              |     |   |   |    |    | A 0 to 5            |
|              |     |   |   |    |    | A0 to 10            |
|              |     |   |   |    |    | AT 0 to 20          |
|              |     |   |   |    |    | AV 0 to 30          |
|              |     |   |   |    |    | AW 0 to 40         |
|              |     |   |   |    |    | AX 0 to 50          |
|              |     |   |   |    |    | AZ 0 to 75          |
|              |     |   |   |    |    | BA 0 to 100         |

*Note: Contact factory for additional options.
† NEMA 4X option requires A-BGM-RPM for programming.
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%.
- **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, cUL, UL.

<table>
<thead>
<tr>
<th>Model</th>
<th>Case</th>
<th>Set Point</th>
<th>Minimum Set Point</th>
<th>LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS-111050</td>
<td>Solid Core</td>
<td>Adjustable</td>
<td>0.50</td>
<td>Red/Green</td>
</tr>
<tr>
<td>MCS-111001</td>
<td>No Core</td>
<td>Adjustable</td>
<td>0.01</td>
<td>Red/Green</td>
</tr>
<tr>
<td></td>
<td>(Terminal Connection)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**SPECIFICATIONS**
- **Amperage Range:** 0 to 200 A AC.
- **Maximum Switch Rating:**
  - For dry contact models: 0.3 A @ 135 VAC/DC
  - For non-dry contact models: 1 A @ 240 VAC
- **Power Requirements:** None, self-powered.
- **Temperature Limits:** -22 to 158°F (-30 to 70°C).
- **Humidity Limits:** 0 to 95% (non-condensing).
- **Isolation Voltage:** 2000 V.
- **Frequency:** 40 to 400 Hz.
- **Enclosure Rating:** UL, 94 V-O flammability rated ABS plastic housing.
- **Approvals:** CE, cUL, UL.

<table>
<thead>
<tr>
<th>Model</th>
<th>Case</th>
<th>Set Point</th>
<th>Minimum Set Point</th>
<th>LED</th>
<th>Dry Contact Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCS-121050</td>
<td>Solid core</td>
<td>Fixed</td>
<td>0.50</td>
<td>Red</td>
<td>Yes</td>
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<tr>
<td>CCS-111100</td>
<td>Solid core</td>
<td>Adjustable</td>
<td>1.00</td>
<td>Red/Green</td>
<td>No</td>
</tr>
<tr>
<td>CCS-221100</td>
<td>Split core</td>
<td>Fixed</td>
<td>1.00</td>
<td>Red</td>
<td>Yes</td>
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<tr>
<td>CCS-211150</td>
<td>Split core</td>
<td>Adjustable</td>
<td>1.50</td>
<td>Red/Green</td>
<td>No</td>
</tr>
<tr>
<td>CCS-131100</td>
<td>Solid core</td>
<td>Adjustable</td>
<td>1.00</td>
<td>Red/Green</td>
<td>Yes</td>
</tr>
<tr>
<td>CCS-231150</td>
<td>Split core</td>
<td>Adjustable</td>
<td>1.50</td>
<td>Red/Green</td>
<td>Yes</td>
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</tbody>
</table>
The Series APT AC Power Transformers provide isolated step-down to 24 VAC with models offering VA ratings of 40, 50, 75, or 96 VA's. These low-cost transformers are offered in single or dual 1/2˝ NPT threaded hub mounts with 8-1/2˝ 18 AWG wire leads, to meet the installation requirements of a variety of building automation and control panel applications. All models are UL Class 2 listed.

**SPECIFICATIONS**

- **Input Voltage:** See model chart.
- **Input Frequency:** 50/60 Hz.
- **Output Voltage:** 24 VAC.
- **Output VA Rating:** 40, 50, 75, or 96 VA.
- **Mounting:** Slotted foot mount with single, or dual 1/2˝ NPT hub.
- **Current Protection:** See model chart.
- **Electrical Connections:** 8.5˝ (210 mm) 18 AWG leads.
- **Weight:** See model chart.
- **Agency Approvals:** CE, RoHS, cUL, UL.

<table>
<thead>
<tr>
<th>Model</th>
<th>Rating</th>
<th>Input Voltage</th>
<th>Mounting</th>
<th>Current Protection</th>
<th>Wiring</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>APT-40-0SN</td>
<td>40 VA</td>
<td>24 VAC</td>
<td>Foot Mount with Single Hub</td>
<td>Inherent</td>
<td>Diagram B</td>
<td>1.96 lb (0.89 kg)</td>
</tr>
<tr>
<td>APT-40-1SN</td>
<td>40 VA</td>
<td>120 VAC</td>
<td>Foot Mount with Single Hub</td>
<td>Inherent</td>
<td>Diagram A</td>
<td>1.98 lb (0.90 kg)</td>
</tr>
<tr>
<td>APT-40-1DN</td>
<td>40 VA</td>
<td>120 VAC</td>
<td>Foot Mount with Dual Hub</td>
<td>Inherent</td>
<td>Diagram A</td>
<td>2.03 lb (0.92 kg)</td>
</tr>
<tr>
<td>APT-50-0SN</td>
<td>50 VA</td>
<td>120 VAC</td>
<td>Foot Mount with Single Hub</td>
<td>Internal Fuse</td>
<td>Diagram A</td>
<td>2.43 lb (1.09 kg)</td>
</tr>
<tr>
<td>APT-50-1SN</td>
<td>50 VA</td>
<td>120 VAC</td>
<td>Foot Mount with Single Hub</td>
<td>Button Circuit Breaker</td>
<td>Diagram A</td>
<td>2.77 lb (1.26 kg)</td>
</tr>
<tr>
<td>APT-50-1DB</td>
<td>50 VA</td>
<td>120 VAC</td>
<td>Foot Mount with Dual Hub</td>
<td>Button Circuit Breaker</td>
<td>Diagram A</td>
<td>2.77 lb (1.26 kg)</td>
</tr>
<tr>
<td>APT-75-0SN</td>
<td>75 VA</td>
<td>120 VAC</td>
<td>Foot Mount with Single Hub</td>
<td>Button Circuit Breaker</td>
<td>Diagram A</td>
<td>3.53 lb (1.60 kg)</td>
</tr>
<tr>
<td>APT-75-1SN</td>
<td>75 VA</td>
<td>120 VAC</td>
<td>Foot Mount with Dual Hub</td>
<td>Button Circuit Breaker</td>
<td>Diagram A</td>
<td>3.57 lb (1.62 kg)</td>
</tr>
<tr>
<td>APT-100-0SN</td>
<td>96 VA</td>
<td>120 VAC</td>
<td>Foot Mount with Single Hub</td>
<td>Button Circuit Breaker</td>
<td>Diagram A</td>
<td>3.97 lb (1.80 kg)</td>
</tr>
<tr>
<td>APT-100-1SN</td>
<td>96 VA</td>
<td>120 VAC</td>
<td>Foot Mount with Dual Hub</td>
<td>Button Circuit Breaker</td>
<td>Diagram A</td>
<td>4.01 lb (1.82 kg)</td>
</tr>
</tbody>
</table>

**Diagram A**

```
WHITE  BROWN
120VAC
     24VAC
```

**Diagram B**

```
RED  BROWN
     24VAC
```

**Model**

- **APT-40-0SN**
- **APT-40-1SN**
- **APT-40-1DN**
- **APT-50-1SN**
- **APT-50-1DB**
- **APT-75-1SN**
- **APT-75-1DB**
- **APT-100-1SN**
- **APT-100-1DB**

**Wiring Diagrams**

- **Diagram A**
- **Diagram B**
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

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

### ACCESSORIES

- Model: WTDL-RX, Wireless transceiver, USB cable, software CD, software manual, A/C adapter
- TLH-5903, Replacement Battery

### Windows® and Windows Vista® are registered trademarks of Microsoft Corporation
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 sensor 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 logger 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(-HA).

**Sampling Mode:** Continuous recording.

**Sampling Rate:** Selectable from 10 s to 12 hrs.

**Transmission Rate:** Selectable from 1 min to 24 hrs.

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

**Power Requirements:** 3.7 V lithium ion battery, installed functional, factory replaceable (cable for charging included).

**Alarms:** Programmable high/low.

**Interface:** Wi-Fi connection.

**Probe Length:**
- DW-WIFI-TP: 11.8˝ (30 cm);
- DW-WIFI-TC: 59˝ (150 cm).

**Weight:** 7.2 oz (204 g).

**Agency Approvals:** CE, RoHS.

<table>
<thead>
<tr>
<th>Model</th>
<th>Input</th>
<th>Range</th>
<th>Accuracy (typ.)</th>
<th>Display Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>DW-WIFI-T</td>
<td>Internal Temperature</td>
<td>-4 to 140°F (-20 to 60°C)</td>
<td>±1.0°F (±0.5°C) @ 14 to 122°F (-10 to 50°C)</td>
<td>0.1°F (0.1°C)</td>
</tr>
<tr>
<td>DW-WIFI-TH</td>
<td>Internal Temperature/Humidity</td>
<td>-4 to 140°F (-20 to 60°C), 0 to 100% RH</td>
<td>±0.6°F (±0.3°C) @ 41 to 140°F (5 to 60°C) ±2.5% RH @ 20 to 80% RH</td>
<td>0.5°F (0.5°C)</td>
</tr>
<tr>
<td>DW-WIFI-TP</td>
<td>Remote Temperature Probe</td>
<td>-454 to 2372°F (-270 to 1300°C) (probe dependent)</td>
<td>±1.2°F (±0.6°C) @ 14 to 158°F (-10 to 70°C) ±3.0°F (1.2°C)</td>
<td>1.0% RH</td>
</tr>
<tr>
<td>DW-WIFI-TC</td>
<td>Remote Thermocouple</td>
<td>-40 to 257°F (-40 to 125°C)</td>
<td>±0.2°F (±0.1°C) @ 14 to 140°F (-10 to 60°C) ±0.2°F (±0.01°C)</td>
<td>0.1°F (0.01°C)</td>
</tr>
<tr>
<td>DW-WIFI-T-HA</td>
<td>Internal Temperature</td>
<td>-4 to 140°F (-20 to 60°C)</td>
<td>±0.4°F (±0.2°C) @ 41 to 140°F (5 to 60°C) ±2.5% RH @ 10 to 90% RH</td>
<td>0.5°F (0.5°C)</td>
</tr>
<tr>
<td>DW-WIFI-TH-HA</td>
<td>Internal Temperature/Humidity</td>
<td>-4 to 140°F (-20 to 60°C), 0 to 100% RH</td>
<td>±0.2°F (±0.1°C) @ 14 to 158°F (-10 to 70°C) ±0.2°F (±0.01°C)</td>
<td>1.0% RH</td>
</tr>
<tr>
<td>DW-WIFI-TP-HA</td>
<td>Remote Temperature Probe</td>
<td>-40 to 257°F (-40 to 125°C)</td>
<td>±0.2°F (±0.1°C) @ 14 to 158°F (-10 to 70°C) ±0.2°F (±0.01°C)</td>
<td>0.01°F (0.01°C)</td>
</tr>
</tbody>
</table>
**Mobile Meter™ Test Instrument App**

Works With Most Android® Phones/Tablets; Wireless Probes

The Mobile Meter™ Test Instrument Mobile App converts Android® based phones and tablets into a multimeter test instrument. The app is available for download in the Google® app market or by scanning the QR code below. Wireless probes connect to the phone or tablet using our mobile gateway, Model UHH-BTG, that utilizes wireless technology from Bluetooth SIG Inc. Parameters from multiple probes can be displayed simultaneously, or a single probe’s parameters can be displayed as a meter or analog gauge. Measurements from a single probe can be saved to log files for future use. Log files can be viewed directly on the phone or emailed to another device or computer. The Mobile Meter™ Mobile App does the conversions for engineering units and calculations for flow or air velocity conversions.

**SPECIFICATIONS**

- **Operating Systems:** Android® firmware version 3.X or later.
- **Wireless Protocol:** Conforms to Bluetooth SIG, Inc. low energy wireless technology.
- **Wireless Distance:** 50’ (15 m) or greater.
- **Response Time:** 1 s.

**The Mobile Meter™ Test Instrument Mobile App**

Converts UHH Probe Wireless Signals to Bluetooth SIG, Inc. Wireless Technology

The Model UHH-BTG Wireless Mobile Gateway transforms the wireless signal from any Dwyer Instruments, Inc. universal handheld probe or module into a Bluetooth SIG, Inc. Wireless Technology. Using this gateway, any iOS® Firmware version 5.X or later or Android® Firmware 3.X or later smartphone or tablet can become the base instrument for measuring or logging. Once the gateway is paired with a phone or tablet, our Mobile Meter™ app or any other Dwyer Instruments, Inc. approved apps can detect available probes or modules. Wireless gateways can detect probes or modules that are 50 feet away or even greater distances depending on the environment. The wireless signal from the gateway to the mobile device adds at least another 25 feet of sensing distance. Model UHH-BTG is compact in size and clips on to most standard belts. The rechargeable battery can be charged using the same mini-USB cable and charger as the probes or modules. LED lights indicate the battery status and whether the gateway is communicating properly.

**Model UHH-BTG, Wireless Mobile Gateway**

- **UHH-ICHRG, Dual USB Charger (Not Included)**

Converts these wireless probes for use with our Mobile Meter™ app.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP2</td>
<td>Wireless Thermo-Hygrometer Probe</td>
</tr>
<tr>
<td>RP2</td>
<td>Wireless Thermo-Anemometer Probe</td>
</tr>
<tr>
<td>VP2</td>
<td>Wireless 100 mm Vane Thermo-Anemometer Probe</td>
</tr>
<tr>
<td>WDPM-002</td>
<td>Wireless Differential Pressure Probe ±2 in w.c.</td>
</tr>
<tr>
<td>WDPM-005</td>
<td>Wireless Differential Pressure Probe ±5 in w.c.</td>
</tr>
<tr>
<td>WDPM-010</td>
<td>Wireless Differential Pressure Probe ±10 in w.c.</td>
</tr>
<tr>
<td>WDPM-020</td>
<td>Wireless Differential Pressure Probe ±20 in w.c.</td>
</tr>
<tr>
<td>WDPM-030</td>
<td>Wireless Differential Pressure Probe ±30 in w.c.</td>
</tr>
<tr>
<td>WDPM-100</td>
<td>Wireless Differential Pressure Probe ±100 in w.c.</td>
</tr>
<tr>
<td>WDPM-200</td>
<td>Wireless Differential Pressure Probe ±200 in w.c.</td>
</tr>
<tr>
<td>WDPM-350</td>
<td>Wireless Differential Pressure Probe ±350 in w.c.</td>
</tr>
</tbody>
</table>

**Note:** See Wireless Probe catalog page for full specifications.

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**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 (-29 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°F @ 25°C.
- **Response Time:** 1.5 s.
- **Probe Length:** 8˝ (203 mm) insertion.
- **Weight:** 12.8 oz (362 g).
- **Agency Approvals:** CE, RoHS.

**Model RP1, Wired Thermo-Hygrometer Probe for the Model UHH**

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**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 (362 g).
- **Agency Approvals:** CE, RoHS.

**Model AP1, Wired Thermo-Anemometer Probe for the Model UHH**

---

**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.

**Model VP1, Wired 100 mm Vane Thermo-Anemometer Probe for the Model UHH**
**Model RP2, Wireless Thermo-Hygrometer Probe for use with the Model UHH handheld meter and the Mobile Meter™ test instrument mobile app.**

**Model AP2, Wireless Thermo-Anemometer Probe for use with the Model UHH handheld meter and the Mobile Meter™ test instrument mobile app.**

**Model VP2, Wireless 100 mm Vane Thermo-Anemometer Probe for use with the Model UHH handheld meter and the Mobile Meter™ test instrument mobile app.**

---

**Thermo-Hygrometer Probe**

**Wireless, Measures Humidity, Temperature, Dew Point, & Wet Bulb Temperatures**

**SPECIFICATIONS**

| Service: | Clean air. |
| Temperature Limits: | Process: -4 to 140°F (-20 to 60°C); Ambient: 5 to 125°F (-15 to 51°C); Battery Charging: 32 to 113°F (0 to 45°C). |
| Range: | RH: 0 to 100% (non-condensing); Temperature: -22 to 140°F (-30 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°C @ 25°C). |
| Probe Length: | 8˝ (203 mm) insertion. |
| Response Time: | 1.5 s. |
| Battery Charging Limits: | 32 to 113°F (0 to 45°C). (Wireless Only). |
| Power Requirements: | 3.7 V YT562447 Lithium ion battery, installed functional, user replaceable. (Note: Intended to be operated with power cables less than 3 m in length). |
| Maximum Wireless Distance: | 50´ (15 m). (Wireless Only). |
| Handle Enclosure: | Thermoplastic elastomer over polycarbonate. |
| Supplied With: | Wrist strap. |
| Weight: | 11.2 oz (331.22 g). |
| Agency Approvals: | CE (not while charging), RoHS, FCC compliant. |

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**Thermo-Anemometer Probe**

**Wireless, 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. |
| Battery Charging Limits: | 32 to 113°F (0 to 45°C). (Wireless Only). |
| Power Requirements: | 3.7 V YT562447 Lithium ion battery, installed functional, user replaceable. (Note: Intended to be operated with power cables less than 3 m in length). |
| 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. |

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**100 mm Vane Thermo-Anemometer Probe**

**Wireless, 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. |
| Battery Charging Limits: | 32 to 113°F (0 to 45°C). (Wireless Only). |
| Power Requirements: | 3.7 V YT562447 Lithium ion battery, installed functional, user replaceable. (Note: Intended to be operated with power cables less than 3 m in length). |
| 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**

**Wireless, Measures Humidity, Temperature, Dew Point, & Wet Bulb Temperatures**

**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. |
| Battery Charging Limits: | 32 to 113°F (0 to 45°C). (Wireless Only). |
| Power Requirements: | 3.7 V YT562447 Lithium ion battery, installed functional, user replaceable. (Note: Intended to be operated with power cables less than 3 m in length). |
| Maximum Wireless Distance: | 50´ (15 m). (Wireless Only). |
| Handle Enclosure: | Thermoplastic elastomer over polycarbonate. |
| Supplied With: | Wrist strap. |
| Weight: | 11.2 oz (331.22 g). |
| Agency Approvals: | CE (not while charging), RoHS, FCC compliant. |
Differential Pressure Modules
Wireless, Measures Differential Pressure, Air 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 YT562447 lithium ion battery, installed functionally, user replaceable.
- **Wireless Distance:** At least 50´ (15 m).
- **Connections:** Two barbed 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.

### Differential Pressure Modules

**Series WDPM**

**Model** | **Range** | **Maximum Pressure**
--- | --- | ---
WDPM-002 | ±2 in w.c. | 10 psi
WDPM-005 | ±5 in w.c. | 10 psi
WDPM-010 | ±10 in w.c. | 10 psi
WDPM-020 | ±20 in w.c. | 20 psi
WDPM-030 | ±30 in w.c. | 20 psi
WDPM-100 | ±100 in w.c. | 15 psi
WDPM-200 | ±200 in w.c. | 45 psi
WDPM-350 | ±350 in w.c. | 45 psi

### Universal Handheld Accessories

**Series UHH-ACC**

- UHH-STRAP, UHH hand strap
- UHH-ICHRG, UHH dual USB charger with international adapters (1.0 A) (Not CE approved)
- UHH-CBL, USB cable
- UHH-C1, Soft carrying case
- UHH-SD, 2 GB SD card
- KF-CC-304, Dual USB CHARGER with North American adapter (1.5 A)
- UHH-C2, Heavy duty hard case with pre-cut foam inserts for additional sensors
The Model RLD2 is the most dependable negative corona refrigerant leak detector. The responsive elements have a wide sensitivity range. This unit utilizes a five level alarm system to detect excessive refrigerant in areas where there could be a potential leak. The dual-color LED indicator lights provide visual indication of the refrigerant gas concentration, various audio pitches facilitate detection, and its portable design is convenient for the user. The refrigerant leak detector can be utilized in residential and commercial refrigeration systems, automotive, air conditioning, and quality control testing environments.

**SPECIFICATIONS**
- **Sensor Type:** Negative corona.
- **Sensitivity:** 3g/yr.
- **Sensitivity Levels:** 5.
- **Response Time:** Less than 1 s (pump driven).
- **Temperature Limits:** 32 to 125°F (0 to 52°C).
- **Power Requirements:** (2) 1.5 V AA alkaline batteries, included, user replaceable.
- **Battery Life:** 30 hours.
- **Warm Up Time:** 5 s.
- **Pre-programmed gases:** Detects gases that contain chlorine, fluorine, bromine, ethylene oxide and SF-6, as well as: CFCs: R11, R12, R500, R503, etc.; HCFCs:R22,R123,R124,R502, etc.; HFCs:R134A,R404A,R125, etc.; Mixtures such as: AZ-50, HP62, MP39 etc.
- **Alarm Setting:** Audio: Variable tick; Visual: Flashing LED.
- **Probe Length:** 12˝ (30.48 cm).
- **Duty Cycle:** Continuous.
- **Weight:** 5.2 oz (147.4 g).
- **Agency Approvals:** CE, RoHS.

The Model DDM-01 Laser Distance Meter offers quick measurement of distances up to 229.7 feet (70 meters) with the click 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.

**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).
- **Laser Type:** 650 nm, class 2, <1 mW.
- **Beam Size:** 25 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) 1.5 V AA carbon zinc batteries, included, user replaceable.
- **Weight:** 21.6 oz (612.35 g).
- **Agency Approvals:** CE, RoHS.
Model LUX-01 Digital Light Meter is able to measure the intensity of fluorescent, metal halide, high-pressure sodium, and incandescent light sources. This meter shows readings on a 3-1/2 digit LCD and can record measurement up to 200,000 lux and up to 20,000 foot-candles. The silicon photodiode sensor allows for use in high temperatures and has a strong angular correction for a highly accurate reading. Model LUX-01 also includes a protective cap for the sensor, ensuring that the meter is always zero calibrated. Applications include HVAC, medical facilities, photography, and cinematography.

**SPECIFICATIONS:**
- **Range:** Up to 200,000 lux; up to 20,000 foot-candles.
- **Accuracy:** ±3% of reading (Calibrated to standard incandescent lamp 4681°F (2583°C)) or ±6% other visible light source.
- **Display:** 3-1/2 digit LCD.
- **Resolution:** 1.0 lux; 1.0 foot-candle.
- **Sensor:** Silicon photodiode and filter.
- **Angle Deviation from Cosine Characteristics:** 10° ±0.5%, 30° ±2%, 50° ±3%, 60° ±6%, 80° ±25%.
- **Temperature Limits:** Operating: 14 to 122°F (-10 to 50°C); Storage: 14 to 122°F (-10 to 50°C).
- **Power Requirements:** 9 V carbon zinc battery, included, user replaceable.
- **Battery Life:** 200 hours.
- **Weight:** 22.4 oz (635 g).
- **Agency Approvals:** CE, RoHS.

Model SLR-01 Handheld Solar Power Meter measures up to 1999 W/m², Auto-Ranging.

**SPECIFICATIONS**
- **Range:** 0 to 1999 W/m²; 0 to 634 BTU/(ft²*h).
- **Accuracy:** ±10 W/m²; ±3 BTU/(ft²*h) or ±5%, whichever is greater; Additional temperature induced error above 77°F (25°C) ±0.38 W/m²; ±0.12 BTU/(ft²*h) per °C.
- **Display:** 3-1/2 digit LCD.
- **Resolution:** 0.1 W/m²; 0.1 BTU/(ft²*h).
- **Temperature Limits:** Operating: 41 to 104°F (5 to 40°C); Storage: 14 to 140°F (-10 to 60°C).
- **Power Requirements:** 9 V carbon zinc battery, included, user replaceable.
- **Battery Life:** Approx. 100 hr.
- **Weight:** 20 oz (567 g).
- **Agency Approvals:** CE, RoHS.
The Series TAC3 Pocket Tachometer measures and displays rotational speed of saw blades, grinders, engines, motors, and conveyor belts. The unique ergonomic design provides direct line-of-sight viewing of display and target. Easy-to-read 5-digit alphanumeric dual LCD also displays on-target, continuous measurement, and lower battery indication. Measurements of up to 999,999 can be viewed with the on-screen multiplier. The Model TAC3 is a 32 function tachometer/ratemeter, totalizer/counter, and timer. It is programmable to read in English or Metric units. An input socket accepts remote sensing devices and an output socket allows for pulse output to external indicating devices. The Series TAC3 Pocket 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.

**SPECIFICATIONS**

**Model TAC3**

- **Speed Ranges**
  - Linear Menu: 10 cm
  - Linear Menu: 12 cm
  - Linear Menu: 10 cm
  - Linear Menu: 12 cm
  - Linear Menu: 10 cm
  - Linear Menu: 12 cm
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  - Linear Menu: 10 cm
  - Linear Menu: 12 cm
  - Linear Menu: 10 cm

**Model TAC-L**

- **Display:** Backlit LCD; 5 digits, 7 segments, 0.7” (1.8 cm) H
- **Range:** Non-contact (RPM): 2.5 to 999,999 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 9999 RPM); Contact (RPM): 0.1 RPM (0.5 to 999.9 RPM), 1 RPM (1000 to 19999 RPM); Surface Speed (m/min): 0.01 m/min (0.05 to 999.9 m/min), 1 m/min (100.0 to 1999.9 m/min).

**CONTACT**

- **Accuracy:** ±0.05% + 1 digit.
- **Power Requirements:** 4.5 V AA alkaline batteries, included, user replaceable.
- **Weight:** 1.37 lb (620 g).
- **Agency Approvals:** CE, RoHS.
Low Pressure Calibration Pump

High Resolution for Calibrating Low Pressure Gages and Transmitters

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

FEATURES

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

Model LPCP-2, Low Pressure Calibration Pump

SPECIFICATIONS

Media: Air.
Output Ranges: 5.8 psi (0.4 bar) vacuum to 5.8 psi (0.4 bar) positive pressure.
Pressure Resolution: 0.01 Pa; 0.0001 mbar.
Process Connection: M20*1.5 or 1/4˝ NPT.
Gage Connection: M20*1.5 or 1/4˝ NPT.
Material:
- Rami/adapters: 316 SS;
- Body: Steel/aluminum;
- Seals: Buna-N.
Weight: 2.21 lb (1.0 kg).

ACCESSORY
A-113A, Fitting Kit

Fitting Kit Includes:
- (1) 1/4˝ NPT to 1/8˝ quick connect fitting
- (1) 1/4˝ NPT to hose barb fitting
- (1) hose barb fitting to 1/8˝ quick connect fitting
- (2) 19.7˝ (0.5 m) length of blue 1/8˝ O.D. tubing
- (2) 12˝ (0.3 m) length of clear 1/4˝ O.D. tubing

The Series BCHP Calibration Test Pump is able to generate pressure and vacuum for adjusting or calibrating pressure gauges, transmitters, or switches. The pump is hand operated and has a pneumatic pressure range of -28 in Hg to 870 psi (-0.95 bar to 60 bar). Dual pressure ports allow two instruments to be connected to the pump without additional fittings. The Series BCHP can be used in laboratories and production areas. The fine adjustment valve on this pump ensures precise measurements.

SPECIFICATIONS

Media: Air.
Output Ranges: -28 in Hg to 870 psi (-0.95 to 60 bar).
Process Connections: 1/4˝ female BSP
Gauge Connection: 1/2˝ female BSP.
Material:
- Anodized aluminum, brass, and ABS.
Weight: 8.4 lb (3.8 kg).

ACCESSORIES
A-BCHP-CASE, Case for BCHP-1
A-BCHP-NPT, 1/4˝ BSP to 1/8˝ NPT, 1/4˝ NPT, 3/8˝ NPT and 1/2˝ NPT Converter Set for Test Connection
A-BCHP-VAT, Fine Volume Adjustment Tool

The Series BCHP Calibration Test Pump is able to generate pressure and vacuum for adjusting or calibrating pressure gauges, transmitters, or switches. The pump is hand operated and has a pneumatic pressure range of -28 in Hg to 870 psi (-0.95 bar to 60 bar). Dual pressure ports allow two instruments to be connected to the pump without additional fittings. The Series BCHP can be used in laboratories and production areas. The fine adjustment valve on this pump ensures precise measurements.

SPECIFICATIONS

Media: Air.
Output Ranges: -28 in Hg to 870 psi (-0.95 to 60 bar).
Process Connections: 1/4˝ female BSP
Gauge Connection: 1/2˝ female BSP.
Material:
- Anodized aluminum, brass, and ABS.
Weight: 8.4 lb (3.8 kg).

ACCESSORIES
A-BCHP-CASE, Case for BCHP-1
A-BCHP-NPT, 1/4˝ BSP to 1/8˝ NPT, 1/4˝ NPT, 3/8˝ NPT and 1/2˝ NPT Converter Set for Test Connection
A-BCHP-VAT, Fine Volume Adjustment Tool
2-Piece NPT Stainless Steel Ball Valve

Full Port, Vented Ball, Electric or Pneumatic Actuators

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 train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, 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

<table>
<thead>
<tr>
<th>VALVE</th>
<th>SERVICE: Compatible liquids and gases.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>2-piece.</td>
</tr>
<tr>
<td>Line Sizes:</td>
<td>1/2 to 3&quot;.</td>
</tr>
<tr>
<td>End Connections:</td>
<td>Female NPT.</td>
</tr>
<tr>
<td>Pressure Limits:</td>
<td>20&quot; Hg to 1000 psi (-0.7 to 69 bar).</td>
</tr>
<tr>
<td>Wetted Materials:</td>
<td>Body and Ball: 316 SS (CF8M); Stem: 316SS; Seal: PTFE; Washer: 316 SS; Stem Nut: Locking Device; Gland Ring: 304SS; Handle Sleeve: PVC.</td>
</tr>
<tr>
<td>Other Materials:</td>
<td>O-ring: Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut: Locking Device; Gland Ring: 304SS; Handle Sleeve: PVC.</td>
</tr>
</tbody>
</table>

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 DA05: 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; 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: 5 s; TI04 and MI04: 10 s; TI05 and MI06: 15 s.

Duty Rating: Two-Position: TI01-TI06: 25%; Modulating: MI01-MI06: 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.
## Popular Models

<table>
<thead>
<tr>
<th>Size</th>
<th>Cv (gal/min)</th>
<th>Hand Operated Pneumatic Model</th>
<th>Double Acting Pneumatic Model</th>
<th>Spring Return Pneumatic Model</th>
<th>NEMA 4X Two-Position Electric Actuator</th>
<th>NEMA 4X Modulating Electric Actuator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>36.64</td>
<td>WE01-CHD00</td>
<td>WE01-SDA01</td>
<td>WE01-CSD02</td>
<td>WE01-CTD01-A</td>
<td>WE01-CMD01-A</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>67.69</td>
<td>WE01-DHD00</td>
<td>WE01-TDA02</td>
<td>WE01-DSR02</td>
<td>WE01-DTD01-A</td>
<td>WE01-DMD01-A</td>
</tr>
<tr>
<td>1&quot;</td>
<td>110.27</td>
<td>WE01-EHD00</td>
<td>WE01-FA02</td>
<td>WE01-FSR03</td>
<td>WE01-ETF01-A</td>
<td>WE01-EMD01-A</td>
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<tr>
<td>1-1/4&quot;</td>
<td>184.73</td>
<td>WE01-FHD00</td>
<td>WE01-GDA03</td>
<td>WE01-GSR04</td>
<td>WE01-FTD01-A</td>
<td>WE01-FMD01-A</td>
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<tr>
<td>2&quot;</td>
<td>256.62</td>
<td>WE01-HHD00</td>
<td>WE01-HDA03</td>
<td>WE01-HSR05</td>
<td>WE01-HTD02-A</td>
<td>WE01-HMD01-A</td>
</tr>
<tr>
<td>2-1/2&quot;</td>
<td>791.57</td>
<td>WE01-ID00</td>
<td>WE01-IDA04</td>
<td>WE01-ISR07</td>
<td>WE01-ITD03-A</td>
<td>WE01-IMD01-A</td>
</tr>
<tr>
<td>3&quot;</td>
<td>1151.95</td>
<td>WE01-JHD00</td>
<td>WE01-JDA05</td>
<td>WE01-JSR07</td>
<td>WE01-JTD03-A</td>
<td>WE01-JMD01-A</td>
</tr>
</tbody>
</table>

### WE01 Hand Operated and Pneumatic Actuator Model Chart

<table>
<thead>
<tr>
<th>Size</th>
<th>Example</th>
<th>WE01-EDA02</th>
<th>A</th>
<th>WE01-EDA02-AAA01</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>A</td>
<td>WE01-CH00</td>
<td>1/2&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>A</td>
<td>WE01-D00</td>
<td>3/4&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>1&quot;</td>
<td>A</td>
<td>WE01-E00</td>
<td>1&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>1-1/4&quot;</td>
<td>A</td>
<td>WE01-F00</td>
<td>1-1/4&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>2&quot;</td>
<td>A</td>
<td>WE01-H00</td>
<td>2&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>2-1/2&quot;</td>
<td>A</td>
<td>WE01-I00</td>
<td>2-1/2&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>3&quot;</td>
<td>A</td>
<td>WE01-J00</td>
<td>3&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
</tbody>
</table>

### WE01 Electric Actuator Model Chart

<table>
<thead>
<tr>
<th>Size and Actuator</th>
<th>Example</th>
<th>WE01-GDA01</th>
<th>A</th>
<th>WE01-GDA01-AAA01</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>A</td>
<td>WE01-CHD00</td>
<td>1/2&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>A</td>
<td>WE01-DHD00</td>
<td>3/4&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>1&quot;</td>
<td>A</td>
<td>WE01-EHD00</td>
<td>1&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>1-1/4&quot;</td>
<td>A</td>
<td>WE01-FHD00</td>
<td>1-1/4&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>2&quot;</td>
<td>A</td>
<td>WE01-HHD00</td>
<td>2&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>2-1/2&quot;</td>
<td>A</td>
<td>WE01-ID00</td>
<td>2-1/2&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
<tr>
<td>3&quot;</td>
<td>A</td>
<td>WE01-JHD00</td>
<td>3&quot; Hand Operated</td>
<td>316 SS 2-Piece</td>
</tr>
</tbody>
</table>

### Valves

- **ACCESSORIES**
  - R2-2120, Air Regulator
  - AFR2-2, Instrument Air Filter Regulator
  - VB-01, Volume Booster

**CALL TO ORDER | 800-876-0036**
### Series WE02

**3-Piece NPT Stainless Steel Ball Valve**

**Full Port, Vented Ball, Electric or Pneumatic Actuators**

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 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 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.

### 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;
  - Gland Ring: 304 SS;
  - Handle Sleeve: PVC.
- **Standard Features:**
  - Manual override, position indicator, and TD models come with two limit switches.

**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 DA05: 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: 20 s;
  - TD03 and MD03: 30 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%.
  - Modulating: MI01-MI05: 75%.
- **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</th>
<th>Cv (gal/min)</th>
<th>Hand Operated Model</th>
<th>Double Acting Pneumatic Model</th>
<th>Spring Return Pneumatic Model</th>
<th>NEMA 4X Two-Position Electric (110 VAC) Model</th>
<th>NEMA 4X Modulating Electric (110 VAC) Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>36.64</td>
<td>WE02-CHD00</td>
<td>WE02-DDA01</td>
<td>WE02-CSD50</td>
<td>WE02-CTD01-A</td>
<td>WE02-CMD01-A</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>67.69</td>
<td>WE02-DHD00</td>
<td>WE02-EDA02</td>
<td>WE02-ESSR03</td>
<td>WE02-ETD01-A</td>
<td>WE02-EMD01-A</td>
</tr>
<tr>
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### WE02 Hand Operated and Pneumatic Actuator Model Chart

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### WE02 Electric Actuator Model Chart

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### Accessories
- R2-2120, Air Regulator
- AFR2-2, Instrument Air Filter Regulator
- VB-01, Volume Booster
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 valves 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.

**FEATURES**

- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring
- Cavity filled valve for sanitary applications

**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: 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: 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; TD02 and MD02: 20 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.
Duty Rating: Two-Position: TI01-TI02: 25%; Modulating: MI01-MI02: 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.
Popular Models

<table>
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<tr>
<th>Size</th>
<th>Cv (gal/min)</th>
<th>Hand Operated Model</th>
<th>Double Acting Pneumatic Model</th>
<th>Spring Return Pneumatic Model</th>
<th>NEMA 4X Two-Position Electric (110 VAC) Model</th>
<th>NEMA 4X Modulating Electric (110 VAC) Model</th>
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</table>

WE03 Hand Operated and Pneumatic Actuator Model Chart

Example | WE03 | EDA02 | A | A 06 | WE03-EDA02-AA06
--------|------|-------|---|------|-------------------
Series  | WE03 | 316 SS 3-Piece Tri-Clamp

**Size and Actuator**

- CHD00: 1/2” Hand Operated
- DHD00: 3/4” Hand Operated
- EHD00: 1” Hand Operated
- GHD00: 1-1/2” Hand Operated
- HD00: 2” Hand Operated
- CDA01: 1/2” Double Acting
- DDA01: 3/4” Double Acting
- EDA02: 1” Double Acting
- GDA02: 1-1/2” Double Acting
- HD02: 2” Double Acting
- CSR02: 1/2” Spring Return
- DSR02: 3/4” Spring Return
- ESR03: 1” Spring Return
- GSR04: 1-1/2” Spring Return
- HSR04: 2” Spring Return

**Solenoid**

- N: No Solenoid
- A: NEMA-4X NAMUR Solenoid

**Solenoid Voltage**

- A: 110 VAC
- B: 220 VAC
- C: 24 VAC
- D: 24 VDC
- E: 12 VDC

**Positioner and Switches**

- 00: None
- 01: 42AD0 Exp Limit Switch
- 02: 49V00 Exp Position Transmitter
- 03: 42AB0-BATEX Limit Switch
- 04: 42AD0-IE EICEX Limit Switch
- 05: VPI-M01 NEMA 4X Limit Switch
- 06: QV-210101 Poly Limit Switch
- 07: VPS and P1 Prox Switch
- 08: 285ER-DS Positioner
- 09: 285ER-DS Smart Positioner

**Options**

- NO: Fail Open Spring Return Actuator

WE03 Electric Actuator Model Chart

Example | WE03 | CMD01 | A | WE03-CMD01-A
--------|------|-------|---|-------------------
Series  | WE03 | 316 SS 3-Piece Tri-Clamp

**Size and Actuator**

- CTD01: 1/2” NEMA 4X Two-Position
- DTD01: 3/4” NEMA 4X Two-Position
- ET01: 1” NEMA 4X Two-Position
- GT01: 1-1/2” NEMA 4X Two-Position
- HTD02: 2” NEMA 4X Two-Position
- CMD01: 1/2” NEMA 4X Modulating
- DMD01: 3/4” NEMA 4X Modulating
- EMD01: 1” NEMA 4X Modulating
- GMD01: 1-1/2” NEMA 4X Modulating
- HMD02: 2” NEMA 4X Modulating
- CTD01: 1/2” Exp Two-Position
- DTD01: 3/4” Exp Two-Position
- ET01: 1” Exp Two-Position
- GT01: 1-1/2” Exp Two-Position
- HT02: 2” Exp Two-Position
- CM01: 1/2” Exp Electric Modulating
- DM01: 3/4” Exp Electric Modulating
- EM02: 1” Exp Electric Modulating
- GM02: 1-1/2” Exp Electric Modulating
- HM02: 2” Exp Electric Modulating

**Actuator Voltage**

- A: 110 VAC
- B: 220 VAC
- C: 24 VAC
- D: 24 VDC

ACCESSORIES

- R2-2120, Air Regulator
- AFR2-2, Instrument Air Filter Regulator
- VB-01, Volume Booster

CALL TO ORDER
**Series WE04**

**2-Piece Flanged Stainless Steel Ball Valve**

150# ANSI Flange, Vented Ball, Electric or Pneumatic Actuators

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 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 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.

**SPECIFICATIONS**

**VALVE**
- **Service:** Compatible liquids and gases.
- **Body:** 2-piece.
- **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: PTFE/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 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 240 VDC (MD models not available in 24 VDC).
- **Power Consumption:** See manual.
- **Cycle Time (per 90°):**
  - TD01: 1 s;
  - MD01: 1 s;
  - TD02 and MD02: 2 s;
  - TD03 and MD03: 3 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 VAC.
- **Power Consumption:** See manual.
- **Cycle Time (per 90°):**
  - TI01 and MI01: 2.5 s;
  - TI02 and MI02: 2 s;
  - TI03 and MI03: 5 s;
  - TI04 and MI04: 10 s;
  - TI05 and MI05: 15 s.
- **Duty Rating:** 2-Position: TI01-TI05: 75%;
  - 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” NPT female.
- **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>Size and Actuator</th>
<th>WE04</th>
<th>GDA03</th>
<th>A</th>
<th>B</th>
<th>05</th>
<th>WE04-GDA03-AB05</th>
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<td>Size</td>
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<tr>
<td>3/4”</td>
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### WE04 Electric Actuator Model Chart

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<th>Size and Actuator</th>
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<th>TD03</th>
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<td>CMD01</td>
<td>1/2” NEMA 4X Modulating</td>
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<td>1/2” Exp Electric Modulating</td>
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<td></td>
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<td>JM105</td>
<td>3” Exp Electric Modulating</td>
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</tbody>
</table>

### Accessories
- R2-2120, Air Regulator
- AFR2-2, Instrument Air Filter Regulator
- VB-01, Volume Booster

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**Distributed by:** M&M Control Service, Inc.  
www.mmcontrol.com/Dwyer.php  
800-876-0036  847-356-0566
3-Way NPT Stainless Steel Ball Valve
Full Port, Vented Ball, Electric or Pneumatic Actuators

The Series WE31 incorporates a full port 3-way SS ball valve with 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 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.

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);
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 DA04: 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 176°F (-40 to 80°C).
Accessory Mounting: NAMUR standard.

Electric “TI” and “MI” 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°):
TI01 and MI01: 2.5 s;
TI02 and MI02: 5 s;
TI03 and MI03: 10 s;
TI04 and MI04: 15 s;
TI05 and MI05: 20 s;
TI06 and MI06: 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 “TD” and “MD” Series
Power Requirements: 110 VAC, 220 VAC, 24 VAC or 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 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</th>
<th>Cv (gal/min)</th>
<th>Hand Operated Model</th>
<th>Double Acting Pneumatic Model</th>
<th>Spring Return Pneumatic Model</th>
<th>NEMA 4X Two-Position Electric (110 VAC) Model</th>
<th>NEMA 4X Modulating Electric (110 VAC) Model</th>
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<tbody>
<tr>
<td>1/2˝</td>
<td>11</td>
<td>WE31-CHD00-T1</td>
<td>WE31-CDA02-T2</td>
<td>WE31-CSR02-T2</td>
<td>WE31-CTD01-T2-A</td>
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<td>WE31-DDA02-T2</td>
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### WE31 Hand Operated and Pneumatic Actuator Model Chart

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<th>WE31-CSR02-T1-AA09</th>
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<td>1/2˝</td>
<td>1/2˝ Double Acting</td>
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<tr>
<td></td>
<td></td>
<td>CDA02</td>
<td>3/4˝ Double Acting</td>
<td>3/4˝ Double Acting</td>
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<td></td>
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<td>ADA03</td>
<td>1˝</td>
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<td>1-1/4˝</td>
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<td>1˝ Spring Return</td>
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<td>FSR05</td>
<td>1-1/4˝</td>
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<td>GSR06</td>
<td>1-1/2˝</td>
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<td>HSR07</td>
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### WE31 Electric Actuator Model Chart

<table>
<thead>
<tr>
<th>Series</th>
<th>WE31</th>
<th>Example</th>
<th>WE31-DMI02-T2-A</th>
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<tr>
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<td>316 SS 3-Way NPT</td>
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<td>DHD00</td>
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<td>1-1/4˝</td>
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<td>GH00</td>
<td>2˝</td>
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<td>1/2˝</td>
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<td>ADA03</td>
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<td></td>
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<td>GDA04</td>
<td>1-1/4˝</td>
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<td>2˝</td>
</tr>
<tr>
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<td></td>
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<td></td>
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<td>HSR07</td>
<td>2˝</td>
</tr>
</tbody>
</table>

### Accessories

- R2-2120, Air Regulator
- APR2-2, Instrument Air Filter Regulator
- VB-01, Volume Booster

### Flow Paths

- **"T" Port Ball**
  - T1 Flow Path A
  - T2 Flow Path B
  - T3 Flow Path C
  - T4 Flow Path D

- **"L" Port Ball**
  - L1 Flow Path E

---

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---

**ACCESSORIES**

- R2-2120, Air Regulator
- APR2-2, Instrument Air Filter Regulator
- VB-01, Volume Booster
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 316) bell 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.

**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: 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 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.

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

** Series WE33**

**Cavity Filled, Electric and Pneumatic Actuators**

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.

**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 (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.
- **Duty Rating:** Two-Position: TI01-TI03: 25%; Modulating: MI01-MI03: 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.
### Popular Models

<table>
<thead>
<tr>
<th>Size</th>
<th>Cv (gal/min)</th>
<th>Hand Operated Model</th>
<th>Double Acting Pneumatic Model</th>
<th>Spring Return Pneumatic Model</th>
<th>NEMA 4X Two-Position Electric (110 VAC) Model</th>
<th>NEMA 4X Modulating Electric (110 VAC) Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2˝</td>
<td>14.39</td>
<td>WE33-CHD00-T2</td>
<td>WE33-CDA01-T2</td>
<td>WE33-CS02-T2</td>
<td>WE33-CD01-T2-A</td>
<td>WE33-CMD01-T2-A</td>
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<tr>
<td>3/4˝</td>
<td>42.25</td>
<td>WE33-CHD00-T2</td>
<td>WE33-DDA01-T2</td>
<td>WE33-DS02-T2</td>
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<td>WE33-DDM01-T2-A</td>
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<td>WE33-CHD00-T2</td>
<td>WE33-EDC02-T2</td>
<td>WE33-DS03-T2</td>
<td>WE33-DD01-T2-A</td>
<td>WE33-EMD01-T2-A</td>
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<td>223.61</td>
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<td>WE33-GDA02-T2</td>
<td>WE33-GS03-T2</td>
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<td>437.88</td>
<td>WE33-CHD00-T2</td>
<td>WE33-HDA03-T2</td>
<td>WE33-HS04-T2</td>
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### WE33 Hand Operated and Pneumatic Actuator Model Chart

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<th>Example</th>
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<th>CSR02</th>
<th>T4</th>
<th>N</th>
<th>N07</th>
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<td>1˝ Hand Operated</td>
<td>1-1/2˝ Hand Operated</td>
<td>2˝ Hand Operated</td>
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<tr>
<td></td>
<td>EHD00</td>
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<td>2˝ Double Acting</td>
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<tr>
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<td>GH00</td>
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<td>3/4˝ Spring Return</td>
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<td>1-1/2˝ Spring Return</td>
<td>2˝ Spring Return</td>
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<td>Valve Position</td>
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<td>Flow Path B</td>
<td>Flow Path C</td>
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<td>Flow Path E</td>
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<td>Flow Path E</td>
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### WE33 Electric Actuator Model Chart

<table>
<thead>
<tr>
<th>Example</th>
<th>WE33</th>
<th>DMD01</th>
<th>T2</th>
<th>B</th>
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<tr>
<td>Size and Actuator</td>
<td>CTD01</td>
<td>1/2˝ Nema 4X Two Position</td>
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<tr>
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<td>ETD01</td>
<td>1/2˝ Nema 4X Modulating</td>
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<td>CMD01</td>
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<td>Valve Position</td>
<td>T1</td>
<td>Flow Path A</td>
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<td>Flow Path D</td>
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<td>Flow Path A</td>
<td>Flow Path B</td>
<td>Flow Path C</td>
<td>Flow Path D</td>
</tr>
</tbody>
</table>

### ACCESSORIES
- R2-2120, Air Regulator
- AFR2-2, Instrument Air Filter Regulator
- VB-01, Volume Booster

---

**Flow Paths**

**"T" Port Ball**

- T1 Flow Path A
- T2 Flow Path B
- T3 Flow Path C
- T4 Flow Path D

**"L" Port Ball**

- L1 Flow Path E
- L2 Flow Path F

---

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 CF3M) 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 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.

**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).
- Temperature Limits: -20 to 392°F (-29 to 200°C).

**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 to DA08: 1/8" female NPT, DA02 to DA09: 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.
- Temperature Limits: -40 to 140°F (-40 to 60°C).
- Electrical Connection: 1/2" female NPT.

**Cycle Time (per 90°):**

- TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s; TD04 and MD04: 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: 5 s; TI04 and MI04: 10 s; TI05 and MI05: 15 s; TI08 and MI08: 12 s.
- Duty Rating: Two-Position: T01 to T07: 25%; T08: 100%.

**Modulating:**

- M01 to M07: 75%; M08: 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</th>
<th>Cv (gpm)</th>
<th>Hand Operated Model</th>
<th>Double Acting Pneumatic Model</th>
<th>Spring Return Pneumatic Model</th>
<th>NEMA 4X Two-Position Electric (110 VAC) Model</th>
<th>NEMA 4X Modulating Electric (110 VAC) Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>26</td>
<td>WE34-JHD00-T2</td>
<td>WE34-DA02-T2</td>
<td>WE34-CR03-T2</td>
<td>WE34-CTD02-T2-A</td>
<td>WE34-CD01-T2-A</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>50</td>
<td></td>
<td>WE34-DD00-T2</td>
<td>WE34-DR03-T2</td>
<td>WE34-DT02-T2-A</td>
<td>WE34-DM01-T2-A</td>
</tr>
<tr>
<td>1&quot;</td>
<td>94</td>
<td></td>
<td>WE34-ED00-T2</td>
<td>WE34-ESR05-T2</td>
<td>WE34-EDT02-T2-A</td>
<td>WE34-EM01-T2-A</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>260</td>
<td></td>
<td>WE34-GE00-T2</td>
<td>WE34-GSR06-T2</td>
<td>WE34-GET03-T2-A</td>
<td>WE34-GM03-T2-A</td>
</tr>
<tr>
<td>2&quot;</td>
<td>380</td>
<td></td>
<td>WE34-HE00-T2</td>
<td>WE34-HSR07-T2</td>
<td>WE34-GTD03-T2-A</td>
<td>WE34-HM03-T2-A</td>
</tr>
<tr>
<td>2-1/2&quot;</td>
<td>650</td>
<td></td>
<td>WE34-IE00-T2</td>
<td>WE34-ISR08-T2</td>
<td>WE34-GTD04-T2-A</td>
<td>WE34-JM04-T2-A</td>
</tr>
<tr>
<td>3&quot;</td>
<td>1000</td>
<td></td>
<td>WE34-JE00-T2</td>
<td>WE34-JSR09-T2</td>
<td>WE34-JTD04-T2-A</td>
<td>WE34-JM04-T2-A</td>
</tr>
</tbody>
</table>

### WE34 Hand Operated and Pneumatic Actuator Model Chart

<table>
<thead>
<tr>
<th>Example</th>
<th>Value</th>
<th>Size</th>
<th>Solenoid</th>
<th>Position</th>
<th>Voltage</th>
<th>Actuator</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSR09</td>
<td></td>
<td>3-1/2&quot;</td>
<td>No Solenoid</td>
<td>T1</td>
<td>120 VDC</td>
<td>2-Position</td>
</tr>
<tr>
<td>ISR08</td>
<td></td>
<td>2-1/2&quot;</td>
<td>No Solenoid</td>
<td>T2</td>
<td>220 VAC</td>
<td>2-Position</td>
</tr>
<tr>
<td>HSR07</td>
<td></td>
<td>2&quot;</td>
<td>No Solenoid</td>
<td>T3</td>
<td>24 VAC</td>
<td>2-Position</td>
</tr>
<tr>
<td>SDR05</td>
<td></td>
<td>1-1/2&quot;</td>
<td>No Solenoid</td>
<td>T4</td>
<td>24 VDC</td>
<td>2-Position</td>
</tr>
<tr>
<td>CSR03</td>
<td></td>
<td>1&quot;</td>
<td>No Solenoid</td>
<td>L1</td>
<td>12 VDC</td>
<td>2-Position</td>
</tr>
</tbody>
</table>

### WE34 Electric Actuator Model Chart

<table>
<thead>
<tr>
<th>Example</th>
<th>Value</th>
<th>Size</th>
<th>Solenoid</th>
<th>Position</th>
<th>Voltage</th>
<th>Actuator</th>
</tr>
</thead>
<tbody>
<tr>
<td>JDA08</td>
<td></td>
<td>3-1/2&quot;</td>
<td>No Solenoid</td>
<td>T1</td>
<td>120 VDC</td>
<td>2-Position</td>
</tr>
<tr>
<td>IHA07</td>
<td></td>
<td>2-1/2&quot;</td>
<td>No Solenoid</td>
<td>T2</td>
<td>220 VAC</td>
<td>2-Position</td>
</tr>
<tr>
<td>DIA06</td>
<td></td>
<td>2&quot;</td>
<td>No Solenoid</td>
<td>T3</td>
<td>24 VAC</td>
<td>2-Position</td>
</tr>
<tr>
<td>CDA05</td>
<td></td>
<td>1-1/2&quot;</td>
<td>No Solenoid</td>
<td>T4</td>
<td>24 VDC</td>
<td>2-Position</td>
</tr>
<tr>
<td>BDA04</td>
<td></td>
<td>1&quot;</td>
<td>No Solenoid</td>
<td>L1</td>
<td>12 VDC</td>
<td>2-Position</td>
</tr>
</tbody>
</table>

### ACCESSORIES

<table>
<thead>
<tr>
<th>R2-2120, Air Regulator</th>
<th>AFR2-2, Instrument Air Filter Regulator</th>
<th>VB-01, Volume Booster</th>
</tr>
</thead>
</table>

## Flow Paths

**T" Port Ball**

- **T1 Flow Path A**
- **T2 Flow Path B**
- **T3 Flow Path C**
- **T4 Flow Path D**

**L" Port Ball**

- **L1 Flow Path E**
### Popular Pneumatic Models

<table>
<thead>
<tr>
<th>Pneumatic Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT-DA01</td>
<td>Double Acting Pneumatic Actuator, 98 in-lb</td>
</tr>
<tr>
<td>ACT-DA02</td>
<td>Double Acting Pneumatic Actuator, 207 in-lb</td>
</tr>
<tr>
<td>ACT-DA03</td>
<td>Double Acting Pneumatic Actuator, 365 in-lb</td>
</tr>
<tr>
<td>ACT-DA04</td>
<td>Double Acting Pneumatic Actuator, 603 in-lb</td>
</tr>
<tr>
<td>ACT-DA05</td>
<td>Double Acting Pneumatic Actuator, 792 in-lb</td>
</tr>
<tr>
<td>ACT-DA06</td>
<td>Double Acting Pneumatic Actuator, 1135 in-lb</td>
</tr>
<tr>
<td>ACT-DA07</td>
<td>Double Acting Pneumatic Actuator, 1690 in-lb</td>
</tr>
<tr>
<td>ACT-DA08</td>
<td>Double Acting Pneumatic Actuator, 2993 in-lb</td>
</tr>
<tr>
<td>ACT-DA09</td>
<td>Double Acting Pneumatic Actuator, 4506 in-lb</td>
</tr>
<tr>
<td>ACT-SR01</td>
<td>Spring Return Pneumatic Actuator, 95 in-lb</td>
</tr>
<tr>
<td>ACT-SR02</td>
<td>Spring Return Pneumatic Actuator, 173 in-lb</td>
</tr>
<tr>
<td>ACT-SR03</td>
<td>Spring Return Pneumatic Actuator, 274 in-lb</td>
</tr>
<tr>
<td>ACT-SR04</td>
<td>Spring Return Pneumatic Actuator, 381 in-lb</td>
</tr>
<tr>
<td>ACT-SR05</td>
<td>Spring Return Pneumatic Actuator, 536 in-lb</td>
</tr>
<tr>
<td>ACT-SR06</td>
<td>Spring Return Pneumatic Actuator, 815 in-lb</td>
</tr>
<tr>
<td>ACT-SR07</td>
<td>Spring Return Pneumatic Actuator, 1411 in-lb</td>
</tr>
<tr>
<td>ACT-SR08</td>
<td>Spring Return Pneumatic Actuator, 2460 in-lb</td>
</tr>
<tr>
<td>ACT-SR09</td>
<td>Spring Return Pneumatic Actuator, 3733 in-lb</td>
</tr>
<tr>
<td>ACT-SR10</td>
<td>Spring Return Pneumatic Actuator, 6166 in-lb</td>
</tr>
</tbody>
</table>

### ACCESSORIES

<table>
<thead>
<tr>
<th>R2-2120</th>
<th>Air Regulator</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFR2-2</td>
<td>Instrument Air Filter Regulator</td>
</tr>
<tr>
<td>VB-01</td>
<td>Volume Booster</td>
</tr>
<tr>
<td>SN-5A</td>
<td>5/2 NAMUR 110 VAC Solenoid</td>
</tr>
<tr>
<td>SN-3A</td>
<td>3/2 NAMUR 110 VAC Solenoid</td>
</tr>
</tbody>
</table>

### Spring Return Actuator Torque

<table>
<thead>
<tr>
<th>Model</th>
<th>Air Pressure</th>
<th>Spring Force (in-lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT-SR01</td>
<td>70 psi</td>
<td>70</td>
</tr>
<tr>
<td>ACT-SR02</td>
<td>80 psi</td>
<td>80</td>
</tr>
<tr>
<td>ACT-SR03</td>
<td>90 psi</td>
<td>90</td>
</tr>
</tbody>
</table>

### Double Acting Pneumatic Actuator Torque

<table>
<thead>
<tr>
<th>Model</th>
<th>Air Pressure</th>
<th>Double-Action Output Torque (in-lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT-DA01</td>
<td>40 psi</td>
<td>40 psi</td>
</tr>
<tr>
<td>ACT-DA02</td>
<td>50 psi</td>
<td>50 psi</td>
</tr>
<tr>
<td>ACT-DA03</td>
<td>60 psi</td>
<td>60 psi</td>
</tr>
<tr>
<td>ACT-DA04</td>
<td>70 psi</td>
<td>70 psi</td>
</tr>
<tr>
<td>ACT-DA05</td>
<td>80 psi</td>
<td>80 psi</td>
</tr>
<tr>
<td>ACT-DA06</td>
<td>90 psi</td>
<td>90 psi</td>
</tr>
<tr>
<td>ACT-DA07</td>
<td>100 psi</td>
<td>100 psi</td>
</tr>
<tr>
<td>ACT-DA08</td>
<td>110 psi</td>
<td>110 psi</td>
</tr>
</tbody>
</table>

### Popular Electric Models

<table>
<thead>
<tr>
<th>Electric Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT-TD01-110VAC</td>
<td>Electric Two-Position, 177 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TD02-110VAC</td>
<td>Electric Two-Position, 442 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TD03-110VAC</td>
<td>Electric Two-Position, 885 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TD04-110VAC</td>
<td>Electric Two-Position, 1770 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TD05-110VAC</td>
<td>Electric Two-Position, 3540 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MD01-110VAC</td>
<td>Electric Modulating, 265 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MD02-110VAC</td>
<td>Electric Modulating, 442 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MD03-110VAC</td>
<td>Electric Modulating, 885 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MD04-110VAC</td>
<td>Electric Modulating, 1770 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MD05-110VAC</td>
<td>Electric Modulating, 3540 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TB01-110VAC</td>
<td>EXP Electric Two-Position, 100 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TB02-110VAC</td>
<td>EXP Electric Two-Position, 200 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TB03-110VAC</td>
<td>EXP Electric Two-Position, 300 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TB04-110VAC</td>
<td>EXP Electric Two-Position, 400 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TB05-110VAC</td>
<td>EXP Electric Two-Position, 500 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TB06-110VAC</td>
<td>EXP Electric Two-Position, 1000 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TB07-110VAC</td>
<td>EXP Electric Two-Position, 1500 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TB08-110VAC</td>
<td>EXP Electric Two-Position, 2000 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TB09-110VAC</td>
<td>EXP Electric Two-Position, 3000 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-TB10-110VAC</td>
<td>EXP Electric Two-Position, 5000 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MI01-110VAC</td>
<td>EXP Electric Modulating, 100 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MI02-110VAC</td>
<td>EXP Electric Modulating, 200 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MI03-110VAC</td>
<td>EXP Electric Modulating, 300 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MI04-110VAC</td>
<td>EXP Electric Modulating, 400 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MI05-110VAC</td>
<td>EXP Electric Modulating, 675 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MI06-110VAC</td>
<td>EXP Electric Modulating, 1000 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MI07-110VAC</td>
<td>EXP Electric Modulating, 1500 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MI08-110VAC</td>
<td>EXP Electric Modulating, 2000 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MI09-110VAC</td>
<td>EXP Electric Modulating, 3000 in-lb, 110 VAC</td>
</tr>
<tr>
<td>ACT-MI10-110VAC</td>
<td>EXP Electric Modulating, 5000 in-lb, 110 VAC</td>
</tr>
</tbody>
</table>

**Note:** Optional voltages available for the electric actuators. Change the -110 VAC to -220 VAC, 24 VDC or 24 VAC. The ACT-TD and ACT-MD are not available with 24 VAC.
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.

**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 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 176°F (-40 to 80°C).
- **Accessory Mounting:** NAMUR standard.

**Electric “TD” and “MD” Series**

- **Type:**
  - PD series is double-acting and MD series is modulating.
- **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: 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:** Position indicator and 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 MI06: 15 s.
- **Duty Rating:**
  - Two-Position: TI01-TI06: 25%.
  - Modulating: MI01-MI06: 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.