Delta™ CONTROLS

INSIDE 38 %RH
72.5 °F

2007 AHR Expo®
2008 AHR Expo®
2012 AHR Expo®
Value · Impact · Application
INNOVATION
Honorable Mention

Version 2, 10/02/2013

2014
Sensor Catalog

**Temperature • Humidity • Pressure
Indoor Air Quality • Accessories
Wireless Temperature & Humidity**

BAPI ®
Sensors for HVAC/R

**Manufactured for Delta Controls
by Building Automation Products, Inc.**

Raise your hand if you think AIR QUALITY matters!

The simple truth is that CO_2-based ventilation doesn't assure indoor air quality. The **VOC Sensor** detects hundreds of air contaminants and is the best way of providing the appropriate ventilation needed for *true* indoor air quality.

VOC Level (PPM)
- Good < 1000
- Fair 1000 - 1500
- Poor > 1500

VOC
523

VOC Level (PPM)
- Good < 1000
- Fair 1000-1500
- Poor > 1500

For more information, see the Air Quality Section of this catalog.

Delta Catalog Table of Contents

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

BAPI-Stat 3™ Room Unit

Temperature Sensors

Rev. 02/12/13

Large Display & Membrane Pushbuttons for Wipedown Cleaning

Features & Options

● Designed for Operating Rooms and Clean Rooms

● Large Easy-to-Read Display

● Membrane Pushbuttons for Wipedown Cleaning

● Optional Temperature Setpoint and Override

● 2% RH Accuracy

● Two Year Warranty

The BAPI-Stat 3 is designed for operating rooms, clean rooms and elder care facilities. It features a large display and membrane pushbuttons for wipedown cleaning. It is available as a temperature sensor alone or with temperature setpoint and occupant override. (The unit is also available with humidity sensing and humidity setpoint. See the humidity section for more info.)

The BAPI-Stat 3 includes a number of field adjustments including °F or °C display, temperature offset (±5 °C or °F in increments of 0.1°) or setpoint lockout (which disables the setpoint pushbuttons). The display can also be set to show a large temperature and small RH, a large RH and a small temperature, or to alternate between these two settings every 5 seconds.

BAPI-Stat 3 Room Unit
(shown with optional temperature setpoint and override)

The BAPI-Guard

● Prevents Tampering and Damage

● Exceptional Airflow

● Two Sizes to Fit Most Thermostats

(See Accessories for info.)

BAPI-Guard & Thermostat

Specifications

Power: 10 to 35 VDC (15 to 24 VDC recommended) for 0 to 5 VDC Outputs
15 to 35 VDC (15 to 24 VDC recommended) for 0 to 10 VDC Output
12 to 28 VAC (Requires a separate pair of shielded wires) for 0 to 5 VDC Output
15 VAC to 28 VAC (Requires a separate pair of shielded wires) 0 to 10 VDC Output

Power Consumption:
60 mA max. DC: 0 to 5 VDC Outputs
10 mA max. DC: 0 to 10 VDC Output
1.44 VA max. AC: 0 to 5 VDC Outputs
0.2 VA max. AC: 0 to 10 VDC Output

RH/Temp Sensor Construction: Communicating Integrated Circuit
Humidity: Capacitive Polymer,
±2% RH (10% to 90%) @25°C, Fully Compensated
Temperature: Semiconductor Band Gap, ±0.3°C @ 25°C

Direct Temp. Sensor: 10K-3 Thermistor

Mounting: J-box or drywall mount - screws provided

Environmental Specifications:
Temperature: 0 to 50 °C (32 to 122 °F)
Humidity: 0 to 95%, non-condensing

Wiring: 2 to 5 pair of 16 to 22 AWG*

Material: ABS Plastic - UL 94, V-0

* Delta recommends that you do not run wiring for Room Units in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.

3.50in [88.9mm]

1.06in [26.9mm]

5.50in [139.7mm]

Closed Cell Foam

10K-3 Thermistor Sensor Specifications
Resistance: 10 kΩ @ 25°C, -55°C to 150°C range
Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

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Rev. 02/12/13

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

BAPI-Stat 3 Room Units with °F Indication and Off White Logo Plate

Call for #   BAPI-Stat 3 Room Sensor, °F Indication, Temperature Setpoint, Occupant Override, Off White Logo Plate
Call for #   BAPI-Stat 3 Room Sensor, °F Indication, Temperature Setpoint, No Override, Off White Logo Plate
Call for #   BAPI-Stat 3 Room Sensor, °F Indication, No Setpoint, No Override, Off White Logo Plate

BAPI-Stat 3 Room Units with °C Indication and Off White Logo Plate

Call for #   BAPI-Stat 3 Room Sensor, °C Indication, Temperature Setpoint, Occupant Override, Off White Logo Plate
Call for #   BAPI-Stat 3 Room Sensor, °C Indication, Temperature Setpoint, No Override, Off White Logo Plate
Call for #   BAPI-Stat 3 Room Sensor, °C Indication, No Setpoint, No Override, Off White Logo Plate

Decora Style Room Unit

Temperature Sensors

Rev. 02/12/13

Features & Options

- LCD Readout of Local Temperature
- Optional Setpoint Adjustment
- Decora Style Enclosure
- °F or °C Indication (field selectable via setpoint pushbuttons)

The low profile Decora Style Room Unit fits inside a Decora Style Wall Plate. It features measurement and display of local temperature with optional pushbutton setpoint adjustment. The room temperature is shown on an easy-to-read LCD display in either °F or °C (field selectable via front pushbuttons for setpoint models). The unit comes with a standard white wall plate cover.

Decora Style Unit with and without Setpoint Adjustment

VC350A Panel Mount Voltage Converter

Delta recommends using DC power on room units for a more stable reading. Our 350mA Panel Mount unit is a perfect way to convert 24 VAC to 5, 12, 15 or 24 VDC. The revolutionary mounting system allows for snaptrack, DIN rail or surface mounting. See the Accessories section for more info.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
Call for #	Decora Style Unit, F Indication, Pushbutton Setpoint, Standard White Wall Plate Cover
Call for #	Decora Style Unit, F Indication, No Setpoint, Standard White Wall Plate Cover
Call for #	Decora Style Unit, C Indication, Pushbutton Setpoint, Standard White Wall Plate Cover
Call for #	Decora Style Room Unit, C Indication, No Setpoint, Standard White Wall Plate Cover

Specifications

Power: 5 VDC to 12 VDC ±5%

Power Consumption: .5 mA

Sensing Element: 10K-3 Thermistor

Wiring: 2 to 3 pair of 16 to 22AWG**

Mounting: J-box with Decora Style Trim Plate

Environmental Operation Range:
Temperature: 0 to 50°C (32 to 122°F)
Humidity: 0 to 95%, non-condensing

Material: ABS Plastic

Material Rating: UL94, V-0

Agency: CE

10K-3 Thermistor Sensor Specifications

Resistance: 10 kΩ @ 25°C, -55 to 150°C range

Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C

Dissipation Constant: 2.7 mW/°C

Stability (drift):
Less than ±0.1°C (0.18°F) drift over 10 years.

2.94in [74.6mm] .28in [7mm] 4.69in [119.1mm]
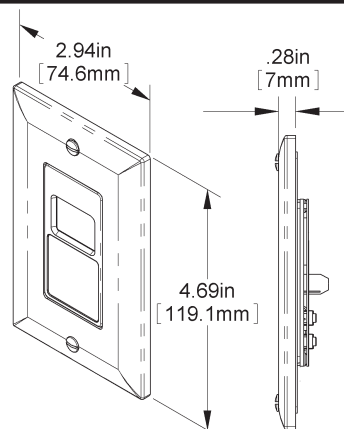
** **Delta** recommends that you do not run wiring for the Room Units in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils. Also, the Decora Style Unit is not designed for line voltage applications. The circuits are intended to be connected to analog inputs (AI's) set in the "resistive" mode.

Rev. 09/10/13

Features & Options

- Small Flush Sensor Mounting
- Accurate Direct Air Measurement
- Paintable with Latex or Oil Base
- Plenum Rated Wiring
- Limited Lifetime Warranty

The Low Profile "Button" Sensor is ideal for locations where aesthetics are as important as the temperature measurement. The inconspicuous wall sensor mounts easily by pushing through a 9.5mm hole and secured with a peel off tape strip. The only visible portion is a flush 22mm dot on the wall.
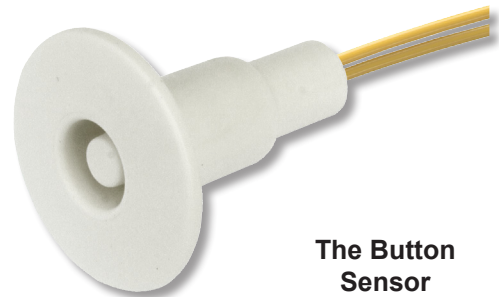
The Button Sensor

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
402228	Low Profile "Button" Temperature Sensor

Specifications

Lead wire: 2 or 3 conductor, 22 AWG stranded wire

Wire Insulation: Etched Teflon, Plenum rated

Wiring: Two 22 AWG wires (non-polar)

Mounting: 9.5mm" hole, push in plastic sheath with peal off tape strip.

Dimensions: .... Plastic Sheath
  Insertion................ 25mm depth, into a 0.9.5mm hole
  Sleeve................... 9.5mm Diameter
  Bezel..................... 22mm Diameter

Enclosure Type: Round Flush Sensor Sheath

Enclosure ratings: NEMA 1

Encl. Material: White Delrin, UL94V-HB

Ambient (Encl.)
  0 to 100% RH, Non-condensing
  -40 to 85ºC (-40 to 185ºF)

Agency
  RoHS, CE
  PT= DIN43760, IEC Pub 751-1983,
  JIS C1604-1989

10K-3 Thermistor Sensor Specifications

Resistance: 10 kΩ @ 25°C, -55 to 150°C range

Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C

Dissipation Constant: 2.7 mW/°C

Stability (drift):
  Less than ±0.1°C (0.18°F) drift over 10 years.

Adhesive Ring

$\varnothing$.88in [22.2mm]

.08in [2mm]

1.03in [26.2mm]

$\varnothing$.39in [10mm]

Wall Plate Units

Temperature Sensors

Features & Options

- Etched Teflon Leadwires and Plate-Sized Foam Insulator
- Stainless Steel with Metallic Finish
- 10K-3 Thermistor Temperature Sensor
- Limited Lifetime Warranty

Wall Plates are ideal for areas where a discreet, rugged zone temperature sensor is required.

All Wall Plates feature 6.35mm closed cell, foam backing which covers the plate and insulates it from wall temperature. They also feature etched Teflon leadwires and double encapsulated sensors to create a watertight package that can perform under real world conditions.

Wall Plates are made of stainless steel with a metallic finish.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
400006	Stainless Steel Wall Plate Temperature Sensor

Specifications

Material:
Stainless Steel

Environnmental Operation Range:
Temperature:
-40 to 100°C (-40 to 212°F)

Humidity:
0 to 95%, non-condensing

Agency: CE

10K-3 Thermistor Sensor Specifications

Resistance:
10 kΩ @ 25°C, -55 to 150°C range

Standard Accuracy:
0.2°C (±0.36°F) at 0 to 70°C

Dissipation Constant:
2.7 mW/°C

Stability (drift):
Less than ±0.1°C (0.18°F) drift over 10 years.

2.78in
[70.6mm]

.165in
[4.19mm]

4.50in
[114.3mm]

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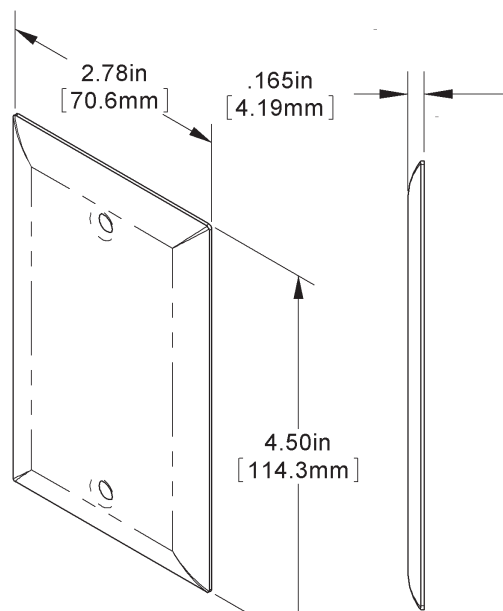
Rev. 02/27/13

Features & Options

- Quick-Response Sensor
- Well-Vented, Light-Colored Sensor Guard
- Watertight BAPI-Box 2 Enclosure

Outside Air Units are designed to be mounted outdoors. The UV-resistant plastic shield keeps the sensor out of the sunlight and allows for excellent air circulation.

The unit features a UV-resistant BAPI-Box 2 enclosure, which carries an IP66 & NEMA 4 rating and remains watertight even after multiple openings of the hinged cover.

Delta Outside Air Units have etched Teflon leadwires and can withstand high humidity and condensation and perform under real world conditions. This is especially important in an outside air application which can be exposed to rain, snow and large temperature swings.

Outside Air Unit in a BAPI-Box 2

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
400787	Outside Air Temperature Sensor, BAPI-Box 2 Enclosure

Specifications

Enclosure Material:
UV-resistant polycarbonate, UL94, V-0

Enclosure Rating:
IP66, NEMA 4

Environmental Operation Range:
Temperature Sensor: -40 to 85ºC (-40 to 185°F)
Humidity: 0 to 100%, non-condensing

Agency: CE

10K-3 Thermistor Sensor Specifications
Resistance:
10 kΩ @ 25°C, -55 to 150°C range

Standard Accuracy:
0.2°C (±0.36°F) at 0 to 70°C

Dissipation Constant:
2.7 mW/°C

Stability (drift):
Less than ±0.1°C (0.18°F) drift over 10 years.

Outside Air Unit in a BAPI-Box 2

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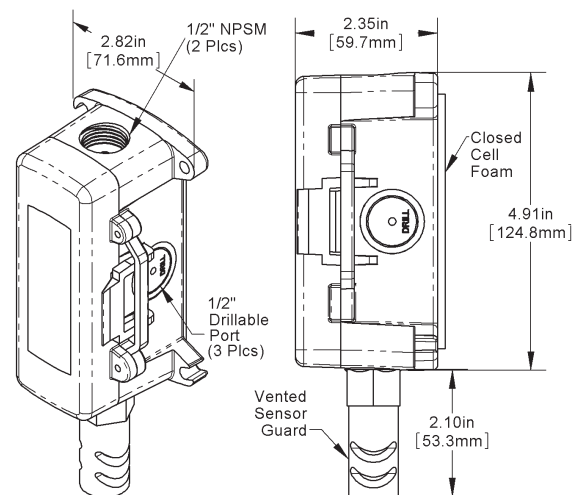
Duct Units
Temperature Sensors

Rev. 06/06/13

Features & Options

- 304 Stainless Steel Probe in lengths from 102 to 457mm
- Several Enclosure Styles
- Double Encapsulated Sensors & Etched Teflon Leadwires

Single Point Duct Units feature closed cell foam to seal the probe insertion hole and to absorb vibration. Mounting tabs allow for easy installation directly to the wall of the duct.

All Duct Units have etched Teflon leadwires and double encapsulated sensors to create a watertight package that can withstand high humidity and condensation and perform under real world conditions. Duct Units have probe lengths from 102 to 457mm to accommodate most duct shapes and sizes. Custom probe lengths are also available.

Duct Units are available with No Box, an IP20/NEMA 1 BAPI-Box 4 or J-Box, or the IP66/NEMA 4 BAPI-Box 2.
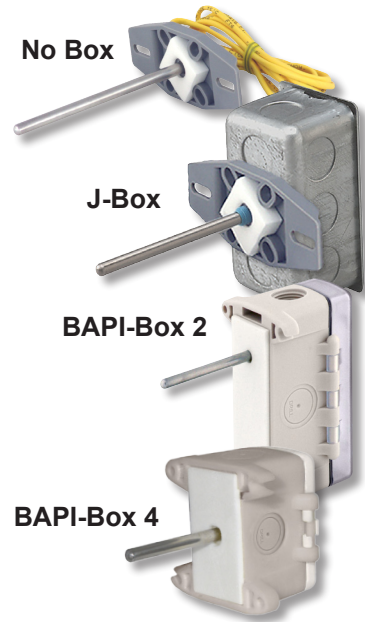
No Box

J-Box

BAPI-Box 2

BAPI-Box 4

Specifications

Enclosure Material:
  BAPI-Box 2: Polycarbonate, UL94, V-0
  BAPI-Box 4: Nylon & Plastic, UL94, V-0
  J-Box: Galvanized Steel

Enclosure Rating:
  BAPI-Box 2: IP66, NEMA 4
  BAPI-Box 4: IP44
  J-Box: IP20, NEMA 1

Environmental Operation Range:
  Temp. Sensor: -40 to 100°C (-40 to 212°F)
  Temp. Transmitter: -20 to 70°C (-4 to 158°F)
  Humidity: 0 to 100%, non-condensing

Agency: CE
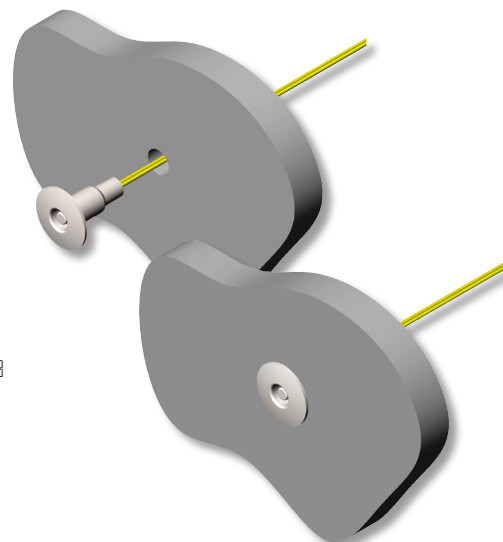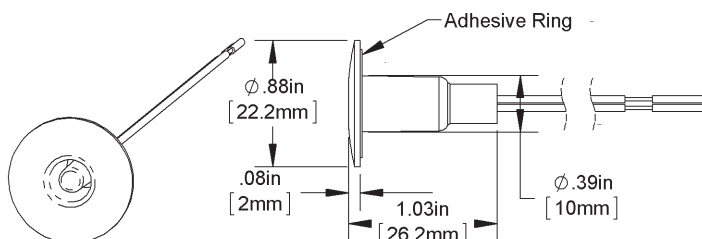
10K-3 Thermistor Sensor Specifications

Resistance: 10 kΩ @ 25°C, -55 to 150°C range
Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

BAPI-Box 2

2.82in [71.6mm]
1/2" NPSM (2 Plcs)
2.35in [59.7mm]
Per Order See Ordering Grid
4.91in [124.8mm]
1/2" Drillable Ports (3 Plcs)
Closed Cell Foam

No Box

3.87in [98.2mm]
Per Order See Ordering Grid
Closed Cell Foam

BAPI-Box 4

2.81in [71.4mm]
2.06in [52.3mm]
PER ORDER SEE ORDERING GRID
2.83in [71.9mm]
1/2" Drillable Ports (4 Plcs)
Closed Cell Foam

J-Box

3.88in [98.4mm]
1.94in [49.1mm]
Per Order See Ordering Grid
Ø.25in [6.4mm]
4.19in [106.4mm]
1/2" Knockout Typ.
2.31in [58.6mm]
Closed Cell Foam

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Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

Duct Temperature Sensors with 102mm (4") Probe

400104	Duct Temp. Sensor with 102mm (4") Probe, No Box, 457mm (18") Leads, Plenum-Rated Cable
400108	Duct Temp. Sensor with 102mm (4") Probe, No Box, 1.5 meter (5') Leads, Plenum-Rated Cable
400264	Duct Temp. Sensor with 102mm (4") Probe, No Box, 3 meter (10') Leads, Plenum-Rated Cable
400765	Duct Temp. Sensor with 102mm (4") Probe, No Box, 4.6 meter (15') Leads, Plenum-Rated Cable
400160	Duct Temp. Sensor with 102mm (4") Probe, J-Box Enclosure
400181	Duct Temp. Sensor with 102mm (4") Probe, BAPI-Box 2 Enclosure
401838	Duct Temp. Sensor with 102mm (4") Probe, BAPI-Box 4 Enclosure

Duct Temperature Sensors with 203mm (8") Probe

400105	Duct Temp. Sensor with 203mm (8") Probe, No Box, 457mm (18") Leads, Plenum-Rated Cable
400368	Duct Temp. Sensor with 203mm (8") Probe, No Box, 1.5 meter (5') Leads, Plenum-Rated Cable
400111	Duct Temp. Sensor with 203mm (8") Probe, No Box, 3 meter (10') Leads, Plenum-Rated Cable
400766	Duct Temp. Sensor with 203mm (8") Probe, No Box, 4.6 meter (15') Leads, Plenum-Rated Cable
400100	Duct Temp. Sensor with 203mm (8") Probe, J-Box Enclosure
400180	Duct Temp. Sensor with 203mm (8") Probe, BAPI-Box 2 Enclosure
401848	Duct Temp. Sensor with 203mm (8") Probe, BAPI-Box 4 Enclosure

Duct Temperature Sensors with 305mm (12") Probe

400106	Duct Temp. Sensor with 305mm (12") Probe, No Box, 457mm (18") Leads, Plenum-Rated Cable
400107	Duct Temp. Sensor with 305mm (12") Probe, No Box, 1.5 meter (5') Leads, Plenum-Rated Cable
400767	Duct Temp. Sensor with 305mm (12") Probe, No Box, 3 meter (10') Leads, Plenum-Rated Cable
400768	Duct Temp. Sensor with 305mm (12") Probe, No Box, 4.6 meter (15') Leads, Plenum-Rated Cable
400101	Duct Temp. Sensor with 305mm (12") Probe, J-Box Enclosure
400178	Duct Temp. Sensor with 305mm (12") Probe, BAPI-Box 2 Enclosure
401837	Duct Temp. Sensor with 305mm (12") Probe, BAPI-Box 4 Enclosure

Duct Temperature Sensors with 457mm (18") Probe

400103	Duct Temp. Sensor with 457mm (18") Probe, No Box, 457mm (18") Leads, Plenum-Rated Cable
400211	Duct Temp. Sensor with 457mm (18") Probe, No Box, 1.5 meter (5') Leads, Plenum-Rated Cable
400769	Duct Temp. Sensor with 457mm (18") Probe, No Box, 3 meter (10') Leads, Plenum-Rated Cable
400770	Duct Temp. Sensor with 457mm (18") Probe, No Box, 4.6 meter (15') Leads, Plenum-Rated Cable
400102	Duct Temp. Sensor with 457mm (18") Probe, J-Box Enclosure
400179	Duct Temp. Sensor with 457mm (18") Probe, BAPI-Box 2 Enclosure
401850	Duct Temp. Sensor with 457mm (18") Probe, BAPI-Box 4 Enclosure

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Duct Averaging Units
Temperature Sensors

Rev. 06/06/13

Features & Options

- Standard Lengths: 2.44, 3.66 and 7.32 meters
- Custom Length Probes Available
- Aluminum Probe Material
- Three Enclosure Styles

Duct Averaging Units feature closed cell foam to seal the probe insertion hole and absorb vibration. Mounting tabs allow for easy installation directly to the wall of the duct. All units have etched Teflon leadwires and encapsulated sensors to create a watertight package that can perform under real world conditions.

Averaging probes should be used wherever there is a chance for stratified layers of hot and cold air. Averaging probes are made of bendable aluminum tubing and measure temperature along their entire length. Nylon tie straps are provided for mounting.

Duct Averaging Units are available with an IP20/NEMA 1 J-Box or BAPI-Box 4 Enclosure, or an IP66/NEMA 4 BAPI-Box 2 Enclosure.

J-Box

BAPI-Box 2

BAPI-Box 4

Specifications

Enclosure Material:
 BAPI-Box 2: Polycarbonate, UL94, V-0
 BAPI-Box 4: Nylon & Plastic, UL94, V-0
 J-Box: Galvanized Steel

Enclosure Rating:
 BAPI-Box 2: IP66, NEMA 4
 BAPI-Box 4: IP44
 J-Box: IP20, NEMA 1

Environmental Operation Range:
 Temperature Sensor:
  BAPI-Boxes: -40 to 85ºC (-40 to 185°F)
  J-Box: -40 to 100ºC (-40 to 212°F)
 Temp. Transmitter: -20 to 70ºC
        (-4 to 158°F)
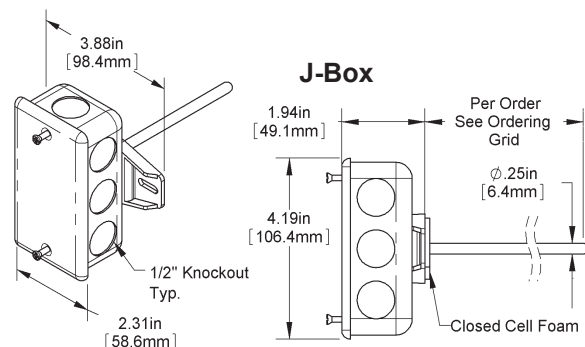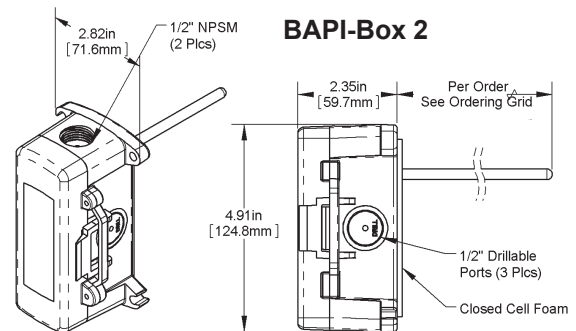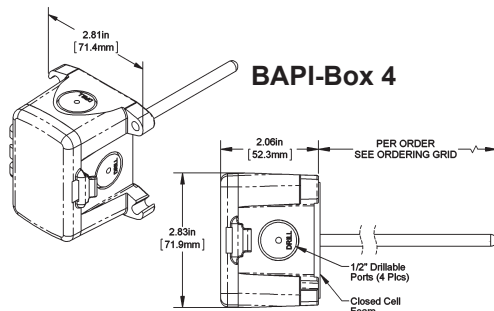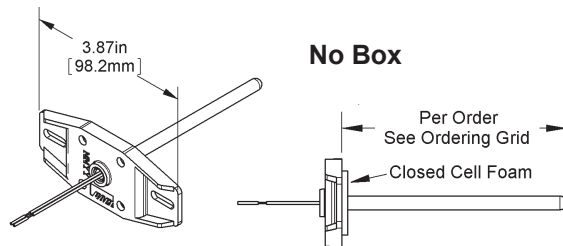 Humidity: 0 to 95%, non-condensing

Agency: CE

10K-3 Thermistor Sensor Specifications

Resistance: 10 kΩ @ 25°C, -55 to 150°C range
Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

BAPI-Box 2

J-Box

BAPI-Box 4

Rev. 06/06/13

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

Duct Averaging Temperature Sensors with 2.44 Meter (8') Probe
400150   Sensor with 2.44m (8') Aluminum 4.8mm (3/16") Dia. Probe, J-Box Enclosure
400777   Sensor with 2.44m (8') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 2 Enclosure
Call for #   Sensor with 2.44m (8') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 4 Enclosure

Duct Averaging Temperature Sensors with 3,66 Meter (12') Probe
400151   Sensor with 3.66m (12') Aluminum 4.8mm (3/16") Dia. Probe, J-Box Enclosure
400176   Sensor with 3.66m (12') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 2 Enclosure
Call for #   Sensor with 3.66m (12') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 4 Enclosure

Duct Averaging Temperature Sensors with 7.32 Meter (24') Probe
400152   Sensor with 7.32m (24') Aluminum 4.8mm (3/16") Dia. Probe, J-Box Enclosure
400177   Sensor with 7.32m (24') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 2 Enclosure
401836   Sensor with 7.32m (24') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 4 Enclosure

Immersion Units with Nylon Fittings
Temperature Sensors

Rev. 06/06/13

J-Box

Features & Options

- Probe Lengths: 51, 102 & 203mm (fit Delta Thermowell lengths)
- Series 304 Stainless Steel Probes and 3 Enclosure Styles
- Double Encapsulated Sensors & Etched Teflon Leadwires

Immersion Units are available in 51, 102 and 203mm probe lengths. The sensor is potted inside a 6.4mm stainless steel probe with thermally conductive compound. All Immersion Units have etched Teflon leadwires and double encapsulated sensors to create a watertight package that can withstand high humidity and condensation.

Immersion Units are available with an IP20/NEMA 1 J-Box or BAPI-Box 4 Enclosure, or an IP66/NEMA 4 BAPI-Box 2 Enclosure.

BAPI-Box 2

BAPI-Box 4

Delta Thermowells
Immersion Probes are designed to be inserted into a Thermowell. For more info on Thermowells, see the next two pages.

Specifications

Enclosure Material:
   J-Box: Galvanized Steel
   BAPI-Box 2: Polycarbonate, UL94, V-0
   BB4 Model: Nylon & Plastic, UL94, V-0

Encl. Rating:
   J-Box: IP20, NEMA 1
   BAPI-Box 4: IP44
   BAPI-Box 2: IP66, NEMA 4

Environmental Operation Range:
   Temperature Sensor: -40 to 85 ºC (-40 to 185°F)
   Humidity: 0 to 100%, non-condensing

Agency: CE

10K-3 Thermistor Sensor Specifications
Resistance: 10 kΩ @ 25°C, -55 to 150°C range
Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

J-Box

1.64in [41.6mm]
Per Order See Ordering Grid
1/2" NPSM Typ.
4.19in [106.4mm]
Ø.25in [6.4mm]
2.31in [58.7mm]
1/2" Knockout Typ.

BAPI-Box 2

2.82in [71.6mm]
2.35in [59.7mm]
Per Order See Ordering Grid
5.00in [127mm]
1/2" NPSM Typ.
1/2" Drillable Port (3 Plcs)

BAPI-Box 4

2.81in [71.4mm]
2.06in [52.3mm]
PER ORDER SEE ORDERING GRID
1/2" NPSM Typ.
2.83in [71.9mm]
Ø.25in [6.4mm]
1/2" Drillable Port (4 Plcs)

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 06/06/13

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

Immersion Temperature Sensors with Nylon Fittings and 51mm (2") Probe

400316	Sensor with 51mm (2") SS 6.4mm (1/4") Diameter Probe, J-Box Encl.
400297	Sensor with 51mm (2") SS 6.4mm (1/4") Diameter Probe, BAPI-Box 2 Encl.
401851	Sensor with 51mm (2") SS 6.4mm (1/4") Diameter Probe, BAPI-Box 4 Encl.

Immersion Temperature Sensors with Nylon Fittings and 102mm (4") Probe

400300	Sensor with 102mm (4") SS 6.4mm (1/4") Diameter Probe, J-Box Encl.
400298	Sensor with 102mm (4") SS 6.4mm (1/4") Diameter Probe, BAPI-Box 2 Encl.
401855	Sensor with 102mm (4") SS 6.4mm (1/4") Diameter Probe, BAPI-Box 4 Encl.

Immersion Temperature Sensors with Nylon Fittings and 203mm (8") Probe

400301	Sensor with 203mm (8") SS 6.4mm (1/4") Diameter Probe, J-Box Encl.
400299	Sensor with 203mm (8") SS 6.4mm (1/4") Diameter Probe, BAPI-Box 2 Encl.
Call for #	Sensor with 203mm (8") SS 6.4mm (1/4") Diameter Probe, BAPI-Box 4 Encl.

Rev. 02/12/13

Features & Options

- Three Lengths: 51, 102 and 203mm
  (Fit standard Immersion Unit lengths)

- Stainless Steel (304 or 316) or Brass

- Two Part (Welded) or Machined Construction

- Other Lengths Available Upon Request

- Limited Lifetime Warranty

Standard Thermowells available from Delta include 304 stainless steel (machined), 316 stainless steel (machined), brass (machined), and two-part (welded) stainless steel. These wells are offered in 51, 102 and 203mm lengths with 12.7mm NPT external and 12.7mm NPSM. Other lengths and thread diameters are available upon request.

The Thermowell chosen for an installation is governed mainly by the corrosion conditions the well will face. The machined stainless steel wells all come with a mirror polish to provide maximum corrosion resistance.

Occasionally, the material consideration is one of strength rather than corrosion. For example, a machined stainless steel well may be required for high pressure water service where otherwise a brass or two part stainless steel well would be satisfactory from a corrosion standpoint.

Note: The two part welded stainless steel thermowells are not intended for service in moving water. They may be used in catch basins, sumps or large storage tanks with small inlet and outlet pipes. Do not mount the two part welded stainless steel thermowells close to the inlet or outlet pipe of the tank.

Machined Stainless Steel Thermowell

Two-Part (welded) Stainless Steel Thermowell

Machined Brass Thermowell

Specifications
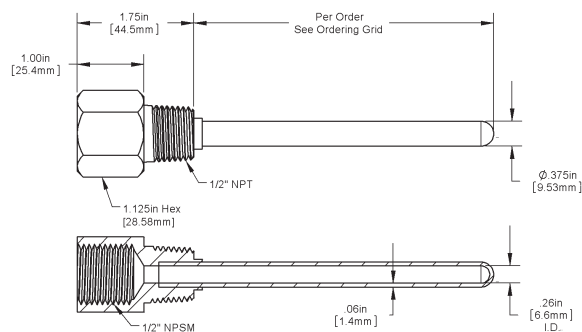
Two Part (Welded) Thermowell
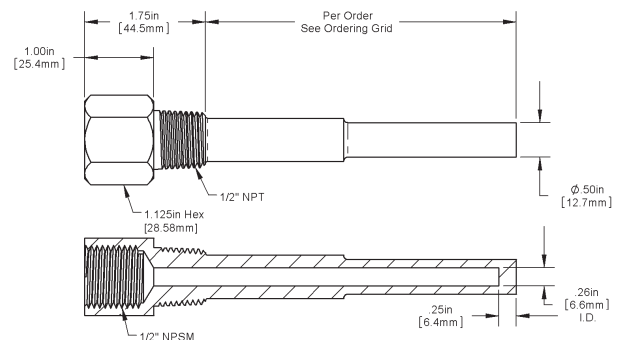
Machined Thermowell

NPT= National Pipe Taper
NPSM=National Pipe Straight Mechanical (not tapered)

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 02/12/13

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

51mm (2") Thermowells
Delta #	Description
400449	51mm (2") Thermowell, 2-Part (Welded) 304 SS - 64mm (2.5") Insertion length, fits 51mm Imm. Probe
400322	51mm (2") Thermowell, Machined 304 SS - 64mm (2.5") Insertion length, fits 51mm Imm. Probe
401572	51mm (2") Thermowell, Machined 316 SS - 64mm (2.5") Insertion length, fits 51mm Imm. Probe
400047	51mm (2") Thermowell, Machined Brass - 64mm (2.5") Insertion length, fits 51mm Imm. Probe

102mm (4") Thermowells
Delta #	Description
400500	102mm (4") Thermowell, 2-Part (Welded) 304 SS - 114mm (4.5") Insertion length, fits 102mm Imm. Probe
400502	102mm (4") Thermowell, Machined 304 SS - 114mm (4.5") Insertion length, fits 102mm Imm. Probe
400504	102mm (4") Thermowell, Machined 316 SS - 114mm (4.5") Insertion length, fits 102mm Imm. Probe
400506	102mm (4") Thermowell, Machined Brass - 114mm (4.5") Insertion length, fits 102mm Imm. Probe

203mm (8") Thermowells
Delta #	Description
400501	203mm (8") Thermowell, 2-Part (Welded) 304 SS - 191mm (7.5") Insertion length, fits 203mm Imm. Probe
400503	203mm (8") Thermowell, Machined 304 SS - 191mm (7.5") Insertion length, fits 203mm Imm. Probe
400505	203mm (8") Thermowell, Machined 316 SS - 191mm (7.5") Insertion length, fits 203mm Imm. Probe
400507	203mm (8") Thermowell, Machined Brass - 191mm (7.5") Insertion length, fits 203mm Imm. Probe

Immersion Unit with Thermowell
Temperature Sensors

Rev. 06/06/13

Features & Options

- Immersion Sensor with Machined Brass or SS Thermowell
- Series 304 Stainless Steel Probes and 3 Enclosure Styles
- Double Encapsulated Sensor & Etched Teflon Leadwires

J-Box

Immersion Units are available in 51, 102 and 203mm probe lengths. The sensor is potted inside a 6.4mm stainless steel probe with thermally conductive compound. All Immersion Units have etched Teflon leadwires and double encapsulated sensors to create a watertight package that can withstand high humidity and condensation.

BAPI-Box 2

Immersion Units are available with an IP20/NEMA 1 J-Box Enclosure, an IP66/NEMA 4 BAPI-Box 2 or an IP44 BAPI-Box 4.

Two-Part (welded) SS Thermowell

The matching Thermowells are available as Machined Brass or Two-Part (welded) Stainless Steel.
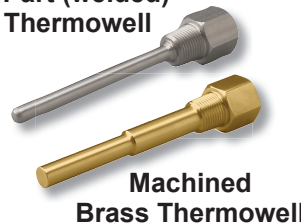
BAPI-Box 4

Machined Brass Thermowell
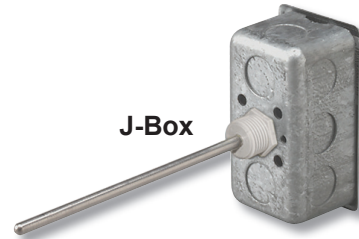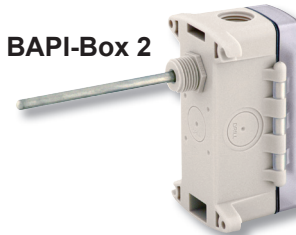
Immersion Unit Specifications

Enclosure Material:
  J-Box: Galvanized Steel
  BAPI-Box 2: Polycarbonate, UL94, V-0
  BB4 Model: Nylon & Plastic, UL94, V-0

Encl. Rating:
  J-Box: IP20, NEMA 1
  BAPI-Box 4: IP44
  BAPI-Box 2: IP66, NEMA 4

Environmental Operation Range:
  Temperature Sensor: -40 to 85 °C (-40 to 185°F)
  Humidity: 0 to 100%, non-condensing

10K-3 Thermistor Sensor Specifications
Resistance: 10 kΩ @ 25°C, -55 to 150°C range
Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

J-Box

1.64in [41.6mm]
Per Order See Ordering Grid
4.19in [106.4mm]
1/2" NPSM Typ.
2.31in [58.7mm]
1/2" Knockout Typ.
∅.25in [6.4mm]

BAPI-Box 2

2.82in [71.6mm]
2.35in [59.7mm]
Per Order See Ordering Grid
5.00in [127mm]
1/2" NPSM Typ.
1/2" Drillable Port (3 Plcs)

BAPI-Box 4

2.81in [71.4mm]
2.06in [52.3mm]
PER ORDER SEE ORDERING GRID
2.83in [71.9mm]
1/2" NPSM Typ.
1/2" Drillable Port (4 Plcs)
∅.25in [6.4mm]
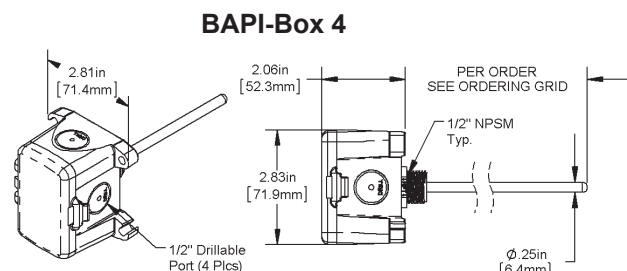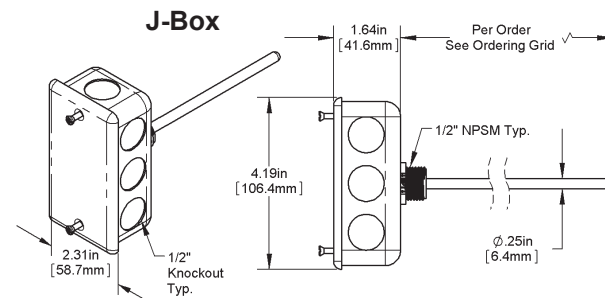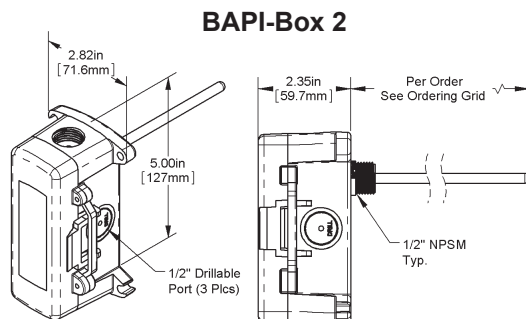
Rev. 06/06/13

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	Immersion Temperature Sensors with 51mm (2") Probe and Thermowell
Call for #	Immersion with 51mm (2") Probe, J-Box Encl. with 51mm Thermowell, 2-Part 304 SS
Call for #	Immersion with 51mm (2") Probe, J-Box Encl. with 51mm Thermowell, Machined Brass
Call for #	Immersion with 51mm (2") Probe, BAPI-Box 2 Encl. with 51mm Thermowell, 2-Part 304 SS
Call for #	Immersion with 51mm (2") Probe, BAPI-Box 2 Encl. with 51mm Thermowell, Machined Brass
Call for #	Immersion with 51mm (2") Probe, BAPI-Box 4 Encl. with 51mm Thermowell, 2-Part 304 SS
Call for #	Immersion with 51mm (2") Probe, BAPI-Box 4 Encl. with 51mm Thermowell, Machined Brass
	Immersion Temperature Sensors with 102mm (4") Probe and Thermowell
Call for #	Immersion with 102mm (4") Probe, J-Box Encl. with 102mm Thermowell, 2-Part 304 SS
Call for #	Immersion with 102mm (4") Probe, J-Box Encl. with 102mm Thermowell, Machined Brass
Call for #	Immersion with 102mm (4") Probe, BAPI-Box 2 Encl. with 102mm Thermowell, 2-Part 304 SS
Call for #	Immersion with 102mm (4") Probe, BAPI-Box 2 Encl. with 102mm Thermowell, Machined Brass
Call for #	Immersion with 102mm (4") Probe, BAPI-Box 4 Encl. with 102mm Thermowell, 2-Part 304 SS
Call for #	Immersion with 102mm (4") Probe, BAPI-Box 4 Encl. with 102mm Thermowell, Machined Brass
	Immersion Temperature Sensors with 203mm (8") Probe and Thermowell
Call for #	Immersion with 203mm (8") Probe, J-Box Encl. with 203mm Thermowell, 2-Part 304 SS
Call for #	Immersion with 203mm (8") Probe, J-Box Encl. with 203mm Thermowell, Machined Brass
Call for #	Immersion with 203mm (8") Probe, BAPI-Box 2 Encl. with 203mm Thermowell, 2-Part 304 SS
Call for #	Immersion with 203mm (8") Probe, BAPI-Box 2 Encl. with 203mm Thermowell, Machined Brass
Call for #	Immersion with 203mm (8") Probe, BAPI-Box 4 Encl. with 203mm Thermowell, 2-Part 304 SS
Call for #	Immersion with 203mm (8") Probe, BAPI-Box 4 Encl. with 203mm Thermowell, Machined Brass

Thermowell Dimensions

Two Part (Welded) Thermowell   **Machined Thermowell**
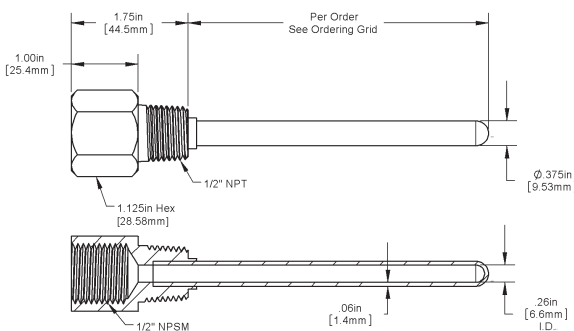
Clamp-On Strap Units
Temperature Sensors
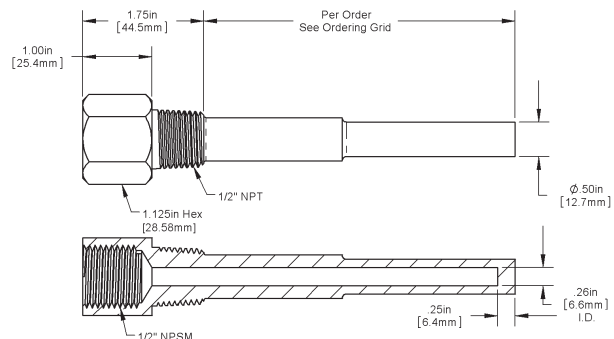
Rev. 07/12/13

Features & Options

Clamp-On Strap Units are designed to monitor water temperature in retrofit or filled pipe applications. They fit around the outside of a pipe, greatly reducing installation cost. They measure the water temperature by sensing the surface temperature of the pipe.

The bendable copper sensing plate forms to the curvature of the pipe. An adjustable hose clamp holds the unit in place around the pipes up to 11.4cm.

These units have etched Teflon leadwires and double encapsulated sensors and come with a steel J-Box Enclosure, a plastic BAPI-Box 4 or a plastic BAPI-Box 2 Enclosure.

J-Box

BAPI-Box 2

BAPI-Box 4

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**
                 Clamp-On Strap - Fits 2" to 4.5" (5.08 to 11.4 cm) pipe
400402   Clamp-On Strap Temperature Sensor, J-Box Enclosure
Call for # Clamp-On Strap Temperature Sensor, BAPI-Box 2 Enclosure
401853   Clamp-On Strap Temperature Sensor, BAPI-Box 4 Enclosure

Specifications

Enclosure Material and Enclosure Rating:
J-Box: Galvanized Steel, IP20, NEMA 1
BAPI-Box 2: Polycarbonate, IP66, NEMA 4
BAPI-Box 4: Nylon and Plastic, IP44

Environmental Operation Range:
Temp. Sensor: -65 to 100°C (-85 to 212°F)
Humidity: 0 to 95%, non-condensing

Agency: CE

10K-3 Thermistor Sensor Specifications
Resistance: 10 kΩ @ 25°C, -55 to 150°C range
Accuracy: 0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.
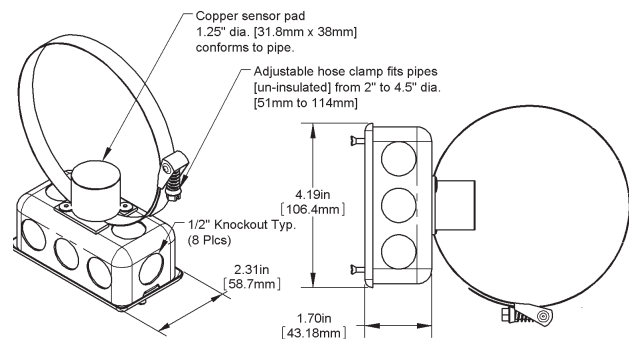
Clamp-On Strap J-Box
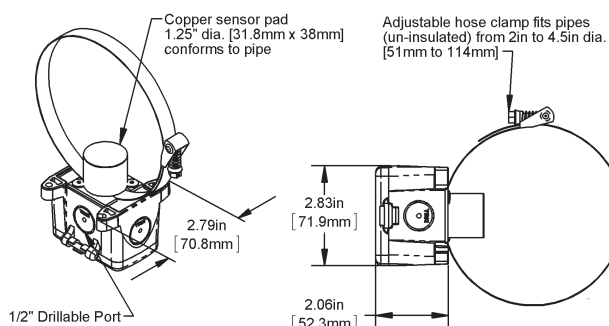
Clamp-On Strap BAPI-Box 4 (BB4)
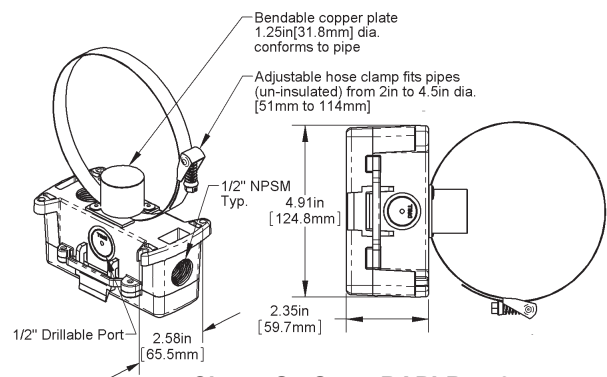
Clamp-On Strap BAPI-Box 2

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 06/06/13

Features & Options

Spring-Loaded Strap Units are designed to monitor water temperature in retrofit or filled pipe applications. They fit around the outside of a pipe, greatly reducing installation cost. They measure the water temperature by sensing the surface temperature of the pipe.

Instead of removing the insulation, the spring loaded sensing pad is held against the pipe through a hole in the insulation. Fits pipes up to 36.8cm with up to 50mm of insulation.

They have etched Teflon leadwires and double encapsulated sensors and come with a steel J-Box, or a plastic BAPI-Box 4 Enclosure or a plastic BAPI-Box 2 Enclosure.

J-Box

BAPI-Box 2

BAPI-Box 4

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	Spring-Loaded Strap - Fits 5" to 14.5" (12.7 to 36.8 cm) pipe
400401	Spring-Loaded Strap Temperature Sensor, J-Box Enclosure
Call for #	Spring-Loaded Strap Temperature Sensor, BAPI-Box 2 Enclosure
Call for #	Spring-Loaded Strap Temperature Sensor, BAPI-Box 4 Enclosure

Specifications

Enclosure Material and Enclosure Rating:
  J-Box: Galvanized Steel, IP20, NEMA 1
  BAPI-Box 2: Polycarbonate, IP66, NEMA 4
  BAPI-Box 4: Nylon and Plastic, IP44

Environmental Operation Range:
  Temperature Sensor: -40 to 85°C (-40 to 185°F)
   Humidity: 0 to 95%, non-condensing

Agency: CE

10K-3 Thermistor Sensor Specifications
Resistance: 10 kΩ @ 25°C, -55 to 150°C range
Accuracy: 0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

Adjustable nylon straps fit pipes from 5" to 14.5" dia. (127mm to 368mm)

Spring holds copper sensor pad ⌀1.25" [31.8mm] firmly against pipe.

4.19in [106.4mm]

1/2" Knockout Typ. (8 Plcs)

2.31in [58.7mm]

1.64in [41.6mm]

2.80in [71.1mm]

Spring-Loaded Strap J-Box

Adjustable nylon straps fits pipes from ⌀5" to ⌀14.5" [127mm to 368mm]

Spring holds copper sensor pad 1.25" [31.8mm] firmly against pipe.

2.83in [71.9mm]

2.81in [71.4mm]

2.06in [52.3mm]

2.72in [69.1mm]

Spring-Loaded Strap BAPI-Box 4

Adjustable nylon straps fits pipes from ⌀5" to ⌀14.5" [127mm to 368mm]

Spring holds copper sensor pad ⌀1.25in [31.8mm] firmly against pipe

4.91in [124.8mm]

2.35in [59.7mm]

1/2" Drillable Ports (3 Plcs)

1/2" NPSM Typ.

2.80in [71.1mm]

Spring-Loaded Strap BAPI-Box 2

Thermobuffer Freezer/Cooler Sensor

Temperature Sensors

Rev. 02/12/13

Features & Options

- Slows/Buffers Temperature Changes in Coolers & Freezers (Caused by Opening and Closing of Cooler/Freezer Door)
- Fluid-Filled to Mimic Core Temperatures
- Easy Wall Mount or Wire Shelf Hanger
- Decreases False High Limit Alarms
- Available with Stainless Steel or Aluminum Buffer
- Different Sizes for Different Applications

Refrigerator (1" Hanging Bracket)

Chest Freezer (BAPI-Box 2 with 2" Probe)

The Thermobuffer Temperature Sensor is used to simulate more closely the refrigerator contents rather than the refrigerator air temperature. The fluid-filled chamber allows for slower reaction to abrupt temperature changes, yet still maintains long-term accuracy if the change remains permanent. It eliminates the temperature spikes due to frequent refrigerator or freezer door opening and decreases false alarms.

The Thermobuffer is available in 25mm (1") and 51mm (2") buffer sizes and is designed to save valuable shelf space by mounting to the wall or by hanger in a refrigerator or freezer. The buffer chamber is machined in 304 Stainless Steel or aluminum and accommodates a variety of temperature sensors or transmitters to interface with all BAS systems.

Specifications

Probe: Stainless steel
Wire: 22 awg stranded, 2 or 3 wires
Insulation: Etched Teflon, PVC or FEP Plenum Rated
Enclosure Rating: NEMA 4, IP66
Enclosure Material:
  BAPI-Box 2   Polycarbonate, UV-rated, UL94 V-0
  Hanging Bracket   SS bracket w/steel clip
Buffer Chamber Construction:
  M304   Bar stock 304 Stainless Steel
  MAL   Bar stock Aluminum
Chamber Fluid: Customer supplied
  Glycol mix   Food grade required
  25mm Chamber   ~7 ml of fluid
  51mm Chamber   ~24 ml of fluid
Environmental Operating Range:
  Temp. Sensor   -40 to 85ºC (-40 to 185ºF)
  Humidity   0 to 100%RH, Condensing
Agency: CE, UL94V-0, RoHS

Hanging Bracket

1.00in [25.40mm]
1.10in [27.8mm]
1.85in [46.88mm]
1.152in [29.26mm]
1.99in [1"] [50mm]
~
4.35in [2"] [110.5mm]
~
6.35in [4"] [161.3mm]

10K-3 Thermistor Sensor Specifications

**Resistance:** 10 kΩ @ 25°C, -55 to 150°C range
**Standard Accuracy:** 0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

2.82in [71.58mm]
1/2" NPSM Typ.
2.350in [59.7mm]
4.91in [124.83mm]
5.32 [-1] [151.2mm]
~
8.32in [-2] [211.3mm]
~
10.32in [-4] [262.1mm]
1.99in [1"] [50mm]
~
4.35in [2"] [110.5mm]
~
6.35in [4"] [161.3mm]
1/2" Drillable Port (3 Plcs)

BAPI-Box 2

Note: Unit requires food grade glycol antifreeze for proper operation.
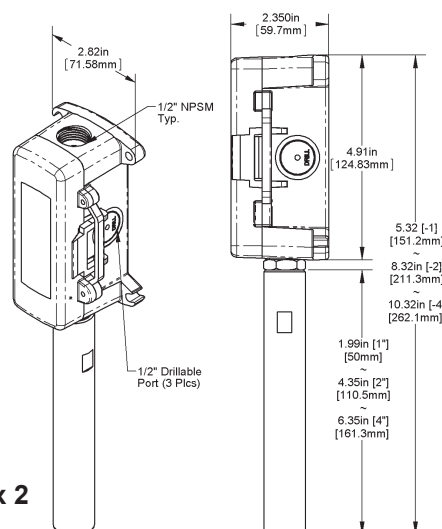
Rev. 02/12/13

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

Thermobuffer with 25mm (1") Hanging Bracket and No Box

Call for #	25mm (1") Thermobuffer, Hanging Bracket, No Box, 1.5m (5') FEP-Jacketed Cable, SS Buffer
Call for #	25mm (1") Thermobuffer, Hanging Bracket, No Box, 3m (10') FEP-Jacketed Cable, SS Buffer
Call for #	25mm (1") Thermobuffer, Hanging Bracket, No Box, 7.6m (25') FEP-Jacketed Cable, SS Buffer

Thermobuffer with 25mm (1") Hanging Bracket and BAPI-Box 2 Enclosure

Call for #	25mm (1") Thermobuffer, Hanging Bracket, BAPI-Box 2, 1.5m (5') FEP-Jacketed Cable, SS Buffer
Call for #	25mm (1") Thermobuffer, Hanging Bracket, BAPI-Box 2, 3m (10') FEP-Jacketed Cable, SS Buffer
Call for #	25mm (1") Thermobuffer, Hanging Bracket, BAPI-Box 2, 7.6m (25') FEP-Jacketed Cable, SS Buffer

Thermobuffer with 51mm (2") Probe BAPI-Box 2 Enclosure

Call for #	Thermobuffer with 51mm (2") Probe, BAPI Box 2, Stainless Steel Buffer
Call for #	Thermobuffer with 51mm (2") Probe, BAPI Box 2, Aluminum Buffer

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Remote Sensors & Probes
Temperature Sensors

Rev. 05/02/13

Features & Options

● Plenum-Rated Cable or FEP Cable

● Double Encapsulated Sensors

Remote Sensors feature a 19mm long encapsulation shell and come with etched Teflon leads in lengths of 152mm, 457mm, 1.52m, 3.05m. Because of their small size, Remote Sensors are perfect for tight locations. Additional cable options, lead lengths and probe styles are available upon request.

Remote Probes feature a 44mm long stainless steel probe with either Plenum-Rated Cable or FEP-Jacketed Cable. Lead lengths are 457mm, 1.52m and 3.05m.

Remote Probes are commonly used in refrigerated case or strap-on applications. They are ideal for hard-to-access areas or spaces where the usual Immersion or Duct Sensors do not fit well.

Remote Sensor with Epoxy Shell

Remote Probe with Plenum Cable

Remote Probe with FEP Cable
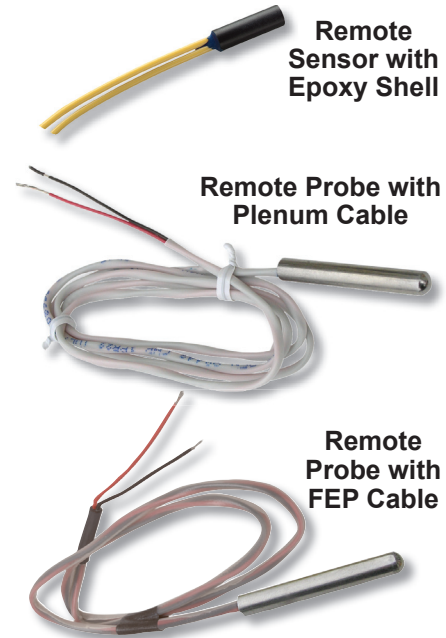
Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	Remote Sensors with Epoxy Shell
400062	Remote Temp. Sensor with Epoxy Shell, 152mm (6") of Etched Teflon Leads, No Enclosure
400021	Remote Temp. Sensor with Epoxy Shell, 457mm (18") of Plenum Rated Leads, No Enclosure
400337	Remote Temp. Sensor with Epoxy Shell, 1.5m (5') of Plenum Rated Leads, No Enclosure
400386	Remote Temp. Sensor with Epoxy Shell, 3m (10') of Plenum Rated Leads, No Enclosure
	Remote Probes with Plenum Rated Cable
400036	Remote SS Probe, 457mm (18") of Plenum Rated Cable, No Enclosure
400411	Remote SS Probe, 1.5m (5') of Plenum Rated Cable, No Enclosure
400487	Remote SS Probe, 3m (10') of Plenum Rated Cable, No Enclosure
	Remote Probes with FEP-Jacketed Cable
400366	Remote SS Probe, 457mm (18") of FEP-Jacketed Cable, No Enclosure
400856	Remote SS Probe, 1.5m (5') of FEP-Jacketed Cable, No Enclosure
400143	Remote SS Probe, 3m (10') of FEP-Jacketed Cable, No Enclosure

Specifications

Environmental Operation Range:
Temp. Sensor: -40 to 105ºC (-40 to 221°F)
Humidity: 0 to 100%, non-condensing

Agency: CE

10K-3 Thermistor Sensor Specifications
Resistance: 10 kΩ @ 25°C, -55 to 150°C range
Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C
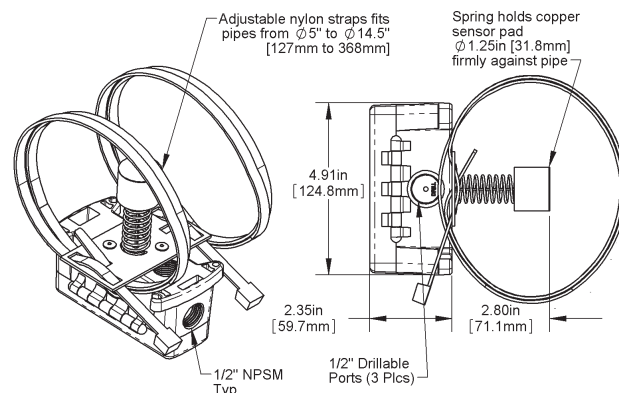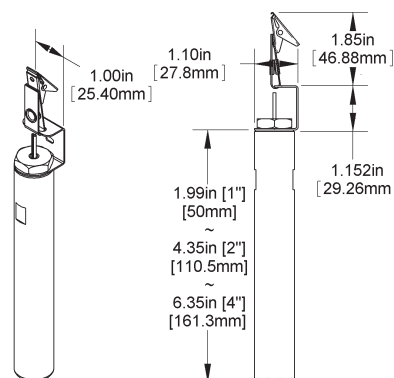**Dissipation Constant:** 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

Per Order
See Ordering Grid

1.75in
[44.50mm]

Remote Probe

$\emptyset$.250in
[6.35mm]

Per Order
See Ordering Grid

.750"
(19mm)

Remote Sensor

$\emptyset$.175"
(4.45mm)
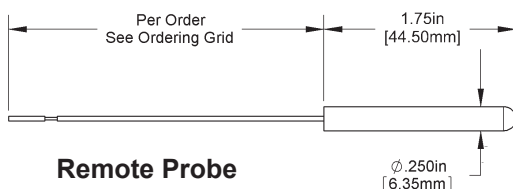
Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Large Display and Wipedown Keypad - Perfect for Operating Rooms, Labs or Elder Care Facilities

INSIDE 38 %RH

22.5 c

Available with Temperature and Humidity Setpoint Adjustment

INSIDE

22.5 c

Accurate Dew Point and Dry Bulb Temperature in One Unit

INSIDE

22.5 c

The Humidity Transmitters are calibrated at 17 points from 10 to 90% RH.

The Humidity Transmitters are calibrated at 17 points from 10 to 90% RH.

BAPI-Stat 3™ Room Unit

Humidity or Combination Sensors
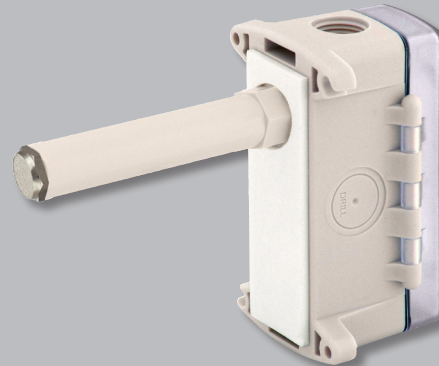
Rev. 02/12/13

Large Display & Membrane Pushbuttons for Wipedown Cleaning

Features & Options

- Designed for Operating Rooms and Clean Rooms
- Large Easy-to-Read Display
- Membrane Pushbuttons for Wipedown Cleaning
- Optional Temperature and Humidity Setpoint Adjustment
- 2% RH Accuracy
- Two Year Warranty

The BAPI-Stat 3 temperature and humidity sensor is designed for operating rooms, clean rooms and elder care facilities. It features a large display and membrane pushbuttons for wipedown cleaning. Depending upon the options selected, the BAPI-Stat 3 can display room temperature, room humidity, temperature setpoint, humidity setpoint and override.

The unit includes a number of field adjustments including °F or °C display, temperature offset (±5 °F or °C in increments of 0.1°), %RH offset (±5% in increments of 0.1%), or setpoint lockout (which disables the setpoint pushbuttons). The display can also be set to show a large temperature and small %RH, a large %RH and a small temperature, or to alternate between these two settings every 5 seconds.

**BAPI-Stat 3 Room Unit
(Shown with optional temperature and humidity setpoint and override)**

The BAPI-Guard

- Prevents Tampering and Damage
- Exceptional Airflow
- Two Sizes to Fit Most Thermostats

(See Accessories for info.)

BAPI-Guard & Thermostat

Specifications

Power: 10 to 35 VDC (15 to 24 VDC recommended) for 0 to 5 VDC Outputs
15 to 35 VDC (15 to 24 VDC recommended) for 0 to 10 VDC Output
12 to 28 VAC (Requires a separate pair of shielded wires) for 0 to 5 VDC Output
15 VAC to 28 VAC (Requires a separate pair of shielded wires) 0 to 10 VDC Output

Power Consumption:
60 mA max. DC: 0 to 5 VDC Outputs
10 mA max. DC: 0 to 10 VDC Output
1.44 VA max. AC: 0 to 5 VDC Outputs
0.2 VA max. AC: 0 to 10 VDC Output

RH/Temp Sensor Construction: Communicating Integrated Circuit
Humidity: Capacitive Polymer,
±2% RH (10% to 90%) @25°C, Fully Compensated
Temperature: Semi-conductor Band Gap, ±0.3°C @ 25°C

Direct Temp. Sensor: 10K-3 Thermistor

Mounting: J-box or drywall mount - screws provided

Environmental Specifications:
Temperature: 0 to 50°C (32 to 122°F)
Humidity: 0 to 95%, non-condensing

Wiring: 2 to 5 pair of 16 to 22 AWG*

Material: ABS Plastic - UL 94, V-0

* Delta recommends that you do not run wiring for Room Units in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.

3.50in [88.9mm]   1.06in [26.9mm]

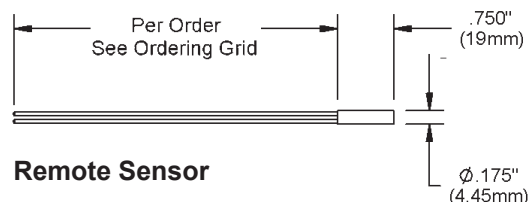5.50in [139.7mm]

Closed Cell Foam

10K-3 Thermistor Sensor Specifications
Resistance: 10 kΩ @ 25°C, -55 to 150°C range
Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

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Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

BAPI-Stat 3 Temp/Humidity Room Units with °F Indication and Off White Logo Plate

Call for #   BAPI-Stat 3 Sensor, °F Ind., Humidity Setpoint, Temp Setpoint, Override, Off White Logo Plate
Call for #   BAPI-Stat 3 Sensor, °F Ind., Temperature Setpoint, Occupant Override, Off White Logo Plate
Call for #   BAPI-Stat 3 Sensor, °F Ind., Temperature Setpoint, No Override, Off White Logo Plate
Call for #   BAPI-Stat 3 Sensor, °F Ind., No Setpoint, No Override, Off White Logo Plate

BAPI-Stat 3 Temp/Humidity Room Units with °C Indication and Off White Logo Plate

Call for #   BAPI-Stat 3 Sensor, °C Ind., Humidity Setpoint, Temp Setpoint, Override, Off White Logo Plate
Call for #   BAPI-Stat 3 Sensor, °C Ind., Temperature Setpoint, Occupant Override, Off White Logo Plate
Call for #   BAPI-Stat 3 Sensor, °C Ind., Temperature Setpoint, No Override, Off White Logo Plate
Call for #   BAPI-Stat 3 Sensor, °C Ind., No Setpoint, No Override, Off White Logo Plate

BAPI-Stat 4 "X-Combo" Room Unit

Delta ™
C O N T R O L S

Humidity or Combination Sensors

Rev. 04/15/13

Available with Temperature & Humidity Setpoint

Features & Options

● Large Easy-to-Read Display with °F or °C Indication

● Fully Compensated 2% RH Sensor

● Temperature and Humidity Sensing with Display and Temperature Setpoint

● Optional Humidity Setpoint and Overrride

● User Adjustable Toggle Rate Between Temp and Humidity Display

● Two Year Warranty

The BAPI-Stat 4 "X-Combo" Room Unit features local measurement and indication of temperature and humidity along with Temperature Setpoint. Additional options include Humidity Setpoint and Local Override.

**BAPI-Stat 4 "X-Combo"
with Setpoint & Override**

The BAPI-Guard

● Prevents Tampering and Damage

● Exceptional Airflow

● Two Sizes to Fit Most Thermostats

(See Accessories for info.)

BAPI-Guard & Thermostat

The LCD shows room temperature in °C or °F and room humidity in %RH. In addition, the unit has adjustable offsets for both temperature and humidity.

Specifications

Supply Volts:	12 to 30VDC (Contact Delta if AC power required)
Supply Power:	VDC = 50mA, VAC = 1.2VA
Temperature Sensor:	Semicond. Band Gap, ±0.6ºC@25°C
RH Sensor:	Capacitive, ±2% Accuracy, 20% to 80%@25°C
Output Signals:	
Temp Setpoint	0 to 5V or 0 to 20KΩ
Humidity Setpoint	0 to 5V
Temp Sensor	10K-3 Thermistor
Input (Digital):	1 (lights Occ/UnOccupied Icon)
Termination:	8 Terminals, 16 to 22 AWG
Optional Override:	Shunt on any of 4 Channels
Indicators on Display:	Temp, RH, SP, Override
Display size	2.04"W x 1.33"H
Mounting:	Standard J-Box or Drywall, screws provided
Enclosure Material:	ABS Plastic, UL94V-0
Ambient (Enclosure):	0 to 50ºC (32 to 122ºF) 0 to 95% RH, Non-condensing
Agency:	RoHS
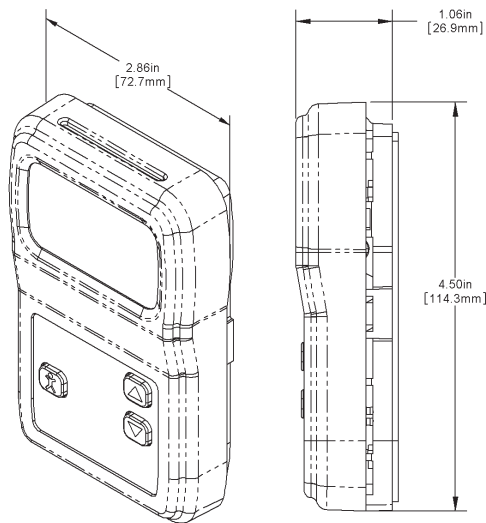
1.06in [26.9mm]

2.86in [72.7mm]

4.50in [114.3mm]

10K-3 Thermistor Sensor Specifications
Resistance:
   10 kΩ @ 25°C, -55 to 150°C range
Standard Accuracy:
   0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift):
   Less than ±0.1°C (0.18°F) drift over 10 years.

*Delta recommends that you do not run wiring for the room units in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators and coils.

Rev. 04/15/13

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

X-Combo Temp/Humidity Unit, BAPI-Stat 4, °F Indication, with Warm White Logo Plate

Call for #   BAPI-Stat 4 X-Combo, °F Indication, Pushbutton Temp Setpoint, Override
Call for #   BAPI-Stat 4 X-Combo, °F Indication, Pushbutton Temp Setpoint, No Override

Call for #   BAPI-Stat 4 X-Combo, °F Indication, Pushbutton Temp and Humidity Setpoint, Override
Call for #   BAPI-Stat 4 X-Combo, °F Indication, Pushbutton Temp and Humidity Setpoint, No Override

X-Combo Temp/Humidity Unit, BAPI-Stat 4, °C Indication, with Warm White Logo Plate

Call for #   BAPI-Stat 4 X-Combo, °C Indication, Pushbutton Temp Setpoint, Override
Call for #   BAPI-Stat 4 X-Combo, °C Indication, Pushbutton Temp Setpoint, No Override

Call for #   BAPI-Stat 4 X-Combo, °C Indication, Pushbutton Temp and Humidity Setpoint, Override
Call for #   BAPI-Stat 4 X-Combo, °C Indication, Pushbutton Temp and Humidity Setpoint, No Override

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Dew Point Sensor
Humidity or Combination Sensors

Rev. 04/15/13

Features & Options

- Accurate Dew Point and Dry Bulb Temperature in One Unit
- ± 1°C (1.8°F) Dew Point Accuracy for the Normal Occupied Range
- 0 to 5 VDC Dew Point Output
- No Installation Calibration or Recalibration Required
- Optional Temperature Sensing, Setpoint and Override

The green revolution is increasing the use of chilled beams and chilled ceilings in commercial buildings. Chilled water is pumped through hollow beams or special hollow ceiling tiles. Radiation cools the space eliminating air handlers, VAV boxes, fan-coil units and the energy to run them.

The temperature of the chilled water has to be regulated above the space's air dew point temperature. If the beam or ceiling temperature is below the space's dew point, they will "sweat", promoting mold growth and dropping water on the occupants and their belongings.

Delta's Dew Point Sensor is an easy and economical way to measure the dew point temperature. The unit is available with an optional display, temperature setpoint slider and an occupant override pushbutton.

The large format display allows you to easily read Dew Point Temperature and Dry Bulb Temperature. The display alternates between these values and is field adjustable between °F or °C. One or both of the displayed values may be easily turned on or off by an HVAC technician.

Dew Point Sensors with Setpoint, Display and Override

Specifications

Power: 15 to 35 VDC @ 4 mA max
Humidity Sensor: Capacitive Polymer, ±2% RH Accuracy, 10% to 90%@25°C
Temperature Sensor: 10K-3 Thermistor
Mounting: J-Box or drywall mount (screws provided)
Dew Point Temperature Range: -20 to 50°C (-4 to 122°F)
Response Time: Less Than 60 Seconds
Operating Environment:
    0 to 50°C (32 to 122°F)
    0 to 95%RH non-condensing
LCD Display: 3.5 digit numeric (Dew Pt & Dry Bulb Temp)
Measurement Offsets (field adjustable)
    ±5° (F or C) in 0.1° or 0.5° increments – DB
    ±5 RH in 0.1% or 0.5% increments – RH
Analog Output (0 to 5 VDC)
    Dew Point Temperature: -20 to 50°C (-4 to 122°F)
Calibration: Internal & continuous, (No field calibration)
Weight: .11kg (.25lb)
Enclosure Material & Rating: ABS Plastic, UL94,V-0
Certifications: CE, RoHS
Warranty: Two years from manufacture date

10K-3 Thermistor Sensor Specifications
Resistance: 10 kΩ @ 25°C, -55 to 150°C range
Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C
Dissipation Constant: 2.7 mW/°C
Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

Delta recommends that you do not run wiring for room units in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.

BAPI-Stat 4 Enclosure

2.86in [72.7mm]
1.06in [26.9mm]
4.50in [114.3mm]
Closed Cell Foam

Dewpoint Accuracy versus Space Conditions

Condensation Possible
±1°C Dewpoint Accuracy
±2°C Dewpoint Accuracy
Unspecified Dewpoint Accuracy
Dewpoint Temperature In Degrees Celsius
Space Temperature in Degrees Celsius

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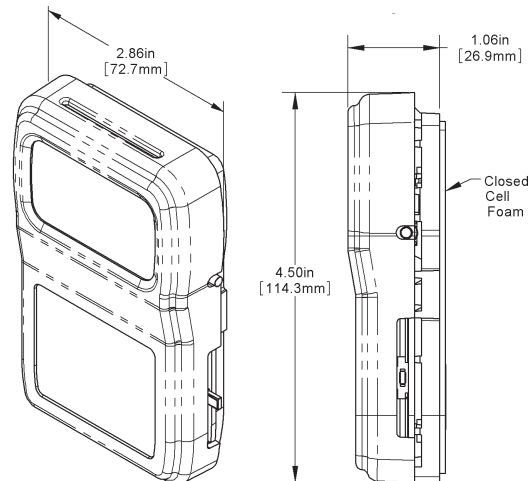
Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

Dew Point Sensor with Display, °F Indication and Warm White Logo Plate

Call for #   BAPI-Stat 4 Dew Point Sensor, Display, °F Ind., Temp. Sensing, Temp. Slider Setpoint, Button Override
Call for #   BAPI-Stat 4 Dew Point Sensor, Display, °F Ind., Temp. Sensing, Temp. Slider Setpoint, No Override
Call for #   BAPI-Stat 4 Dew Point Sensor, Display, °F Ind., Temp. Sensing, No Setpoint, No Override
Call for #   BAPI-Stat 4 Dew Point Sensor, Display, No Temp. Sensing, No Setpoint, No Override

Dew Point Sensor with Display, °C Indication and Warm White Logo Plate

Call for #   BAPI-Stat 4 Dew Point Sensor, Display, °C Ind., Temp. Sensing, Temp. Slider Setpoint, Button Override
Call for #   BAPI-Stat 4 Dew Point Sensor, Display, °C Ind., Temp. Sensing, Temp. Slider Setpoint, No Override
Call for #   BAPI-Stat 4 Dew Point Sensor, Display, °C Ind., Temp. Sensing, No Setpoint, No Override
Call for #   BAPI-Stat 4 Dew Point Sensor, Display, No Temp. Sensing, No Setpoint, No Override

Dew Point Sensor without Display and Warm White Logo Plate

Call for #   BAPI-Stat 4 Dew Point Sensor without Display,, Temp. Sensing, Temp. Slider Setpoint, Button Override
Call for #   BAPI-Stat 4 Dew Point Sensor without Display,, Temp. Sensing, Temp. Slider Setpoint, No Override
Call for #   BAPI-Stat 4 Dew Point Sensor without Display,, Temp. Sensing, No Setpoint, No Override
Call for #   BAPI-Stat 4 Dew Point Sensor without Display,, No Temp. Sensing, No Setpoint, No Override

Humidity or Combination Sensors

Rev. 02/27/13

Features & Options

- Humidity Only or Temp./Humidity Combination
- 17 Points of Calibration from 10 to 90% RH
- Watertight BAPI-Box 2 Enclosure
- Replaceable Stainless Steel Filter
- 2% and 3% RH Accuracies
- Optional 10K-3 Thermistor Temperature Sensor

Humidity control is an important aspect of any climate control system. Therefore, humidity sensors must be both accurate and dependable. Delta's humidity transmitters are calibrated at 17 points from 10 to 90% RH for accuracy, eliminating field calibration.

The Duct Units are also extremely dependable, featuring the polycarbonate BAPI-Box 2 which carries an IP66/NEMA 4 rating and remains watertight even after multiple openings of the hinged cover.

All Duct Units feature closed cell foam to seal the insertion hole and to absorb vibration. Mounting tabs allow for easy installation to the wall of the duct. The units are built to withstand high humidity and condensation and perform in the real world.
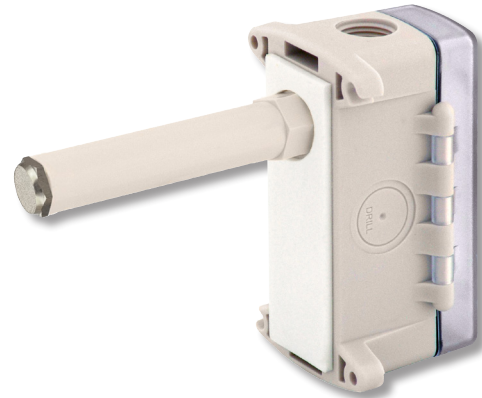
**Duct Humidity Sensor
in a BAPI-Box 2**

Replacement Filter

The 100 micron sintered stainless steel filter protects the sensor from contamination while allowing airflow. See "Accessories" for more info.

Specifications

Power and Consumption:
10 to 35 VDC, 22 mA max. (for units with 0 to 5 VDC or 4 to 20 mA Humidity Outputs)
12 to 27 VAC, 0.53 VA max. (for units with 0 to 5 VDC Humidity Outputs)

Sensor:
    Humidity: Capacitive 2% or 3% RH (10 to 90% RH @ 23°C)
    Temp: 10K-3 Thermistor

Enclosure Rating: IP66, NEMA 4

Enclosure Material:
    UV-resistant Polycarbonate, UL 94, V-0

Environmental Operation Range:
    Temp: -30 to 70°C (-22 to 158°F)
    Humidity: 0% to 100% RH
    Fully Temperature Compensated

Agency: CE

10K-3 Thermistor Sensor Specifications
Resistance:
  10 kΩ @ 25°C, -55 to 150°C range

Standard Accuracy:
  0.2°C (±0.36°F) at 0 to 70°C

Dissipation Constant:
  2.7 mW/°C

Stability (drift):
  Less than ±0.1°C (0.18°F) drift over 10 years.

2.82in [71.6mm]
1/2in NPSM (2 Plcs)
2.35in [59.7mm]
5.30in [134.5mm]
Ø.19in [4.9mm] Typ. of 4
4.91in [124.8mm]
.125in [3.18mm] Foam
Hinged Cover, Latch & Cover Screws
1/2in Drillable Ports (3 Plcs)

Duct Humidity Sensor in a BAPI-Box 2

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 02/27/13

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

Duct Combination Temp/Humidity Sensor in a BAPI-Box 2 Enclosure

402103   Duct Sensor, 2%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, 10K-3 Therm, BAPI-Box 2
402105   Duct Sensor, 3%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, 10K-3 Therm, BAPI-Box 2

Duct Humidity Sensor in a BAPI-Box 2 Enclosure

401104   Duct Humidity Sensor, 2%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, BAPI-Box 2
401106   Duct Humidity Sensor, 3%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, BAPI-Box 2

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Features & Options

- 17 Points of Calibration from 10 to 90% RH
- Watertight BAPI-Box 2 Enclosure
- Humidity Only or Temp./Humidity Combination
- Replaceable Filter
- 2% and 3% RH Accuracies
- Optional 10K-3 Thermistor Temperature Sensor

Humidity control is an important aspect of any climate control system. Therefore, humidity sensors must be both accurate and dependable.

Delta's humidity transmitters are calibrated at 17 points from 10 to 90% RH for accuracy, eliminating field calibration.

The Outside Air Units are also extremely dependable, featuring the polycarbonate BAPI-Box 2 which carries an IP66/NEMA 4 rating and remains watertight even after multiple openings of the hinged cover.

All Outside Air Units are built to withstand high humidity and condensation and perform in the real world. This is especially important in an Outside Air Unit which can be exposed to rain, snow and large temperature swings.

Outside Air Humidity Sensor in a BAPI-Box 2

Specifications

Power and Consumption:
10 to 35 VDC, 22 mA max. (for units with 0 to 5 VDC or 4 to 20 mA Humidity Outputs)
12 to 27 VAC, 0.53 VA max. (for units with 0 to 5 VDC Humidity Outputs)

Sensor:
Humidity: Capacitive 2% or 3% RH (10 to 90% RH @ 23°C)
Temp: 10K-3 Thermistor

Enclosure Rating: IP66, NEMA 4

Enclosure Material:
UV-resistant Polycarbonate, UL 94, V-0

Environmental Operation Range:
Temp: -30 to 70°C (-22 to 158°F)
Humidity: 0% to 100% RH
Fully Temperature Compensated

Agency: CE

10K-3 Thermistor Sensor Specifications

Resistance: 10 kΩ @ 25°C, -55 to 150°C range

Standard Accuracy: 0.2°C (±0.36°F) at 0 to 70°C

Dissipation Constant: 2.7 mW/°C

Stability (drift): Less than ±0.1°C (0.18°F) drift over 10 years.

Outside Air Humidity Sensor in a BAPI-Box 2

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Rev. 05/02/13

Ordering Information/Part Numbers

DELTA #   DESCRIPTION

Outside Air Combination Temp/Humidity Sensor in a BAPI-Box 2 Enclosure
402204   Outside Air Sensor, 2%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, 10K-3 Therm, BAPI-Box 2
402206   Outside Air Sensor, 3%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, 10K-3 Therm, BAPI-Box 2

Outside Air Humidity Sensor in a BAPI-Box 2 Enclosure
401059   Outside Air Sensor, 2%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, BAPI-Box 2
401202   Outside Air Sensor, 3%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, BAPI-Box 2

The temperature sensor shouldn't have to be in your interior design plans.

The Button Sensor
Paintable • Inconspicuous • Highly Accurate

For more information on the Button Sensor, turn to the Temperature Sensors section of this catalog.

Panel Mount Pressure Sensors - pgs 36-37

10 Field Selectable Pressure Ranges &
3 Field Selectable Outputs

Standard Pressure Ranges - pg 36

Low Pressure Ranges - pg 37

BAPI-Box Pressure Sensors - pgs 38-40

10 Field Selectable Pressure Ranges &
3 Field Selectable Outputs

Standard Pressure Ranges - pg 38

Low Pressure Ranges - pg 39

High Pressure Ranges - pg 40

Pressure Probe Assemblies - pg 41

The Static Pressure Probe and Total Pressure Probe Assemblies connect to the Delta Pressure Sensors to provide duct static pressure or duct air velocity.

Pressure Pickup Ports - pgs 42-43

The Wall Plate and Delta Style Enclosure can be used for pressure alone or as a combination temperature sensor and pressure pickup port.

Outside Air Pickup Port - pg 44

Helps stabilize pressure readings because it significantly reduces the pressure fluctuations caused by wind gusts.
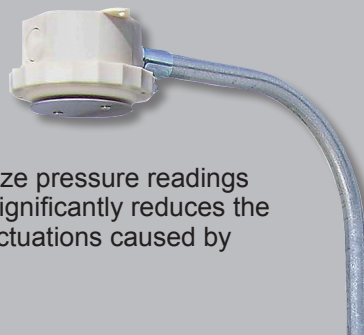
Low Profile Pressure Pickup Port - pg 45

The only visible portion is a flush 22mm dot on the wall. The built in surge damper smoothes out rapid variations in air pressure for a more stable reading.

Pressure Switches - pg 46

Because of its UL 353 Limit Control Listing, the Delta Switch can be used in safety circuits to protect heating appliances, heating systems, processing systems and HVAC/R systems.

Rev. 01/09/14

Panel Mount Pressure

Features & Options

- 10 Field Selectable Pressure Ranges & 3 Field Selectable Outputs

- LCD Displays Pressure Over the Entire Operational Range Regardless of Which Individual Pressure Range is Selected

- Inches of Water Column (W.C.) or Pascal Operation

- Standard Pressure Ranges, -5" to +5" WC or -1,250 to +1,250 Pascals

- Simple Auto-Zero with Snaptrack, DIN Rail or Surface Mounting

Measuring building pressure and air velocities or volumes doesn't get any easier than with the Delta Panel Mount Pressure Sensor. The revolutionary mounting system allows for 70mm snaptrack, DIN rail or surface mounting, and the three Outputs and 10 Pressure Ranges are field selectable by simply turning the rotary switch and pressing the "Next" button. The auto-zeroing process is also very easy — simply turn the rotary switch to zero, push the button, wait for five seconds, turn the rotary switch back to your pressure range and walk away.

Besides being easy to set up and install, it is also accurate, rugged and economical. The heart of the unit is a micro-machined silicon pressure sensor. The capacitive sensor design inherently provides excellent accuracy, repeatability and stability. The unit features a rugged NEMA 1 rated enclosure with short circuit proof outputs and reverse polarity protected inputs to perform under real world conditions.

The LCD display helps with troubleshooting because it displays the actual differential pressure over the entire operational range (-5 to +5 inches W.C. or -1,250 to 1,250 Pascals) regardless of which individual pressure range is selected for output to the system controller.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
400398	Panel Mount Pressure, Standard Range, Inches of W.C. Ranges, Display, No Tube or Probe
401311	Panel Mount Pressure, Standard Range, Pascals Ranges, Display, No Tube or Probe

Specifications

Power:
7 to 40 VDC (4 to 20 mA Output)
7 to 40 VDC or 18 to 28 VAC (0 to 5 VDC Output)
13 to 40 VDC or 18 to 28 VAC (0 to 10 VDC Output)

Power Consumption:
20 mA max, DC only at 4 to 20 mA Output
4.9 mA max DC at 0 to 5 VDC or 0 to 10 VDC Output
0.12 VA max AC at 0 to 5 VDC or 0 to 10 VDC Output

Load Resistance:
4 to 20 mA Output 850 Ω Maximum @ 24 VDC
0 to 5 VDC or 0 to 10 VDC output 1KΩ minimum

Accuracy at 72°F: ±0.25% of range

Stability: ±0.25% F.S. per year

Environmental Operation Range: -4°F to 140°F (-20°C to 60°C)

Humidity: 0 to 95% RH, non-condensing

Storage Temperature: -40 to 203°F (-40 to 95°C)

Temperature Error:
0.01% FS/°F (0.02% FS/°C)
(±5.0" W.C. @ -4 to 140°F [-20 to 60°C])

Overpressure:
Proof: 27.68" W.C. (1 PSI), Burst: 41.52" W.C. (1.5 PSI)

Wiring:
3-wire removable terminal block (14 to 24 AWG)*
2 wires (4 to 20mA Current loop)*
3 wires (AC or DC powered, Voltage out)*

Port Connection:
1 High Pressure & 1 Low Pressure
for push-on 1/4-inch tubing (1/8" to 3/16" I.D.)

Enclosure Material: ABS Plastic, UL94, V-0

Mounting: DIN Rail, Snaptrack or Surface

Agency: CE

[1]**Delta** recommends that you do not run wiring for the pressure transmitter in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.

Note: Mount unit with the pressure fittings on the bottom to prevent condensation from entering the sensor.

Rev. 01/09/14

Features & Options

- 10 Field Selectable Pressure Ranges & 3 Field Selectable Outputs
- LCD Displays Pressure Over the Entire Operational Range Regardless of Which Individual Pressure Range is Selected
- Inches of Water Column or Pascal Operation
- Simple Auto-Zero with Snaptrack, DIN Rail or Surface Mounting
- Optimized for Pressures Below 1" W.C. or 250 Pascals

Panel Mount Pressure

Measuring building pressure and air velocities or volumes doesn't get any easier than with the Delta's Panel Mount Low Pressure Sensor. The revolutionary mounting system allows for 70mm snaptrack, DIN rail or surface mounting, and the three Outputs and 10 Pressure Ranges are field selectable by simply turning the rotary switch and pressing the button. The auto-zeroing process is also very easy and uses the same switch and button.

Besides being easy to set up and install, it is also accurate, rugged and economical. The heart of the unit is a micro-machined silicon pressure sensor specifically developed for low pressure. The capacitive sensor design inherently provides excellent accuracy, repeatability and stability. The unit has been optimized for pressures below 1" W.C. or 250 Pascals.

The unit features a rugged NEMA 1 rated enclosure with short circuit proof outputs and reverse polarity protected inputs. The LCD display helps with troubleshooting because it displays the actual differential pressure over the entire operational range (-1 to +1 inches W.C. or -250 to +250 Pascals) regardless of which individual pressure range is selected for output to the system controller.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
400399	Panel Mount Pressure, Low Range, Inches of W.C. Ranges, Display, No Tube or Probe
401306	Panel Mount Pressure, Low Range, Pascals Ranges, Display, No Tube or Probe

Specifications

Power:
7 to 40 VDC (4 to 20 mA Output)
7 to 40 VDC or 18 to 28 VAC (0 to 5 VDC Output)
13 to 40 VDC or 18 to 28 VAC (0 to 10 VDC Output)

Power Consumption:
20 mA max, DC only at 4 to 20 mA Output
4.9 mA max DC at 0 to 5 VDC or 0 to 10 VDC Output
0.12 VA max AC at 0 to 5 VDC or 0 to 10 VDC Output

Load Resistance:
4 to 20 mA Output 850 Ω Maximum @ 24 VDC
0 to 5 VDC or 0 to 10 VDC output 1KΩ minimum

Accuracy at 72°F:
±0.5% of range 0 to 0.1", 0 to 0.25", ±0.1" and ±0.25" ranges
±0.5% of range 0 to 30 Pa, 0 to 50 Pa, ±30 Pa and ±50 Pa ranges
±0.25% of range all other ranges

Stability: ±0.25% F.S. per year

Temperature Error:
0.04% FS/°F (0.07% FS/°C) (±1.0" W.C. @ -4 to 140°F [-20 to 60°C])

Environmental Operation Range: -4 to 140°F (-20 to 60°C)

Storage Temperature: -40 to 203°F (-40 to 95°C)

Overpressure: Proof: 27.68 in W.C (1 PSI),
Burst: 41.52 in W.C. (1.5 PSI)

Wiring: 3-wire removable term. block (14 to 24 AWG)*
2 wires (4 to 20mA Current loop)*
3 wires (AC or DC powered, Voltage out)*

Humidity: 0 to 95% RH, non-condensing
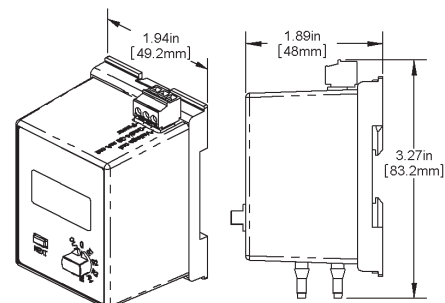
Port Connection:
1 High Pressure & 1 Low Pressure for push-on 1/4" tubing (1/8" to 3/16" I.D.)

Enclosure Material: ABS Plastic, UL94, V-0

Mounting: DIN Rail, Snaptrack or Surface

Agency: CE

1.94in [49.2mm]   1.89in [48mm]   3.27in [83.2mm]

[1]**Delta** recommends that you do not run wiring for the pressure transmitter in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.
Note: Mount unit with the pressure fittings on the bottom to prevent condensation from entering the sensor.

BAPI-Box Pressure, Standard Ranges, -5" to +5" WC

Air Pressure Sensors

Rev. 01/09/14

Patent Pending

Features & Options

● 10 Field Selectable Pressure Ranges and 3 Field Selectable Outputs

● Pascal or Inches of Water Column (WC) Operation

Delta's BAPI-Box Pressure Sensor is an accurate, rugged and economical solution for measuring and reporting duct/building static pressure, room-to-room differential pressure or air velocities/volumes. The heart of the unit is a micro-machined silicon pressure sensor with excellent accuracy, repeatability and stability.

The unit comes with an IP66-rated BAPI-Box enclosure with short circuit proof outputs and reverse polarity protected inputs to perform under real world conditions.

The LCD helps with troubleshooting because it displays the actual differential pressure over the entire operational range (-5 to +5 inches W.C. or -1,250 to 1,250 Pascals) regardless of which individual pressure range is selected for output to the system controller.

BAPI-Box Pressure Sensor, Standard Ranges

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
400094	BAPI-Box Pressure, Standard Ranges, Inches of W.C. Ranges, Display, No Tube or Probe
401278	BAPI-Box Pressure, Standard Ranges, Pascal Ranges, Display, No Tube or Probe

Specifications

Power:
7 to 40 VDC (4 to 20 mA Output)
7 to 40 VDC or 18 to 28 VAC (0 to 5 VDC Output)
13 to 40 VDC or 18 to 28 VAC (0 to 10 VDC Output)

Power Consumption:
20 mA max, DC only at 4 to 20 mA Output
4.9 mA max DC at 0 to 5 VDC or 0 to 10 VDC Output
0.12 VA max AC at 0 to 5 VDC or 0 to 10 VDC Output

Load Resistance:
4 to 20 mA Output 850 Ω Maximum @ 24 VDC
0 to 5 VDC or 0 to 10 VDC output 1KΩ minimum

Accuracy at 72°F: ±0.25% of range

Stability: ±0.25% F.S. per year

Environmental Operation Range:
-4 to 140°F (-20 to 60°C)

Storage Temperature: -40 to 203°F (-40 to 95°C)

Temperature Error:
0.01% FS/°F (0.02% FS/°C) (±5.0" W.C. @ -4 to 140°F [-20 to 60°C])

Overpressure: Proof: 27.68 in W.C (1 PSI),
Burst: 41.52 in W.C. (1.5 PSI)

Wiring: 2 wires (4 to 20mA Current loop)*
3 wires (AC or DC powered, Voltage out)*

Humidity: 0 to 95% RH, non-condensing

Port Connection:
1 High Pressure & 1 Low Pressure
for push-on 1/4" tubing (1/8" to 3/16" I.D.)

Enclosure Material:
UV-resistant Polycarbonate, UL94, V-0

Enclosure Rating: IP66, NEMA 4

Mounting: 4 external tabs with holes for #10 screws

Agency: CE

[1]**BAPI** recommends that you do not run wiring for the pressure transmitter in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.

Note: Mount unit with the pressure fittings on the bottom to prevent condensation from entering the sensor.

Rev. 01/09/14

Features & Options

- 10 Field Selectable Pressure Ranges and 3 Field Selectable Outputs
- Pascal or Inches of Water Column (WC) Operation

Delta's BAPI-Box Pressure Sensor is an accurate, rugged and economical solution for measuring and reporting duct/building static pressure, room-to-room differential pressure or air velocities/volumes. The heart of the unit is a micro-machined silicon pressure sensor with excellent accuracy, repeatability and stability. The unit has been optimized for pressures below 1" W.C. or 250 Pascals.

The unit comes with an IP66-rated BAPI-Box enclosure with short circuit proof outputs and reverse polarity protected inputs to perform under real world conditions.

The LCD helps with troubleshooting because it displays the actual differential pressure over the entire operational range (-1 to +1 inches W.C. or -250 to 250 Pascals) regardless of which individual pressure range is selected for output to the system controller.

Patent Pending

BAPI-Box Pressure Sensor, Low Ranges

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
401260	BAPI-Box Pressure, Low Ranges, Inches W.C. Ranges, Display, No Tube or Probe
Call for #	BAPI-Box Pressure, Low Ranges, Pascal Ranges, Display, No Tube or Probe

Specifications

Power:
7 to 40 VDC (4 to 20 mA Output)
7 to 40 VDC or 18 to 28 VAC (0 to 5 VDC Output)
13 to 40 VDC or 18 to 28 VAC (0 to 10 VDC Output)

Power Consumption:
20 mA max, DC only at 4 to 20 mA Output
4.9 mA max DC at 0 to 5 VDC or 0 to 10 VDC Output
0.12 VA max AC at 0 to 5 VDC or 0 to 10 VDC Output

Load Resistance:
4 to 20 mA Output 850 Ω Maximum @ 24 VDC
0 to 5 VDC or 0 to 10 VDC output 1KΩ minimum

Accuracy at 72°F:
±0.5% of range 0 to 0.1", 0 to 0.25", ±0.1" and ±0.25" ranges
±0.5% of range 0 to 30 Pa, 0 to 50 Pa, ±30 Pa and ±50 Pa ranges
±0.25% of range all other ranges

Stability: ±0.25% F.S. per year

Temperature Error:
0.04% FS/°F (0.07% FS/°C) (±1.0" W.C. @ -4 to 140°F [-20 to 60°C])

Environmental Operation Range: -4 to 140°F (-20 to 60°C)

Storage Temperature: -40 to 203°F (-40 to 95°C)

Overpressure: Proof: 27.68 in W.C (1 PSI),
Burst: 41.52 in W.C. (1.5 PSI)

Wiring: 2 wires (4 to 20mA Current loop)*
3 wires (AC or DC powered, Voltage out)*
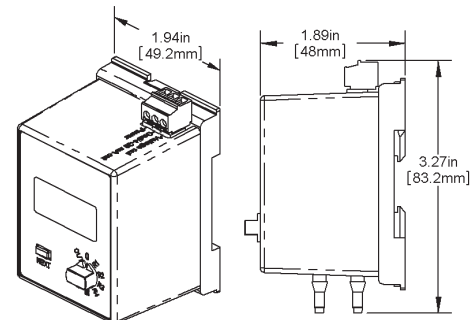
Humidity: 0 to 95% RH, non-condensing

Port Connection:
1 High Pressure & 1 Low Pressure for push-on 1/4-inch tubing (1/8" to 3/16" I.D.)

Enclosure Material:
UV-resistant Polycarbonate, UL94, V-0

Enclosure Rating: IP66, NEMA 4

Mounting: 4 external tabs with holes for #10 screws

Agency: CE

1/2" Drillable Port
4.11in [104.4mm]
1/2" NPSM Typ
2.50in [63.5mm]
5.49in [139.4mm]

[1]**BAPI** recommends that you do not run wiring for the pressure transmitter in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.
Note: Mount unit with the pressure fittings on the bottom to prevent condensation from entering the sensor.

BAPI-Box Pressure, High Ranges, 0" to 30" WC

Air Pressure Sensors

Rev. 01/09/14

Delta™
CONTROLS

Patent
Pending

Features & Options

- Field Selectable Pressure Ranges and Outputs
- Optional Display Shows Pressure Over the Entire Operational Range Regardless of Which Individual Pressure Range is Selected
- Inches of Water Column or Pascal Operation
- Simple Auto-Zero Process & IP66-Rated Enclosure

Delta's High Pressure Sensor in a BAPI-Box is an accurate, rugged and economical solution for measuring and reporting duct/building static pressure, room-to-room differential pressure or air velocities/volumes. The heart of the unit is a micro-machined silicon pressure sensor. The capacitive sensor design inherently provides excellent accuracy, repeatability and stability.

The LCD display helps with troubleshooting because it displays the actual differential pressure over the entire operational range (0 to 30 W.C. or 0 to 7,400 Pascals) regardless of which individual pressure range is selected for output to the system controller.

**BAPI-Box Pressure
Sensor, High Ranges**

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	Pressure Sensor, BAPI-Box, High Ranges
401290	BAPI-Box Pressure Sensor, High Range, Inches of W.C. Ranges, Display, No Tube or Probe
401293	BAPI-Box Pressure Sensor, High Range, Pascal Ranges, Display, No Tube or Probe

Specifications

Power:
7 to 40 VDC *(4 to 20 mA output)*
7 to 40 VDC or 18 to 28 VAC *(0 to 5 VDC output)*
13 to 40 VDC or 18 to 28 VAC *(0 to 10 VDC output)*

Load Resistance:
0 to 5 VDC or 0 to 10 VDC Output - 1 kΩ minimum
4 to 20 mA Output - 850 Ω max @ 24 VDC

Power Consumption:
4.9 mA max DC at 0 to 5 or 0 to 10 VDC Output
0.12 VA max AC at 0 to 5 or 0 to 10 VDC Output
20 mA max, DC only at 4 to 20 mA Output

Accuracy at 72 ºF: ±0.25% on all ranges

Stability: ±0.25 % F.S. (full scale) per year

Temperature Error:
  Zero: ±0.025% F.S. per °C,
  Span: max ±0.03% F.S. per °C

Environmental Operation Range: 32 to 140°F (0 to 60°C)

Storage Temperature: -40 to 203°F (-40 to 95°C)

Overpressure: Proof: 2 PSI, Burst: 3 PSI

Wiring: 2 wires (4 to 20mA Current loop)*
        3 wires (AC or DC powered, Voltage out)*

Humidity: 0 to 95% RH, non-condensing

Port Connection:
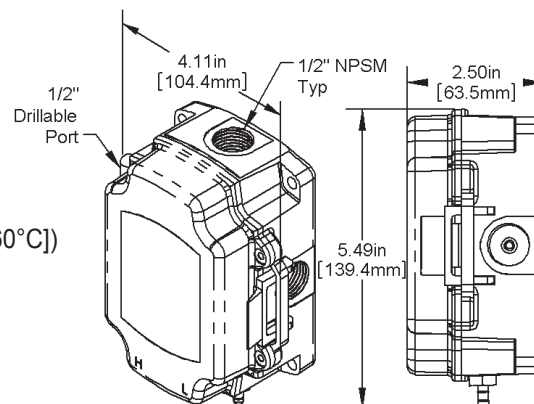1 High Pressure & 1 Low Pressure for push-on 1/4-inch tubing (1/8" to 3/16" I.D.)

Enclosure Material:
UV-resistant Polycarbonate, UL94, V-0

Enclosure Rating: IP66, NEMA 4

Mounting: 4 external tabs with holes for #10 screws

Agency: CE

4.11in [104.4mm]   1/2" NPSM Typ   2.50in [63.5mm]
1/2" Drillable Port
5.49in [139.4mm]
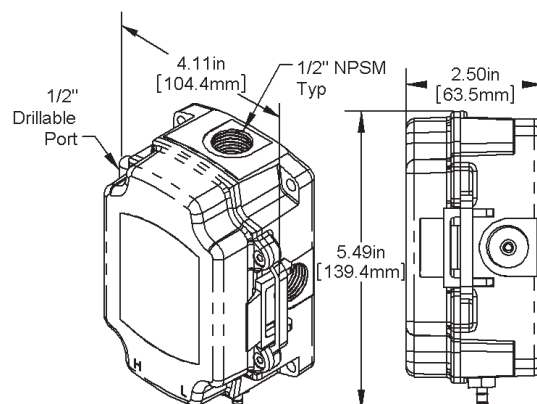
[1]**BAPI** recommends that you do not run wiring for the pressure transmitter in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.

Note: Mount unit with the pressure fittings on the bottom to prevent condensation from entering the sensor.

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 02/12/13

Static and Total Pressure Probe Assemblies

Overview

The Static Pressure Probe and Total Pressure Probe Assemblies connect to the Delta Pressure Sensors to provide duct static pressure or duct air velocity. The angled total probe faces into the airflow to sense the moving air's total pressure while the static probe senses static pressure.

Both probe assemblies include a tube and rubber hose with built in surge damper to smooth out variations in airflow for a more stable reading. The Static Pressure Probe is available individually while the Pitot Pressure Probe Assemby includes the total probe and the static probe assemblies.

Static Tube & Foam Pad

Surge Damper

**6.35mm (.25")
diameter tube,
152mm (6") long**

Static Pressure Probe Assembly

**Tube Opening
faces into the
air flow.**

Total Pressure Probe Assembly

Ordering Information

DELTA #	DESCRIPTION
	Pressure Probes and Accessories
400328	Static Pressure Probe Assembly, 152mm (6") Probes
401255	Pitot Pressure Probe Assembly, 89mm (3.5") Probes (includes 89mm Static & Total Probe Assemblies)
400391	Pitot Pressure Probe Assembly, 152mm (6") Probes (includes 152mm Static & Total Probe Assemblies)

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C42 Zone Pressure Pickup Ports
Air Pressure Sensors

Rev. 02/12/13

Features & Options

- Easy to Install Wall and Ceiling Pickup Ports
- Delta Style Enclosure or Stainless Steel Plate
- Ceiling Mount With or Without J-Box Enclosure
- Available as Pressure Pickup and Temp Sensor
- 100 Micron Filter
- Accommodates 3.2 to 4mm I.D. Tubing

The Wall Pressure Pickup Port comes standard on a brushed stainless steel plate or in a Delta Style enclosure, both sized to fit a common junction electrical box. A foam gasket seals the plate or enclosure to the wall to insure the integrity of the measured space.

The Wall Plate and Delta Style Enclosure can be used for pressure alone or as a combination temperature sensor and pressure pickup port. Delta also offers a Ceiling Mount Cover designed to fit a standard 19mm (3/4") thick suspended ceiling tile. If additional protection is required in the ceiling, a second ceiling cover fits on a common junction electrical box. The brass fitting on the back of all Pickup Ports accommodates standard 3.2 to 4mm (1/8" to 5/32") I.D. tubing.

Delta Style

Wall Plate

Ceiling Mount Square Cover

Ceiling Mount with J-Box

Specifications
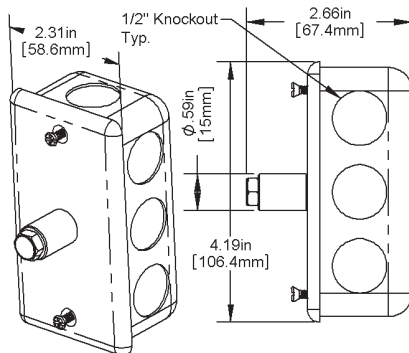
Ceiling Mount Cover & J-Box

2.31in [58.6mm]
1/2" Knockout Typ.
2.66in [67.4mm]
Ø.59in [15mm]
4.19in [106.4mm]

Ceiling Mount Cover

1.94in [49.3mm]
Ø.59in [15mm]
4.06in [103.1mm]

Environmental Operation Range:
Temperature
0 to 50 °C
(32 to 122 °F)
Humidity
0% to 95% RH, non-condensing

Material:
Delta Style:
ABS Plastic, UL94, V-0

Wall & Ceiling Plates:
Stainless Steel
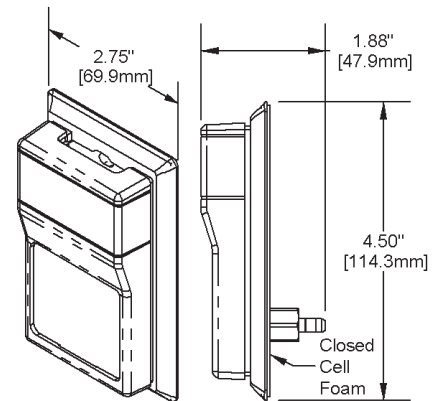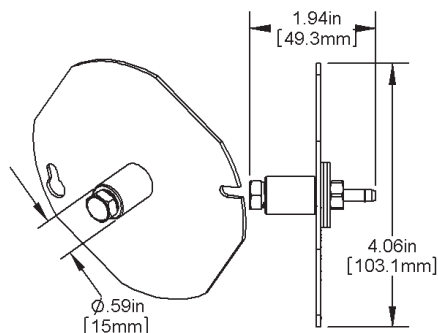
10K-3 Thermistor Sensor Specifications
Resistance:
10 kΩ @ 25°C,
-55 to 150°C range

Standard Accuracy:
0.2°C (±0.36°F)
at 0 to 70°C

Dissipation Constant:
2.7 mW/°C

Stability (drift):
Less than ±0.1°C (0.18°F)
drift over 10 years.

Delta Style

2.75" [69.9mm]
1.88" [47.9mm]
4.50" [114.3mm]
Closed Cell Foam

Wall Plate

2.78in [70.6mm]
1.19in [30.1mm]
Closed Cell Foam
4.50in [114.3mm]
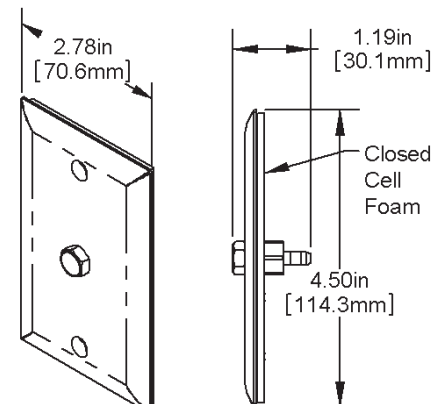
Rev. 02/12/13

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	Pressure Pickup Ports, Wall and Ceiling
400084	Stainless Steel Wall Plate with Static Pickup
400382	Stainless Steel Wall Plate with Static Pickup, 10K-3 Thermistor Temp Sensor
400331	Room Mount Delta Style Enclosure with Static Pickup
401252	Room Mount Delta Style Enclosure with Static Pickup, 10K-3 Thermistor Temp Sensor
400325	Ceiling Mount Square Cover with Static Pickup
400332	Ceiling Mount Rectangular Cover and J-Box with Static Pickup

Ceiling Mount Pickup Installation

The Ceiling Mount pickup is designed to fit through a standard 19mm (3/4") thick ceiling tile. Cut a 16mm (5/8") hole in the tile and place the static pressure sensor on top of the tile with the filter extending through the hole. The filter should stick out slightly below the tile's room surface. Attach tubing to the barbed fitting on the back of the pickup port and run the tubing to the pressure sensor. An optional Junction Box is available for the cover to protect the barbed fitting.

Ceiling Mount Pickup

5/8 hole through tile

Top of Ceiling Tile

Room that is being monitored

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Outside Air Pressure Pickup Port
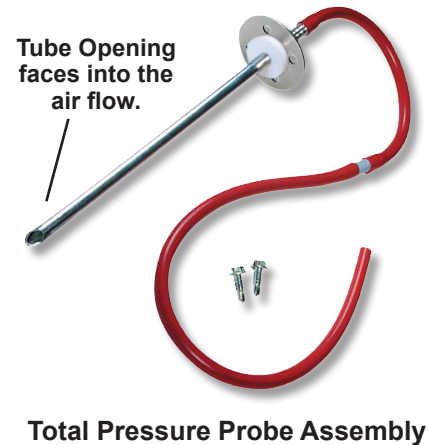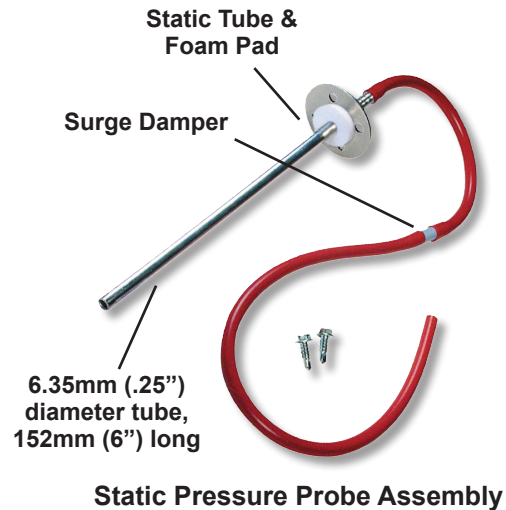*Air Pressure Sensors*
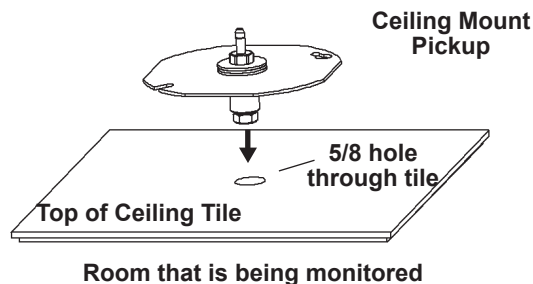
Rev. 02/12/13

Features & Options

- Economical & Easy to Install
- Accommodates 3.2 to 4mm I.D. Tubing
- Rooftop, Wall or Vertical Mount

Delta's Outside Air Pressure Pickup Port is an easy, economical and attractive way of measuring outdoor static pressure. The pickup port also helps stabilize pressure readings because it significantly reduces the pressure fluctuations caused by wind gusts.

Differences in building pressure are caused by the operation of supply fans or exhaust fans and usually measure less than 25 Pascals. A gentle breeze of 16 KPH provides a pressure of 12 Pascals, while a strong wind of 64 KPH provides 192 Pascals. A gale of 121 KPH can measure over 673 Pascals. Delta's pickup port significantly reduces these wind pressures for a stable and accurate reading at the pressure sensor and controller.

The unit is very rugged with a UV-resistant and flame-retardant housing to perform and last under harsh conditions. It is available in Rooftop or Wall Mount or Vertical Mount for building soffits or ceilings.

Patent Pending

Rooftop Mount or Wall Mount
(Conduit and tubing not included)

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
400083	Outside Air Pressure Pickup Port
400385	Outside Air Pressure Pickup Port, Vertical Mount

Specifications

Environmental Operation Range:

Temperature:
-40 to 100 °C (-40 to 212 °F)

Humidity:
0% to 100% RH, condensing

Material:
UV-resistant plastic

Rooftop or Wall Mount

4.10in [104.1mm]

1/2" EMT Conduit Fitting

5.15in [130.7mm]

1.27in [32.2mm]

2.28in [58mm]

Vertical Mount

4.10in [104.1mm]

Closed Cell Foam

1/2" EMT Conduit fitting

3.97in [100.8mm]

2.28in [58mm]
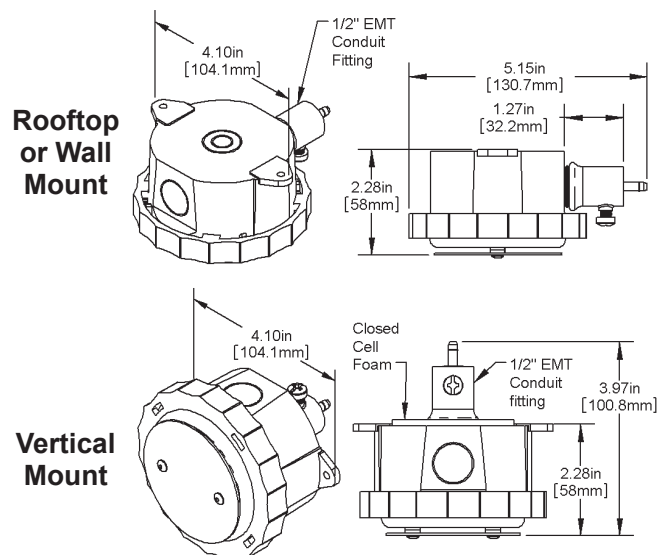
Rev. 02/12/13

Features & Options

● Small Flush Pressure Port Mounting

● Accurate Air Pressure Measurement

● Paintable with Latex or Oil Base

● Five-Micron Filter

● Built in Surge Damper

● Accommodates 3.2 to 4mm I.D. Tubing

The Low Profile Pressure Port is ideal for locations where aesthetics are as important as the pressure measurement. The inconspicuous sensor mounts easily by pushing through a 9.5mm hole and secured with an adhesive ring. The only visible portion is a flush 22mm dot on the wall. The built in surge damper provides five-micron filtering and smoothes out rapid variations in air pressure for a more stable reading.
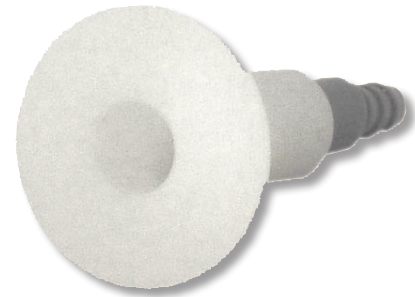
Low Profile Pressure Pickup Port

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

Call for #   Low Profile Pressure Pickup Port

Specifications

Mounting: 3/8" hole, push in plastic sheath with an adhesive ring

Configuration: Round Flush Sensor Sheath

Dimensions:

Insertion: 44.2mm (1.74") depth, into a 9.53mm (0.375") hole
Sleeve: 9.53mm (0.375") Diameter
Bezel 22.2mm (0.88") Diameter

Material: White Delrin, UL94V-HB

Filter: 5 Micron

Ambient:

0 to 100% RH, Non-condensing
-40 to 85ºC (-40 to 185ºF)

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Differential Pressure Switch

Air Pressure Sensors
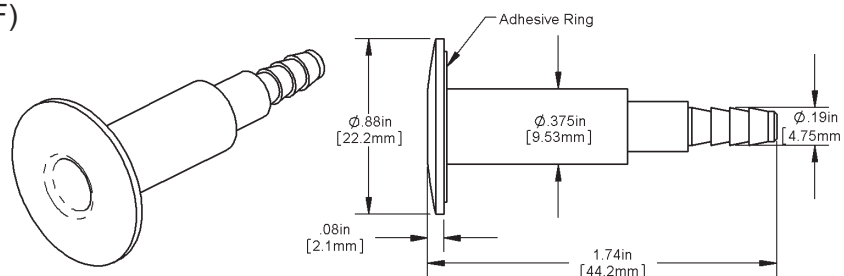
Delta™
C O N T R O L S

Rev. 02/12/13

Features & Options

- Easy to Access Field Adjustable Setpoint from 30 to 8,800 Pascals
- UL 353 Listing So the Unit Can Be Used for Safety Controls
- 5 Amp Silver Contacts
- Built In Pressure Snubber for More Stable Readings

The Delta Differential Pressure Switch is ideal for air filter monitoring, static pressure proving, airflow proving or auxiliary fan actuation. The UL 353 Limit Control Listing means it can be used in safety circuits to protect heating appliances, heating systems, processing systems and HVAC/R systems.

The setpoint is field adjustable from 30 to 8,800 Pascals (0.1" to 35" W.C), and the unit can measure positive pressure, vacuum or true differential pressure. The seven pressure ranges are field selectable by changing a color-coded spring. The spring for the range that you order is preinstalled, and the other 6 springs are shipped with the unit so that you can change ranges in the field if you choose.

Differential Pressure Switch

The unit features a rugged plastic enclosure that protects the electrical terminations and pressure adjustment screw which is easily accessed through a port in the front cover using a square screwdriver bit. The quick connect wiring terminations are accessed by opening the hinged cover. The unit is very compact and can be mounted directly on a flat surface with the rugged mounting feet, and the pressure barbs accept 4.7 to 6.35mm tubing. The unit also features an extremely high proof pressure of 24,900 Pascals (100" W.C.) so that it will continue to function properly even if it is accidently connected to an unusually high or low pressure.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	Pressure Switches
400454	Differential Pressure Switch, 30 to 130 Pascals (0.12" to 0.52" W.C.)
400115	Differential Pressure Switch, 100 to 350 Pascals (0.40" to 1.40" W.C.)
400285	Differential Pressure Switch, 300 to 600 Pascals (1.20" to 2.40" W.C.)
400855	Differential Pressure Switch, 600 to 1,600 Pascals (2.40" to 6.42" W.C.)
401257	Differential Pressure Switch, 1,300 to 3,200 Pascals (5.22" to 12.84" W.C.)
401258	Differential Pressure Switch, 2,900 to 5,900 Pascals (11.64" to 23.68" W.C.)
401259	Differential Pressure Switch, 5,400 to 8,800 Pascals (21.68" to 35.32" W.C.)
Call for #	Square Screwdriver Bit to turn the Pressure Adjustment Screw

Specifications

Measurement Media: Air, Combustion Gases

Operating Temperature: -40 to 185°F (-40 to 85°C)

Operating Humidity: 5 to 95% RH non-condensing

Contact Ratings:
28 VA pilot duty, 24 VAC • 1/10 HP, 120-277 VAC
125 VA Pilot Duty, 125 VAC • 2.5 A Inductive, 125 VAC
5 A Resistive, 125 VAC • 0.1 A, 30 VDC

Proof Pressure: 100" W.C. (3.6 PSI, 24,900 Pa)

Pressure Ports: 1/4" Barbed Fittings

Switch Type: SPDT (Silver Contacts)

UL Limit Control Listing: 353

Repeatability: <10% of Setting

Hysteresis: 0.07 to 0.09 Inch W.C. For All Ranges

1/2" Drillable Port
4.11in [104.4mm]
1/2" NPSM Typ.
2.50in [63.5mm]
5.44in [138.2mm]

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

VOC Room Sensor, BAPI-Stat 3 Enclosure

Air Quality Sensors

Rev. 09/27/13

Features & Options

- VOC Alone or Temperature and Humidity Combination
- Indicates Space Occupancy by Detecting Human-Generated VOCs
- Output is Correlated to a CO_2 Value Allowing You to Ventilate Using ASHRAE's Occupancy-Based VRP Algorithm

Humans respire Volatile Organic Compounds (VOCs) as well as CO_2. The Delta sensor is able to measure these VOCs and indicate when a space is occupied just as well as a CO_2 sensor.

The Delta Sensor is different from other VOC sensors because it has been optimized for Demand Controlled Ventilation (DCV). Using a calibration algorithm, the sensor value is converted to an output with a high correlation to a CO_2 level. This lets you use ASHRAE's occupancy-based VRP schedule to ventilate.

Besides from respiration, the sensor picks up VOCs from other sources such as building materials, perfumes, colognes and furniture off gassing. Using this sensor to ventilate is a way of achieving true indoor air quality and not just CO_2 dilution.

The unit is available as a VOC sensor alone or as a combination temperature and humidity sensor. The optional display alternates between the measured values and is field adjustable between °F or °C. An optional three-color LED indicates "VOC Level" of Good, Fair or Poor.

VOC Sensors with Temperature Setpoint and Override

The top unit has the VOC Level of "Good, Fair or Poor" shown by an arrow on the LCD. The bottom unit has the VOC level shown by a 3-color LED.

Specifications

Power: (No AC Power)
15 to 35 VDC @ 50mA Max (15 VDC recommended)

Sensing Elements:
Humidity – Capacitive Polymer, ±2% RH Accuracy
VOCs – Micro-machined Metal Oxide

Temp. Sensor: 10K-3 Thermistor

Mounting: J-Box or drywall mount – screws provided

VOC Detection Range: 0 to 2,000 CO_2 PPM equivalent

Response Time: Less Than 60 Sec. (after Start-Up Time)

Start-Up Time: 15 minutes

Operating Environment:
0 to 50°C (32 to 122°F)
0 to 95% RH non-condensing

LCD Display:
Main Display: 19mm 4-digit Numeric (Numeric Values)
Minor Display: 8.6mm 3-digit Alpha-Numeric (PPM, %RH, °F, °C)
Occupied/UnOccupied Icon

Measurement Offsets (field adjustable)
±5° (F or C) in 0.1° increments
±5% RH in 0.1% RH increments
±5% Contaminants in 0.1% increments
±100 ppp CO_2 Equivalent Contaminants in 2 ppm increments

Analog Outputs (0 to 10VDC, >10KΩ impedance)
VOC Contaminants: 0 to 2,000 CO_2 PPM equivalent
%RH: 0 to 100%RH

Override Output:
Contact: SPST
Sensor: Shorts out direct Temperature sensor (Temp)
Setpoint: Contact in parallel, resistive setpoint only

LED CO_2 Equivalent Level Indicator:
Good, Green < 1,000 PPM
Fair, Yellow = 1,000 to 1,500 PPM
Poor, Red > 1,500 PPM

Material: ABS Plastic, Material Rated UL94V-0

Certifications: RoHS

Warranty Period: Two years from manufacture date

3.50in [88.9mm]

1.06in [26.9mm]

Closed Cell Foam

5.50in [139.7mm]

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
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Manufactured by Building Automation Products Inc., for Delta Controls Inc.
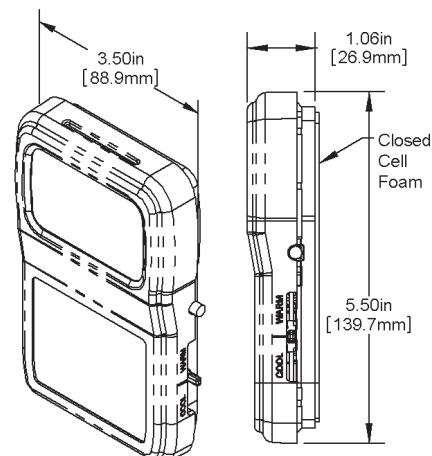
Rev. 09/27/13

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

VOC BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and Override

400594   BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level
400596   BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level
400595   BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override

VOC BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and No Override

400591   BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level
400593   BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level
400592   BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override

VOC BAPI-Stat 3, °F Indication, Humidity Sensing, No Setpoint, No Override

Call for # BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, No Setpoint, No Override, LED Level
400587   BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level
401633   BAPI-Stat 3, °F, 0 to 10V VOC Output, 0 to 10V %RH Output, No Setpoint, No Override

VOC BAPI-Stat 3, °F Indication, No Setpoint, No Override

400582   BAPI-Stat 3, °F, 0 to 10V VOC Output, No Setpoint, No Override, LED Level
401632   BAPI-Stat 3, °F, 0 to 10V VOC Output, No Setpoint, No Override, Arrow Level
400583   BAPI-Stat 3, °F, 0 to 10V VOC Output, No Setpoint, No Override

VOC BAPI-Stat 3, °C Indication, Temp & Humidity Sensing, Temp Setpoint and Override

400654   BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level
400656   BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level
400655   BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override

VOC BAPI-Stat 3, °C Indication, Temp & Humidity Sensing, Temp Setpoint and No Override

400651   BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level
400653   BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level
400652   BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override

VOC BAPI-Stat 3 Sensor, °C Indication, Humidity Sensing, No Setpoint, No Override

400645   BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, No Setpoint, No Override, LED Level
400647   BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level
400646   BAPI-Stat 3, °C, 0 to 10V VOC Output, 0 to 10V %RH Output, No Setpoint, No Override

VOC BAPI-Stat 3 Sensor, °C Indication, No Setpoint, No Override

400642   BAPI-Stat 3, °C, 0 to 10V VOC Output, No Setpoint, No Override, LED Level
400644   BAPI-Stat 3, °C, 0 to 10V VOC Output, No Setpoint, No Override, Arrow Level
400643   BAPI-Stat 3, °C, 0 to 10V VOC Output, No Setpoint, No Override

VOC Room Sensor, BAPI-Stat 4 Enclosure

Air Quality Sensors

Rev. 10/21/12

Features & Options

- Indicates Space Occupancy by Detecting Human-Generated VOCs
- Output is Correlated to a CO_2 Value Allowing You to Ventilate Using ASHRAE's Occupancy-Based VRP Algorithm
- BAPI-Stat 4 Style Enclosure with 0 to 10 VDC Output

Humans respirate Volatile Organic Compounds (VOCs) as well as CO_2. The Delta sensor measures these VOCs and indicates when a space is occupied just as well as a CO_2 sensor.

The advantage of the VOC sensor is that it measures air contaminants from other sources besides respiration, such as building materials, cleaners, perfumes and furniture and carpet off-gassing. Using this sensor for Demand Controlled Ventilation then is a way of achieving true indoor air quality, rather than just CO_2 dilution.

A further benefit is that it requires no additional work on your part. That's because the sensor converts the VOC reading to a CO_2 equivalent level. This lets you use ASHRAE's CO_2-based VRP schedule to ventilate.

The VOC Room Sensor in the BAPI-Stat 4 Enclosure features 0 to 10 VDC output with an optional indication of the VOC level as "Good, Fair or Poor" by a three-color LED on the front of the unit.

VOC Sensors in the BAPI-Stat 4 Enclosure

The bottom unit has the VOC Level of "Good, Fair or Poor" shown by a 3-color LED.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	VOC Room Sensor, BAPI-Stat 4 Enclosure, No Display
400580	BAPI-Stat 4 VOC Sensor, 0 to 10V Output of 0 to 2,000 PPM CO2 Equivalent, LED Level
400581	BAPI-Stat 4 VOC Sensor, 0 to 10V Output of 0 to 2,000 PPM CO2 Equivalent, No LED

Specifications

Power:
12 to 18 VAC, 2 VA Max
12 to 24 VDC, 200 mA Max (12 VDC Recommended)

Selectable Output: 0 to 2,000 PPM CO_2 Equivalent
0 to 10 VDC

Sensing Element: Micro-machined Metal Oxide

Termination: 3 Terminals, 16 to 22 AWG

Wiring: 2 Pair

Operating Environment:
0 to 50°C (32 to 122°F)
5 to 95%RH non-condensing

Enclosure Material & Rating: ABS Plastic, UL94V-O

VOC Detection Range: 0 to 2,000 ppm CO_2 Equivalent

Start-Up Time: 15 Minutes

Response Time:
Less Than 2 Minutes (after Start-Up Time)

Mounting: J-Box or drywall – screws provided

Certifications: RoHS

Optional LED VOC Level Indicator:
Good, Green < 1,000 PPM
Fair, Orange = 1,000 to 1,500 PPM
Poor, Red > 1,500 PPM

Warranty Period:
2 Years from manufacture date
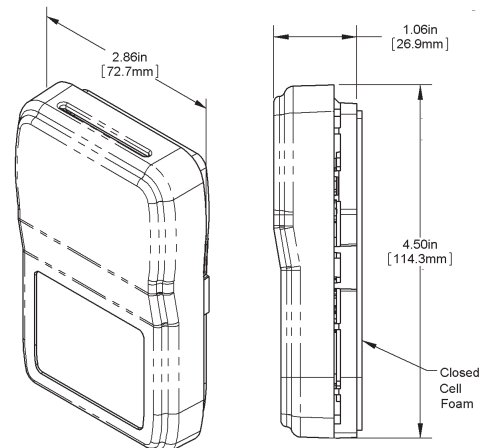
VOC Sensor in the BAPI-Stat 4 Enclosure

Features & Options

- Corresponds to ASHRAE's Occupancy-Based DCV Algorithm
- Quick Response Sensor Through Aspiration Tube
- Indicates Space Occupancy by Detecting Human-Generated VOCs
- 0 to 10 VDC Output

Humans respirate Volatile Organic Compounds (VOCs) as well as CO_2. The Delta sensor measures these VOCs and indicates when a space is occupied just as well as a CO_2 sensor.

VOC Duct Sensor

The advantage of the VOC sensor is that it measures air contaminants from other sources besides respiration, such as building materials, cleaners, perfumes and furniture and carpet off-gassing. Using this sensor for Demand Controlled Ventilation then is a way of achieving true indoor air quality, rather than just CO_2 dilution.

A further benefit is that it requires no additional work on your part. That's because the sensor converts the VOC reading to a CO_2 equivalent level. This lets you use ASHRAE's CO_2-based VRP schedule to ventilate.

Delta's VOC Duct Sensor samples duct air using an aspiration tube. Moving air from the duct enters the tube, is forced into the BAPI-Box enclosure and exits through the other half of the tube. As long as there is air movement in the duct, air is continuously exchanged.

Demand Controlled Ventilation with Confidence!

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	VOC Duct Sensors, BAPI-Box Enclosure
400597	Duct VOC Sensor in a BAPI-Box, 0 to 10V Output of 0 to 2,000 PPM CO2 Equivalent

Specifications

Power:
15 to 35 VDC @ 50mA Max
(15 to 24VDC recommended, No AC Power)

Sensing Element:
VOCs – Micro-machined Metal Oxide

Analog Outputs:
(0 to 10VDC, >10KΩ impedance)
VOC Contaminants: 0 to 2,000 PPM CO_2 Equivalent

VOC Detection Range:
0 to 100%

Response Time:
Less Than 60 Seconds

Start-Up Time: 15 minutes

Operating Environment:
0 to 50°C (32 to 122°F)
0 to 95%RH non-condensing

Dimension (HxWxD)**:**
124.6 x 81.5 x 30.5 mm
(4.91" x 3.21" x 1.20")

Enclosure Rating:
NEMA 4, IP66

Enclosure Material:
Polycarbonate, UL94 V-O

Certifications: RoHS

Warranty Period:
Two years from manufacture date

1/2" Drillable Port
4.11in [104.4mm]
1/2" NPSM Typ
2.50in [63.5mm]
5.12in [130mm]
Ø.85in [21.6mm]
5.00in [127mm]
Closed Cell Foam
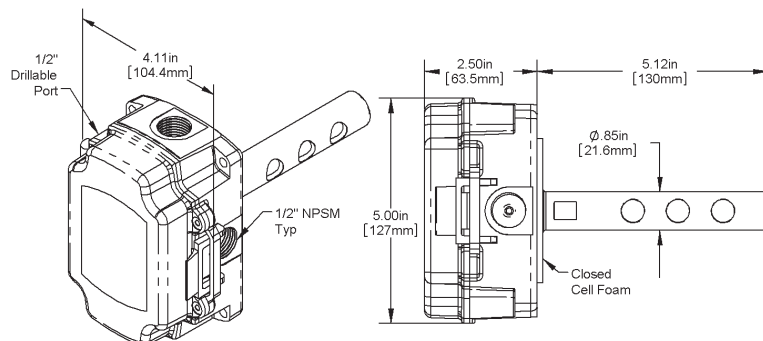
VOC Duct Sensor in a BAPI-Box Enclosure

Air Quality Sensors

Rev. 10/21/12

Features & Options

- Automatic Altitude and Temperature Compensation
- Optional Temperature, Temperature Setpoint, Override and Humidity
- Optimized for Periodically Unoccupied Areas

The Delta CO$_2$ Sensor is an accurate and reliable way of incorporating demand controlled ventilation into a building's HVAC strategy. It measures the CO$_2$ in a range of 0 to 2,000 ppm with a field selectable output of 0 to 5 or 0 to 10 VDC.

The non-dispersive infrared (NDIR) technology has been optimized for periodically unoccupied areas and features automatic background calibration over a long time period to reduce drift. The sensor is also altitude compensated for long-term accuracy. Air pressure changes from altitude or weather patterns can affect the output of CO$_2$ sensors, even putting them outside of their specified accuracy. The Delta unit has a built-in barometric sensor that continuously compensates the output for accurate readings despite the weather or altitude of the installation.

The unit can be ordered as CO$_2$ alone, or with optional temp sensing, temp setpoint, override and humidity sensing. The large format display is easy to read and alternates between the measured values (CO$_2$, Temperature or Humidity). The display is also field adjustable between °F or °C and all the displayed values may be turned on or off by an HVAC technician.

Optional indication of the CO$_2$ level as "Good, Fair or Poor" is available as a three-color LED on the unit or as an arrow on the display.

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CO$_2$ Sensors with Temp. Setpoint and Override.

The top unit has the CO$_2$ Level of "Good, Fair or Poor" shown by an arrow on the display. The bottom unit has the CO$_2$ level shown by a 3-color LED.

Specifications

Power for 0 to 5 VDC Outputs:
9 to 35 VDC @ 50mA avg, 200 mA max (9 to 24 VDC recomm.)

Power for 0 to 10 VDC Outputs:
15 to 35 VDC @ 50mA avg, 200 mA max (15 to 24 VDC recomm.)

Sensing Elements:
CO$_2$ – Single Beam Non-Dispersive Infrared (NDIR)
Humidity – Capacitive Polymer ±2% RH Accuracy

Temperature Sensor: 10K-3 Thermistor

Operating Environment:
0 to 50°C (32 to 122°F)
0 to 95%RH non-condensing

Material ABS Plastic, Material Rated UL94V-O

CO$_2$ Detection Range: 0 to 2000 ppm

Start-Up Time: 10 Minutes

Response Time: Less Than 2 Minutes (after Start-Up Time)

Mounting: J-Box or drywall – screws provided

CO$_2$ Accuracy: (Automatic Background Calibration)
400 to 1,250 ppm: ±30ppm or 3% of reading, whichever is greater
1,250 to 2,000 ppm: ±5% of reading + 30ppm

LCD Display:
Main Display: 19mm 4-digit Numeric (Numeric Values)
Minor Display: 8.6mm 3-digit Alpha-Numeric (PPM, %RH, °F, °C)
Occupied/UnOccupied Icon

Measurement Offsets: (Field Adjustable)
±5° (F or C) in 0.1° increments
±5% RH in 0.1% RH increments

Override Output:
Contact .... SPST, 24V AC/DC, 0.5A max
Sensor ..... Shorts Out direct temperature sensor
Setpoint .... Contact in parallel, resistive setpoint only

LED CO$_2$ Level Indicator:
Good, Green < 1,000 PPM
Fair, Orange = 1,000 to 1,500 PPM
Poor, Red > 1,500 PPM

Certifications: RoHS

Warranty Period: 2 Years from manufacture date

3.50in [88.9mm]

1.06in [26.9mm]

Closed Cell Foam

5.50in [139.7mm]

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	CO2 BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and Override
400576	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level
400574	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level
400575	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override
	CO2 BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and No Override
400573	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level
400571	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level
400572	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override
	CO2 BAPI-Stat 3, °F Indication, Humidity Sensing, No Setpoint, No Override
400567	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, LED Level
400565	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level
400566	BAPI-Stat 3, °F, 0 to 10V CO2 Output, 0 to 10V %RH Output, No Setpoint, No Override
	CO2 BAPI-Stat 3, °F Indication, No Setpoint, No Override
400564	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override, LED Level
401630	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override, Arrow Level
401631	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override
	CO2 BAPI-Stat 3, °C Indication, Temp & Humidity Sensing, Temp Setpoint and Override
400676	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level
400674	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level
400675	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override
	CO2 BAPI-Stat 3, °C Indication, Temp & Humidity Sensing, Temp Setpoint and No Override
400673	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level
400671	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level
400672	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override
	CO2 BAPI-Stat 3, °C Indication, Humidity Sensing, No Setpoint, No Override
400667	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, LED Level
400665	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level
400666	BAPI-Stat 3, °C, 0 to 10V CO2 Output, 0 to 10V %RH Output, No Setpoint, No Override
	CO2 BAPI-Stat 3, °C Indication, No Setpoint, No Override
400664	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override, LED Level
400662	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override, Arrow Level
400663	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override

"24/7" CO$_2$ Room Sensor, BAPI-Stat 3

Air Quality Sensors

Rev. 12/06/13

Delta CONTROLS ™

Features & Options

- Altitude and Temperature Compensation
- Optional Temperature, Temperature Setpoint, Override and Humidity
- Optimized for Areas that Are Continuously Occupied

The Delta CO$_2$ Sensor is an accurate and reliable way of incorporating demand controlled ventilation into a building's HVAC strategy. It measures the CO$_2$ in a range of 0 to 2,000 ppm with a field selectable output of 0 to 5 or 0 to 10 VDC.

The non-dispersive infrared (NDIR) technology of the "24/7" unit has been optimized for continuously occupied areas. It features a dual-channel optical system and three-point calibration process for enhanced stability, accuracy and reliability. The sensor is also altitude compensated for long-term accuracy. Air pressure changes from altitude or weather patterns can affect the output of CO$_2$ sensors, even putting them outside of their specified accuracy. The Delta unit has a built-in barometric sensor that continuously compensates the output for accurate readings despite the weather or the altitude of the installation.

The unit can be ordered as CO$_2$ alone, or with optional temp sensing, temp setpoint, override and humidity sensing. The large format display is easy to read and alternates between the measured values (CO$_2$, Temperature or Humidity). The display is also field adjustable between °F or °C and all the displayed values may be turned on or off by an HVAC technician.

Optional indication of the CO$_2$ level as "Good, Fair or Poor" is available as a 3-color LED on the unit or an arrow on the display.

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CO$_2$ Sensors with Temp. Setpoint and Override.

The top unit has the CO$_2$ Level of "Good, Fair or Poor" shown by an arrow on the display. The bottom unit has the CO$_2$ level shown by a 3-color LED.

Specifications

Power for 0 to 5 VDC Outputs:
9 to 35 VDC @ 50mA avg, 200 mA max (9 to 24 VDC recomm.)

Power for 0 to 10 VDC Outputs:
15 to 35 VDC @ 50mA avg, 200 mA max (15 to 24 VDC recomm.)

Sensing Elements:
CO$_2$ – Dual Channel Non-Dispersive Infrared (NDIR)
Humidity – Capacitive Polymer ±2% RH Accuracy

Temperature Sensor: 10K-3 Thermistor

Operating Environment:
0 to 50°C (32 to 122°F) • 0 to 95%RH non-condensing

Material ABS Plastic, Material Rated UL94V-O

CO$_2$ Detection Range: 0 to 2000 ppm

Start-Up Time: 10 Minutes

Response Time: Less Than 2 Minutes (after Start-Up Time)

Mounting: 2"x4" J-Box or drywall – screws provided

Override Output:
Contact ....SPST, 24V AC/DC, 0.5A max
Sensor .....Shorts out direct temperature sensor
Setpoint ...Contact in parallel, resistive setpoint only

LCD Display:
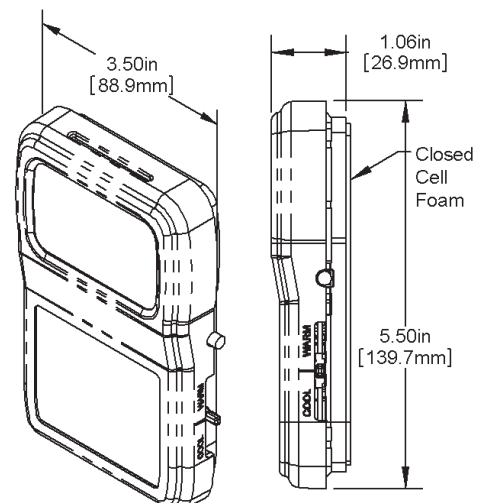Main Display: 19mm 4-digit Numeric (Numeric Values)
Minor Display: 8.6mm 3-digit Alpha-Numeric (PPM, %RH, °F, °C)
Occupied/UnOccupied Icon

Measurement Offsets: (Field Adjustable)
±5° (F or C) in 0.1° increments
±5% RH in 0.1% RH increments

CO$_2$ Accuracy: ±75ppm

LED Air Quality Indicator:
Good, Green < 1,000 PPM
Fair, Yellow = 1,000 to 1,500 PPM
Poor, Red > 1,500 PPM

Certifications: RoHS

Warranty Period: 2 Years from manufacture date

3.50in [88.9mm]

1.06in [26.9mm]

Closed Cell Foam

5.50in [139.7mm]

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
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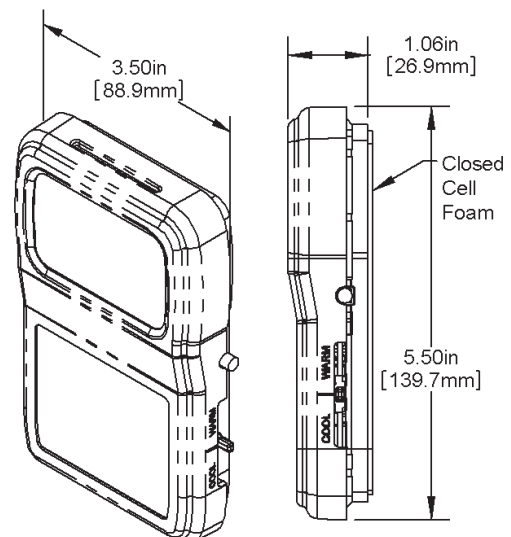
Rev. 12/06/13

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	CO2 "24/7" BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and Override
400636	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level
Call for #	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level
400638	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override
	CO2 "24/7" BAPI-Stat 3, °F Ind., Temp & Humidity Sensing, Temp Setpoint and No Override
Call for #	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level
400631	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level
Call for #	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override
	CO2 "24/7" BAPI-Stat 3, °F Indication, Humidity Sensing, No Setpoint, No Override
401625	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, LED Level
401623	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level
401624	BAPI-Stat 3, °F, 0 to 10V CO2 Output, 0 to 10V %RH Output, No Setpoint, No Override
	CO2 "24/7" BAPI-Stat 3, °F Indication, No Setpoint, No Override
401622	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override, LED Level
401620	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override, Arrow Level
401621	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override
	CO2 "24/7" BAPI-Stat 3, °C Ind., Temp & Humidity Sensing, Temp Setpoint and Override
400696	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level
400694	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level
400695	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override
	CO2 "24/7" BAPI-Stat 3, °C Ind., Temp & Humidity Sensing, Temp Setpoint and No Override
400693	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level
400691	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level
400692	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override
	CO2 "24/7" BAPI-Stat 3, °C Indication, Humidity Sensing, No Setpoint, No Override
400687	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, LED Level
400685	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level
400686	BAPI-Stat 3, °C, 0 to 10V CO2 Output, 0 to 10V %RH Output, No Setpoint, No Override
	CO2 "24/7" BAPI-Stat 3, °C Indication, No Setpoint, No Override
400684	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override, LED Level
400682	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override, Arrow Level
400683	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

CO_2 Room Sensor, BAPI-Stat 4 Enclosure

Air Quality Sensors

Delta ™
C O N T R O L S

Rev. 05/02/13

Features & Options

- Automatic Air Pressure and Temperature Compensation
- Optimized for Periodically Unoccupied Areas

The Delta CO_2 Sensor in the BAPI-Stat 4 Enclosure is an accurate and reliable way of incorporating demand controlled ventilation into a building's HVAC strategy. It measures the CO_2 in a range of 0 to 2,000 ppm with a field selectable output of 0 to 5 or 0 to 10 VDC.

The non-dispersive infrared (NDIR) technology has been optimized for periodically unoccupied areas and features automatic background calibration over a long time period to reduce drift.

The BAPI unit also has continuous automatic air pressure compensation. Air pressure changes from altitude or weather patterns can affect the output of CO_2 sensors, even putting them outside of their specified accuracy. The Delta unit has a built-in barometric sensor that continuously compensates the output for accurate readings despite the weather or the altitude of the installation. Because of this feature, the Delta CO_2 sensor received a 2012 AHR Expo Innovation Award. Optional indication of the CO_2 level as "Good, Fair or Poor" is available as a three-color LED on the front of the unit.

CO_2 Sensors in the BAPI-Stat 4 Enclosure

The bottom unit has the CO_2 Level of "Good, Fair or Poor" shown by a 3-color LED.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	CO2 BAPI-Stat 4 Sensor
400558	BAPI-Stat 4 CO2 Sensor for Periodically Occupied Areas, 0 to 10VDC Output, LED Level
400559	BAPI-Stat 4 CO2 Sensor for Periodically Occupied Areas, 0 to 10VDC Output, No LED

Specifications

Power:
12 to 18 VAC, 2 VA Max
12 to 24 VDC, 200 mA Max (12 VDC Recommended)

Sensing Elements:
CO_2 – Single Beam Non-Dispersive Infrared (NDIR)

Selectable Output: 0 to 2,000 PPM CO_2
0 to 5 VDC or 0 to 10 VDC

Termination: 3 Terminals, 16 to 22 AWG

Wiring: 2 Pair

Operating Environment:
0 to 50°C (32 to 122°F) • 0 to 95%RH non-condensing

Enclosure Material:
ABS Plastic, Material Rated UL94V-O

CO_2 Detection Range: 0 to 2,000 ppm

Start-Up Time: 10 Minutes

Response Time: Less Than 5 Minutes (after Start-Up Time)
Mounting: J-Box or drywall – screws provided

CO_2 Accuracy: (Automatic Background Calibration)
400 to 1,250 ppm: ±30ppm or 3% of reading,
                        whichever is greater
1,250 to 2,000 ppm: ±5% of reading + 30ppm

Optional LED CO_2 Level Indicator:
Good, Green < 1,000 PPM
Fair, Orange = 1,000 to 1,500 PPM
Poor, Red > 1,500 PPM

Certifications: RoHS

Warranty Period:
2 Years from manufacture date

2.86in [72.7mm]
1.06in [26.9mm]
4.50in [114.3mm]
Closed Cell Foam

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Rev. 05/02/13

Features & Options

● Automatic Air Pressure and Temperature Compensation

● Optimized for Continuously Occupied Areas

The Delta "24/7" CO$_2$ Sensor in the BAPI-Stat 4 Enclosure is an accurate and reliable way of incorporating demand controlled ventilation into a building's HVAC strategy. It measures the CO$_2$ in a range of 0 to 2,000 ppm with a field selectable output of 0 to 5 or 0 to 10 VDC.

The non-dispersive infrared (NDIR) technology of the "24/7" unit has been optimized for areas that are continuously occupied. It features a dual-channel optical system and three-point calibration process for enhanced stability, accuracy and reliability.

The BAPI unit also has continuous automatic air pressure compensation. Air pressure changes from altitude or weather patterns can affect the output of CO$_2$ sensors, even putting them outside of their specified accuracy. The Delta unit has a built-in barometric sensor that continuously compensates the output for accurate readings despite the weather or the altitude of the installation. Because of this feature, the Delta CO$_2$ sensor received a 2012 AHR Expo Innovation Award.

Optional indication of the CO$_2$ level as "Good, Fair or Poor" is available as a three-color LED on the front of the unit.

CO$_2$ Sensors in the BAPI-Stat 4 Enclosure

The bottom unit has the CO$_2$ Level of "Good, Fair or Poor" shown by a 3-color LED.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	CO2 "24/7" BAPI-Stat 4 Sensor
400578	BAPI-Stat 4 "24/7" CO2 Sensor for Continuously Occupied Areas, 0 to 10VDC Output, LED Level
400579	BAPI-Stat 4 "24/7" CO2 Sensor for Continuously Occupied Areas, 0 to 10VDC Output, No LED

Specifications

Power:
12 to 18 VAC, 2 VA Max
12 to 24 VDC, 200 mA Max (12 VDC Recommended)

Sensing Elements:
CO$_2$ – Dual Channel Non-Dispersive Infrared (NDIR)

Selectable Output: 0 to 2,000 PPM CO$_2$
0 to 5 VDC or 0 to 10 VDC

Termination: 3 Terminals, 16 to 22 AWG

Wiring: 2 Pair

Operating Environment:
0 to 50°C (32 to 122°F) • 0 to 95%RH non-condensing

Enclosure Material:
ABS Plastic, Material Rated UL94V-O

CO$_2$ Detection Range: 0 to 2000 ppm

Start-Up Time: 10 Minutes

Response Time:
Less Than 5 Minutes (after Start-Up Time)

Mounting: 2"x4" J-Box or drywall – screws provided

CO$_2$ Accuracy: 75ppm

Optional LED CO$_2$ Level Indicator:
Good, Green < 1,000 PPM
Fair, Orange = 1,000 to 1,500 PPM
Poor, Red > 1,500 PPM

Certifications: RoHS

Warranty Period:
2 Years from manufacture date

2.86in
[72.7mm]

1.06in
[26.9mm]

4.50in
[114.3mm]

Closed Cell Foam

CO₂ Duct Sensor

Air Quality Sensors
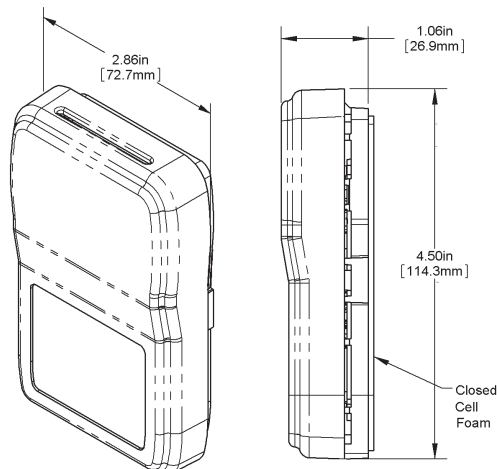
Delta™
C O N T R O L S

Rev. 05/02/13

Features & Options

- Automatic Air Pressure and Temperature Compensation
- Optimized for Periodically Unoccupied Areas

The Delta CO₂ Duct Sensor is an accurate and reliable way of incorporating demand controlled ventilation into a building's HVAC strategy. It measures the CO₂ in a range of 0 to 2,000 ppm with an output of 0 to 10 VDC.

The non-dispersive infrared (NDIR) technology has been optimized for periodically unoccupied areas and features automatic background calibration over a long time period to reduce drift.

The Delta unit also has continuous automatic air pressure compensation. Air pressure changes from altitude or weather patterns can affect the output of CO₂ sensors, even putting them outside of their specified accuracy. The Delta unit has a built-in barometric sensor that continuously compensates the output for accurate readings despite the weather or the altitude of the installation. Because of this feature, the Delta CO₂ sensor received a 2012 AHR Expo Innovation Award.

Delta's CO₂ Duct Sensor samples duct air using an aspiration tube. Moving air from the duct enters the tube, is forced into the BAPI-Box enclosure and exits through the other half of the tube. As long as there is air movement in the duct, air is continuously exchanged. Optional indication of the CO₂ level as "Good, Fair or Poor" is available as a three-color LED on the front.

CO₂ Duct Sensor in the BAPI-Box Enclosure

The unit on right has the CO₂ Level of "Good, Fair or Poor" shown by a 3-color LED.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	CO2 Duct Sensor, BAPI-Box Enclosure
400577	Duct CO2 Sensor, BAPI-Box, for Periodically Occupied Areas, 0 to 10VDC Output, LED Level
Call for #	Duct CO2 Sensor, BAPI-Box, for Periodically Occupied Areas, 0 to 10VDC Output, No LED

Specifications

Power:
12 to 18 VAC, 2 VA Max
12 to 24 VDC, 200 mA Max
(12 VDC Recommended)

CO₂ Sensing Elements:
Single Beam Non-Dispersive Infrared (NDIR)

Selectable Output: 0 to 2,000 PPM CO₂
0 to 10 VDC

Termination: 3 Terminals, 16 to 22 AWG

Wiring: 2 Pair

Operating Environment:
0 to 50°C (32 to 122°F)
0 to 95%RH non-condensing

Enclosure Rating: NEMA 4, IP66

Enclosure Material:
Polycarbonate, UL94 V-O

CO₂ Detection Range: 0 to 2,000 PPM

Start-Up Time: 10 Minutes

Response Time:
Less Than 5 Minutes (after Start-Up Time)

CO₂ Accuracy: (Automatic Background Calibration)
400 to 1,250 ppm: ±30ppm or 3% of reading, whichever is greater
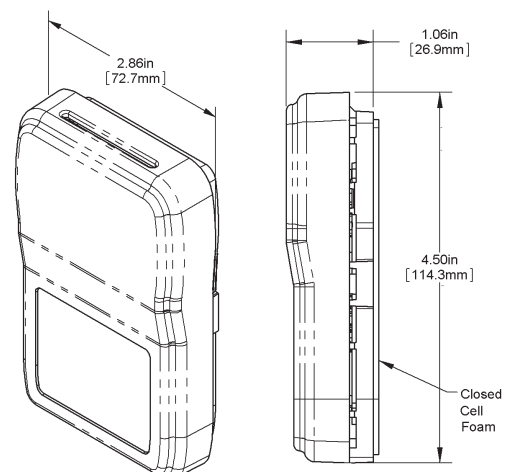
1,250 to 2,000 ppm: ±5% of reading + 30ppm

Certifications: RoHS

Warranty Period: 2 Years from manufacture date

1/2" Drillable Port
4.11in [104.4mm]
1/2" NPSM Typ
5.00in [127mm]
2.50in [63.5mm]
5.12in [130mm]
Ø.85in [21.6mm]
Closed Cell Foam

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Rev. 05/02/13

Features & Options

- Automatic Air Pressure and Temperature Compensation
- Optimized for Continuously Occupied Areas

The Delta "24/7" CO_2 Duct Sensor is an accurate and reliable way of incorporating demand controlled ventilation into a building's HVAC strategy. It measures the CO_2 in a range of 0 to 2,000 ppm with a field selectable output of 0 to 5 or 0 to 10 VDC.

The non-dispersive infrared (NDIR) technology of the "24/7" unit has been optimized for continuously occupied areas. It features a dual-channel optical system and three-point calibration process for enhanced stability, accuracy and reliability.

The Delta unit also has continuous automatic air pressure compensation. Air pressure changes from altitude or weather patterns can affect the output of CO_2 sensors, even putting them outside of their specified accuracy. The Delta unit has a built-in barometric sensor that continuously compensates the output for accurate readings despite the weather or the altitude of the installation. Because of this feature, the Delta CO_2 sensor received a 2012 AHR Expo Innovation Award.

Delta's CO_2 Duct Sensor samples duct air using an aspiration tube. Moving air from the duct enters the tube, is forced into the BAPI-Box enclosure and exits through the other half of the tube. As long as there is air movement in the duct, air is continuously exchanged. Optional indication of the CO_2 level as "Good, Fair or Poor" is available as a three-color LED on the front.

"24/7" CO_2 Duct Sensor in the BAPI-Box Enclosure

The unit on right has the CO_2 Level of "Good, Fair or Poor" shown by a 3-color LED.

Ordering Information/Part Numbers

DELTA #	DESCRIPTION
	CO2 "24/7" Duct Sensor, BAPI-Box Enclosure
400637	Duct "24/7" CO2, BAPI-Box, for Continuously Occupied Areas, 0 to 10VDC Output, LED Level
400637	Duct "24/7" CO2, BAPI-Box, for Continuously Occupied Areas, 0 to 10VDC Output, No LED

Specifications

Power:
12 to 18 VAC, 2 VA Max
12 to 24 VDC, 200 mA Max
(12 VDC Recommended)

CO_2 Sensing Elements:
Dual Channel Non-Dispersive Infrared (NDIR)

Selectable Output: 0 to 2,000 PPM CO_2
0 to 5 VDC or 0 to 10 VDC

Termination: 3 Terminals, 16 to 22 AWG

Wiring: 2 Pair

Operating Environment:
0 to 50°C (32 to 122°F)
0 to 95%RH non-condensing

Enclosure Rating:
NEMA 4, IP66

Enclosure Material:
Polycarbonate, UL94 V-O

CO_2 Detection Range: 0 to 2,000 PPM

Start-Up Time: 10 Minutes

Response Time:
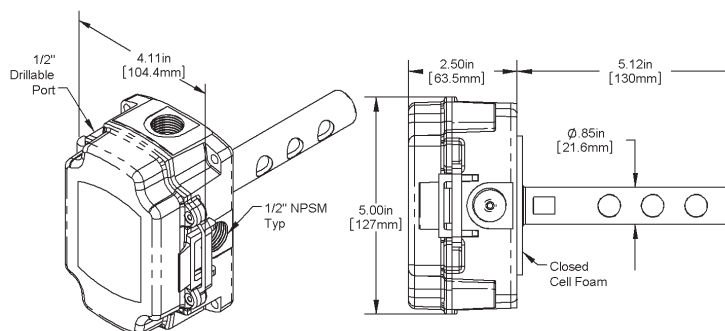Less Than 5 Minutes (after Start-Up Time)

CO_2 Accuracy: 75ppm

Certifications: RoHS

Warranty Period: 2 Years from manufacture date

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Carbon Monoxide Sensor

Air Quality Sensors
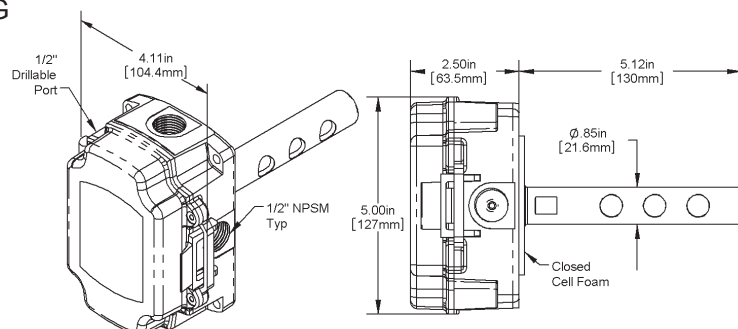
Rev. 05/02/13

Features & Options

- Long Life Electrochemical Sensor
- High Accuracy at Low Concentrations
- Optional LCD Display
- Rugged Housing with Mounting Tabs for Easy Installation
- Two Year Warranty

Delta's Carbon Monoxide Sensor offers enhanced, long life electrochemical sensing with outstanding accuracy at low concentrations. The sensor has a range of 1 to 100 PPM or 1 to 300 PPM of Carbon Monoxide with a resolution of 1 PPM and a linear output of 4 to 20 mA. The unit also features a robust enclosure with or without display.

**Carbon Monoxide Sensor
with and without Display**

Ordering Information

DELTA #	DESCRIPTION
	CO SENSORS with Display
401605	CO Sensor, 4 to 20 mA, 0 to 100PPM, Outdoor EU Enclosure with Display
401607	CO Sensor, 4 to 20 mA, 0 to 300PPM, Outdoor EU Enclosure with Display
	CO SENSORS without Display
401601	CO Sensor, 4 to 20 mA, 0 to 100PPM, Outdoor EU Enclosure
401603	CO Sensor, 4 to 20 mA, 0 to 300PPM, Outdoor EU Enclosure

Specifications

Range: 1 to 100 PPM CO (normal range) or 1 to 300 PPM CO (optional)

Voltage requirement: 12 to 27 VDC (non-display) or 14 to 27 VDC (with display)

Signal output: 4 to 20 mA, 2-wire, loop powered

Sensor type: Electrochemical cell

Enclosure Material: UV-resistant plastic

Resolution: 1 PPM on display,
Infinite on 4 to 20 mA loop

Accuracy: ±5 PPM (combination of linearity, temperature, drift and repeatability)

Response time:
90%: Less than 40 seconds @ 25°C

Environmental Operating Range:
Temperature: -20 to 40°C (non-display)
-10 to 40°C (with display)
Humidity: 15 to 90% RH (constant)
0 to 98% RH (intermittent)

1/2" EMT Conduit Fitting

2.13in [54mm]

4.10in [104.1mm]
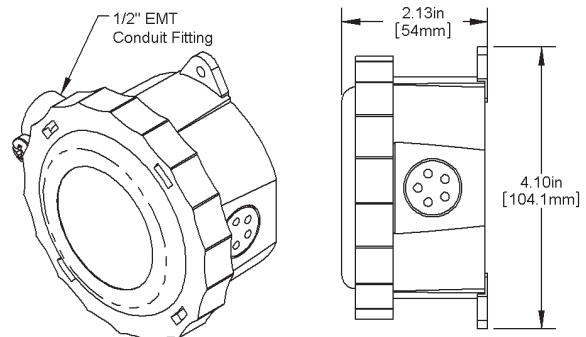
Sensor life expectancy: More than four years
Load Resistance: 500 Ohms max at 24 VDC

* Delta recommends that you do not run wiring for the CO transmitter in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.

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Rev. 07/15/13

Features & Options

- Calibrates All Delta CO_2 Room and Duct Sensors
- Verifies Proper Operation of All Delta CO_2 Room and Duct Sensors
- Logs CO_2 Measurements

Delta's CO_2 Sensor Calibration Kit verifies the proper operation and calibrates all of BAPI's room and duct CO_2 sensors.

Two calibration gas concentrations are required to perform a complete calibration*. Purchase the single point gas at a CO_2 concentration of 400 to 800 ppm, and the span gas at 1,000 to 1,200 ppm. Only one regulator is required because it can be swapped between gas cylinders.

Delta's CO_2 Sensor Calibration Kit consists of the following:
- A software CD containing the test software and cable drivers
- A communications cable that connects a computer to the Delta CO_2 sensor
- A funnel used as a gas shroud
- A length of tubing to connect the funnel to the test gases
- Rubber bands to secure the funnel to the Delta CO_2 sensor
- Shunt jumpers to place the Delta CO_2 sensor into test mode

Equipment supplied by the customer:
- Laptop computer running Windows XP, Vista or 7
- Test gases
- 0.5 liter per minute test gas flow regulator

Test gases and flow regulators can be purchased online or through local HVAC distributors. A few online sources for the test gases are:
- http://www.calibration-gas.com/
- http://www.gasdetectionsolutions.com
- http://www.mercury-instrumentsusa.com

*Note: A single point gas may not be required. If the ambient CO_2 concentration is known, stays stable at ±10 ppm for at least 10 minutes and is in the range of 350 to 800 ppm, you may perform the single point accuracy check and calibration without any test gas.

CO_2 Sensor Calibration Kit

CO_2 Sensor Calibration Kit with Optional Case (shown with customer supplied gas cylinders)

Ordering Information

DELTA #	DESCRIPTION
Call for #	CO_2 Sensor Calibration Kit
Call for #	CO_2 Sensor Calibration Kit with Case
Call for #	Empty Case with Foam Cutouts

Specifications

Customer supplied laptop computer running Windows XP, Vista or 7

CDROM drive

USB 2.0

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VOC Sensor Verification Kit
Air Quality Sensors

Rev. 10/16/12

Overview

The VOC Sensor Verification Kit allows a known VOC sample to be generated and applied to a BAPI room or duct VOC sensor. The sample tests the dynamic range of the sensor to see if the sensor element is working correctly.

The kit consists of a plastic bottle and a 60mL syringe and a comprehensive set of instructions. The customer has to supply 70% minimum Isopropyl Alcohol.

**VOC Sensor
Verification Kit**

Ordering Information

DELTA #   **DESCRIPTION**
Call for # ....VOC Sensor Verification Kit

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Adaptor Plates for Retrofits
HVAC/R Accessories

Rev. 02/12/13

Features & Options

- Covers Wall Imperfections during Retrofits
- Different Colors and Sizes
- Horizontal or Vertical Mounting

Delta Adaptor Plates are designed to cover wall imperfections when installing wall sensors or thermostats. They are made in three different sizes and four different colors to match the sensor. The Adaptor Plates can be painted or wall papered in place if architecturally required.

133x178mm Adaptor Plate

135x135mm Adaptor Plate

95x140mm Adaptor Plate

95x140mm (UK) Adaptor Plate

Ordering Information

DELTA #	DESCRIPTION
	Adaptor Plates
400023	Adaptor Plate, 133 x 178mm Warm White
400098	Adaptor Plate, 133 x 178mm Off White
400515	Adaptor Plate, 133 x 178mm Copla White
401558	Adaptor Plate, 133 x 178mm Cloud White
Call for #	Adaptor Plate, 135 x 135mm Warm White
Call for #	Adaptor Plate, 135 x 135mm Off White
Call for #	Adaptor Plate, 135 x 135mm Copla White
Call for #	Adaptor Plate, 135 x 135mm Cloud White
Call for #	Adaptor Plate, 95 x 140mm Warm White
Call for #	Adaptor Plate, 95 x 140mm Off White
Call for #	Adaptor Plate, 95 x 140mm Copla White
Call for #	Adaptor Plate, 95 x 140mm Cloud White
Call for #	Adaptor Plate (Europe), 95 x 140mm Warm White
Call for #	Adaptor Plate (Europe), 95 x 140mm Off White
Call for #	Adaptor Plate (Europe), 95 x 140mm Copla White
Call for #	Adaptor Plate (Europe), 95 x 140mm Cloud White

Specifications

Material	ABS plastic, Flame-retardant, UL 94, V-0
Application	Horizontal or Vertical
Mounting	Dry wall, US back box or European back box
Color Match	
Warm White:	Delta, BAPI-Stat 2, EU, BAPI-Box (Approximately Pantone Warm Gray 2)
Off White:	BAPI-Stat (Approximately Pantone Warm Gray 1)
Copla White:	Delta, BAPI-Stat 2 (Approximately Pantone Cool Gray 2)
Cloud White:	Delta, BAPI-Stat 2 (Approximately Pantone Cool Gray 1)

Rev. 02/12/13

Specifications

95x140mm Adaptor Plate

1.97in [50mm]
2.40in [61mm]
5.50in [139.7mm]
3.28in [83.3mm]
Ø1.69in [43mm]
Depth .188in [4.8mm]
3.75in [95.3mm]

133 x178mm Adaptor Plate

1.97in [50mm]
3.28in [83.3mm]
2.40in [61mm]
7.00in [177.8mm]
Ø1.69in [43mm]
Depth .188in [4.8mm]
5.25in [133.4mm]

135x135mm Adaptor Plate

1.97in [50mm]
2.40in [61mm]
5.30in [134.6mm]
3.28in [83.3mm]
Ø1.69in [43mm]
Depth .188in [4.8mm]
5.30in [134.6mm]

3.75"x5.5" (UK) Adaptor Plate

1.97in [50mm]
2.40in [61mm]
5.50in [139.7mm]
3.30in [83.7mm]
Ø1.67in [42.3mm]
Depth .188in [4.8mm]
2.36in [60mm]
3.75in [95.3mm]

Color Reference

Cloud White
Similar to our Delta and BAPI-Stat 2 Style Room Sensors when ordered as Cloud White

Copla White
Similar to our Delta and BAPI-Stat 2 Style Room Sensors when ordered as Copla White

Off White
Standard on our BAPI-Stat Style Room Sensor

Warm White
The same as our Beige, standard on our Delta & BAPI-Stat 2 Style Room Sensors

Delta Adaptor Plate Colors

The colors in this image are approximate. The actual colors may vary slightly from those shown here.

BAPI-Guard™ Thermostat Protector

HVAC/R Accessories

Rev. 10/22/12

Features & Options

- Prevents Tampering, Damage and Unauthorized Adjustment
- Exceptional Airflow for Proper Thermostat Operation
- Made from Thick, Durable Polycarbonate
- Two Sizes to Fit Most Thermostats

The BAPI-Guard prevents tampering, physical damage and unauthorized adjustment of thermostats. The attractive, low-profile design is available in two sizes to fit most thermostats. It is made of thick, durable polycarbonate and features exceptional airflow, key lock protection, horizontal or vertical mounting and easy installation with hardware included.

Ordering Information

DELTA #	DESCRIPTION
	BAPI-Guard Thermostat Protector
400602	Larger BAPI-Guard Thermostat Protector
400603	Smaller BAPI-Guard 2 Thermostat Protector
400617	Replacement Key for BAPI-Guard and BAPI-Guard

BAPI-Guard 2 Mounted Over a BAPI-Stat 2 Room Sensor

Specifications

Material:
Polycarbonate

Material Rating:
UL 94, V-0

The BAPI-Guard fits these common thermostats
BAPI-Stat and BAPI-Stat 3

The BAPI-Guard 2 fits these common thermostats
Delta Style Enclosure
BAPI-Stat 2 and BAPI-Stat 4

If you have a question about whether the BAPI-Guard or BAPI-Guard 2 will fit a specific thermostat, please call Delta.

BAPI-Guard

3.03in [76.8mm]

2.89in [73.4mm] Max. Height at Center

6.65in [168.9mm]

4.65in [118.1] Max. Internal Footprint

6.89in [175.0mm] Max. Internal Footprint

9.45in [239.9mm]

BAPI-Guard 2

2.125in [53.98mm]

1.76in [44.7mm] Max. Height for Max. Footprint 2 Dimensions

1.57in [39.9mm] Max. Height for Max. Footprint 1 Dimensions

4.75in [120.7mm]

3.30in [83.8mm] Max. Internal Footprint #1

3.50in [88.9mm] Max. Internal Footprint #2

3.55in [90.2mm] Max. Internal Footprint #2

4.94in [125.5mm] Max. Internal Footprint #1

6.75in [171.5mm]

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 05/02/13

Overview

- Panel Mount Enclosure
- Compact & Cost-Effective 350 mA Unit
- Self-resetting Thermal Fuse
- Operation & Fault LED Indicators
- Fixed or Adjustable Outputs
- Output Protected Against Overload and Accidental Short Circuit

Delta's Panel Mount Voltage Converter is a cost-effective way of converting 24 VAC or VDC to 5, 12, 15 or 24 VDC for use on peripheral devices that require DC voltage. The converter is available with a 350 mA output. The revolutionary mounting system allows for 70mm snaptrack, DIN rail or surface mounting.

VC350A Panel Mount Voltage Converter on DIN Rail

Although most Delta room units can run on 24 VAC power, converting to DC power eliminates the AC power "noise" which can affect the room sensor readings. Delta's tests show that fluctuating and inaccurate signal levels are possible when AC power wiring is present in the same cable as the signal lines. To minimize the AC voltage noise, the DC converter must be mounted as close to the controller as physically possible. Do not mount the converter at the sensor end of the wire, the AC will still couple into the sensor signal if you do. All fixed outputs of 5, 10, 12 or 15 VDC are adjustable ±10%. The adjustable model (-ADJ) has an output of 5-24 VDC.

Ordering Information

DELTA #	DESCRIPTION
	VC350A-EZ Voltage Converter
401557	Voltage Converter, 5 VDC at 350 mA
400241	Voltage Converter, 12 VDC at 350 mA
401514	Voltage Converter, 15 VDC at 350 mA
400488	Voltage Converter, 5 to 24 VDC at 350 mA

Mounting Methods

Snaptrack

Wall

DIN Rail

Specifications

Output Voltage: 5 to 24 VDC @ 350 mA

Recommended Input Voltage: 18 to 28 VAC, 24 VDC

Input Voltage Limits:

Model of Unit	Minimum (VAC/VDC)	Maximum (VAC/VDC)	Input Current@ Min Input Volts (AC/DC)
5V	5.0/9.0	28.0/35.0	5.2 VA/305 mA
12V	12.0/16.9	28.0/35.0	9.5 VA/318 mA
15V	15.0/20.5	28.0/35.0	11.2 VA/320 mA
ADJ (24V)	24.0/31.0*	28.0/35.0	16.7 VA/325 mA

*Depends on output voltage

Environmental Operation Range:
0 to 95% RH non-condensing
-40 to 65°C (-40 to 149°F) 350 mA @ any output voltage
-40 to 70°C (-40 to 158°F) 350 mA @ 5 VDC,
280 mA @ 12 VDC,
224 mA @ 15 VDC,
140 mA @ 24 VDC

Environmental Storage Range:
-40 to 80°C (-40 to 176°F)

Wiring: 4 wires, 16 to 22 gauge

Rectification: Half-Wave Rectified

Grounding:
AC & DC Ground are Common

2.75in [69.7mm]

1.93in [49.1mm]

1.38in [35.1mm]

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VC3000 2.5 Amp Voltage Converter

HVAC/R Accessories

Rev. 05/02/13
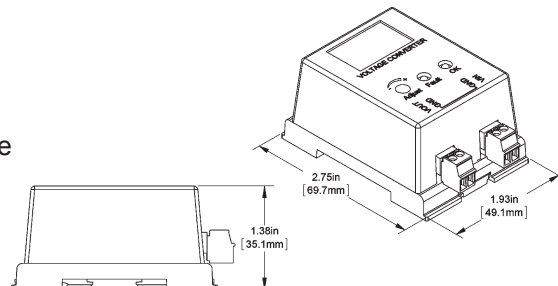
Features & Options

- Compact and Cost-Effective

- Regulated and Adjustable 1.2 to 24 VDC Output

- Output Protected Against Overload and Accidental Short Circuit

Delta's VC3000 Voltage Converters are accurate, rugged and reliable power sources designed for commercial energy management applications.

The 2.5 Amp Voltage Converter accepts a 24 VAC input which can be field adjusted to a regulated output of 1.2 VDC to 24 VDC (factory set for 24 VDC). The input can be configured for full or half wave rectification.

The unit includes a cartridge output fuse to protect against overload and short circuits, a power indication LED, and is available with or without a backplate on the steel mounting bracket.

**VC3000 Voltage Converter
with optional Backplate**

Ordering Information

DELTA #	DESCRIPTION
	VC3000 Voltage Converters
401500	Full Wave Voltage Convertor, 2.5 Amp, Adjustable 1.28 to 24Vdc, Cartridge Fuse
401805	Half Wave Voltage Convertor, 2.5 Amp, Adjustable 1.28 to 24Vdc, Cartridge Fuse
401502	Full Wave Voltage Conv., 2.5 Amp, Adjustable 1.28 to 24Vdc, Cartridge Fuse, Backplate
401503	Half Wave Voltage Conv., 2.5 Amp, Adjustable 1.28 to 24Vdc, Cartridge Fuse, Backplate

Specifications

Input Voltage Range:
24 VAC

Fuse Protection:
4 Amp, Output Side

Output Voltage Range:
1.2 VDC to 24 VDC

Maximum Output Current:
2.5 Amps

Operating Range:
4 to 70°C (40 to 158°F)

Wiring:
16 to 22 AWG
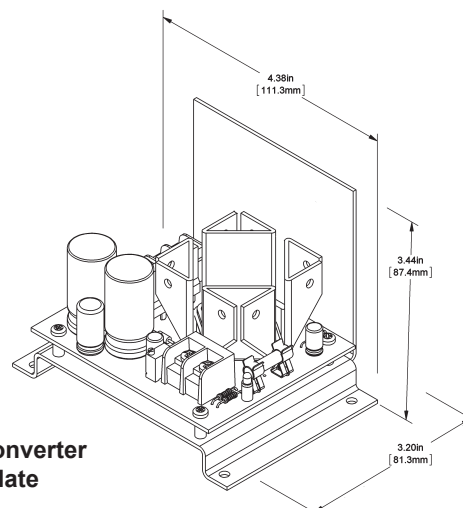
**VC3000B Voltage Converter
with optional Backplate**

4.38in [111.3mm]

3.44in [87.4mm]

3.20in [81.3mm]

Rev. 04/15/13

Features & Options

- Quick, Easy and Professional Looking Knockouts for the BAPI-Box, BAPI-Box 2 & BAPI-Box 4 Enclosures
- Standard Hex Drill Bit Shaft
- Quick Disconnect Shaft
- Built in Rim Stop Prevents Damage to Internal Components
- Stainless Steel Construction
- Comes with Blade Sheath

Clean-Cut

The Clean-Cut hole cutters are designed to cut out the plastic plugs in the ½" NPSM threaded ports of the BAPI-Box and BAPI-Box 2 polycarbonate enclosures and the BAPI-Box 4 ABS plastic enclosure. These tools make removing the plastic plug fast and easy and produce a professional-looking .65" diameter hole.

A built-in stop prevents the tools from pushing through and possibly damaging sensitive electronics within the box, so there's no need to remove the items to drill the hole. The Stainless Steel construction keeps its edge and lasts for over 1,000 operations in both directions. The tool can be sharpened with a hand grinder or file and comes with a protective sheath to protect the blades and user.
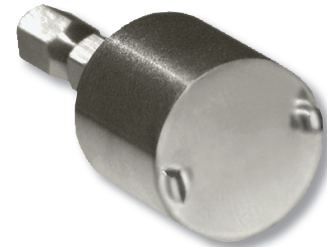
Clean-Cut 4

Ordering Information

DELTA #	DESCRIPTION
	Clean Cut Tools for BAPI-Boxes
Call for #	Clean Cut - 12.7mm (1/2") Threaded Knockout Cutting Tool for BAPI-Box and BAPI-Box 2
Call for #	Clean Cut 4 - 12.7mm (1/2") Unthreaded Knockout Cutting Tool for BAPI-Boxes

Specifications

Material .... 316 Stainless Steel

Rim Stop.............. 0.04" (1mm), in from edge

Shaft Stem........... 0.95" (24.1mm) long with quick disconnect shaft

Drill Chuck........... Quarter inch Hex

Sharpening.......... Hand grinder or file (As needed)

Weight: 0.11lb (50.0g)

Outer Diameter
Clean Cut.................Smooth 0.73" (18.5mm)
Clean Cut 4.............Smooth 1.00" (25.4mm)

Cutting Blades
Clean Cut.................0.125" (3.175mm) long, 0.05" (1.27mm) wide

Clean Cut 4..............0.2" (5.1mm) long, 0.18" (4.5mm) wide

Hole Cut
Clean Cut.................0.65" (16.51mm)
Clean Cut 4.............0.84" (21.3mm)

Clean-Cut

1.750
1.625
.950
.275
.247
.200
Ø.730
.650 Dia. Cut

1.52in [38.6mm]
1.33in [33.7mm]
.95in [24.1mm]
Ø .84in [21.3mm]
Ø 1.00in [25.4mm]

Clean-Cut 4

FPB - Flexible Probe Bracket

HVAC/R Accessories

Delta™
C O N T R O L S
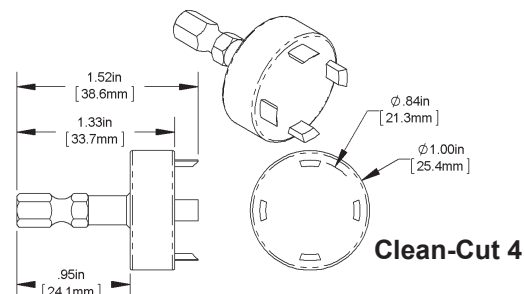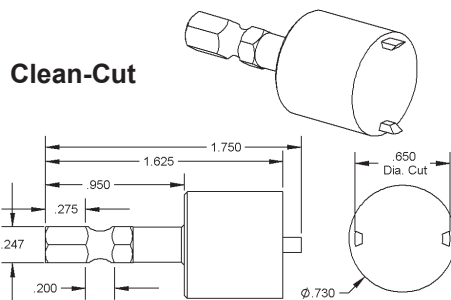
Rev. 02/12/13

Features & Options

- Makes mounting of averaging sensors quick and easy
- Eliminates risk of kinking and damaging the probe
- Scored break off for 6.35mm (1/4") rigid probe mounting
- Nylon material limits heat/cold conduction to the probe

The Flexible Probe Bracket (FPB) is used to mount averaging sensors, low limit thermostats or liquid fill thermostats in duct applications for probe diameters of 3.2mm (1/8"), 16.35mm (1/4") and 9.5mm (3/8).

The bracket is used to reverse the direction of the flexible probe with a smooth arc to eliminate the risk of kinking the sensor and damaging the probe.

A fixed 16.35mm (1/4") probe may also be mounted as part of the bracket design using the scored break-off. The FPB is made out of tough UL94V Nylon which limits heat/cold conduction to the probe and has multiple mounting holes.

FPB - Flexible Probe Bracket

Ordering Information

DELTA #	DESCRIPTION
	Flexible Probe Brackets
400405	50 Flexible Probe Brackets
400406	100 Flexible Probe Brackets
Call for #	500 Flexible Probe Brackets

Specifications

Material: Nylon

Rating: UL94V-2 (plenum rated), RoHS Compliant

Mounting: Two 16.35mm (1/4") holes, on the top and side.

Probe Size: 3.2mm (1/8"), 16.35mm (1/4") and 9.5mm (3/8") flexible probes or 16.35mm (1/4") rigid probe holder, w/break off score

Bracket Arc: 28.6mm (1.125") radius

Operational Temp: -30 to 75ºC (-22 to 167ºF)
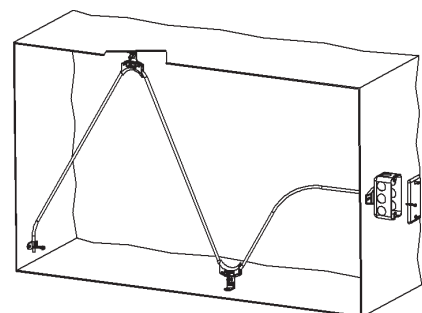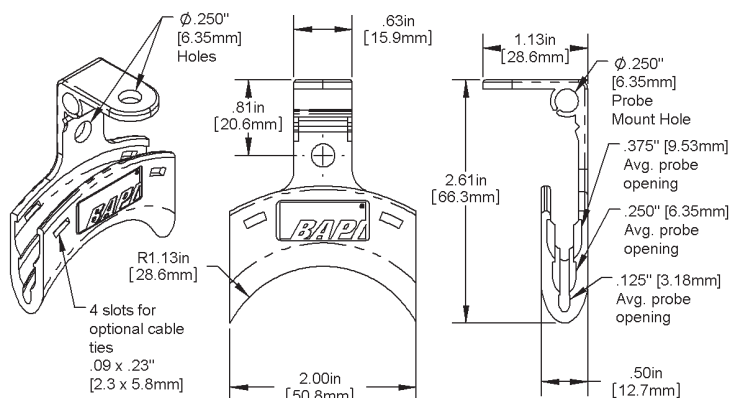
Vertical Mounting of the Averaging Sensor
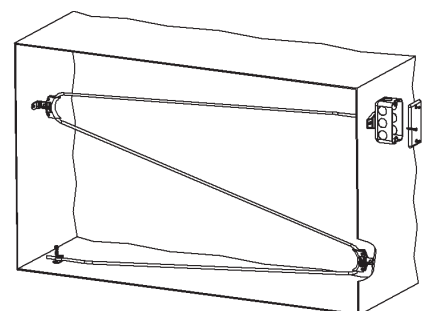
Horizontal Mounting of the Averaging Sensor
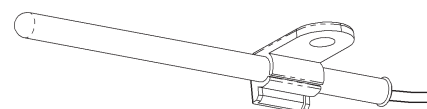
16.35mm (1/4") Rigid Probe Mounting (using scored break off)

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Rev. 10/22/12

Features & Options

- Creates a Weatherproof Wire Connection
- Crimp-On & Twist-On Styles Available

Delta's Sealant Filled Connectors (SFC) contain a moisture-excluding sealant which encapsulates the electrical connection protecting it from moisture and oxidation. This encapsulation also reduces the potential for fire, electrocution and flashover. Delta offers two types of SFCs—a Twist-On Style and a Crimp-On Style. The Crimp-On Style is used for factory terminations, while the Twist-On Style is used for quick and safe field terminations. The Twist-On accepts up to two 22 AWG wires or one 22 AWG and one 16 or 18 AWG wire. The Twist-On has a voltage rating of 300 volts and a temperature rating of 105 ºC, and it is not UL listed.

Incorporating a "J-Loop" (see figures below) in all terminations adds another level of protection against moisture and oxidation. Used in conjunction with Delta's double encapsulated sensors and etched Teflon leadwires, SFCs and "J-Loop" terminations ensure a watertight package that can withstand high humidity and condensation and perform under real world conditions.

Crimp-On Sealant Filled Connectors

Twist-On Sealant Filled Connectors

Ordering Information

DELTA #	DESCRIPTION
	Sealant Filled Connectors
401551	100 Crimp-On Style SFCs
401550	1,000 Crimp-On Style SFCs
401553	100 Twist-On Style SFCs
401552	1,000 Twist-On Style SFCs

J-Loop Termination Technique

Junction Box — Crimp-On or Twist-On SFC (Crimp-On Shown) — J-Loop — Wall

Using a "J-Loop" directs moisture away from the connection. Place the wire junction as high as possible and form a "J" with the leadwires. Any moisture that collects on the leadwires flows downward to the bottom of this loop and away from the junction.
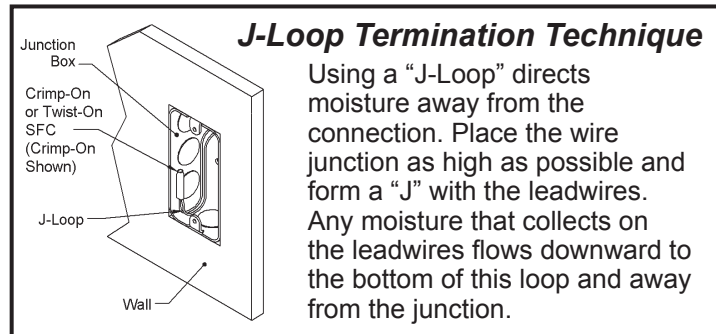
TB18 - Pluggable Terminal Block

The TB18 - Pluggable Terminal Block is a small circuit board designed to simplify the task of wire termination. The TB18 is easier to apply and troubleshoot than a bunch of wires under a large wire nut or the typical barrier strip.

The TB18 board fits into the ETA line TRK Snaptrack or any other industry standard 2.75" snaptrack, and provides a straight through connection for nine pairs of wire on individual plugs.
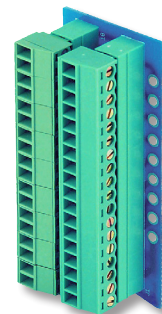
TB18 Pluggable Terminal Block

Ordering Information

DELTA #	DESCRIPTION
	TB18 - Pluggable Terminal Block
400833	TB18 Pluggable Terminal Block (NEC Class 2 Circuits, 4 A max.)
400834	TB18C Pluggable Terminal Block (NEC Class 2 Circuits, 4 A max.) All odd numbered terminals are common
400835	TB18C2 Pluggable Terminal Block (NEC Class 2 Circuits, 4 A max.) All odd numbered terminals are common and all even numbered terminals are common

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Water Leak Detector

HVAC/R Accessories

Rev. 01/29/13

Features & Options

- Detection Within 5 Seconds with Local LED Alarm Indication
- 5 Amp or 0.5 Amp Relays @ 30VAC/DC
- One Piece, Rope or Remote Sensor Design
- Adjustable Detection Level with Bottom or Pan Edge Mounting
- 15 to 30VDC or 24 to 30VAC Power
- NEMA 4 Enclosure

The Water Leak Detector is designed to sense the presence of water and alert a central monitoring system of the potentially destructive situation. Upon water detection, the alarm relays change state, and a local red LED illuminates. The transmitter can be set for latching or non-latching alarm, and normally energized or normally de-energized operation.

Detector with Attached Sensor

Detector with Rope Sensor

Detector with Remote Sensor

Specifications

Power:	15 to 30VDC or 24 to 30VAC, ~100 mA or ~4 VA
Wiring:	Flex Connector or Liquid Tight Fitting
Relays	Up to 6 wires for Alarm Contacts
Transmitter	2 wires for Power
Mounting:	Lays in the pan with industrial adhesive tape or attached to the pan edge with screws

Sensor:

Standard	Attached SS probe w/ adjustable depth screw from 1.6 to 21mm
Optional	Remote Sensor w/ adjustable depth from 1.6 to 13mm, Mounting to pan with industrial adhesive tape or 4.4mm mounting holes
Optional	Remote Long Line Wire Sensor (Rope), Plenum Rated. Detects 3.2mm of water over the full length. Comes in lengths from 3 to 30 meters.

Detector Transmitter:

Alarm Contacts	LDT1:	One SPST, 0.5A relay output, 10W max.
	LDT2:	Two SPST, 0.5A relay outputs, 10W max.
	LDT3:	One SPDT, 5A relay output
	LDT4:	Two SPDT, 5A relay outputs
Indication		1 Green Power LED, 1 Red Alarm LED
Reset Action		If latching, local push button or power interrupt
Termination:		Terminal strip, 12 to 24 AWG

Latching and Supervised Relay Options:

Latching	Relay stays in alarm until manually reset or power is cycled
Non-Latching	Relay automatically resets after water has dried up (default)
Unsupervised	Relay energizes on water detection
Supervised	Relay de-energizes on water detection (default) Note: Relay de-energizes on loss of power

Enclosure Ratings:

Remote Sensor	Submersible, with FEP plenum-rated, waterproof cable
Detector	BAPI-Box, NEMA 4

Ambient:

Remote Sensor	-40 to 85ºC (-40 to 185ºF), 0 to 100%RH, Condensing
Rope Sensor	0 to 75ºC (32 to 167ºF), 0 to 95%RH, Non-condensing
Detector (BB)	-40 to 85ºC (-40 to 185ºF), 0 to 95%RH, Non-condensing
Materials:	Sensor: Stainless Steel BAPI-Box: Polycarbonate
Agency:	RoHS, UL94V-0 , UV-rated in Enclosure

Water Leak Detector with Attached Sensor

5.00in [127mm]

4.26in [108.2mm]

3.56in [90.4mm]

.84in [21.3mm] Total Screw Height Adjust

2.50in [63.5mm]

5.00in [127mm]

4.11in [104.4mm]
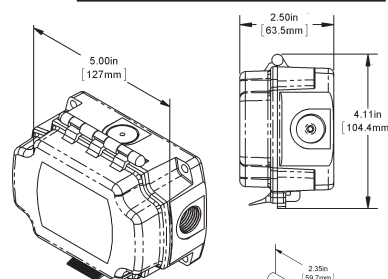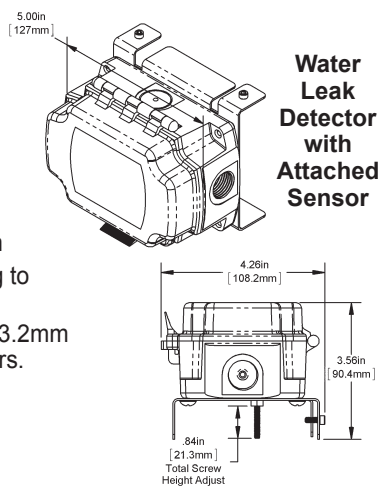
Water Leak Detector with Remote Pan Sensor or Rope Sensor

2.35in [59.7mm]

1.60in [40.6mm]

2.29in [58.2mm]

HEATSHRINK

0.25in [6.35mm]

HEATSHRINK

10ft, 25ft, 50ft, 100ft [3.05m, 7.62m, 15.24m, 30.48m]

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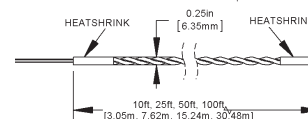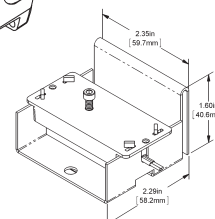
Rev. 01/29/13

Ordering Information

DELTA #   **DESCRIPTION**

Water Leak Detector

Call for #	Detector w/ one 0.5A SPST contacts, Probe Sensor built into the enclosure
Call for #	Detector w/ one 0.5A SPST contacts, Remote Spot Sensor with 1.5m FEP cable
Call for #	Detector w/ one 0.5A SPST contacts, Remote Spot Sensor with 3m FEP cable
Call for #	Detector w/ one 0.5A SPST contacts, Remote Spot Sensor with 7.6m FEP cable
Call for #	Detector w/ one 0.5A SPST contacts, Remote Rope Sensor with 3m Plenum Rated Cable
Call for #	Detector w/ one 0.5A SPST contacts, Remote Rope Sensor w/ 7.6m Plenum Rated Cable
Call for #	Detector w/ one 0.5A SPST contacts, Remote Rope Sensor w/ 15m Plenum Rated Cable
Call for #	Detector w/ one 0.5A SPST contacts, Remote Rope Sensor w/ 30m Plenum Rated Cable

SQ4, Four-Step Sequencer

HVAC/R Accessories

Rev. 10/22/2012

Overview

The high cost of energy today makes proportional control of HVAC systems a necessity, not a luxury. With proportional control you use only the energy needed to get the job done.

Proportional control is easy for water valves and air dampers, but more complex and cost prohibitive for electric heat units, fans and refrigeration systems. The SQ4 module simplifies the job by sequencing multiple on-off devices based on a single analog output from the controller. Now items such as cooling towers with multiple two-speed fans, staged electric heat units and multi-compressor chillers can be controlled to provide the utmost efficiency and consistency for the load at hand – all at a reasonable price.

Each SQ4 module provides four NO/NC output relays that trigger at four fixed voltages across the 0-5 or 0-10 control voltage range. Two SQ4 modules can be cascaded to provide eight independent output stages. When closed, each output relay provides 24 VDC at 120 mA. In addition, sequencer modules are available that provide a rotational sequence as well as contact monitoring and alarm output.
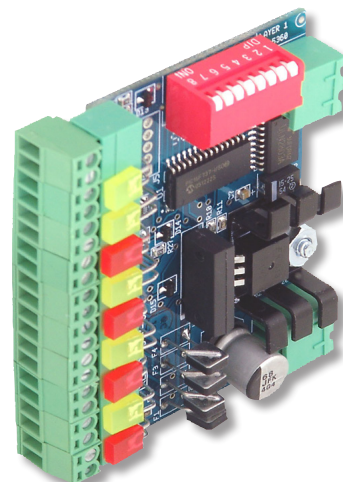
SQ4RA, Four-Step Sequence Module

Ordering Information

DELTA #	DESCRIPTION
	SQ4, Four-Step Sequencers
400803	SQ4, 4-Step Sequence Module
400804	SQ4-R, 4-Step Sequence Module (Rotational)
Call for #	SQ4-A, 4-Step Sequence Module (with Alarm)
Call for #	SQ4-RA, 4-Step Sequence Module (Rotational with Alarm)

Associated Products

TR2
Snaptrack

BP8 and BP4
Interface
Backplanes

Specifications

SQ4 plugged into a BP4 Backplane and Snaptrack

3.47in [88.2mm]

3.00in [76.2mm]

Power Voltage: 26 to 36 VDC

Power Current: 50 mA max. plus output
(1.7 VA max plus output)

Input Control Voltage: 0 to 5 or 0 to 10 VDC

Output Power: Nominal 24 VDC (23 to 32 VDC)

Output Power Current:
4 outputs of 120 mA max. (12 Watts total)

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 10/22/2012

Overview

The DS6R module monitors six dry switch closure devices and provides one resistive output to the controller.

Each switch closure subtracts a precise resistance from the output so a simple subtraction algorithm at the controller decodes which switches are set. Each switch terminates on an independent plug on the front of the DS6R module and an LED associated with each input indicates switch closure for simple troubleshooting.

The DS6R plugs into the BP2, BP4 or BP8 backplane.
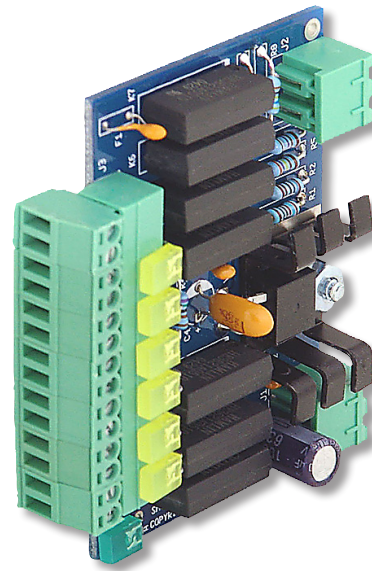
DS6R, Dry Switch Monitor
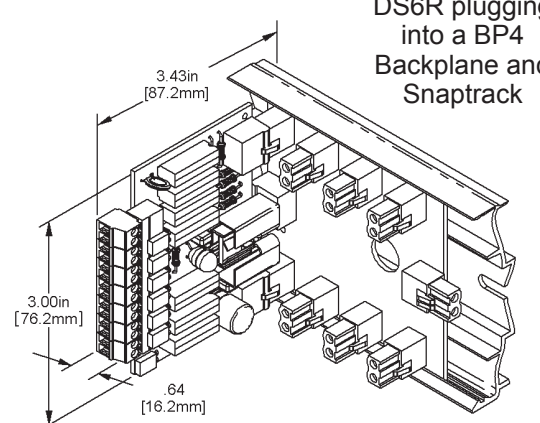
Ordering Information

DELTA #	DESCRIPTION
	DS6R, Dry Switch Monitors
400810	DS6R, Dry Switch Monitor, 30K Output
Call for #	DS6R-10K, Dry Switch Monitor, 10K Output

Associated Products

TR2
Snaptrack

BP8 and BP4
Interface
Backplanes
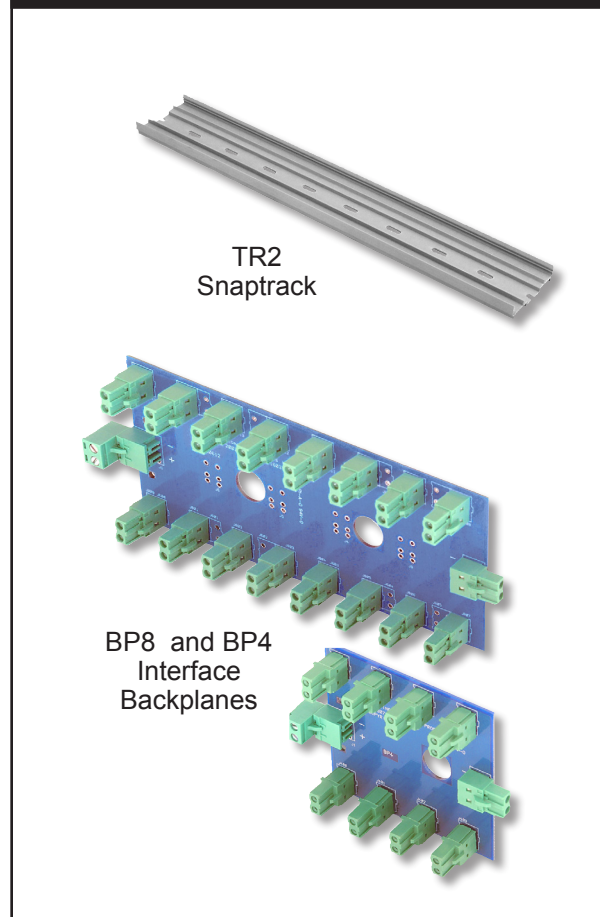
Specifications

DS6R plugging
into a BP4
Backplane and
Snaptrack

3.43in
[87.2mm]

3.00in
[76.2mm]

.64
[16.2mm]

Power Voltage: 10 to 42 VDC
20 to 26 VAC

Power Current: 70 mA maximum
(2.4 VA maximum)

Switch Voltage: 7 VDC

Switch Current: 10mA

Output Resistance:
DS6R .... 29.505KΩ - All Switches Open
DS6R-10K .. 9.806KΩ - All Switches Open

(Full output resistance tables are available in the installation and operation instructions)

PMPB5 - Pulse Meter Pulse Buffer

HVAC/R Accessories

Rev. 10/22/12

Overview

Many electrical, water or gas meters provide a pulse output with each pulse representing a specific quantity of the media being measured. These pulse outputs often need to be electrically isolated from the controller's input by a buffer. The PMPB5 provides that buffer by receiving the pulses from the meter and recreating them as dry contact closures. An LED lights whenever the buffer contacts are closed. The PMPB5 fits standard 7cm snaptrack.

PMPB5 mounted in the optional 7cm snaptrack

Ordering Information

DELTA #	DESCRIPTION
400811	PMPB5, Pulse Meter Pulse Buffer

Specifications

Power .... 24VAC 50/60HZ @ 25mA (0.6VA)
Contact rating .... 1A @ 24VAC maximum, 1mA @ 5VDC minimum)
Contact repetition rate .... 2 seconds per pulse maximum
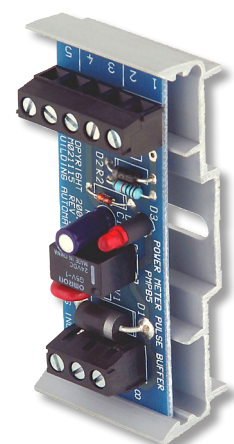
TS1 & TS2 - Transient Suppressor

Rev. 10/22/12

Overview

HVAC control systems can be subjected to electrical transients (temporary excess voltage) from various sources. Damage to control systems can occur if static electricity, lightning or contactors produce transients of sufficient magnitude and duration to overwhelm the protection built into the control system components. The TS1 and TS2 can significantly increase the transient protection and reduce the possibility of damage to the control system. Both modules fit in standard 7cm snaptrack

The TS1 is specifically designed for network communications between control system components. The TS1 clamps voltages to 10 VAC or ±14 VDC Line to ground and 7.5 VDC line to line. *Please Note: The added capacitance of the TS1 may be unsuitable for some combinations of communications line length and high speed data. For best operation you may have to reduce line lengths and add data repeaters.*

The TS2 is designed to protect 4 to 20 mA current loops. The TS2 clamps the signal return line to 5 volts above ground and 1 volt below ground. The voltage supply line is clamped to ±39 VDC Line to ground.
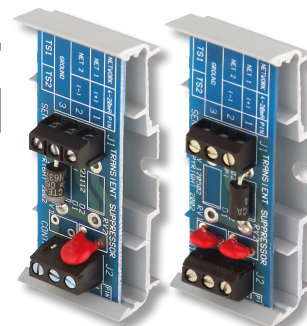
TS1 & TS2 - Transient Suppressors with optional 7cm snaptrack

Ordering Information

DELTA #	DESCRIPTION
400812	TS1, Transient Suppressor (Voltage)
400813	TS2, Transient Suppressor (Current)

Specifications

TS1 Clamping Voltage
0 VAC or ±14 VDC Line to Ground,
 ±7.5 VDC Line to Line

TS2 Clamping Voltage
5 VDC Above Ground, Signal Return Line
1 VDC Below Ground, Signal Return Line
±39 VDC Line to Ground, Power Supply Line

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 10/22/12

Overview

The number of discrete switch closure inputs required in an HVAC system often exceeds the number of hardware inputs available (or justifiable) on the controller. Summarizing multiple discrete points into a single system input is an easy and effective solution. The DS8 module accepts up to eight dry contacts and provides a single dry contact signal to the controller when the number of monitored points reaches a user-defined threshold.

The DS8 is great for grouping alarms which you will want to distinguish in the field, but don't need to distinguish on the central computer. Examples include dirty filter alarms, condensate float switches, VFD faults, moisture monitors, door switches, etc. A technician can glance at the DS8 and quickly determine which filter to change; which drain to check or which VFD to inspect.

The DS8 plugs into the BP4 or BP8 backplane and accepts up to eight independent dry switch contacts on easy-to-use connectors at the front of the module. Each input has an LED to indicate when the contact is closed. An eight-position DIP switch allows the user to set the alarm threshold. The output is also user switchable to a NO or NC dry contact.

The DS8 can also be used to monitor multiple auxilliary contacts when multiple discrete points are controlled using a R49. Typical applications include lighting controls and small fan controls.
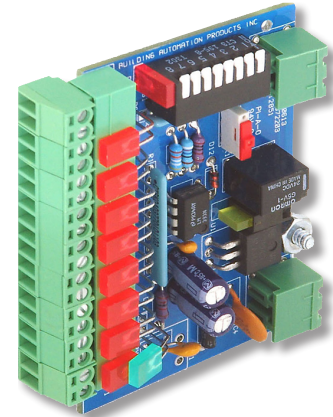
DS8 - Discrete Summary Module

Ordering Information

DELTA #	DESCRIPTION
400800	DS8, Discrete Summary Module, 8 Input

Associated Products

TR2
Snaptrack

BP8 and BP4
Interface
Backplanes
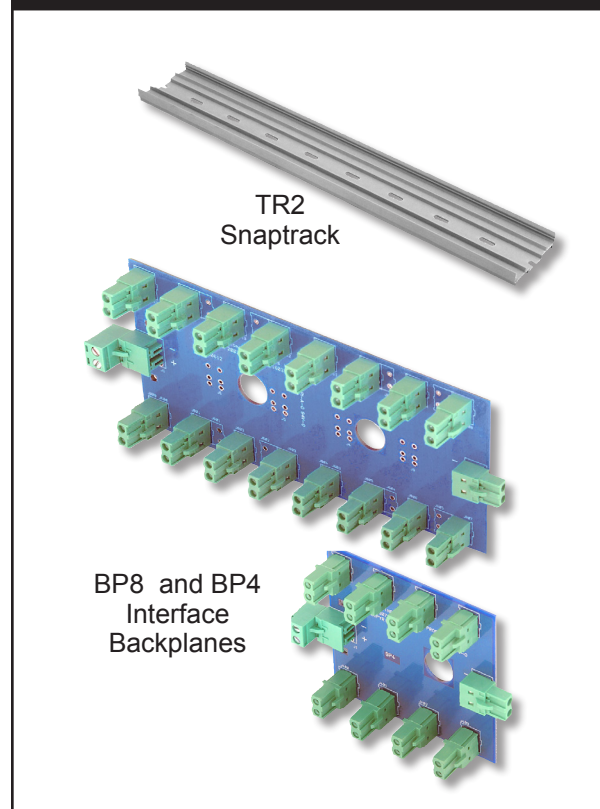
Specifications
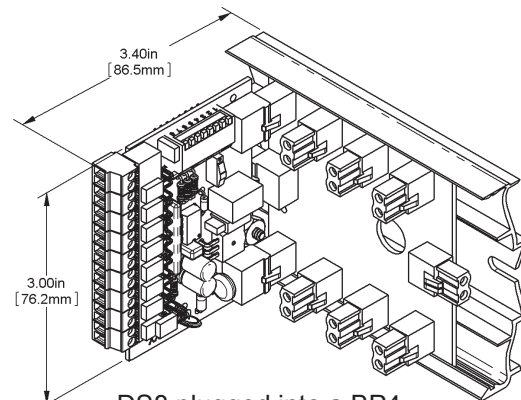
DS8 plugged into a BP4
Backplane and Snaptrack

3.40in [86.5mm]

3.00in [76.2mm]

Power Voltage: 24 to 35 VDC • 22 to 26 VAC

Power Current: 35 mA max. (1.2VA max)

Switch Voltage: 24 VDC

Switch Current: 2.4 mA

Output: Dry relay contacts
NEC Class 2 circuits only

Output Current: 1 mA to 1 Amp

EA1 - Two Position Actuator Interface

HVAC/R Accessories

Rev. 10/22/2012

Overview

The EA1 simplifies the wiring and troubleshooting of "Belimo®" style two-position actuators with end switch position feedback. Each EA1 module can control two actuators from a single controller output and provide a summary dry contact status when a user-selectable number of end switches close (1, 2 or more). The actuators can move together or in opposite directions based on jumper settings on the module. An additional end switch input allows multiple EA1s to be cascaded together.

The connectors on the front of the EA1 module are readily accessible and make terminations quick and easy for the controller, actuators and actuator end switches. The red and amber LEDs on the EA1 indicate when power is being supplied to the actuators and when they have reached their end states. These LEDs tell the technician the state of the controller output, when power is being sent to the actuators and if the actuator end switch is closed.

The EA1 plugs into a BP4 or BP8 backplane. A green LED on the EA1 indicates when power is present.
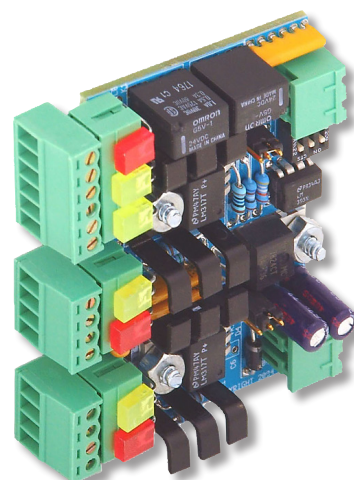
EA1 - Two Position Actuator Interface

Ordering Information

DELTA #	DESCRIPTION
400801	EA1, Two Position Actuator Interface

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Associated Products
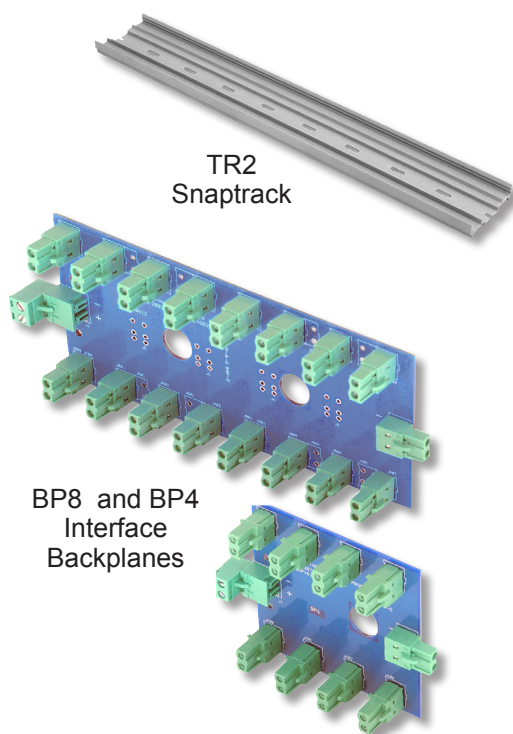
TR2
Snaptrack

BP8 and BP4
Interface
Backplanes

Specifications

EA1 plugged into a BP4 Backplane

3.40in [86.4mm]

3.00in [76.2mm]

Power Voltage: 26 to 36 VDC

Power Current: 50 mA max. plus actuators (1.7 VA max plus actuator)

Actuator Control Voltage:
0 or 24 VDC @ 7mA max

Actuator Power Voltage: 24 VDC

Actuator Power Current:
2 output of 250 mA max. (12 Watts total)

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 05/02/2013

Overview

All good projects need to start with a proper foundation and Delta's HVAC accessory modules are no exception. The Snaptrack provides a sturdy, secure and easy mounting method for the modules. The standard 7cm snaptrack is cut to a several convenient lengths.

The snaptrack cradles the BP4 & BP8 Communications Backplanes and Terminal Blocks, holding them firmly in place so you can build neat, accurate and cost effective control panels.
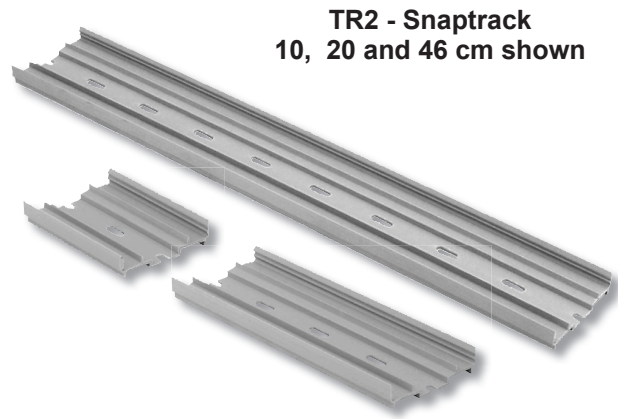
**TR2 - Snaptrack
10, 20 and 46 cm shown**

Ordering Information

DELTA #	DESCRIPTION
	TR2 Snaptrack
400824	TR2 Snaptrack, 32mm (1.25") length
401638	TR2 Snaptrack, 51mm (2") length
Call for #	TR2 Snaptrack, 102mm (4") length
400829	TR2 Snaptrack, 203mm (8") length
400828	TR2 Snaptrack, 305mm (12") length
Call for #	TR2 Snaptrack, 457mm (18") length
400830	TR2 Snaptrack, 1.22m (48") length

PAN16 - Panduit Wire Duct

Rev. 10/22/2012

Overview

Delta's PAN16 - Panduit wire duct screws to the enclosure back plate using pre-punched holes in the back plate.

The PAN16 guides the wire to the devices, keeping clutter out of the control panel.
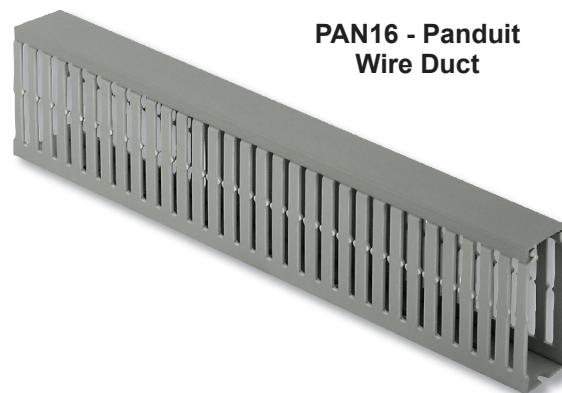
**PAN16 - Panduit
Wire Duct**

Ordering Information

DELTA #	DESCRIPTION
	PAN16 - Panduit Wire Duct
400831	PAN16 - Panduit Wire Duct 25 x 76 x 406mm (1 x 3 x 16")

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EA2 - Modulating Actuator Interface
HVAC/R Accessories

Δ**Delta**™
C O N T R O L S

Rev. 10/22/2012

Overview

The EA2 simplifies the wiring and troubleshooting of "Belimo®" style modulating actuators with voltage feedback, saving time and money every time you install or check an actuator. The connector plug on the front of the EA2 module makes terminations quick and easy for the controller and the actuator. The four actuator wires and the controller's output signal terminate on the connector plug. The EA2 provides regulated and fused power for the actuator from the backplane.

The EA2 module is an excellent troubleshooting tool because the technician does not need to gain physical access to the actuator to determine if the actuator is in the correct position. The EA2 display shows the actuator position based on the actuator's feedback signal. An easy push of a button on the EA2 and the display shows the position which the controller is requesting. Troubleshooting is a simple comparison of the two. If they don't match, you have a problem; the actuator is either stuck, manually overridden, not terminated properly or dead.

The EA2 plugs into a BP4 or BP8 backplane. A green LED on the EA2 indicates when power is present.
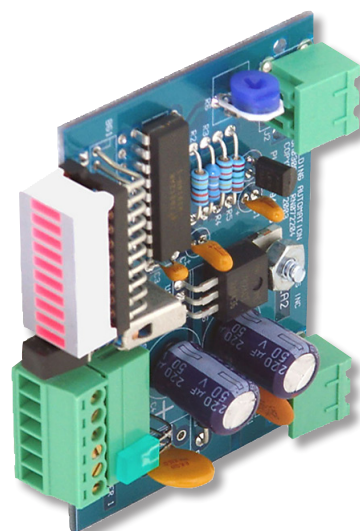
EA2 - Modulating Actuator Interface

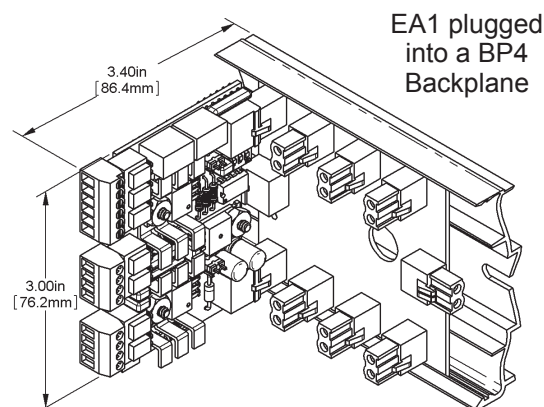Belimo® is a trademark of Belimo Aircontrols (USA) Inc. registered in the United States and other countries.

Ordering Information

DELTA #	DESCRIPTION
400802	EA2 - Modulating Actuator Interface

Associated Products

OAM - Output Adjust Module

TR2 Snaptrack

BP4 Interface Backplanes

Specifications

EA2 plugged into a BP4 Backplane

3.30in [83.8mm]

3.00in [76.2mm]
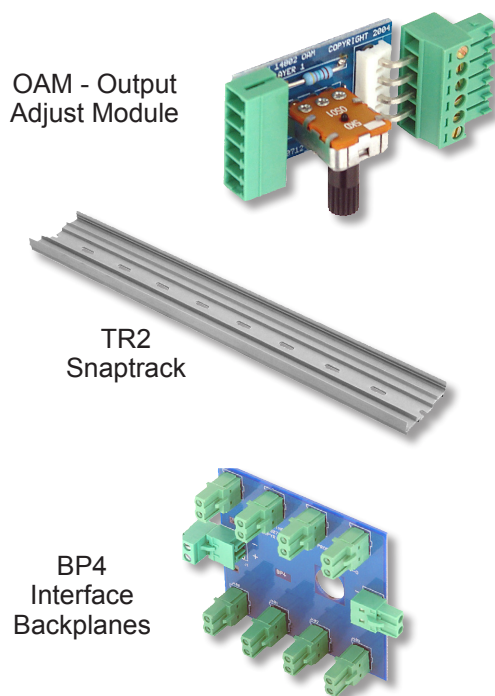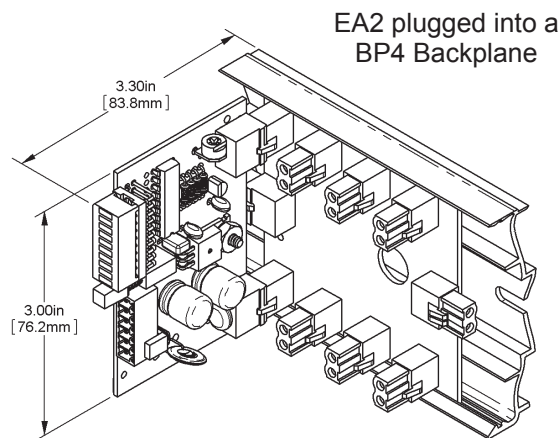
Power Voltage: 26 to 35 VDC • 20 to 26 VAC

Power Current: 50 mA max. plus actuators (1.7 VA max plus actuator)

Actuator Control Voltage: 2 to 10 VDC

Actuator Power Voltage: 24 VDC

Actuator Power Current: 500 mA max (12 Watts total)

Rev. 10/22/2012

## Overview

Many times, it is necessary to move an actuator throughout its entire range of motion to troubleshoot the mechanical linkage. In DDC systems, this procedure may require a laptop computer, communications interface and special software. Then you have to know which controller to interface with, that controller's individual address and which output connects to the actuator you need to troubleshoot. Now the battery is going dead on your laptop and there is nowhere to plug in the charger.

There is a better way. If you use the EA2 module to drive your modulating actuators, the OAM (Output Adjust Module) accessory allows you to stroke your actuator to any position without any additional equipment. Simply plug the actuator cable into the OAM and then plug the OAM into the EA2. Turning the knob on the OAM allows you to set the actuator's position anywhere in its range. Push the button on the EA2 to see your commanded position, release the button to see the actuator's position.
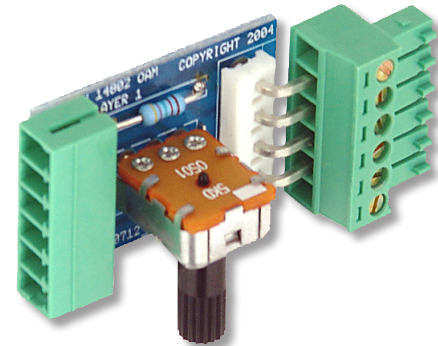
OAM - Output Adjust Module

Ordering Information

DELTA #	DESCRIPTION
400808	OAM - Output Adjust Module

Associated Products
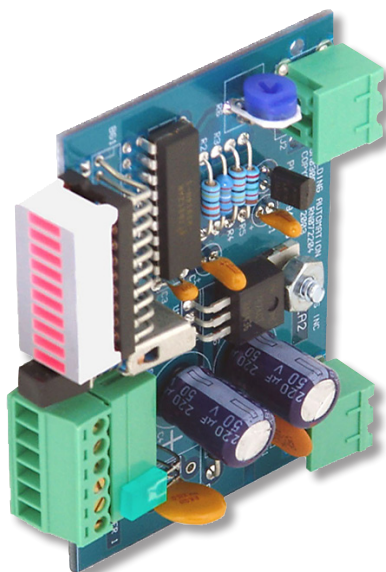
EA2 - Modulating Actuator Interface

Specifications

OAM plugged into an EA2 Module

3.00in [76.2mm]

4.04in [102.6mm]
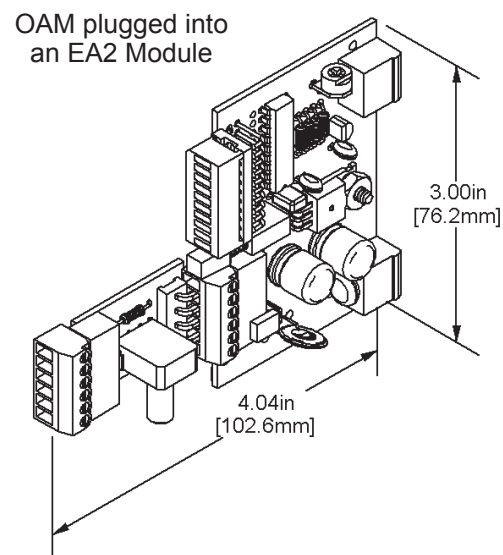
Input Voltage: 24VDC

Output Power Voltage: 0 to 10 VDC nominal

Output Power Current: 2 mA

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RBP - Comm. Repeater Backplane
HVAC/R Accessories

Rev. 10/22/2012

Overview

The RBP - Communications Repeater Backplane fits into the TR2 Snaptrack and provides power, communications and convenient mounting for the FOX and RPTR modules.

Connectors on the face of the RBP plug into mating connectors on the RPTR and FOX. The FOX and RPTR modules share data across the RBP backplane which provides transient protection for the communications network. Several RBP backplanes can be plugged together to share data through the backplane end connectors, allowing all the RPTR and FOX modules to form a large communications hub.

**RBP -
Communications
Repeater Backplane**
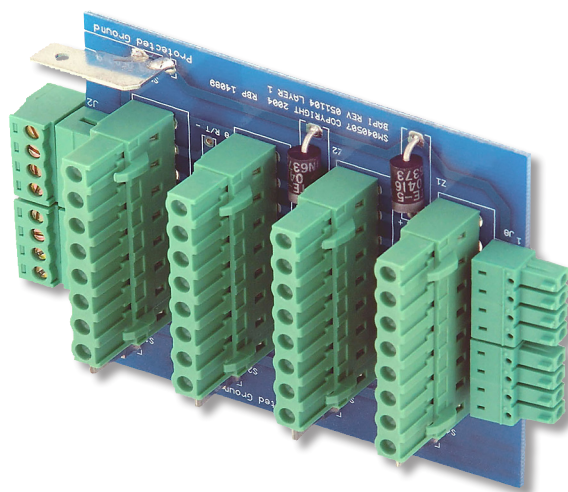
Ordering Information

DELTA #	DESCRIPTION
400839	RBP - Comm. Repeater Backplane

Associated Products
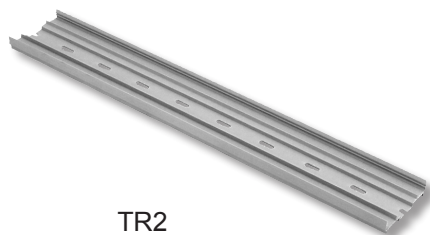
TR2
Snaptrack

Specifications

RBP - Repeater Backplane
mounted in 7cm snaptrack

3.33in
[84.5mm]

4.00in
[101.6mm]

1.25in
[31.70mm]

Power Voltage: 12 VDC

Power Current: 4 Amp max.

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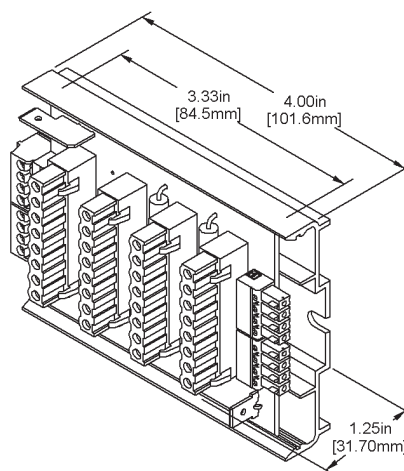
Rev. 10/22/2012

Overview

Many times you need to place only one communications repeater at a specific point in a communications network. A four-position Communications Repeater Backplane (RBP) and it's associated power supplies is clearly overkill. The SRBP - Single Repeater Back Plane teamed with a Delta VC350A Panel Mount voltage converter (in Accessories section) and a FOX or RPTR module provides a convenient single repeater solution.

The SRBP fits into the standard 7cm snaptrack. Pluggable connectors on the face of the SRBP allow quick and easy connections for power and RS-485 communications buses. One FOX module or RPTR module plug into a mating connector.
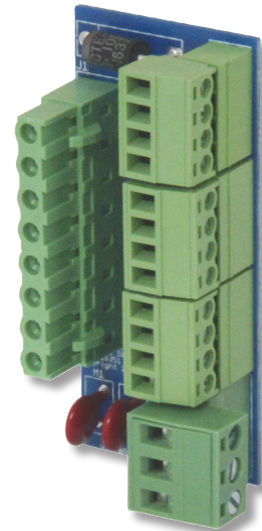
**SRBP - Single
Repeater Backplane**

Ordering Information

DELTA #	DESCRIPTION
400841	SRBP - Single Repeater Backplane

Associated Products
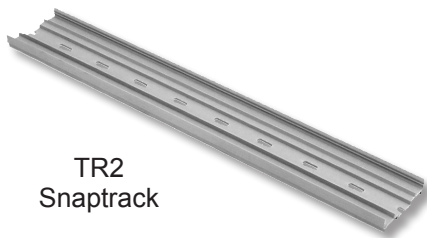
TR2
Snaptrack

Specifications

SRBP - Single Repeater Backplane
mounted in the optional 7cm snaptrack
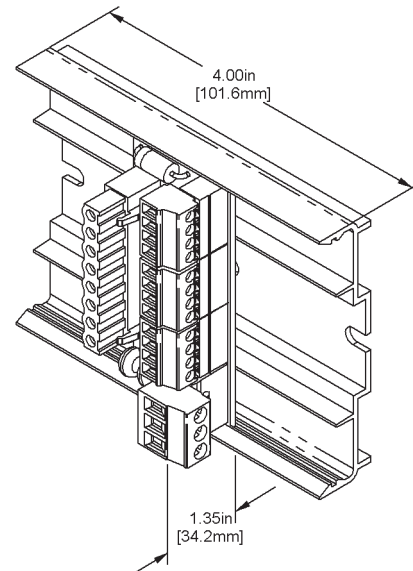
4.00in
[101.6mm]

1.35in
[34.2mm]

Power Voltage:	12 VDC
Power Current:	4 Amp max.

FOX - RS-485 Fiber Optic Transceiver

HVAC/R Accessories

Delta
CONTROLS

Rev. 10/22/2012

Overview

Delta recommends fiber optic cable for HVAC communications networks that travel between buildings. Fiber optic cable is not electrically conductive therefore it is not affected by electrical disturbances such as lightning strikes, radio transmitters or system ground variations.

The FOX - Fiber Optic Transceiver converts the RS-485 data from the copper network to a fiber optic signal for transmission to other buildings. A FOX in the other building converts the fiber optic signal back into RS-485 for the remote copper network.

The FOX module accepts the multi-mode fiber cable on standard ST connectors. The copper RS-485 connection is made on the 8-pole plug along with the power and ground connections. The FOX also plugs into the communications repeater backplane (RBP). Each FOX module consumes one unit load on the RS-485 bus.

A green power LED indicates that 12 VDC is present to the module. A red LED at each fiber cable connection flashes when data is transmitted or received.
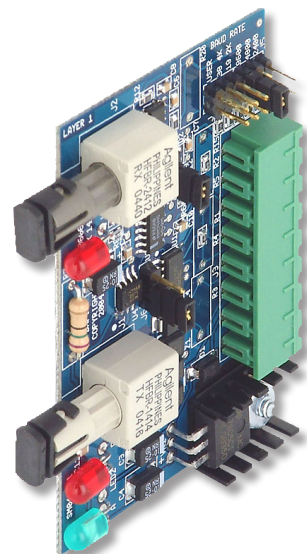
FOX - RS-485 Fiber Optic Transceiver

Ordering Information

DELTA #	DESCRIPTION
400838	FOX - RS-485 Fiber Optic Transceiver

Associated Products
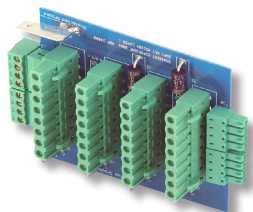
TR2
Snaptrack

RBP or SRBP
Repeater Backplanes

Specifications

FOX module plugged into a RBP - Repeater Backplane

3.37in [85.6mm]   3.33in [84.5mm]   4.00in [101.6mm]   .56in [14.3mm]
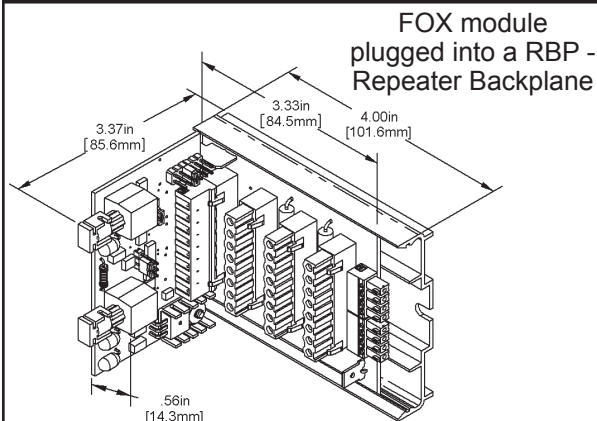
Power Voltage: 11 to 13 VDC

Power Current: 250 mA max. (3 VA max)

Communications rates:
2.4K, 4.8K, 9.6K, 19.2K and 38.4K Baud

Network Load: 1 unit load (RS-485 side)

Optical Network Length:
3,200 meters (10,500 ft)
(max. attenuation of 4 dB/Km)

RS-485 Network Length: 1.2Km (4,000 ft)

Rev. 10/22/2012

Overview

Delta recommends fiber optic cable for HVAC communications networks that travel between buildings. Fiber optic cable is not electrically conductive therefore it is not affected by electrical disturbances such as lightning strikes, radio transmitters or system ground variations.

The FOX Communication Kit provides all the functions for one fiber optic and remote RS-485 network, plus it comes in a self-contained, easy-to-apply and cost effective assembly. The kit also aids in troubleshooting because LEDs indicate when power is applied and communications are present.

The FOX Communications Kit includes:

• One Fiber Optic Transceiver (FOX) module which converts RS-485 data to a fiber optic signal or converts a fiber optic signal to RS-485 data;

• A 350 mA voltage converter to provide the higher current necessary for flawless communications;

• A Single Repeater Back Plane (SRBP) to mount the FOX module and provide pluggable connectors for power and three RS-485 cables;

• A four inch long piece of 7cm snaptrack to easily mount the entire assembly.
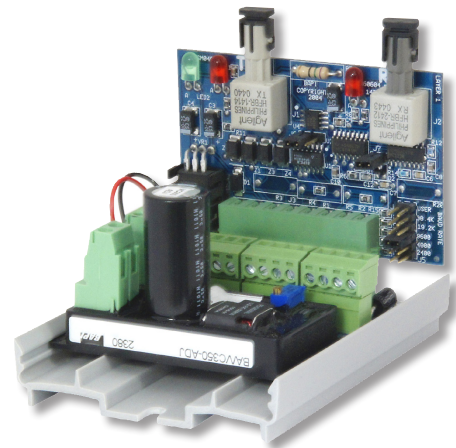
FOX Communication Kit
(includes one Fiber Optic Transceiver Module, a 350 mA voltage converter, a Single Repeater Backplane and a 10cm piece of 7cm snaptrack)

Ordering Information

DELTA #   **DESCRIPTION**

Call for #   FOX Communication Kit
(includes one FOX Module, a 350 mA voltage converter, an SRBP and a 10cm piece of 7cm snaptrack)

Specifications

Input Voltage: 18 to 30 VAC, 15 to 28 VDC

Input Current Max: 760mA (18.25 VA)

Environmental operation Range:
0 to 50°C (32 to 122°F)
0 to 95 %RH Non-Condensing

Rectification: Half-Wave Rectified

Grounding: AC and DC Ground are common

Communication Rates:
2.4K, 4.8K, 9.6K, 19.2K and 33.4K Baud

Network Load: 1 unit load (RS-485 side)

Optical Network Length:
3,200 meters (10,500 Ft)
(Maximum attenuation of 4db/Km)

RS-485 Network Length: 1.2Km (4,000ft)

3.90in [99.1mm]
3.37in [85.6mm]
3.00in [76.2mm]

FOX Communication Kit

RPTR - RS-485 Repeater

HVAC/R Accessories

Rev. 10/22/2012

Overview

RS-485 is the most common communications standard for DDC controllers; however, it is limited to 32 unit loads and 1.2Km. Extending the network beyond 32 unit loads or 4,000 feet requires repeaters.

Delta's RS-485 repeater (RPTR) connects two RS-485 segments together. Data from one segment repeats to the other segment and vice versa. Each RPTR module allows an additional 32 unit loads or 1.2Km. The RPTR may be installed directly into the snaptrack to form a simple stand alone bus extender as described above.

The RPTR module also plugs into the communications repeater backplane (RBP). Additional RPTR modules plugged into the backplane will form a star network, allowing multiple segments to connect to the same point. Each repeater card consumes one unit load for the primary RS-485 network and one unit load for the repeated network.

A green power LED indicates that 12 VDC is present to the module. A red LED at each RS-485 network connector flashes when data is transmitted or received.
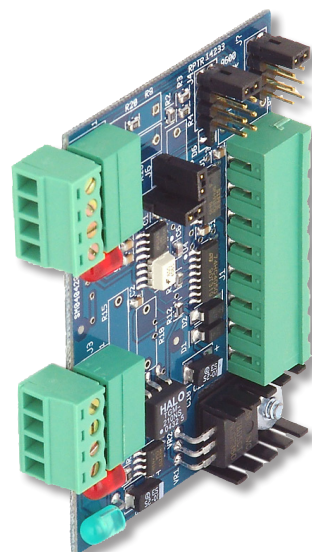
RPTR - RS-485 Repeater

Ordering Information

DELTA #   **DESCRIPTION**

400837   RPTR - RS-485 Repeater

Associated Products
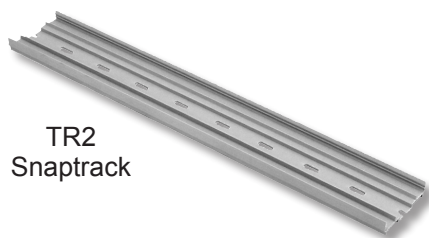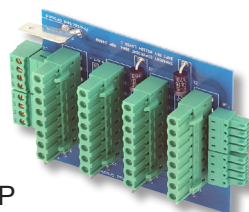
TR2
Snaptrack

RBP or SRBP
Repeater Backplanes

Specifications

RPTR module plugged into a RBP - Repeater Backplane

3.29in [83.6mm]

3.33in [84.5mm]

.47in [12mm]
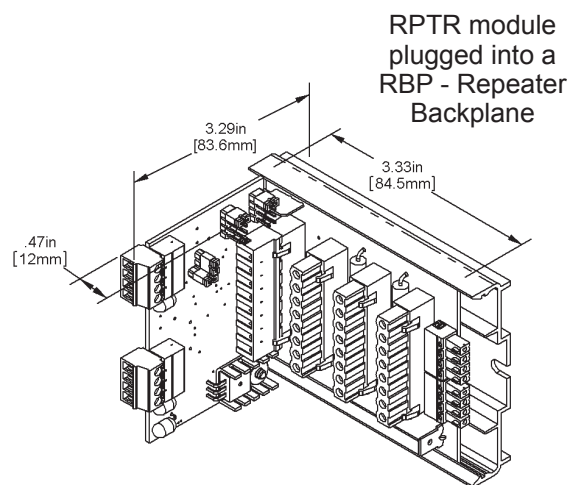
Power Voltage: 11 to 13 VDC

Power Current: 250 mA max. (3 VA max.)

Communications rates:
        9.6K, 19.2K and 38.4K Baud

Network Load: 1 unit load

Network Length: 1.2Km (4,000ft)

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 10/22/12

Overview

RS-485 is the most common communications standard for DDC controllers; however, it is limited to 32 unit loads and 1.2Km. Extending the network beyond 32 unit loads or 1.2Km requires repeaters.

The RPTR-KIT RS-485 Repeater Communication Kit provides all the functions for one repeater and remote RS-485 network, plus it comes in a self-contained, easy-to-apply and cost effective assembly. The kit also aids in troubleshooting because LEDs indicate when power is applied and communications are present.

The RS-485 Repeater Communication Kit includes:

- One RS-485 Repeater (RPTR) module which connects two RS-485 segments together. Data from one segment repeats to the other segment and vice versa. Each RPTR module allows an additional 32 unit loads and 1.2Km;

- A 350 mA voltage converter to provide the higher current necessary for flawless communications;

- A Single Repeater Back Plane (SRBP) to mount the RPTR module and provide pluggable connectors for power and three RS-485 cables;

- A 10cm long piece of 7cm snaptrack to easily mount the entire assembly.
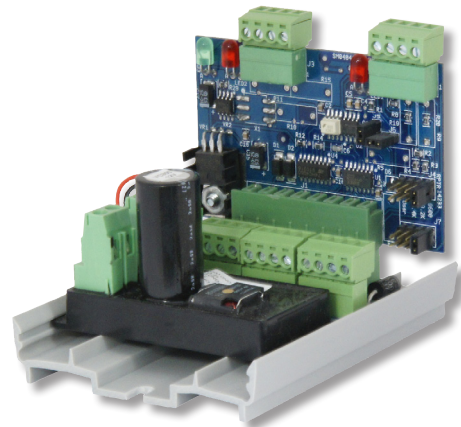
RPTR-KIT RS-485 Repeater Kit
(includes one RS-485 Repeater Module, a 350 mA voltage converter, a Single Repeater Backplane and a 10cm piece of 7cm snaptrack)

Ordering Information

DELTA # | **DESCRIPTION**

Call for #   RPTR-KIT - RS-485 Repeater Communication Kit
(includes one RPTR Module, a 350 mA voltage converter, an SRBP and a 10cm piece of 7cm snaptrack)

Specifications

Input Voltage: 18-30 VAC, 15-28 VDC

Input Current Max: 760mA (18.25 VA)

Environmental Operation Range:
0 to 50°C (32 to 122°F)
0 to 95 %RH Non-Condensing

Rectification: Half-Wave Rectified

Grounding: AC and DC Ground are common
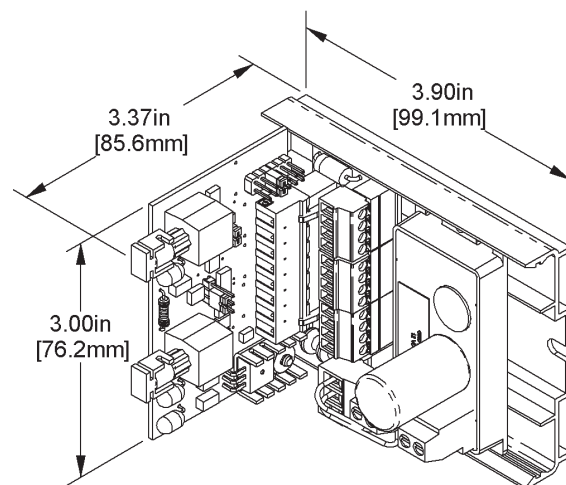
Communication Rates:
9.6K, 19.2K and 38.4K Baud

Network Load:
1 unit load on each RS-485 bus

RS-485 Network Length: 1.2Km (4,000ft)

RS-485 Repeater Communication Kit

R49 - Relay Interface, 9 Output

HVAC/R Accessories
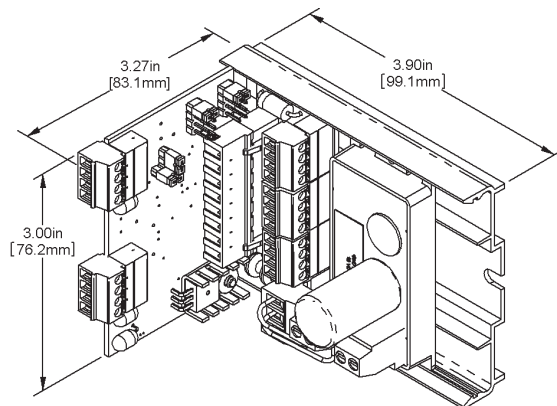
Rev. 10/22/2012

Overview

It is often necessary to perform several tasks simultaneously in an HVAC system – for example, turn on an auxiliary supply fan, turn on an exhaust fan, open purge dampers and close return dampers. Rather than tying up four I/O spots on the controller to perform these tasks, the BAPI R49 conserves critical controller space by turning on or off up to nine relays using only one controller output.

Each output on the R49 module has a polarity switch so that some loads may be turned off while others are turned on as the input changes state.

Each R49 output supplies a nominal 24 VDC at 120 mA allowing it to control most common relays or small contactors. Each output has a red LED to indicate when power is present.

The R49 plugs into a BP2, BP4 or BP8 Backplane. A green LED indicates that power is present to the module.
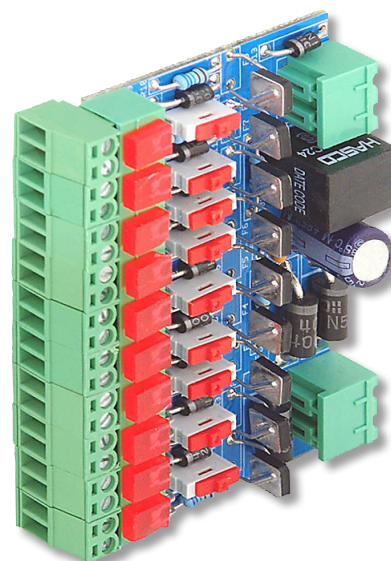
R49 - Relay Interface

Ordering Information

DELTA #	DESCRIPTION
400809	R49 - Relay Interface, 9 Output

Associated Products
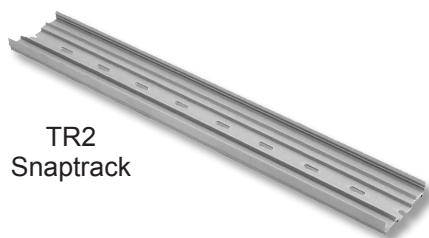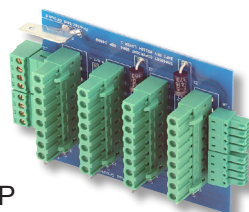
TR2
Snaptrack

RBP or SRBP
Repeater Backplanes

Specifications

R49 plugged into a BP4 Backplane

3.30in [83.9mm]

.64in [16.2mm]

3.00in [76.2mm]
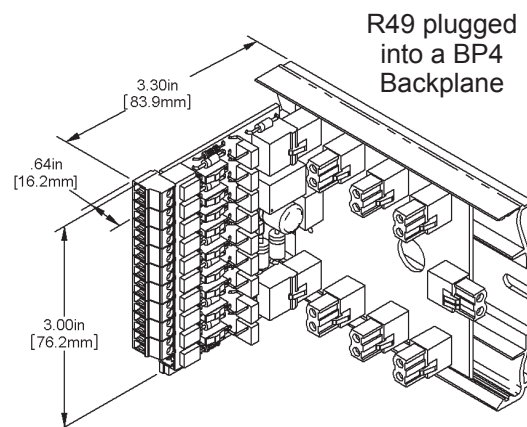
Power Voltage: 26 to 36 VDC

Power Current: 50 mA max. plus relays (1.7 VA max. plus relays)

Input Control Voltage:
0 or 24 VDC @ 7 mA max.

Output Power Voltage:
Nominal 24 VDC (23-32 VDC)

Output Power Current:
9 outputs of 120 mA max. (26 Watts total)

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 05/02/2013

Overview

Many HVAC peripherals come with a short pigtail wire for connecting to the rest of your system. Running wire from your control panel to the peripheral and connecting them together is your headache. Most of the time it's twist the wires together and apply wire nuts. Later, when you need to disconnect the peripheral for troubleshooting, the inconvenient wire nuts get lost and the loose wires short out ruining the controller.

BAPI's BELCON connector pair allows a four-pole pluggable connection between your peripheral and the control wiring. You can quickly disconnect any peripheral without fear of wires shorting together or to any conductive surface.
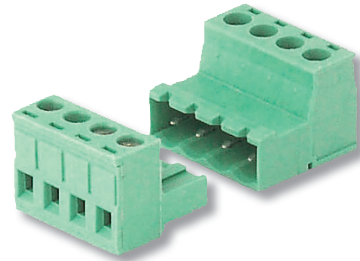
**BELCON
Mating Pair of
Belimo® Connectors**

Belimo® is a trademark of Belimo Aircontrols (USA) Inc. registered in the United States and other countries.

Ordering Information

DELTA #	DESCRIPTION
400204	BELCON - Mating Pair of Connectors

TUCOM - Terminal Unit Comm. Block

Rev. 10/22/2012

Overview

The TUCOM is a specific purpose connector which adds pluggable screw terminals for the Carrier® Comfort System zone controller.

The Carrier® zone controller only provides one communications plug, whereas you often need to terminate three cables on it. The TUCOM plugs into the zone controller's communications port and expands it into three pluggable screw terminals. Now you have one set of terminals for each wire in the network (communications in, communications out and zone sensor)

The TUCOM will accept the COMSRG for surge protection in extreme environments.
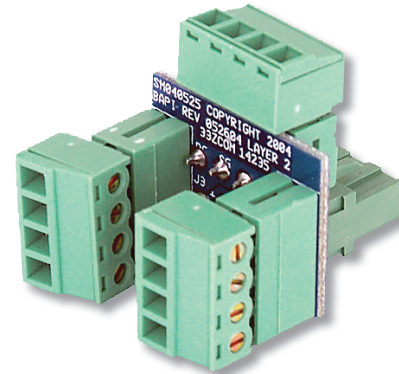
**TUCOM - Terminal Unit
Communications Block**

Carrier® is a trademark of Carrier Corporation, Registered in the United States and other countries.

Ordering Information

DELTA #	DESCRIPTION
400203	TUCOM - Terminal Unit Communications Block

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

BP2, BP4 and BP8 Backplanes

HVAC/R Accessories

Rev. 10/23/2012

Overview

The BP2, BP4 and BP8 Backplanes provide a convenient way to mount and power the Delta interface devices which helps cut down on control panel and control room clutter. All three backplanes fit standard 7cm snaptrack.

Connectors on the face of each Backplane plug into mating connectors on the ETA modules. The BP8 Backplane accommodates eight interface modules while the BP4 Backplane accommodates four modules and the BP2 accommodates two modules.

The Backplanes can be plugged together using the end connectors to build large systems. For small control systems, the Backplanes can receive power from Delta's VC350A Panel Mount voltage converters.

BP2 Backplane

BP4 Backplane

BP8 Backplane

Ordering Information

DELTA #	DESCRIPTION
	BP2, BP4 and BP8 Backplanes
400816	BP2 - 2-Position Interface Backplane
400817	BP4 - 4-Position Interface Backplane
400818	BP8 - 8-Position Interface Backplane

Associated Products

TR2
Snaptrack

Specifications

PCB Lengths	
BP2	1.5in [38.1mm]
BP4	3in [76.2mm]
BP8	6in [152.4mm]

PCB Lengths (SeeTable)

1.25in [31.8mm]

.75in [19.1mm] Typ.

BP8 Backplane in a 46cm piece of 7cm snaptrack
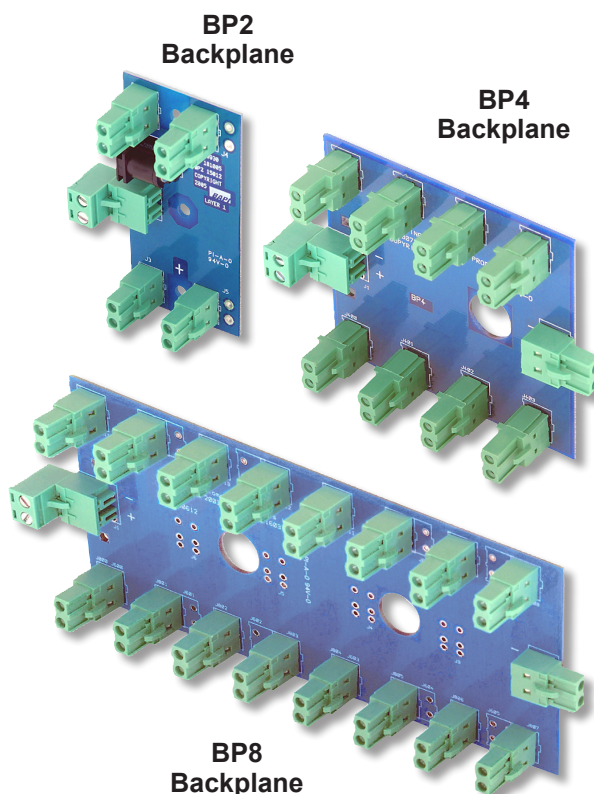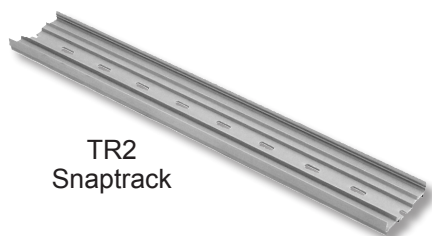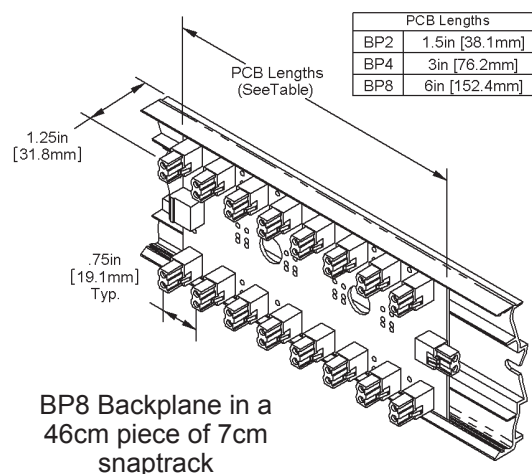
Power Voltage: 0 to 40 VDC or VAC

Power Current: 4 Amp max.

Rev. 10/23/2012

Overview

The BP4-V Vertical Backplane was designed to add additional modules into a congested panel. The Vertical Backplane allows the use of small vertical spaces that may go unused. Each Vertical Backplane accommodates four modules.

If there is enough space for more than one Vertical Backplane, they should be connected together with a BP-BR Bridge. The Bridge provides clearance from one Vertical Backplane to the other for easy insertion of the modules.

The Vertical Backplane can receive power from Delta's VC350A Panel Mount voltage converters.

Ordering Information

DELTA #	DESCRIPTION
	BP4-V Vertical Backplane & BP-BR Bridge
Call for #	BP4-V Vertical Backplane
Call for #	BP-BR Bridge (to connect Vertical Backplanes)
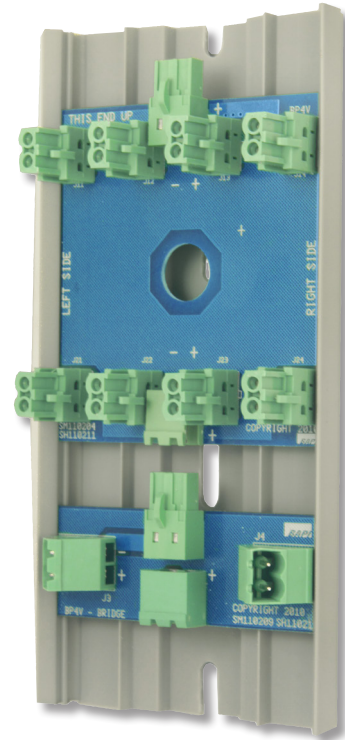
BP4-V - Vertical Backplane and a BP-BR - Bridge in a 7cm wide piece of snaptrack (sold separately)

Associated Products
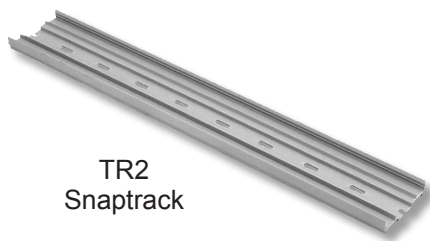
TR2
Snaptrack

Specifications

BP4-V Vertical Backplane in a 46cm piece of 7cm snaptrack

.81in [20.6mm]

2.75in [69.9mm]

3.70in [94mm]

BP-BR Bridge in the same snaptrack

2.75in [69.9mm]

1.34in [34mm]

.65in [16.4mm]
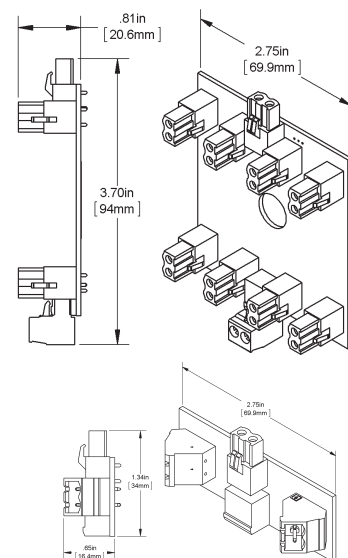
Power Voltage: 12 to 36 VDC, 18 to 32 VAC

Power Current: 4 Amp max.

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 02/15/13

BAPI-Guard Replacement Keys

Description

Replacement keys are available for the BAPI-Guard and BAPI-Guard 2 thermostat protectors.

Ordering Information

DELTA #	DESCRIPTION
400617	Replacement Key for BAPI-Guard and BAPI-Guard 2

Replacement Key

Foamback Insulator

Description

Made of closed cell foam, the Foamback Insulator ensures that room sensors are reading the temperature of the room, not the temperature of the wall. They also guard against condensation from mixing of room air and wall air around the room unit. The foamback features an adhesive backing and is available in white or grey.

Note: Several Delta products come standard with foamback insulators.

Ordering Information

DELTA #	DESCRIPTION
	Foamback Insulators, WxHxD
400060	White Foamback Insulator, 66 x 112 x 6.4mm (2.6 x 4.4 x 0.25")
400390	White Foamback Insulator, 66 x 112 x 3.2mm (2.6 x 4.4 x 0.125")
400359	Grey Foamback Insulator, 71 x 117 x 6.4mm (2.8 x 4.6 x 0.25")

Foamback Insulator

Replacement Humidity Filter

Description

Replacement Filters for Duct and Outside Air Humidity Sensors

The 100 micron sintered stainless steel filters protect the sensor from contamination while allowing airflow. Note: The flush and regular versions are not interchangeable. The humidity filter must be replaced with the same version.

Flush Stainless Steel Filter

Ordering Information

DELTA #	DESCRIPTION
	Replacement Humidity Filters
Call for #	Flush Stainless Steel Replacement Humidity Filter
Call for #	Stainless Steel Replacement Humidity Filter

Stainless Steel Filter

Rev. 02/12/13

Features & Options

- Small Flathead Screwdriver for Terminal Block screws
- 1.6mm (1/16") Allen Wrench for Cover Locking Screws
- Works on Delta Style and all BAPI-Stat Room Unit Enclosures

Screwdriver & Allen Wrench Combinations are especially useful for installing Room Units. The small, flathead screwdriver can be used to turn the screws on the circuit board terminal block while the 1.6mm (1/16") Allen wrench is used for the locking screws on the removable cover (See figures below).

One 152mm (6") screwdriver is included with every 25 room units ordered. This model is not designed for prolonged use. The 171mm (6.75") model is designed for prolonged use.

171mm (6.75") Screwdriver & Allen Wrench Combination (top) and the 152mm (6") Screwdriver & Allen Wrench Combination (bottom)

Ordering Information

DELTA #	DESCRIPTION
	Screwdriver and Allen Wrench Combo
400157	171mm (6.75") Screwdriver & Allen Wrench Combination
400159	152mm (6") Screwdriver & Allen Wrench Combination

Allen Wrench Locking Screw Locations for Room Units

The figures below show the location of the locking screws on 3 of Delta's room unit enclosures. The screwdriver can be used with all of them. Simply snap the cover in place and turn the locking screws counterclockwise with the allen wrench, backing them out to lock the cover in place.
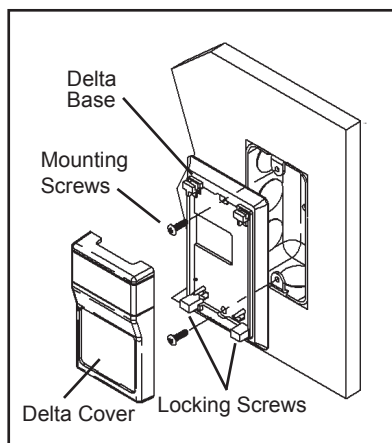
Delta Style Enclosure
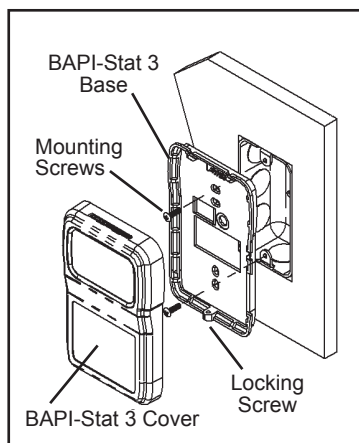
BAPI-Stat 3 Stye Enclosure
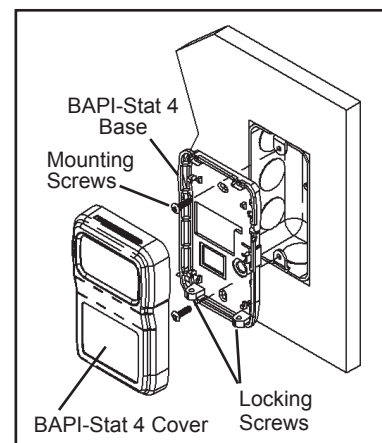
BAPI-Stat 4 Stye Enclosure

BAPI-GUARD

The BAPI-Guard prevents tampering, physical damage and unauthorized adjustment of thermostats. The attractive, low-profile design is available in two sizes to fit most thermostats. It is made of thick, durable polycarbonate and features exceptional airflow, key lock protection, horizontal or vertical mounting and easy installation with hardware included.

For more information on the BAPI-Guard Thermostat Protector, turn to the Accessories Sensors section of this catalog.

Room Transmitters - *pgs 96-97*

- Temperature Only or Combination Temp and Humidity Transmitter
- Setpoint and Override Optional
- 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater

Duct Transmitters - *pgs 98-99*

- Temp. Only or Combination
- 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater

Immersion Trans. - *pg 100*

- 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater

Remote Trans. - *pg 101*

- Plenum Rated Cable or FEP Jacketed Cable

Outside Air Trans. - *p 102-103*

- Temp Only or Combination
- 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater

Thermobuffer Trans. - *p 104*

- Reduces Temperature "Spikes" Caused By Opening the Cooler or Freezer Door

Universal Trans. - *p 105*

Monitor an analog or digital signal and transmit that value to the receiver.

BAPI-Slim Trans. - *p 106-107*

Monitors temperature inside refrigerators and freezers.

Receivers & Repeaters - *p 108-110*

- 418 & 900 MHz Receivers
- 418 to 900 MHz Repeater

Antennas, Pg 116

Output Modules - *p 111-115*

- Resistance Output (ROM)
- Voltage Output (VOM)
- Current Output (COM)
- Setpoint Output (SOM)
- Relay Output (RYOM)

Converts the wireless data into a Resistance, Voltage or Current.

Field Verifiers - *pg 117*

- Validates RF operation with a simple site visit
- Identifies radio positions before installation
- 30 Day Loaner

WAM System - *pgs 118-119*

Monitor freezer and cooler temperatures with a smart phone, tablet or computer.

WAM Receiver pg. 116

WAM Website pgs. 117

Food Probes - *pgs 120-121*

The Wireless Food Probes remain in the food trays to measure and transmit the temperature every 30 seconds to a receiver up to 30.5 meters away.

Blü-Test Probe - *pg 122*

A handheld temperature & humidity measurement probe that interfaces via wireless Bluetooth to the user's enabled Android Smart Phone or Tablet display.

F96 Temperature Transmitter

Wireless Sensors

Rev. 05/02/13

Features & Options

- 8 Year Battery Life (with two 3.6 volt lithium batteries, full AA size)
- Optional Setpoint and Occupant Override
- 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater*
- Transmitted signals are converted to Voltage, Current or Resistive Outputs for the Controller

The Delta Wireless Transmitter measures the room temperature and transmits the data through 418MHz RF to a receiver. The transmitter is mounted in a BAPI-Stat 2 style enclosure and has an in-building range of 30.5 meters*. It is available with optional Setpoint and Override.

The unit has an estimated battery life of 8 years using two high-capacity 3.6V lithium batteries with a transmit rate of about once every 10 seconds. Each transmitter has a unique address with built in error detection. Each variable sent by the transmitter is picked up by the receiver and converted by a Delta Analog Output Module to a voltage, current or resistance signal which is sent to the controller.

Transmitter with optional Setpoint & Override

Ordering Information

DELTA #	DESCRIPTION
	Wireless Temperature Transmitters
402130	Wireless Temp Transmitter
401702	Wireless Temp Transmitter with Occupant Override
401703	Wireless Temp Transmitter with Setpoint Adjustment
401704	Wireless Temp Transmitter with Setpoint & Override
400219	Lithium Battery 3.6V

Associated Products

• 418 or 900 MHz Receivers
Receives the RF signal from one or more transmitters or repeaters and outputs the values to up to 127 Analog Output Modules.

• Analog Output Modules:
Converts the signal from the Receiver into a Resistance, Voltage or Current for sending to the controller.

• Repeater
Extends the range of the Transmitter up to 305 meters.

Specifications

Supply Power: Two 3.6V Lithium batteries, 8 year battery life at 10 second transmit rate

Inputs: Built in thermistor

Accuracy: ±0.2°C (±0.36°F)

Transmitted Range: -40 to 85°C (-40 to 185°F)

Environmental Operation Range:
Temp: 0 to 60°C (32 to 140°F)
Humidity: 5% to 95% RH non-condensing

Material: ABS Plastic

Material Rating: UL94 V-0

Radio Frequency: 418 MHz

Transmitter Interval: ~10 seconds

Antenna: Built inside the enclosure

FCC Approval: FCC ID# T4F061213RSO

2.79in [70.9mm]   1.06in [26.9mm]   4.50in [114.4mm]   Closed Cell Foam

*Actual in-building transmission distances will vary depending upon building construction and other factors.

Rev. 05/02/13

Features & Options

- 8 Year Battery Life (with two 3.6 volt lithium batteries, full AA size)
- Optional Temperature Setpoint and Occupant Override
- 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater*
- Transmitted signals are converted to Voltage, Current or Resistive Outputs for the Controller

The Delta Wireless Transmitter measures the room temperature and Humidity and transmits the data through 418MHz RF to a receiver. The transmitter is mounted in a BAPI-Stat 2 style enclosure and has an in-building range of 30.5 meters*. It is available with optional Temp. Setpoint and Override.

The unit has an estimated battery life of 8 years using two high-capacity 3.6V lithium batteries with a transmit rate of once every 10 seconds. Each transmitter has a unique address with built in error detection. Each variable sent by the transmitter is picked up by the receiver and converted by a Delta Analog Output Module to a voltage, current or resistance signal for the controller.

Transmitter with optional Setpoint & Override

Ordering Information

DELTA #	DESCRIPTION
	Wireless Temperature Transmitters
402131	Wireless Temperature & Humidity Transmitter
401705	Wireless Temp & Humidity Transmitter with Override
401706	Wireless Temp & Humidity Transmitter with Setpoint
401707	Wireless Temp. & Humidity Transmitter with Setpoint and Override
400219	Lithium Battery 3.6V

Associated Products

• 418 or 900 MHz Receivers
Receives the RF signal from one or more transmitters or repeaters and outputs the values to up to 127 Analog Output Modules.

• Analog Output Modules:
Converts the signal from the Receiver into a Resistance, Voltage or Current for sending to the controller.

• Repeater
Extends the range of the Transmitter up to 305 meters.

Specifications

Supply Power: Two 3.6V Lithium batteries, 8 year battery life at 10 second transmit rate

Sensing Elements:
Temp. - Semiconductor Band Gap, Proportional to Absolute Temperature, ±0.3°C (±0.54°F)
Humidity - Capacitive Polymer, ±2% RH Accuracy

Transmitted Range: -40 to 85°C (-40 to 185°F) • 0 to 100% RH

Environmental Operation Range:
Temp: 0 to 60°C (32 to 140°F)
Humidity: 5% to 95% RH non-condensing

Material & Rating: ABS Plastic, UL94 V-0

Radio Frequency: 418 MHz

Transmitter Interval: ~10 seconds

Antenna: Built inside the enclosure

FCC Approval: FCC ID# T4F061213RSO

2.79in [70.9mm]

1.06in [26.9mm]

4.50in [114.4mm]

Closed Cell Foam

*Actual in-building transmission distances will vary depending upon building construction and other factors.

Duct Temperature Transmitter

Wireless Sensors

Rev. 10/24/12

**Wireless Duct
Temperature Transmitter**

Features & Options

- 8 Year Battery Life (with two 3.6 volt lithium batteries, full AA size)
- 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater*
- Transmitted signals are converted to Voltage, Current or Resistive Outputs for the Controller
- Probe Lengths: 10, 20, 30.5 & 46cm (4", 8", 12" & 18")
- Watertight BAPI-Box Enclosure and Stainless Steel Probes
- 2 Year Warranty

Delta Wireless Duct Temperature Transmitters feature closed cell foam to seal the probe insertion hole and to absorb vibration. Mounting feet allow for easy installation directly to the wall of the duct. The Duct Units come with etched teflon leadwires, double encapsulated sensors and a watertight BAPI-Box enclosure to withstand high humidity and condensation and perform under real world conditions. The units are available with probe lengths from 10 to 46cm to accommodate most duct shapes and sizes. Custom probe lengths are also available.

The Wireless Duct Temperature Transmitter measures the duct temperature and transmits the data through 418MHz RF to a receiver. It has an in-building range of 30.5 meters* and an estimated battery life of 8 years using two high-capacity 3.6V lithium batteries with a transmit rate of about once every 10 seconds. Each transmitter has a unique address with built in error detection. Each variable sent by the transmitter is picked up by the receiver and converted by a Delta Analog Output Module to a voltage, current or resistance signal which is sent to the controller.

Ordering Information

DELTA #	DESCRIPTION
	Wireless Duct Temperature Transmitters
401720	Wireless Duct Temperature Transmitter, 10cm (4") Probe Length
401721	Wireless Duct Temperature Transmitter, 20cm (8") Probe Length
401722	Wireless Duct Temperature Transmitter, 30.5cm (12") Probe Length
401723	Wireless Duct Temperature Transmitter, 46cm (18") Probe Length
Call for #	Wireless Duct Temperature Transmitter, Custom Probe Length
400219	Lithium Battery 3.6V

Specifications

Supply Power: Two 3.6V Lithium batteries, 8 year battery life at 10 second transmit rate

Inputs: Built in thermistor

Accuracy: ±0.2°C (±0.36°F)

Transmitted Range: -40 to 85°C (-40 to 185°F)

Environmental Operation Range:
  Temp: -40 to 85°C (-40 to 185°F)
  Humidity: 0% to 100% RH, non-condensing

Enclosure Rating: IP66

Enclosure Material: UV-Resistant Polycarbonate

Material Rating: UL94 V-0

Radio Frequency: 418 MHz

Transmitter Interval: ~10 seconds

Antenna: Built inside the enclosure

FCC Approval: FCC ID# T4F060811TEMP

*Actual in-building transmission distances will vary depending upon building construction and other factors.

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Features & Options

- 8 Year Battery Life
  (with two 3.6 volt lithium batteries, full AA size)

- 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater*

- Temperature and Humidity signals are converted to Voltage, Current or Resistive Outputs for the Controller

- Watertight BAPI-Box Enclosure

- Closed Cell Foam Padding

- 2 Year Warranty

Wireless Duct Temperature and Humidity Transmitter

Delta Wireless Duct Temp. and Humidity Transmitters feature closed cell foam to seal the probe insertion hole and to absorb vibration. Mounting feet allow for easy installation directly to the wall of the duct. The wireless Duct Units come with a watertight BAPI-Box enclosure to withstand high humidity and condensation and perform under real world conditions.

The Wireless Duct unit measures the duct temperature and humidity and transmits the data through 418MHz RF to a receiver. It has an in-building range of 30.5 meters* and an estimated battery life of 8 years using two high-capacity 3.6V lithium batteries with a transmit rate of about once every 10 seconds. Each transmitter has a unique address with built in error detection. Each variable sent by the transmitter is picked up by the receiver and converted by a Delta Analog Output Module to a voltage, current or resistance signal which is sent to the controller. The unit can be set up to trigger an alarm on the controller when the batteries need replacing.

Ordering Information

DELTA #	DESCRIPTION
	Wireless Duct Temperature & Humidity Transmitters
401725	Wireless Duct Temp. & Humidity Transmitter, 13.2cm (5.2") Probe Length
400219	Lithium Battery 3.6V

Specifications

Supply Power: Two 3.6V Lithium batteries, 8 year battery life at 10 second transmit rate

Sensing Elements:
Temp. - Semiconductor Band Gap, Proportional to Absolute Temperature, ±0.3°C (±0.54°F)
Humidity - Capacitive Polymer, ±2% RH Accuracy

Transmitted Range: -40 to 85°C (-40 to 185°F)

Environmental Operation Range:
Temp: -40 to 85°C (-40 to 185°F)
Humidity: 0% to 100% RH, non-condensing

Enclosure Rating: IP66

Enclosure Material:
UV-Resistant Polycarbonate

Material Rating: UL94 V-0

Radio Frequency: 418 MHz

Transmitter Interval: ~10 seconds

Antenna: Built inside the enclosure

FCC Approval: FCC ID# T4F060811RH

5.00in [127mm]
1/2" Drillable Port
1/2" NPSM Typ.
2.50in [63.5mm]
5.30in [134.5mm]
4.11in [104.4mm]
Closed Cell Foam

*Actual in-building transmission distances will vary depending upon building construction and other factors.

Features & Options

● 8 Year Battery Life (with two 3.6V lithium batteries, full AA size)

● 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater*

● Transmitted signals are converted to Voltage, Current or Resistive Outputs for the Controller

● Probe Lengths of 51, 102 & 203mm to fit standard Delta Thermowells)

● Watertight BAPI-Box Enclosure and Stainless Steel Probes

● 2 Year Warranty

Wireless Immersion Temperature Transmitter

Delta Wireless Immersion Units are available in 51, 102 and 203mm (2, 4 & 8") probe lengths. The sensor is potted inside a 6.35mm (1/4") stainless steel probe with thermally conductive epoxy. The Immersion Units come with etched teflon leadwires, double encapsulated sensors and a BAPI-Box enclosure to withstand high humidity and condensation and perform under real world conditions.

BAPI Thermowells

Immersion Unit Probes are designed to be inserted into a Thermowell. Delta Thermowells are available in machined stainless steel or brass, or welded stainless steel, in lengths to match our Immersion Unit Probe Lengths.

The Wireless Immersion Temperature Transmitter measures the temperature and transmits the data through 418MHz RF to a receiver. It has an in-building range of 30.5 meter* and an estimated battery life of 8 years using two high-capacity 3.6V lithium batteries with a transmit rate of about once every 10 seconds. Each transmitter has a unique address with built in error detection. Each variable sent by the transmitter is picked up by the receiver and converted by a Delta Analog Output Module to a voltage, current or resistance signal which is sent to the controller.

Ordering Information

DELTA #	DESCRIPTION
	Wireless Immersion Temperature Transmitters
401710	Wireless Immersion Temperature Transmitter, 51mm (2") Probe Length
401711	Wireless Immersion Temperature Transmitter, 102mm (4") Probe Length
401712	Wireless Immersion Temperature Transmitter, 203mm (8") Probe Length
400219	Lithium Battery 3.6V

Specifications

Supply Power: Two 3.6V Lithium batteries, 8 year battery life at 10 second transmit rate

Inputs: Built in thermistor

Accuracy: ±0.36°F (±0.2°C)

Transmitted Range: -40 to 85°C (-40 to 185°F)

Environmental Operation Range:
   Temp: -40 to 85°C (-40 to 185°F)
   Humidity: 0% to 100% RH, non-condensing

Enclosure Rating: IP66

Enclosure Material: UV-Resistant Polycarbonate

Material Rating: UL94 V-0

Radio Frequency: 418 MHz

Transmitter Interval: ~10 seconds

Antenna: Built inside the enclosure

FCC Approval: FCC ID# T4F060811TEMP

5.00in [127mm]
1/2" Drillable Port
1/2" NPSM Typ.
4.11in [104.4mm]
2.50in [63.5mm]
Per Order See Ordering Grid
Ø.25in [6.4mm]

*Actual in-building transmission distances will vary depending upon building construction and other factors.

Features & Options

- 8 Year Battery Life (with two 3.6V lithium batteries, full AA size)
- 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater*
- Transmitted signals are converted to a Voltage, Current or Resistance
- Plenum Rated Cable or FEP Jacketed Cable
- Double Encapsulated Probe Sensor
- 2 Year Warranty

Delta Wireless Remote Probes feature a 4.4cm long stainless steel probe with either Plenum-Rated Cable or FEP-Jacketed Cable and a watertight BAPI-Box Enclosure. Standard lead lengths are 1.5, 3, 4.6, 6 & 7.6 meters (5', 10', 15', 20' & 25'). Remote Probes are commonly used in refrigerated case or strap-on applications. They are ideal for hard-to-access areas or for applications where the usual Immersion or Duct Sensors do not fit well.

The Wireless Remote Probe Transmitter measures the temperature and transmits the data through 418MHz RF to a receiver. It has an in-building range of 30.5 meters* and an estimated battery life of 8 years with a transmit rate of about once every 10 seconds. Each variable sent by the transmitter is picked up by the receiver and converted by an Analog Output Module to a voltage, current or resistance signal which is sent to the controller.

**Wireless Remote
Probe Transmitter**

Ordering Information

DELTA #	DESCRIPTION
	Wireless Remote Probe Transmitter
401730	Remote Probe, Plenum Rated Cable - 1.5 meter (5') Leads
401731	Remote Probe, Plenum Rated Cable - 3 meter (10') Leads
401732	Remote Probe, Plenum Rated Cable - 4.6 meter (15') Leads
401733	Remote Probe, Plenum Rated Cable - 6 meter (20') Leads
401734	Remote Probe, Plenum Rated Cable - 7.6 meter (25') Leads
401735	Remote Probe with FEP-Jacketed Cable - 1.5 meter (5') Leads
401736	Remote Probe with FEP-Jacketed Cable - 3 meter (10') Leads
401737	Remote Probe with FEP-Jacketed Cable - 4.6 meter (15') Leads
401738	Remote Probe with FEP-Jacketed Cable - 6 meter (20') Leads
401739	Remote Probe with FEP-Jacketed Cable - 7.6 meter (25') Leads
400219	Lithium Battery 3.6V

Specifications

Supply Power: Two 3.6V Lithium batteries, 8 year battery life at 10 second transmit rate

Inputs: Built in thermistor

Accuracy: ±0.2°C (±0.36°F)

Transmitted Range: -40 to 85°C (-40 to 185°F)

Environmental Operation Range:
   Temp: -40 to 85°C (-40 to 185°F)
   Humidity: 0% to 100% RH, non-condensing

Enclosure Rating: IP66

Enclosure Material: UV-Resistant Polycarbonate
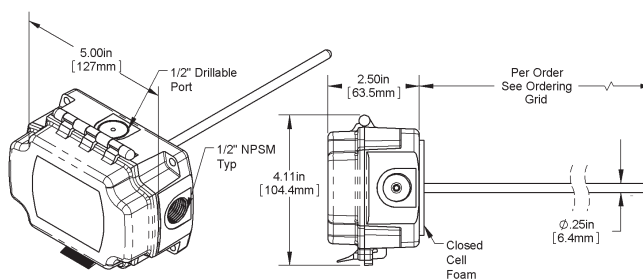
Material Rating: UL94 V-0

Radio Frequency: 418 MHz

Transmitter Interval: ~10 seconds

Antenna: Built inside the enclosure

FCC Approval: FCC ID# T4F060811TEMP

*Actual in-building transmission distances will vary depending upon building construction and other factors.

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Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

F102 Outside Air Temperature Transmitter

Delta CONTROLS™

Wireless Sensors

Rev. 02/15/13

Features & Options

- 8 Year Battery Life (with two 3.6 volt lithium batteries, full AA size)
- 30.5 Meter In Building Range, Extendable to 305 Meters with Repeater*
- Transmitted signals can be converted to Voltage, Current or Resistive Outputs for the Controller
- Watertight BAPI-Box Enclosure with Light-Colored Sensor Guard
- Quick Response Sensor and Etched Teflon Leadwires
- 2 Year Warranty

Wireless Outside Air Temperature Transmitter

Delta Wireless Outside Air Temperature Transmitters are designed to be mounted outdoors. The UV-resistant plastic shield keeps the sensor out of the sunlight and allows for excellent air circulation.The Outside Air Units come with a watertight BAPI-Box enclosure which is made of UV-resistant polycarbonate and carries an IP66 rating.

The Outside Air unit measures the temperature and transmits the data through 418MHz RF to a receiver. It has an in-building range of 30.5 meters* and an estimated battery life of 8 years using two high-capacity 3.6V lithium batteries with a transmit rate of about once every 10 seconds. Each transmitter has a unique address with built in error detection. Each variable sent by the transmitter is picked up by the receiver and converted by a Delta Analog Output Module to a voltage, current or resistance signal which is sent to the controller.

Ordering Information

DELTA #	DESCRIPTION
	Wireless Outside Air Temperature Transmitter
401715	Wireless Outside Air Temperature Transmitter
400219	Lithium Battery 3.6V

Specifications

Supply Power: Two 3.6V Lithium batteries, 8 year battery life at 10 second transmit rate

Inputs: Built in thermistor

Accuracy: ±0.2°C (±0.36°F)

Transmitted Range:
-40 to 85°C (-40 to 185°F)

Enclosure Rating: IP66

Enclosure Material:
UV-Resistant Polycarbonate

Material Rating: UL94 V-0

Environmental Operation Range:
Temp: -40 to 85°C (-40 to 185°F)
Humidity: 0 to 100% RH
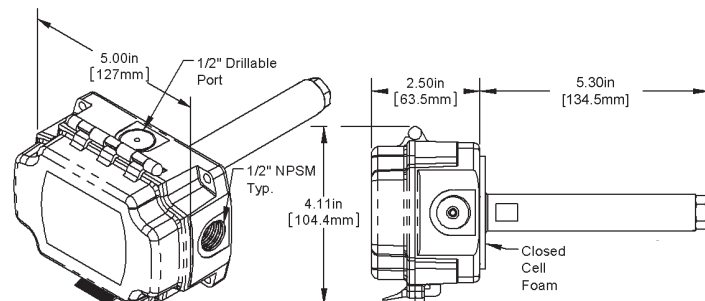
Radio Frequency: 418 MHz

Transmitter Interval: ~10 seconds

Antenna: Built inside the enclosure

FCC Approval: FCC ID# T4F060811TEMP

5.00in [127mm]

1/2" Drillable Port

2.50in [63.5mm]

Closed Cell Foam

4.11in [104.4mm]

1/2" NPSM Typ.

1.58in [40.2mm]

*Actual in-building transmission distances will vary depending upon building construction and other factors.

Rev. 02/15/13

Features & Options

- 8 Year Battery Life (with two 3.6 volt lithium batteries, full AA size)
- 30.5 Meter In-Building Range, Extendable to 305 Meters with Repeater*
- Temperature and Humidity signals can be converted to Voltage, Current or Resistive Outputs for the Controller
- Watertight BAPI-Box Enclosure
- Quick Response Sensor with 2% RH Accuracy
- 2 Year Warranty

Wireless Outside Air Temperature and Humidity Transmitter

Delta Wireless Outside Air Temperature and Humidity Transmitters are designed to be mounted outdoors. The UV-resistant plastic shield keeps the sensor out of the sunlight and allows for excellent air circulation.The Outside Air Units come with a watertight BAPI-Box enclosure which is made of UV-resistant polycarbonate and carries an IP66 rating.

The Wireless Outside Air Temperature and Humidity Transmitter measures the temperature and humidity and transmits the data through 418MHz RF to a receiver. It has an in-building range of 30.5 meters* and an estimated battery life of 8 years using two high-capacity 3.6V lithium batteries with a transmit rate of about once every 10 seconds. Each transmitter has a unique address with built in error detection. Each variable sent by the transmitter is picked up by the receiver and converted by a Delta Analog Output Module to a voltage, current or resistance signal which is sent to the controller.

Ordering Information

DELTA #	DESCRIPTION
	Wireless Outside Air Temperature & Humidity Transmitter
401716	Wireless Outside Air Temperature & Humidity Transmitter
400219	Lithium Battery 3.6V

Specifications

Supply Power: Two 3.6V Lithium batteries, 8 year battery life at 10 second transmit rate

Sensing Elements:
Temp. - Semiconductor Band Gap, Proportional to Absolute Temperature, ±0.3°C (±0.54°F)
Humidity - Capacitive Polymer, ±2% RH Accuracy

Transmitted Range:
-40 to 85°C (-40 to 185°F)

Enclosure Rating: IP66

Enclosure Material:
UV-Resistant Polycarbonate

Material Rating: UL94 V-0

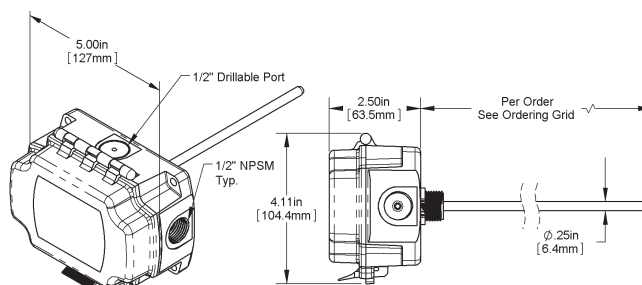**Environmental Operation Range:**
Temp: -30 to 70°C (-22 to 158°F)
Humidity: 0 to 100% RH

Radio Frequency: 418 MHz

Transmitter Interval: ~10 seconds

Antenna: Built inside the enclosure

FCC Approval: FCC ID# T4F060811RH

*Actual in-building transmission distances will vary depending upon building construction and other factors.

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

F104 Thermobuffer Freezer/Cooler Transmitter

Wireless Sensors

Rev. 10/24/12

Features & Options

- Reduces Temperature "Spikes" Caused By Opening the Cooler or Freezer Door
- 30.5 Meter In-Building Range, Extendable to 305 Meters with a Repeater*
- Receiver & Output Modules Convert the Wireless Data to Voltage, Current or Thermistor Resistive
- Buffer Chamber is 304 Stainless Steel or Aluminum
- 8 Year Battery Life
- 2 Year Warranty

The Thermobuffer wirelessly transmits the temperature of walk-in freezers or coolers to a receiver within 305 meters*. The Thermobuffer slows the temperature reaction of a freezer door opening to prevent false alarms or short cycling the compressor.

The Thermobuffer features a watertight BAPI-Box enclosure and is designed to be mounted to the wall of the cooler or freezer saving valuable shelf space. It is available with a two-inch or four-inch stainless steel buffer chamber (optional aluminum) which is sealed with customer provided oil, or a 50/50 glycol solution to approximate the temperature reaction of the refrigerated contents in the freezer or cooler.

Thermobuffer

Ordering Information

DELTA #	DESCRIPTION
	Wireless Outside Air Temperature Transmitter
Call for #	Wireless Thermobuffer, 304 Stainless Steel Chamber, 51mm (2") Probe
Call for #	Wireless Thermobuffer, 304 Stainless Steel Chamber, 102mm (4") Probe
Call for #	Wireless Thermobuffer, Machined Aluminum Chamber, 51mm (2") Probe
Call for #	Wireless Thermobuffer, Machined Aluminum Chamber, 102mm (4") Probe
400219	Lithium Battery 3.6V

Specifications

Supply Power: Two 3.6V Lithium batteries
Battery Life: 8 years at 10 second transmit rate
Battery capacity: 2.25 AH
Sensor: Built in thermistor
Accuracy: ±0.2°C (±0.36°F)
Temperature Range: -40 to 85°C (-40 to 185°F)
Radio Frequency: 418 MHz
Transmit Power: 1.5mW
Transmit Time: 20ms
Modulation: Amplitude Modulation (AM)
A/D Resolution: 12 Bit
Transmitter Interval: ~10 seconds
Antenna: Built inside the enclosure
Error checking:
    CRC 16, Cyclic Redundancy
    Check 16 bit
Agency: FCC ID#T4F060811TEMP
Weight: 0.9kg (2 lb)

Environmental Operation Range:
    Temp: -30 to 70°C (-22 to 158°F)
    Humidity: 0% to 100% RH, Non-condensing
Enclosure Rating: NEMA 4, IP66
Encl. Material: UV-Resistant Polycarb., UL94 V-0
Probe: 51 or 102mm 304 SS or Aluminum
Warranty: 2 Years
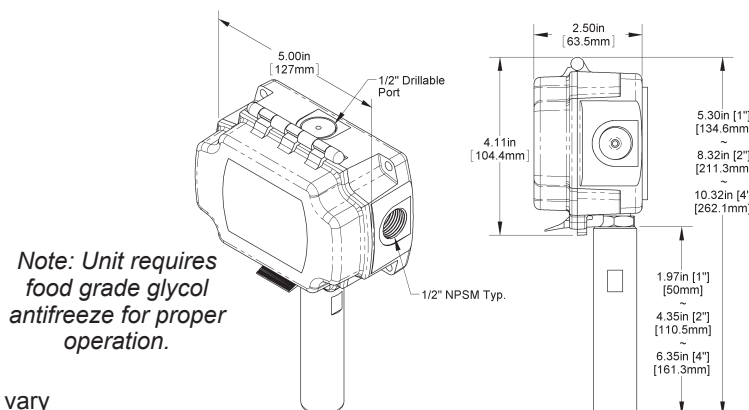
Note: Unit requires food grade glycol antifreeze for proper operation.

*Actual in-building transmission distances will vary depending upon building construction and other factors.

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 10/24/12

Features & Options

● Battery Powered (Eight Year Battery Life)

● Analog Input (0 to 5VDC, 0 to 10VDC & 4 to 20mA), Digital Input (dry contact) and Thermistor Temperature Input Models

● 30.5 Meter In-Building Range, Extendable to 305 Meters with a Repeater*

The Wireless Universal Input Transmitters take a hard-wired signal and transmit that signal wirelessly to a 418 MHz receiver. The Analog Input version receives a 0 to 5VDC, 0 to 10VDC or 4 to 20mA signal, the Digital Input version receives any dry contact on/off status, while the Thermistor Temperature Input version takes a 10K-2 thermistor sensor input.

All models transmit their data every 10 to 17 seconds at 418 MHz to a Delta 418 MHz Receiver. An Output Module connected to the Receiver converts the data back to its original form for the BAS controller. The transmitters are battery powered and only require wiring from the remote input sensor.

Wireless Universal Input Transmitter with the BAPI-Box open and closed

Ordering Information

DELTA #	DESCRIPTION
	Wireless Universal Input Transmitter
Call for #	0 to 5VDC Analog Input Transmitter
Call for #	0 to 10VDC Analog Input Transmitter
Call for #	4 to 20mA Analog Input Transmitter
Call for #	Digital Input Transmitter
400418	Thermistor Sensor Transmitter

Specifications

Supply Power: ....3.6 Lithium, 2-AA Batteries (included)

Battery Life: ....8 years @ 10 sec. intervals

Analog Input: ....2 Terminals
BA/WAI-05.............0 to 5VDC, Imp. > 30KΩ
BA/WAI-10.............0 to 10VDC, Imp. > 50KΩ
BA/WAI-420..........4 to 20mA, Imp. = 100Ω

Digital Input: ....2 Terminals
BA/WDI.................Dry contact, >20 seconds
Contact Status, < 10Ω closed >250Ω open

Thermistor Input:...2 Terminals
BA/WTS................10K-2 Thermistor (sold seperately)
Temp. Range, -40 to 85°C (-40 to 185°F)

Mounting: ....Four corner feet

Radio Frequency: ..418 MHz @ 1mW

Transmitter Interval: ~10-17 sec.

Transmission Range: 30.5 meter in-building direct*
(Up to 305 meters in-building with a repeater*)

Antenna: .... Built inside the enclosure

Enclosure:......... IP66 & NEMA-4 w/ cover screw

Environmental Operating Range:
Temperature ... 0 to 60°C (32 to 140°F)
Humidity .... 5 to 95% RH, Non-condensing

Case Material: ... Polycarb., UV resist., UL94V-0

FCC ID: T4F060811TEMP

5.00in [127mm] — 1/2" Drillable Port — 2.50in [63.5mm]
1/2" NPSM Typ — 4.11in [104.4mm] — Closed Cell Foam

*Actual in-building transmission distances will vary depending upon building construction and other factors.

Caution: Delta wireless products are designed for non-critical HVAC monitoring. These products are not intended as safety devices or any heavy equipment control applications.

BAPI-Slim™ Wireless Temp. Transmitter

Wireless Sensors

Delta
C O N T R O L S ™

Rev. 09/10/13

Features & Options

- Wireless 30.5 Meter (100 Foot) In-Building Range*
- Built in or Remote Temperature Sensor
- Four Year Battery Life
- Slim Unobtrusive Design That Is Easy To Mount
- Two Year Warranty

The BAPI-Slim Wireless Temperature Transmitter is designed to monitor temperature inside refrigerator and freezer cases. The BAPI-Slim mounts on the outside of freezer units and can be mounted either inside or outside of refrigerator units. The unit is available with an internal sensor or an RJ11 jack external sensor.

The external sensor's ribbon cable can easily fit between the door seal or through hole with FEP cable without affecting appliance efficiency. The temperature is then transmitted at 30-second intervals to the receiver with a measurement range of -40 to 85˚C (-40 to 185˚F).

BAPI-Slim Wireless Temperature Transmitter with Remote Probe Sensor

Specifications

Supply Power: One 3.6 VDC Lithium Battery (included)
            4 Year Replaceable, 1/2 AA, (3.6 VDC)
LED: LED Transmit Lamp Inside Cover
Sensor: Thermistor, 10K-2
   Internal: Located at Bottom of Case
   External: RJ11 Jack
            44mm (1.75") SS Sensor with Ribbon Cable
            25mm (1") Thermobuffer with Ribbon Cable
Measurement Range: -40 to 85˚C (-40 to 185˚F)
Accuracy: ±0.28ºC (±0.5ºF) from -40 to 85˚C (-40 to 185ºF)
Environmental:
  -30 to 50ºC (-22 to 122ºF), 0 to 95% RH non-condensing
Case Material & Material Rating: ABS Plastic, UL94 V-0
Ext. Probe Material: 304 Stainless Steel (SS)
Transmitter Mounting:
   Keyhole Screw Mounts (Screws not included)
   Double-Sided Mounting Tape (Included)
Sensor Mounting:
   Remote Probe: Plastic Holder (BA/FPB)
   Thermobuffer: Hanging Rack Clip (Included)
Radio Frequency: 418 MHz @ 1mW
Transmitter Interval:
   Selectable from 10 sec to 10 min (30 sec default)
Antenna: Helical Coil Type Built into Case
Transmission Range:
   30.5 Meters In-Building* (418 MHz @ 1mW)
   305 Meters In Building w/ Repeater* (900MHz @ 100mW)
FCC Approval:
   FCC Rules Part 15, Subpart B
   FCC ID# T4FSM061025
Agency:
   RoHS and Industry Canada (IC:9067A-SM061025)

1.15in [29.2mm]
1.33in [33.7mm]
4.10in [104.1mm]

BAPI-Slim Wireless Temperature Transmitter

.43in [10.9mm]
.38in [9.7mm]
.57in [14.5mm]
∅.04in [0.9mm]
.07in [1.9mm]
CABLE 5' LONG
1.97in [50mm]
∅1.00in [25.4mm]

.57in [14.5mm]
.43in [10.9mm]
.38in [9.7mm]
CABLE 5' LONG
∅.04in [0.9mm]
.07in [1.9mm]
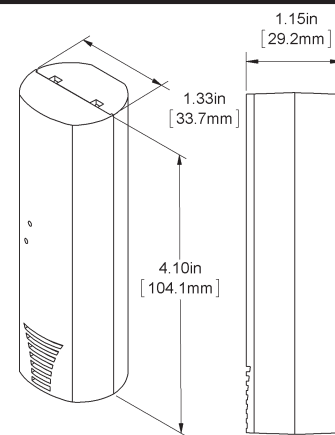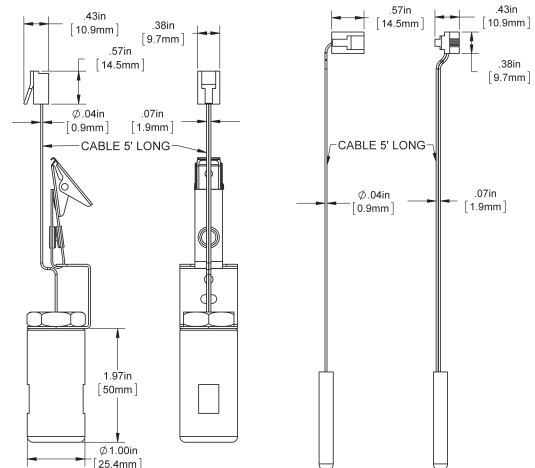
External Hanging Thermobuffer Sensor

External Remote Probe Sensor

*Actual in-building transmission distances will vary depending upon building construction and other factors.

Ordering Information/Part Numbers

DELTA #   **DESCRIPTION**

BAPI-Slim Wireless Temperature Transmitter

Call for #   BAPI-Slim, Internal Sensor - On board 10K-2 thermistor (no external sensor jack connector)

Call for #   BAPI-Slim, External Sensor - 44mm SS Remote Probe, PVC Ribbon Cable 1.5m, RJ11 Plug

Call for #   BAPI-Slim, External Sensor - 44mm SS Remote Probe, PVC Ribbon Cable 3m, RJ11 Plug

Call for #   BAPI-Slim, External Sensor - 44mm SS Remote Probe, FEP Round Cable 1.5m, RJ11 Plug

Call for #   BAPI-Slim, External Sensor - 44mm SS Remote Probe, FEP Round Cable 3m, RJ11 Plug

Call for #   BAPI-Slim, External Sensor - 25mm Hanging Thermobuffer, PVC Ribbon Cable 1.5m, RJ11 Plug

Call for #   BAPI-Slim, External Sensor - 25mm Hanging Thermobuffer, PVC Ribbon Cable 3m, RJ11 Plug

Call for #   BAPI-Slim, External Sensor - 25mm Hanging Thermobuffer, FEP Round Cable 1.5m, RJ11 Plug

Call for #   BAPI-Slim, External Sensor - 25mm Hanging Thermobuffer, FEP Round Cable 3m, RJ11 Plug

418 MHz Receiver

Wireless Sensors

Rev. 02/15/13

Features & Options

- 30.5 Meter In-Building Range*
- Extendable Antenna for Optimum Reception
- Surface, Snaptrack or Din Rail Mounting
- Accommodates Up To 127 Analog Output Modules

The Delta 418 MHz unit receives the RF signal from one or more wireless temperature or humidity transmitters which have an in-building range of 30.5 meters*. The receiver then outputs the values to any Analog Output Module through a four-wire bus. The Analog Output Module converts the signal to an analog voltage, current or resistance for the controller. The receiver can accommodate up to 127 different Analog Output Modules. It is surface, snaptrack or din rail mountable with a 2 meter extendable antenna for optimum reception.

418 MHz Receiver

Ordering Information

DELTA #	DESCRIPTION
400220	Wireless 418 MHz Receiver
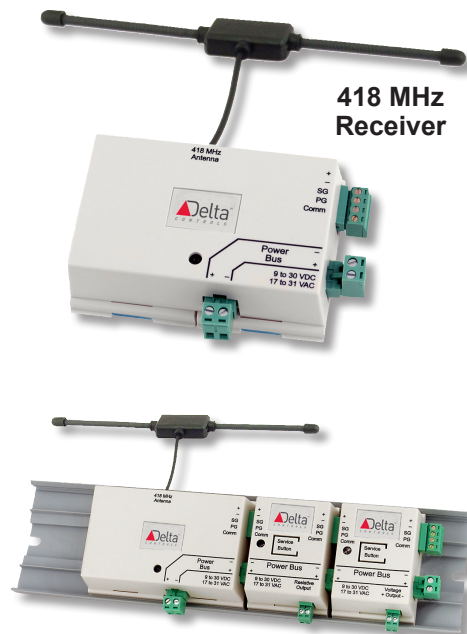
418 MHz Receiver with two Analog Output Modules in snaptrack

Associated Products

• Wireless Temperature or Temp./Humidity Transmitter
Measures the room temperature and/or humidity and transmits the data through 418MHz RF to a receiver. The 1 mW transmitter is mounted in a BAPI-Stat 2 style enclosure and has an in-building range of 30.5 meters*.

• Analog Output Modules:
Converts the signal from the Receiver into a Resistance, Voltage or Current for sending to the controller.

• Repeater
Extends the in-building range of the Transmitter to 305 meters.*

Wireless Transmitter

Wireless Receiver
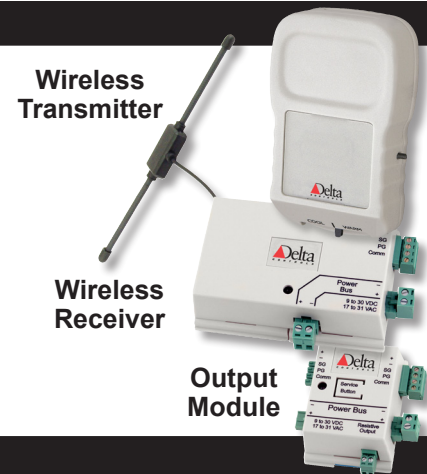
Output Module

Specifications

Supply Power: 9 to 30 VDC or 17 to 31 VAC

Power Consumption: 20 mA max. DC, .5 VA max AC

Inputs: 418MHz

Bus Cable Distance:
1,219 meters with shielded, twisted pair cable (Belden 9841, Belden 8132 or equivalent)

Maximum Output Modules per Receiver: 127
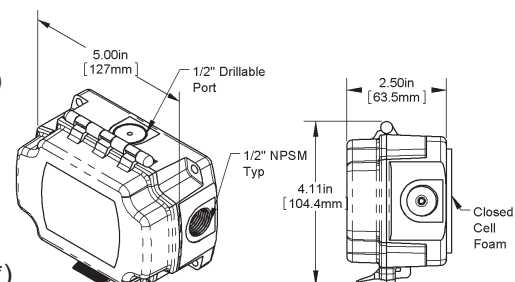
Environmental Operation Range:
Temp: 0 to 60°C (32 to 140°F)
Humidity: 5% to 95% RH non-condensing

Material: ABS Plastic

Material Rating: UL94, V-0

Cord Length 79.0in [2007mm]

3.87in [98.3mm]

2.75in [69.9mm]

1.28in [32.5mm]

*Actual in-building transmission distances will vary depending upon building construction and other factors.

Rev. 02/15/13

Features & Options

- 305 Meter (1,000 Feet) In-Building Range with a Repeater*
- Optional 2 Meter Extendable Antenna for Optimum Reception
- Surface, Snaptrack or Din Rail Mounting
- Can Accommodate Up To 127 Analog Output Modules

The Delta 900 MHz unit receives a repeated or re-transmitted RF signal from one or more wireless temperature or humidity transmitters. The transmitter signal (418 MHz) is received by a Delta Repeater and then re-transmitted at 900 MHz up to 305 meters to the 900 MHz Receiver.

The 900 MHz Receiver then outputs the values to any Analog Output Module through a four-wire bus. The output module converts the signal to an analog voltage, current or resistance for the controller. The 900 MHz Receiver can accommodate up to 127 different output modules. The receiver is surface, snaptrack or din rail mountable with an attached antenna or a 2 meter extendable antenna.

900 MHz Receiver with attached antenna
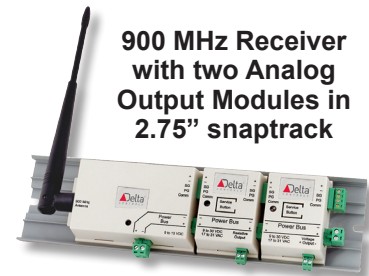
900 MHz Receiver with two Analog Output Modules in 2.75" snaptrack

Ordering Information

DELTA #	DESCRIPTION
	Wireless 900 MHz Receiver
402137	900 MHz Receiver with Attached Antenna
400230	900 MHz Receiver with Extendable Antenna

Associated Products

- **Wireless Temperature or Temp/Humidity Transmitter:** Measures the room temperature and/or humidity and transmits the data through 418MHz RF to a receiver.

- **Analog Output Modules:** Converts the signal from the Receiver into a Resistance, Voltage or Current for the DDC controller.

- **Repeater:** Extends the range of the Transmitter up to 305 meters.

Specifications

Supply Power: 9 to 15 VDC
Power Consumption: 80 mA max. DC
Bus Cable Distance:
  1,219 meters with shielded, twisted pair cable (Belden 9841, Belden 8132 or equivalent)
Inputs: 900MHz

Maximum Output Modules per Receiver: 127
Environmental Operation Range:
  Temp: 0 to 60°C (32 to 140°F)
  Humidity: 5% to 95% RH non-condensing
Material and Rating: ABS Plastic, UL94, V-0

900 MHz Receiver with Extendable Antenna

3.86in [98mm]
3.87in [98.3mm]
2.75in [69.9mm]
1.28in [32.5mm]

900 MHz Receiver with Attached Antenna

7.17in [182mm]
3.87in [98.3mm]
2.75in [69.9mm]
1.28in [32.5mm]

*Actual in-building transmission distances will vary depending upon building construction and other factors.

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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

418 MHz to 900 MHz Repeater

Wireless Sensors

Rev. 02/15/13

Features & Options

● Extends In-Building Transmitter Range to 305 Meters*

The Delta Repeater receives the 418 MHz RF signal from one or more wireless temperature or humidity transmitters which have an in-building range of 30.5 meters*. The Repeater re-transmits the signal at 900 Mhz up to 305 meters* to a 900 MHz Receiver.

The 900 MHz Receiver then outputs the values to any Analog Output Module through a four-wire bus. The Analog Output Module converts the signal to an analog voltage, current or resistance for the controller. The 900 MHz Receiver can accommodate up to 127 different Analog Output Modules. The Repeater is surface, snaptrack or din rail mountable with an attached 900 MHZ antenna and a 2 meter 418 MHz extendable antenna.

418 MHz to 900 MHz Repeater

Ordering Information

DELTA #	DESCRIPTION
	Wireless 418 MHz to 900 MHz Repeater
402136	418 to 900 MHz Repeater
Call for #	418 to 900 MHz Repeater with Extendable Antenna Replacement

Associated Products

• **Wireless Temperature or Temp/Humidity Transmitter:** Measures the room temperature and/or humidity and transmits the data through 418MHz RF to a receiver.

• **900 MHz Receiver:** Receives the re-transmitted signal signal from the Repeater and outputs the values to up to an Analog Output Modules.

• **Analog Output Modules:** Converts the signal from the Receiver into a Resistance, Voltage or Current for sending to the controller.

Specifications

Supply Power: 9 to 15 VDC

Power Consumption: 150 mA max. DC

Inputs: 418MHz

Output: 900MHz at 100mW

Environmental Operation Range:
  Temp: 0 to 60°C (32 to 140°F)
  Humidity: 5% to 95% RH non-condensing

Material and Material: ABS Plastic, UL94, V-0
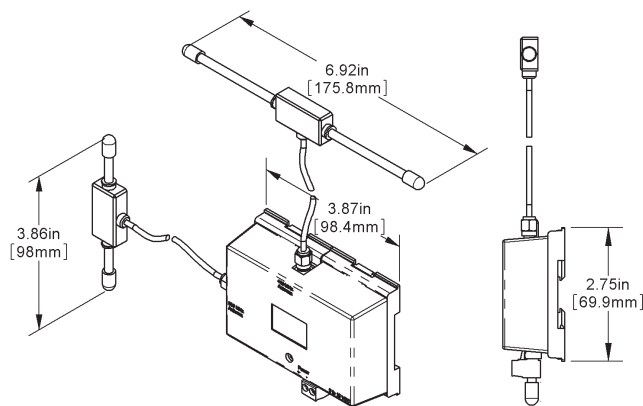
Repeater with Extendable Antenna
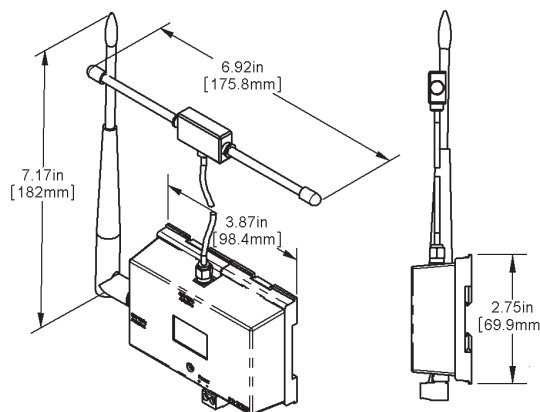
Repeater with Attached Antenna

*Actual in-building transmission distances will vary depending upon building construction and other factors.

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 10/24/12

Overview

The Resistance Output Module (ROM) converts the temperature data from the Wireless Receiver into a Resistance for the DDC controller. The unit is factory calibrated to output a 10K-3 thermistor curve.

The ROM receives data from a BAPI 418 or 900 MHz Receiver through a four-wire bus. Up to 127 different Output Modules can be connected to a single receiver to send multiple variables to the controller. The ROM is easily trained to a single transmitter temperature or humidity variable with a pushbutton and LED. The ROM is surface, 70mm snaptrack or 35mm din rail mountable.

Resistance Output Module - ROM
(includes the Resistance Output terminal block connector only)
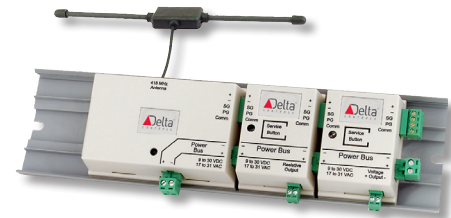
Ordering Information

DELTA #	DESCRIPTION
401740	Resistance Output Module (ROM) with 10K-3 Thermistor Curve

418 MHz Receiver with two Analog Output Modules

Pluggable Terminal Blocks for Analog Output Modules

Analog Output Modules (AOMs) plug into each other and the receiver as shown above. However, the AOMs may also be mounted remotely using the optional Pluggable Terminal Block Connectors which are available as a 4-connector kit.

DELTA #	DESCRIPTION
Call for #	Pluggable Terminal Block Kit
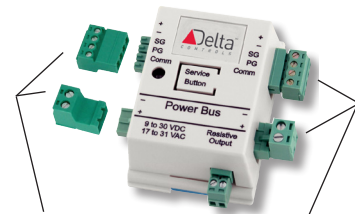
Optional Pluggable Terminal Block Kit for AOMs (4 Connectors)

Specifications for Resistance Output Modules

Temperature Output Ranges at ~0.5ºF Resolution:
0 to 50ºC (32 to 120ºF)

Supply Power: 9 to 30 VDC or 17 to 31 VAC, half wave

Power Consumption:
3 mA max. DC, .1 VA max AC

Analog Input Bias Voltage: 5 VDC max

Lost Communications Timeout: 15 min. (Fast Flash)
Reverts to High Resistance >35KΩ (Low Temp.)

Bus Cable Distance:
1,219 meters with shielded, twisted pair cable
(Belden 9841, Belden 8132 or equivalent)

Output Resolution: ~40Ω

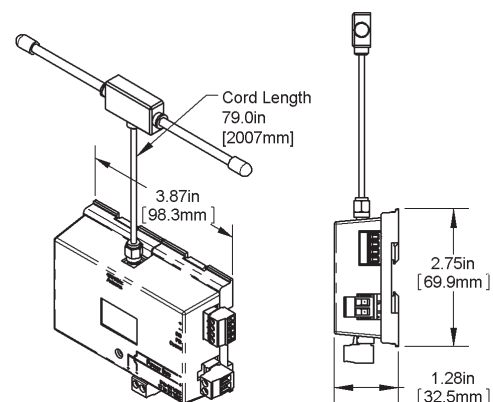**Environmental Operation Range:**
Temp: 0 to 60°C (32 to 140°F)
Humidity: 5% to 95% RH non-condensing

Material and Rating: ABS Plastic, UL94, V-0

1.94in [49.2mm]
1.28in [32.5mm]
2.75in [69.9mm]
3.32in [84.3mm]

Voltage Output Module (VOM)

Wireless Sensors

Rev. 10/24/12

Overview

The Voltage Output Module (VOM) converts the temperature or humidity data from the Wireless Receiver into a linear 0 to 5 volt or 0 to 10 volt signal for the DDC controller.

The VOM receives the temperature or humidity data from a Delta 418 or 900 MHz Receiver through a four-wire bus. Up to 127 different Output Modules can be connected to a single receiver to send multiple variables to the controller.

The VOM is easily trained to a single transmitter variable with a pushbutton and LED. The VOM is surface, 70mm snaptrack or 35mm din rail mountable.

Voltage Output Module - VOM
(includes the Voltage Output terminal block connector only)

418 MHz Receiver with two Analog Output Modules

Ordering Information

DELTA #	DESCRIPTION
	VOMs with °F Ranges
401750	0 to 5V Output, 50 to 90°F Temp. Range
401751	0 to 5V Output, 55 to 85°F Temp. Range
401752	0 to 5V Output, 60 to 80°F Temp. Range
401753	0 to 5V Output, 65 to 80°F Temp. Range
401754	0 to 5V Output, 45 to 96°F Temp. Range
401756	0 to 10V Output, 50 to 90°F Temp. Range
401757	0 to 10V Output, 55 to 85°F Temp. Range
401758	0 to 10V Output, 60 to 80°F Temp. Range
401759	0 to 10V Output, 65 to 80°F Temp. Range
401760	0 to 10V Output, 45 to 96°F Temp. Range
	VOMs with °C Ranges
Call for #	0 to 5V Output, 10 to 32°C Temp. Range
Call for #	0 to 5V Output, 13 to 30°C Temp. Range
Call for #	0 to 5V Output, 15 to 27°C Temp. Range
Call for #	0 to 5V Output, 18 to 27°C Temp. Range
Call for #	0 to 5V Output, 7 to 35°C Temp. Range
Call for #	0 to 10V Output, 10 to 32°C Temp. Range
Call for #	0 to 10V Output, 13 to 30°C Temp. Range
Call for #	0 to 10V Output, 15 to 27°C Temp. Range
Call for #	0 to 10V Output, 18 to 27°C Temp. Range
Call for #	0 to 10V Output, 7 to 35°C Temp. Range
	VOMs with %RH Ranges
Call for #	0 to 5V Output, 0 to 100% RH
Call for #	0 to 10V Output, 0 to 100% RH
	Pluggable Terminal Block Kit
Call for #	Pluggable Terminal Block Kit

Specifications

Supply Power: (half wave)
0 to 5V models: 9 to 30 VDC,17 to 31 VAC
0 to 10V models: 15 to 30 VDC, 17 to 35 VAC

Output Voltage Range:
0 to 5 Volts or 0 to 10 Volts (factory calibrated)

Output Current: 1 mA max

Power Consumption:
3 mA max. DC, .1 VA max. AC,

Lost Comm. Timeout: 15 min. (Fast Flash)
Temp. & Full Scale revert to 0 volts
%RH reverts to high scale (5V or 10V)

Bus Cable Distance:
1,219 meters with shielded, twisted pair cable
(Belden 9841, Belden 8132 or equivalent)

Output Resolution: 10 bit, 1024 counts

Environmental Operation Range:
Temp: 0 to 60°C (32 to 140°F)
Humidity: 5% to 95% RH non-condensing

Material & Rating: ABS Plastic, UL94, V-0

Accessory Terminals: BA/AOM-CONN

1.94in [49.2mm]   1.28in [32.5mm]
2.75in [69.9mm]
3.32in [84.3mm]

Voltage Output Module

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 10/24/12

Features & Options

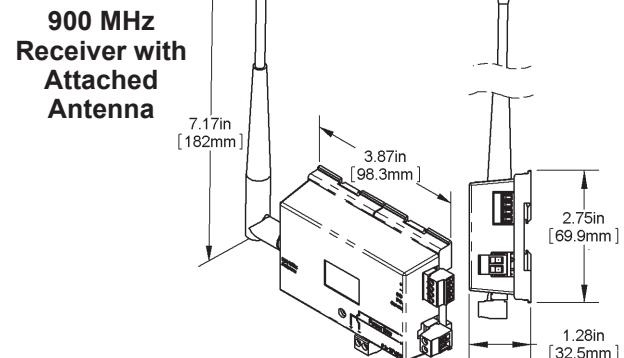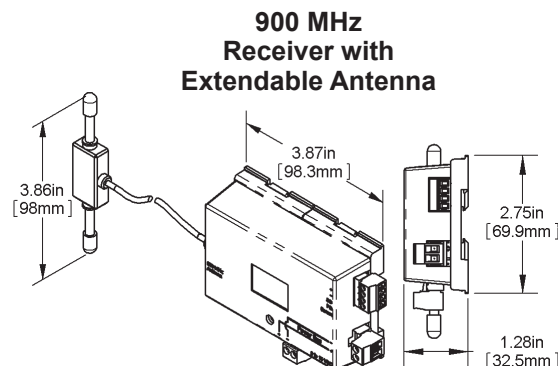The Current Output Module (COM) converts the temperature or humidity data from the Wireless Receiver into a linear 4 to 20 mA signal for the DDC controller.

The COM is loop powered and receives data from a Delta 418 or 900 MHz Receiver through a four-wire bus. Up to 127 different Output Modules can be connected to a single receiver to send multiple network variables to the controller. The COM is easily trained to a single transmitter variable with a pushbutton and LED. The COM is surface, 70mm snaptrack or 35mm din rail mountable.

Ordering Information

DELTA #	DESCRIPTION
	COMS with °F Ranges
400236	4 to 20 mA Output, 50 to 90ºF Temp. Range
401766	4 to 20 mA Output, 55 to 85ºF Temp. Range
401767	4 to 20 mA Output, 60 to 80ºF Temp. Range
401768	4 to 20 mA Output, 65 to 80ºF Temp. Range
401769	4 to 20 mA Output, 45 to 96ºF Temp. Range
	COMS with °C Ranges
Call for #	4 to 20 mA Output, 10 to 32ºC Temp. Range
Call for #	4 to 20 mA Output, 13 to 30ºC Temp. Range
Call for #	4 to 20 mA Output, 15 to 27ºC Temp. Range
Call for #	4 to 20 mA Output, 18 to 27ºC Temp. Range
Call for #	4 to 20 mA Output, 7 to 35ºC Temp. Range
	COMs with %RH Ranges
401770	4 to 20 mA Output, 0 to 100% RH
	Pluggable Terminal Block Kit
Call for #	Pluggable Terminal Block Kit

Current Output Module - COM (includes the Current Output terminal block connector only)
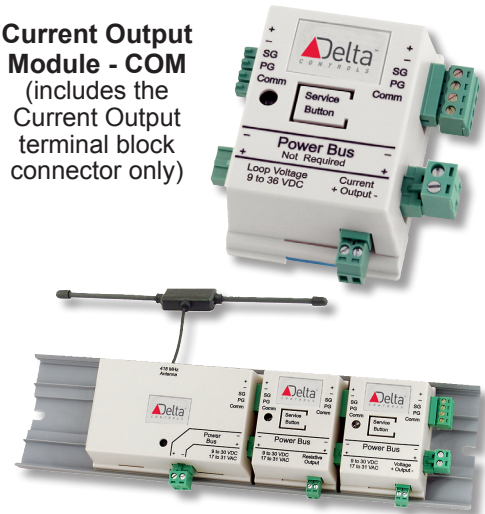
418 MHz Receiver with two Analog Output Modules

Pluggable Terminal Blocks

AOMs plug into each other and the receiver as shown above. However, the AOMs may also be mounted remotely using the optional Pluggable Terminal Block Connectors which are available as a 4-connector kit.
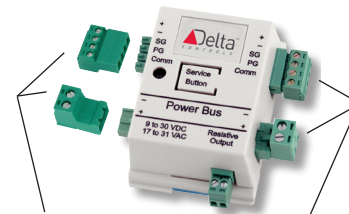
Optional Pluggable Terminal Block Kit for AOMs (4 Connectors)

Specifications for Current Output Modules

Output Current Range: 4 to 20 mA (factory calibrated)

Power Consumption: (half wave)
 Loop Powered, 20 mA max
 Loop Voltage Range 9 to 36 VDC,

Lost Comm. Timeout: 15 min. (Fast Flash)
 Temp. & Full Scale revert to 4 mA, %RH reverts to 20 mA

Bus Cable Distance:
 1,219 meters with shielded, twisted pair cable
 (Belden 9841, Belden 8132 or equivalent)

Output Resolution: 12 bit, 4096 counts

Environmental Operation Range:
 Temp: 0 to 60°C (32 to 140°F)
 Humidity: 5% to 95% RH non-condensing

Material: ABS Plastic
Material Rating: UL94, V-0

Setpoint Output Module (SOM)
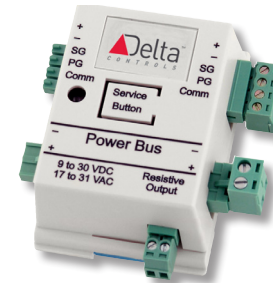
Wireless Sensors
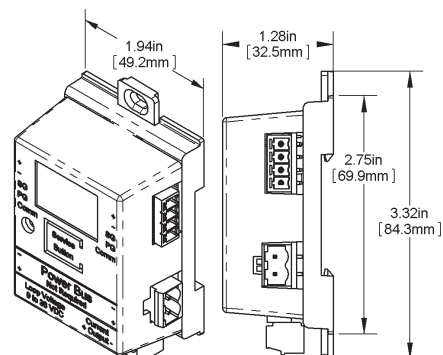
Rev. 10/24/12

Overview

The Setpoint Output Module (SOM) converts the Setpoint data from the Wireless Receiver into a Resistance or Voltage for the DDC controller.

The SOM receives the setpoint data from a Delta 418 or 900 MHz Receiver through a four-wire bus. Up to 127 different Setpoint Output Modules or Analog Output Modules can be connected to a single receiver to send multiple variables to the controller.

The Setpoint Output Module is easily trained to a single transmitter setpoint with a pushbutton and LED. The SOM is surface, 70mm snaptrack or 35mm din rail mountable.

Setpoint Output Module - SOM (includes the Setpoint Output terminal block connector only)

418 MHz Receiver with two Analog Output Modules

Ordering Information

DELTA #	DESCRIPTION
	SOMs with Voltage Output
Call for #	0 to 5 Volts Output
Call for #	0 to 10 Volts Output
	SOM with Resistance Output
Call for #	0 to 20k Ohms Output
	Pluggable Terminal Block Kit
Call for #	Pluggable Terminal Block Kit

Pluggable Terminal Blocks

AOMs plug into each other and the receiver as shown above. However, the AOMs may also be mounted remotely using the optional Pluggable Terminal Block Connectors which are available as a 4-connector kit.

Optional Pluggable Terminal Block Kit for AOMs (4 Connectors)

Specifications

Supply Power: (half wave)
Resistance Model: 9 to 30 VDC or 17 to 31 VAC
0 to 5VDC Model: 9 to 30 VDC or 17 to 31 VAC
0 to 10VDC Model: 15 to 30 VDC or 17 to 35 VAC

Output Current: 1 mA

Analog Input Bias Voltage:
5 VDC max (Resistance Output Models only)

Power Consumption:
3 mA max. DC, .1 VA max AC

Lost Comm. Timeout: 15 min. (Fast Flash)
Reverts to its last command

Bus Cable Distance:
1,219 meters with shielded, twisted pair cable (Belden 9841, Belden 8132 or equivalent)
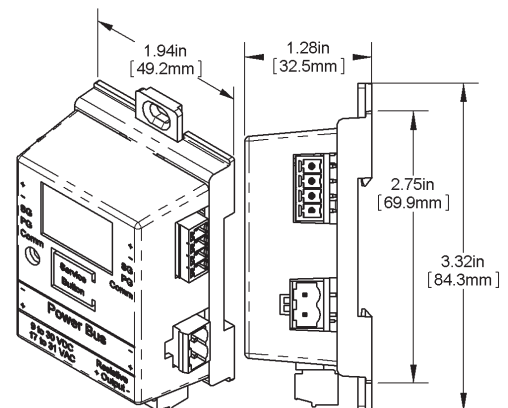
Output Resolution:
Resistance Output: ~40 ohms
Voltage Output: 10 bit

Environmental Operation Range:
Temp: 0 to 60°C (32 to 140°F)
Humidity: 5% to 95% RH non-condensing

Material & Rating: ABS Plastic, UL94, V-0

1.94in [49.2mm]   1.28in [32.5mm]

2.75in [69.9mm]

3.32in [84.3mm]
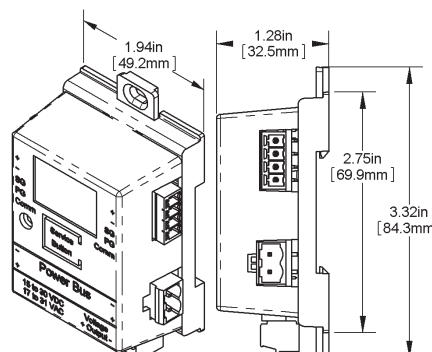
Rev. 10/24/12

Features & Options

The Relay Output Modules convert the data from the Wireless Receiver into a floating solid state switch closure for the DDC controller. The RYOM is a momentary Relay and is trained to the override button on the side of the Delta Wireless Room Transmitter. The RYOL is a latching relay and is trained to the Delta Wireless Digital Input Transmitter.

Both modules receive data from a Delta 418 or 900 MHz Receiver through a four-wire bus. Up to 127 different modules can be connected to a single receiver. The Relay Modules are easily trained to a single transmitter variable with a pushbutton and LED. The RYOM is surface, 70mm snaptrack or 35mm din rail mountable.
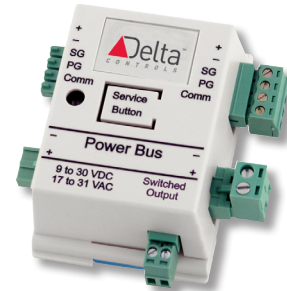
Relay Output Module
(includes the Relay Output terminal block connector only)

Ordering Information

DELTA #	DESCRIPTION
	Relay Output Modules
401775	Relay Output Momentary, Normally Open Output
401776	Relay Output Momentary, Normally Closed Output
400221	Relay Output Latching, Normally Open Default
401778	Relay Output Latching, Normally Closed Default
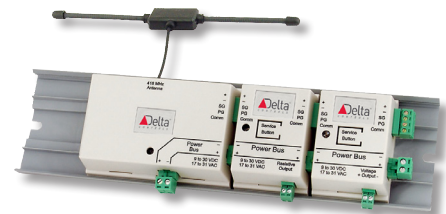
**Receiver with two
Output Modules**

Pluggable Terminal Blocks for Analog Output Modules

Analog Output Modules (AOMs) plug into each other and the receiver as shown above. However, the AOMs may also be mounted remotely using the optional Pluggable Terminal Block Connectors which are available as a 4-connector kit.

DELTA #	DESCRIPTION
Call for #	Pluggable Terminal Block Kit
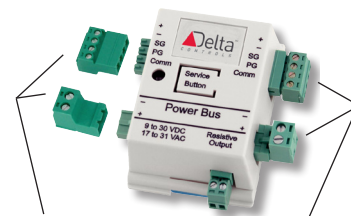
**Optional Pluggable Terminal
Block Kit for AOMs (4 Connectors)**

Specifications for Relay Output Modules

Supply Power: 9 to 30 VDC or 17 to 31 VAC

Power Consumption: 15 mA max. (relay on)

Relay Output: 40V (DC or AC peak), 150 mA max.
Off state leakage current 1 uA max.
On state resistance 15Ω max.

Operation:
 BA/RYOM: 5 second momentary actuation
 BA/RYOL: Latching actuation

Lost Comm. Timeout: 15 minutes (Fast Flash)
Reverts to normal condition, N.O. or N.C.

Bus Cable Distance:
 1,219 meters with shielded, twisted pair cable
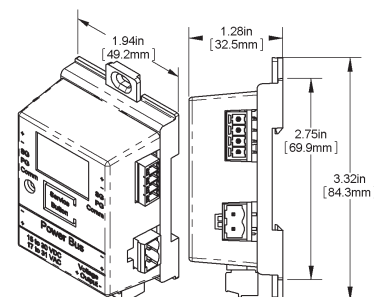 (Belden 9841, Belden 8132 or equivalent)

Environmental Operation Range:
 Temp: 0 to 60°C (32 to 140°F)
 Humidity: 5% to 95% RH non-condensing

Material & Rating: ABS Plastic, UL94, V-0

1.94in [49.2mm]
1.28in [32.5mm]
2.75in [69.9mm]
3.32in [84.3mm]
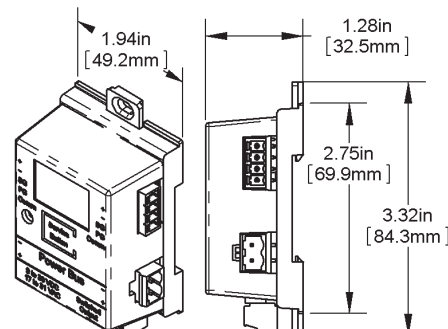
Rev. 10/24/12

Features & Options

● Rugged Injection Molded

● Compact and Unobtrusive with Omni-directional Pattern

● Very Low VSWR

● RP-SMA Connectors

Delta provides a broad line of wireless antennas for use with our receivers and repeaters.

The dipole antennas have 2 meter (79") cords for flexibility in mounting. The receiver or repeater may be mounted low for accessibility while the antenna is mounted high for better reception. The long cord allows the receiver to be mounted in a metal panel while the antenna is outside for proper reception. An adhesive pad allows the antenna to be mounted on flat nonconductive surfaces such as drywall, windows or ceiling tiles.

The 900 MHz half wave flexible whip is a compact antenna for tight areas.

900 MHz Dipole Antenna

418 MHz Dipole Antenna

900 MHz Whip Antenna

Ordering Information

DELTA #	DESCRIPTION
	Wireless Antennas
Call for #	Dipole, 2 meter (79") cord, 418 MHz
Call for #	Flexible Whip, 182mm (7"), 900MHz
Call for #	Dipole, 2 meter (79") cord, 900 MHz

Specifications

Parameter	418 MHz Dipole	900 MHz Dipole	900 MHz Whip
Center Frequency	418 MHz	916 MHz	925 MHz
Bandwidth	20 MHz	136 MHz	70 MHz
Wavelength	½ Wave	½ Wave	½ Wave
VSWR	≤1.5 typ at center	≤1.5 typ at center	<2
Impedance	50 Ω	50 Ω	50 Ω
Connector	RP-SMA	RP-SMA	RP-SMA
Cable	79" RG-174 coax	79" RG-174 coax	None

900 MHz Dipole Antenna

418 MHz Dipole Antenna

900 MHz Whip Antenna
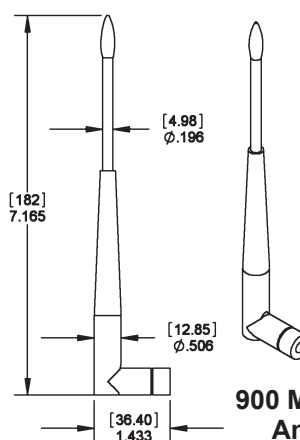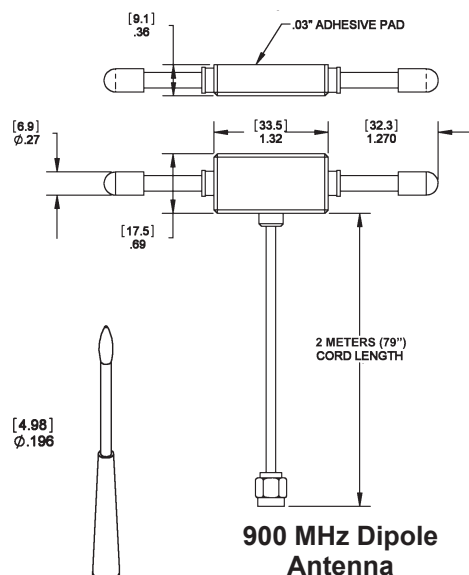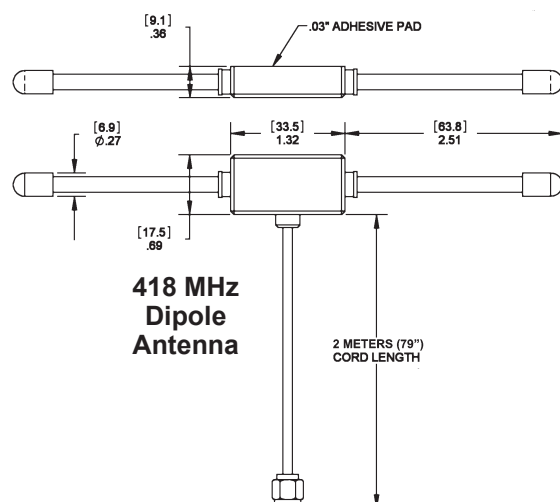
Rev. 10/24/12

Features & Options

- Validates RF Operation with a Simple Site Visit
- Identifies Radio Positions Before Installation
- Battery Operated for Easy Survey Mobility
- 30 Day Loaner
- LED and Beeper Indication of Performance

The 418 MHz Field Verifier is designed to measure how far the Delta Wireless Transmitter signal will go in a specific installation. The 418 MHz verifier is equipped with an LED bar graph that indicates the signal strength from a single BAPI 418 MHz transmitter or from all the BAPI 418 MHz transmitters on the job.

The 900 MHz Field Verifier is designed to verify how far the Delta Repeater signal will go in a specific installation. Each 900 MHz verifier is equipped with an LED and beeper to indicate when it has received a signal from the other verifier. The 900 MHz verifiers are used in pairs with one unit set up as the transmitter and the other unit set up as the receiver.

The verifiers are available as a combined 30 day loaner kit which includes both 418 MHz and 900 MHz units and a carrying case.

Ordering Information

DELTA #	DESCRIPTION
	Wireless Field Verifier
Call for #	Loaner Combined Field Verifier Kit (includes 418 MHz & 900 MHz Verifiers)

*Note: You will receive 100% credit less shipping and handling charges if unit is returned in working order within 30 Days from product ship date

Specifications

Battery Power: 418 MHz Unit, (2) 3.6 volt Lithium
900 MHz Unit, 9VDC

Auto Off: 418 MHz Unit, 17 minutes
900 MHz Unit, 1 hour

Storage/Operating: 0 to 70ºC (32 to 158ºF)

Frequency/RF-Power/Transmission time
  418MHz Unit: 418MHz/ 1mW / ~every 10S
  900MHz Unit: 900MHz/100mW / ~ every 1S

Receiver Sensitivity: 418 MHz - 112dBm
900 MHz - 110dBm

Typical open air range: 418 MHz - 30 meters
900 MHz - 305 meters

Sound Indication: 50db@1.5m beeper (Off selectable)

418MHz Unit Indication: 10 bar LED, ~6db per element

900 MHz Unit Indication: 2 LED's, 1-transmit and 1-recieve

Antenna: Detachable whip (must be installed to operate)

Weight: .23kg (0.5 lb) per unit

Agency: 418 MHz, FCC ID #T4F060811TEMP
900 MHz, FCC ID #OUR9XSTREAM

Indoor Transmission Range Estimate "Rules of Thumb"

A) Transmitter 0 to 15 meters
   Will work in open office instances.

B) Transmitter 0 to 30 meters
   May work but verify.

C) Transmitter > 30 meters
   Needs a repeater.

D) Repeater 0 to 90 meters
   Will work in most instances.

E) Repeater 0 to 244 meters
   May work but verify.

F) Repeater > 305 meters
   Needs another repeater.

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Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Rev. 10/24/12

WAM Receiver

Features & Options

- 100 Foot In-Building Reception Range*
- Remote Antenna Option for Optimum Reception
- Surface, Snaptrack or DIN Rail Mounting
- RJ45 and USB-B Communication Connections
- Local or Custom Web-based Sensor Monitoring

The Wireless Asset Monitor (WAM) unit receives data from all Delta wireless 418 MHz sensor/transmitters. The receiver delivers the data simultaneously to the Universal Serial Bus (USB) output for local use and to the RJ45 Ethernet port for communication with a WAM Website (see "Associated Products" below) or to a web address of your choice.

Multiple length antennas are available for ease of installation and optimal reception. The EZ mount system allows for DIN rail, snaptrack or surface mounting.

Ordering Information

DELTA # | **DESCRIPTION**

WAM Receivers
Call for # Wireless 418MHz WAM Receiver with 2 Meter (79") Dipole Antenna
Call for # Wireless 418MHz WAM Receiver with 4.5 Meter (180") Dipole Antenna
Call for # Wireless 418MHz WAM Receiver with 127mm (5") Whip Antenna

Associated Products - WAM Website

The WAM website lets the user monitor their wireless sensor/transmitters from anywhere in the world with a customized web browser. The website is password protected and allows full administrative control of locations, users, devices and alerts.

Specifications

Supply Voltage: AC Receptacle Plug-in Power Supply (provided)
  Power cord 1.5m cord w/ 2.5mm DC power jack
  Volts 120VAC converter 5VDC@6W

Outputs:
  Ethernet RJ45 Jack (10base-T)
  Serial USB-B Jack (USB 2.0)

Termination:
  Ethernet RJ45 CAT5e straight 1.5m cable (provided)
  Serial USB-B/USB-A male, .9m cable (provided)
  Antenna RP-SMA Connector

Display Indicator: One Red LED for Power & Reception

Antenna: Dipole or Whip

Enclosure Rating: NEMA 1, IP20

Mounting: 35mm DIN Rail, 70mm Snaptrack or Surface w/ Tabs

Material: ABS Plastic, UL94 V-2

Color: Warm White (WMW)

Ambient: 0 to 60ºC (32 to 140ºF) • 5 to 95% RH, Non-Condensing

Agency: RoHS

Software: Included
  IP Search Program Identifies Assigned DHCP Network Address
  Monitor Local Computer Wireless Point Monitoring
  FTDI Drivers USB Communication Interface

1.25in [31.9mm]
2.75in [69.9mm]
5 FOOT CORD
3.87in [98.3mm]

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Phone: +1 604.574.9444 | Fax: +1 604.574.7793 | Web: www.deltacontrols.com

Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Web-based Wireless Asset Monitor (WAM) F119

Wireless Sensors
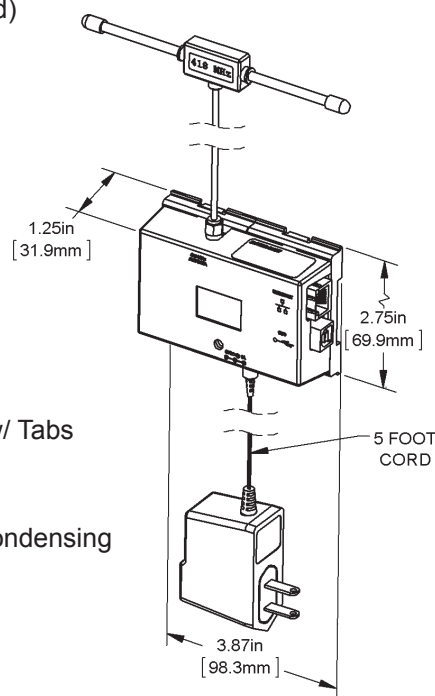
Rev. 10/24/12

Features & Options

- Remote Monitoring of Temp & Humidity from any Internet Connection
- Password Protected Private Website with Live Data, Charts, Trending and Easy-to-Navigate Screens
- User Controllable Alert Parameters for Text, Voice or Email Alerts

The Web-based Wireless Asset Monitor (WAM) system allows users to monitor wireless sensors/transmitters from any of the popular web browsers. The WAM website is password protected and provides full administrative control. The WAM website works with any Delta wireless transmitter to monitor temp and/or humidity.

The wireless sensor/transmitters send their information to a WAM Receiver which passes the information on to the WAM Website via a local internet jack. Alert parameters such as high and low temperature or humidity limits can be added to each sensor through the website with alert notifications sent out to selectable recipients via email, phone text, phone call or voice mail.

A demonstration of the system is available at "wam.bapisensors.com". Enter the User name "bapidemo" and password "bapidemo" to view a live system.

Ordering Information

DELTA #	DESCRIPTION
Call for #	10 Monitored Points on Custom WAM Website, 1 year service
Call for #	10 Monitored Points on Custom WAM Website, 2 year service
Call for #	10 Monitored Points on Custom WAM Website, 3 year service

Note: There is a maximum of 120 phone call alert messages per year for every 10 sensors included in the price. Beyond the maximum, a $1 charge per phone call alert message will be invoiced at the end of the year. There is no limit on email or text alert messages.

Associated Products - WAM Website

The WAM Receiver collects the data from the Delta wireless sensor/transmitters. The receiver delivers the data simultaneously to the serial ASCII USB output for local use and to the RJ45 Ethernet port for communication with the WAM Website or web address of your choice.

Specifications

Computer HW (customer provided):	Must have internet access: Tower, Laptop, Tablet or Smart Phone
Required Supporting Software:	Oracle JAVA or Adobe Flash Player
Web Browsers Supported:	Microsoft Internet Explorer 7, Mozilla Firefox 11, Apple Safari 5.1, Google Chrome v18 (or newer versions of any of these)
Display Screen:	Best with >200mm color screen or smart phone
Cell Phones Supported:	All Major Carriers with Text Messaging
New Data Response Time Typical:	
Website Display:	Normally Within 1 Minute
New Point Registration:	Normally Within 5 Minutes
Screen Navigation:	First Level "Device", "Alerts", "Profile" or "Manage"
Top	Website Information and Asset Location Name
Left side	Main Navigation Elements
Center Screen	Main Device or Personnel Profile Information
Right Side if shown	Device Status and/or Editing
Remote Site Equipment:	Purchased Separately
Wireless Receiver Gateway	Wireless Asset Monitor (WAM) Receiver
Wireless Point Transmitters	Temperature, Humidity, Analog, Digital
Specialized Sensors	Door Switch and Break Beam

Delta Controls Inc., 17850 - 56th Avenue, Surrey, British Columbia, Canada V3S 1C7
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Manufactured by Building Automation Products Inc., for Delta Controls Inc.

Wireless Food Temperature Probes

Wireless Sensors

Rev. 10/16/12

Features & Options

- 30.5 Meter (100 Feet) Open Air Transmission Range
- Integrates with all BAPI Receivers & Output Modules
- 4 Year Battery Life
- Waterproof Construction for Food Service Use
- NSF Certified with Food and Dishwasher Safe Materials
- Fits Most Food Bins
- Many Additional Applications Besides Food

Delta's Wireless Food Temperature Probes remain in the food trays to measure and transmit the temperature every 30 seconds to a receiver up to 30 meters (100 feet) away. The receiver transforms the data into common outputs (0 to 10V, 0 to 5V, 4 to 20mA or thermistor) for input into any BAS or data acquisition system or the Delta WAM internet monitoring service.

The food probes eliminate the need for an employee to hand record the temperatures with a thermometer for HACCP compliance. Bin clips are available to fit most stainless steel or plastic food bins. The probe is designed for dishwasher or hand washing.

Because the probes are designed for wet, dusty or dirty environments, there are many additional applications including Cooling Towers, Evaporative Coolers, Steam Humidifiers, Dusty or Wet Conveyer Systems, Aggregate Washers and Vaulted Ceiling Suspension.

86mm Bent Probe without Clip

104mm Bent Probe with Black Clip

Straight Probe with Black Clip

Food Probe Inside a Bin
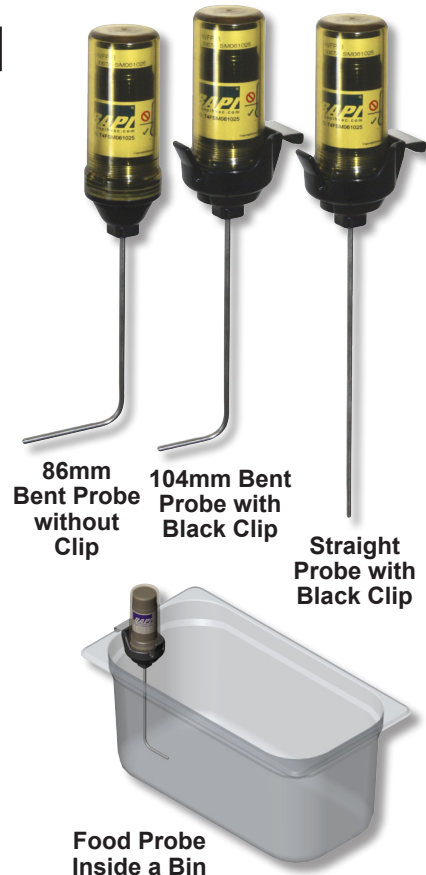
Specifications

Supply Power: One 3.6 VDC Lithium

Battery life: 4 years @ 30 second intervals

Battery Included: BA/BAT-5AA-HIT, 1/2 AA

Sensor: Tip Sensitive Thermistor Probe

Measurement Range: -15 to 110ºC (5 to 230ºF)

Accuracy: ±0.55ºC (±1ºF), from 0 to 100ºC

Environmental Operating Range:
  SS Probe: -40 to 110ºC (-40 to 230ºF)
  Washing Spike Temp: 100ºC (212ºF) for 8 hours
  Humidity: 0 to 100% RH Condensing

Case Material: Food Safe Plastic

Probe Material:
  304 Stainless Steel, 3.2mm (1/8") Dia.

Food Bin Bracket: Four Styles
  SS Bin: Tip within 9.5mm (3/8") of bottom
  Plastic Bin: Tip within 9.5mm (3/8") of bottom

Food Probe Insertion:
  51mm (2") Min. into Food, Tip Sensitive

Radio Frequency: 418 MHz @ 1mW

Transmitter Interval: ~30 seconds

Antenna: Spiral type built into case

Transmission Range:
  Up to 30.5 meters (100') open air
  Up to 305 meters (1,000') open air with a repeater

Cleaning: Dishwasher Safe (see Spike Temperature)

Agency: RoHs & NSF Certified

  FCC Approval: FCC ID# T4FSM061025
                          FCC Rules Part 15, Subpart B

  Industry Canada: IC:9067A - SM061025

103.5 mm (4") Bent Probe with Clip
7.82in [198.6mm]
5.53in [140.5mm]
4.08in [103.5mm]
1.44in [36.5mm]

Straight Probe with Clip
8.97in [227.9mm]
6.69in [169.9mm]
5.23in [132.8mm]
Ø.125in [3.18mm]

86mm (3.4") Bent Probe without Clip
7.15in [181.5mm]
3.40in [86.4mm]
2.11in [53.6mm]

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Rev. 10/16/12

Food Probe Ordering Information

DELTA #	DESCRIPTION
Call for #	Bent Stainless Steel Probe, 86mm (3.4") Insertion with 54mm (2.11") Bend
Call for #	Bent Stainless Steel Probe 103.5mm (4.1") insertion with 36.5mm (1.4") bend
Call for #	Straight Stainless Steel probe 133mm (5") insertion

Note: Each Probe includes two round blank Disk Labels.

Accessories Ordering Information

DELTA #	DESCRIPTION
Call for #	Fixed Depth Clip for Stainless Steel Square Food Bins (Black Plastic) (Use with B4 or B3 probes for 152mm (6") deep bins or S5 probe for 178mm (7") deep bins.)
Call for #	Fixed Depth Clip for Plastic Square Food Bins (Amber Plastic) [Use with B4 or B3 probes for 152mm (6") deep bins.]
Call for #	Adjustable Depth Clip for Plastic Square Bins ("6" stamp on flat) [Use with B4 or B3 probes for 152mm (6") deep bins.]
Call for #	Adjustable Clip for SS Square Bins ("7" stamp on flat) [Use with B4 or B3 probes for 152mm (6") deep bins or S5 probe for 178mm (7") deep bins.]
Call for #	Clip Kit (includes 1 each of BA/FP-CLP4, BA/FP-CLP5, BA/FP-CLP6, BA/FP-CLP7)
Call for #	Replacement Battery, 3.6V, 1/2-AA, High Temperature
Call for #	Food Probe O-Ring (5 per package)
Call for #	Food Probe Label Sheet, 70 Round Labels (40 numbered 1 to 40 and 30 blanks)
Call for #	Food Probe Label Sheet, 70 Round Blank Labels
Call for #	Stainless Food Bin Lid, 152x178mm (6x7"), 1/6 Square w/ Ladle and Food Probe Cutout
Call for #	Stainless Food Bin Lid, 305x178mm (12x7"), 1/3 Square w/ Ladle and Food Probe Cutout
Call for #	Stainless Food Bin Lid, 324x264mm (12.75x10.4"), 1/2 Square w/ Ladle & Food Probe Cutout
Call for #	Stainless Food Bin Hinged Lid, 229mm (9") 7-QT Round w/ Ladle and Food Probe Cutout
Call for #	Desiccant Pack (5 per package)
Call for #	Food Probe Plastic Cap Removal Tool
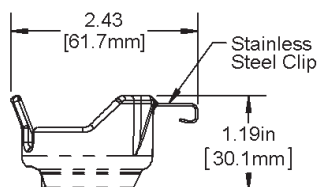
Fixed Depth Clip for Most Plastic Square Bins (Amber Plastic)

Adjustable Depth Bin Clip for Most Plastic Square Bins ("6" stamp on flat)
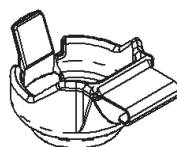
Fixed Depth Clip for Most Stainless Steel Square Bins (Black Plastic)
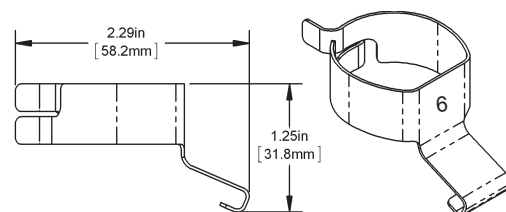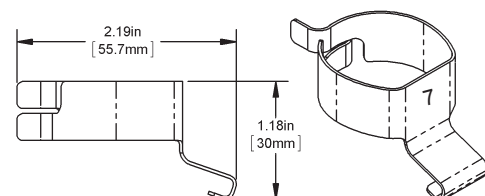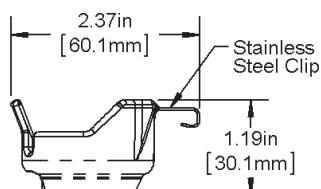
Adjustable Depth Bin Clip for Most SS Square Bins ("7" stamp on flat)

Blü-Test™ - Bluetooth Temp & Humidity Probe

Wireless Sensors

Rev. 01/24/14

Features & Options

- Temp & Humidity Probe with Bluetooth Wireless Interface
- Communicates with Android* Smart Phone or Tablet
- Blü-Test App for Android* OS with Simple Touch Screen Menus
- Emailable Data Logs with Time Stamp and Location
- One Year Battery Life Under Normal Use

The Blü-Test is a handheld temperature & humidity measurement probe that interfaces wirelessly via Bluetooth to the user's enabled Android Smart Phone or Tablet. After loading the free Blü-Test App, multiple points can be logged and emailed for easy insertion into the commissioning reporting.

The unit makes it easy to take readings from difficult locations. The 8" probe has a fast measurement time of 2 minutes in slow moving air. Each probe comes with a National Institute of Standards and Technology (NIST) traceable certificate of calibration.

This unit is very simple to use. Just start up the app on your smart phone or tablet, sync the Bluetooth communication with the testing probe, then begin taking measurements. Includes a Probe Clip Hanger for hands-free measurements.
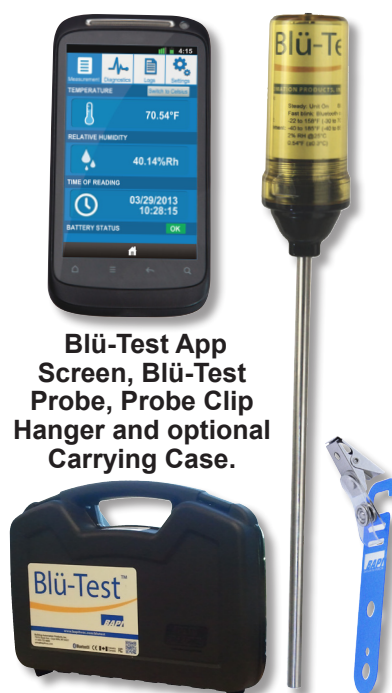
Blü-Test App Screen, Blü-Test Probe, Probe Clip Hanger and optional Carrying Case.

Ordering Information

DELTA #   **DESCRIPTION**

401843...............Blü-Test Bluetooth Temp and Humidity Measurement Probe
401844...............Blü-Test Bluetooth Temp/Humidity Probe and Carrying Case (room for up to 4 probes)

Call for # ....Blü-Test probe recertification with NIST certificate and battery

Call for # ....Probe Clip Hanger (one included with each Blü-Test Probe)

Specifications

Handheld Probe (HHP) Specifications**

Power:.........................3.0 to 3.6V 1,000 mAh Battery Included (Replaceable)

Environmental:
   Probe.........................-40 to 185°F (-40 to 85°C)
   Plastic.........................-22 to 158°F (-30 to 70°C)
   Humidity Overall ....5 to 95% Non-condensing

Probe Measurement Range:
   Temperature:............-40 to 185°F (-40 to 85°C),
   %RH.........................10 to 90% Non-condensing

Battery Life:.................Up to 6 months under normal use

HHP Controls:.............On/Off Button and Auto Off

HHP LED Indicators: ..2 for On/Off and Comm. Status

Typical Accuracy:
   Temperature:..............±0.54°F@77°F (±0.3°C@25°C)
   %RH: ....±2%RH@77°F (25°C)

Specific Accuracy: .....See the provided NIST certificate

%RH Sensor:...............Capacitive Polymer

Temperature Sensor:..Semiconductor Band Gap

Dimensions:................12" Overall Height

Probe: ....Stainless Steel - 8" Length, .25" Dia.

Enclosure Material: ....Molded Plastic

Communication:.........Bluetooth Class 2

Handheld Probe (HHP) Specifications**

Data Transfer: ......Updates to display every 15 sec

Carrying Case: .....Space for multiple probes

Agency: .... RoHS, CE, NIST Traceable Cert.

FCC ID: T9J-RN42

Blü-Test Application Specifications

Application Program: *Android OS 2.2 or higher (Apple iOS is not currently supported.)

Display: On Smart Phone or Tablet
   Measured Data: Temp (°F/°C) & %RH
   Time Stamp: Date and 24 hour time
   Location: Manually entered
   Save: Saves current data, time & location
   Log: Show trend data on screen
   Email: Sends data log to any email address

Note: A user supplied Bluetooth-enabled Android Smart Phone or Tablet is required as the display device with Android OS 2.2 or higher. (Apple iOS is not currently supported.)

**For complete specifications, see the full instruction manual.

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Rev. 10/24/12

Page	Delta #	Description	List Price
		BAPI-Stat 3 Room Units with °F Indication and Off White Logo Plate	
2-3	Call for #	BAPI-Stat 3, °F Indication, Temperature Setpoint, Override, Off White Logo Plate	$268
	Call for #	BAPI-Stat 3, °F Indication, Temperature Setpoint, No Override, Off White Logo Plate	$268
	Call for #	BAPI-Stat 3, °F Indication, No Setpoint, No Override, Off White Logo Plate	$218
		BAPI-Stat 3 Room Units with °C Indication and Off White Logo Plate	
2-3	Call for #	BAPI-Stat 3, °C Indication, Temperature Setpoint, Override, Off White Logo Plate	$268
	Call for #	BAPI-Stat 3, °C Indication, Temperature Setpoint, No Override, Off White Logo Plate	$268
	Call for #	BAPI-Stat 3, °C Indication, No Setpoint, No Override, Off White Logo Plate	$218
		Decora Style Room Units with Display	
4	Call for #	Decora Style Room Unit, F Indication, Pushbutton Setpoint, Standard White Wall Plate Cover	$125
	Call for #	Decora Style Room Unit, F Indication, No Setpoint, Standard White Wall Plate Cover	$125
4	Call for #	Decora Style Room Unit, C Indication, Pushbutton Setpoint, Standard White Wall Plate Cover	$125
	Call for #	Decora Style Room Unit, C Indication, No Setpoint, Standard White Wall Plate Cover	$125
		Low Profile "Button" Sensor	
5	402228	Low Profile "Button" Temperature Sensor	$25
		Wall Plate Sensors	
6	400006	Stainless Steel Wall Plate Temperature Sensor	$18
		Outside Air Temperature Sensors	
7	400787	Outside Air Temperature Sensor, BAPI-Box 2 Enclosure	$30
	400225	Outside Air Temperature Sensor, Weather Tight Enclosure	$30
		Duct Temperature Sensors with 102mm (4") Probe	
8-9	400104	Duct Temp Sensor with 102mm (4") Probe, No Box, 457mm (18") Leads, Plenum-Rated Cable	$25
	400108	Duct Temp. Sensor with 102mm (4") Probe, No Box, 1.5m (5') Leads, Plenum-Rated Cable	$27
	400264	Duct Temp. Sensor with 102mm (4") Probe, No Box, 3m (10') Leads, Plenum-Rated Cable	$29
	400765	Duct Temp. Sensor with 102mm (4") Probe, No Box, 4.6m (15') Leads, Plenum-Rated Cable	$31
	400160	Duct Temp. Sensor with 102mm (4") Probe, J-Box Enclosure	$25
	400181	Duct Temp. Sensor with 102mm (4") Probe, BAPI-Box 2 Enclosure	$37
	401838	Duct Temp. Sensor with 102mm (4") Probe, BAPI-Box 4 Enclosure	$25
		Duct Temperature Sensors with 203mm (8") Probe	
8-9	400105	Duct Temp. Sensor with 203mm (8") Probe, No Box, 457mm (18") Leads, Plenum-Rated Cable	$25
	400368	Duct Temp. Sensor with 203mm (8") Probe, No Box, 1.5m (5') Leads, Plenum-Rated Cable	$27
	400111	Duct Temp. Sensor with 203mm (8") Probe, No Box, 3m (10') Leads, Plenum-Rated Cable	$29
	400766	Duct Temp. Sensor with 203mm (8") Probe, No Box, 15' (4.57m) Leads, Plenum-Rated Cable	$31
	400100	Duct Temp. Sensor with 203mm (8") Probe, J-Box Enclosure	$25
	400180	Duct Temp. Sensor with 203mm (8") Probe, BAPI-Box 2 Enclosure	$37
	401848	Duct Temp. Sensor with 203mm (8") Probe, BAPI-Box 4 Enclosure	$25
		Duct Temperature Sensors with 305mm (12") Probe	
8-9	400106	Duct Temp. Sensor with 305mm (12") Probe, No Box, 457mm (18") Leads, Plenum-Rated Cable	$25
	400107	Duct Temp. Sensor with 305mm (12") Probe, No Box, 1.5m (5') Leads, Plenum-Rated Cable	$27
	400767	Duct Temp. Sensor with 305mm (12") Probe, No Box, 3m (10') Leads, Plenum-Rated Cable	$29
	400768	Duct Temp. Sensor with 305mm (12") Probe, No Box, 4.6m (15') Leads, Plenum-Rated Cable	$31
	400101	Duct Temp. Sensor with 305mm (12") Probe, J-Box Enclosure	$25
	400178	Duct Temp. Sensor with 305mm (12") Probe, BAPI-Box 2 Enclosure	$37
	401837	Duct Temp. Sensor with 305mm (12") Probe, BAPI-Box 4 Enclosure	$25

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Delta
CONTROLS™

Rev. 10/24/12

Page	Delta #	Description	List Price
		Duct Temperature Sensors with 457mm (18") Probe	
8-9	400103	Duct Temp. Sensor with 457mm (18") Probe, No Box, 457mm (18") Leads, Plenum-Rated Cable	$25
	400211	Duct Temp. Sensor with 457mm (18") Probe, No Box, 1.5m (5') Leads, Plenum-Rated Cable	$27
	400769	Duct Temp. Sensor with 457mm (18") Probe, No Box, 3m (10') Leads, Plenum-Rated Cable	$29
	400770	Duct Temp. Sensor with 457mm (18") Probe, No Box, 4.6m (15') Leads, Plenum-Rated Cable	$31
	400102	Duct Temp. Sensor with 457mm (18") Probe, J-Box Enclosure	$25
	400179	Duct Temp. Sensor with 457mm (18") Probe, BAPI-Box 2 Enclosure	$37
	401850	Duct Temp. Sensor with 457mm (18") Probe, BAPI-Box 4 Enclosure	$25
		Duct Averaging Temperature Sensors with 2.44 meter (8') Probe	
10-11	400150	Duct Avging Sensor with 2.44m (8') Aluminum 4.8mm (3/16") Dia. Probe, J-Box Enclosure	$105
	400777	Duct Avging Sensor with 2.44m (8') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 2 Enclosure	$117
	Call for #	Duct Avging Sensor with 2.44m (8') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 4 Enclosure	$105
		Duct Averaging Temperature Sensors with 3.6 meter (12') Probe	
10-11	400151	Duct Avging Sensor with 3.7m (12') Aluminum 4.8mm (3/16") Dia. Probe, J-Box Enclosure	$110
	400176	Duct Avging Sensor with 3.7m (12') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 2 Enclosure	$122
	Call for #	Duct Avging Sensor with 3.7m (12') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 4 Enclosure	$110
		Duct Averaging Temperature Sensors with 7.3 meter (24') Probe	
10-11	400152	Duct Avging Sensor with 7.3m (24') Aluminum 4.8mm (3/16") Dia. Probe, J-Box Enclosure	$134
	400177	Duct Avging Sensor with 7.3m (24') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 2 Enclosure	$146
	401836	Duct Avging Sensor with 7.3m (24') Aluminum 4.8mm (3/16") Dia. Probe, BAPI-Box 4 Enclosure	$134
		Immersion Temperature Sensors with Nylon Fittings and 51mm (2") Probe	
12-13	400316	Immersion Temp. Sensor with 51mm (2") SS 6.4mm (1/4") Dia. Probe, J-Box Encl.	$25
	400297	Immersion Temp. Sensor with 51mm (2") SS 6.4mm (1/4") Dia. Probe, BAPI-Box 2 Encl.	$37
	401851	Immersion Temp. Sensor with 51mm (2") SS 6.4mm (1/4") Dia. Probe, BAPI-Box 4 Encl.	$25
		Immersion Temperature Sensors with Nylon Fittings and 102mm (4") Probe	
12-13	400300	Immersion Temp. Sensor with 102mm (4") SS 6.4mm (1/4") Dia. Probe, J-Box Encl.	$25
	400298	Immersion Temp. Sensor with 102mm (4") SS 6.4mm (1/4") Dia. Probe, BAPI-Box 2 Encl.	$37
	401855	Immersion Temp. Sensor with 102mm (4") SS 6.4mm (1/4") Dia. Probe, BAPI-Box 4 Encl.	$25
		Immersion Temperature Sensors with Nylon Fittings and 203mm (8") Probe	
12-13	400301	Immersion Temp. Sensor with 203mm (8") SS 6.4mm (1/4") Dia. Probe, J-Box Encl.	$25
	400299	Immersion Temp. Sensor with 203mm (8") SS 6.4mm (1/4") Dia. Probe, BAPI-Box 2 Encl.	$37
	Call for #	Immersion Temp. Sensor with 203mm (8") SS 6.4mm (1/4") Dia. Probe, BAPI-Box 4 Encl.	$25
		51mm (2") Thermowells	
14-15	400449	51mm (2") Thermowell, 2-Part (Welded) 304 SS - 64mm (2.5") Insertion length, fits 51mm Imm. Probe	$22
	400322	51mm (2") Thermowell, Machined 304 SS - 64mm (2.5") Insertion length, fits 51mm Imm. Probe	$32
	401572	51mm (2") Thermowell, Machined 316 SS - 64mm (2.5") Insertion length, fits 51mm Imm. Probe	$44
	400047	51mm (2") Thermowell, Machined Brass - 64mm (2.5") Insertion length, fits 51mm Imm. Probe	$23
		102mm (4") Thermowells	
14-15	400500	102mm (4") Thermowell, 2-Part (Welded) 304 SS - 114mm (4.5") Insertion length, fits 102mm Imm. Probe	$24
	400502	102mm (4") Thermowell, Machined 304 SS - 114mm (4.5") Insertion length, fits 102mm Imm. Probe	$44
	400504	102mm (4")Thermowell, Machined 316 SS - 114mm (4.5") Insertion length, fits 102mm Imm. Probe	$50
	400506	102mm (4") Thermowell, Machined Brass - 114mm (4.5") Insertion length, fits 102mm Imm. Probe	$26

Gray shaded items follow the Buy and Resale Multiplier.

Page	Delta #	Description	List Price
		203mm (8") Thermowells	
14-15	400501	203mm (8") Thermowell, 2-Part (Welded) 304 SS - 191mm (7.5") Insertion length, fits 203mm Imm. Probe	$28
	400503	203mm (8") Thermowell, Machined 304 SS - 191mm (7.5") Insertion length, fits 203mm Imm. Probe	$65
	400505	203mm (8") Thermowell, Machined 316 SS - 191mm (7.5") Insertion length, fits 203mm Imm. Probe	$80
	400507	203mm (8") Thermowell, Machined Brass - 191mm (7.5") Insertion length, fits 203mm Imm. Probe	$45
		Combined Immersion and Thermowell Units	
		Immersion Temperature Sensors with 51mm (2") Probe and 51mm (2") Thermowell	
16-17	Call for #	Immersion with 51mm (2") Probe, J-Box Encl. with 51mm Thermowell, 2-Part 304 SS	$47
	Call for #	Immersion with 51mm (2") Probe, J-Box Encl. with 51mm Thermowell, Machined Brass	$48
	Call for #	Immersion with 51mm (2") Probe, BAPI-Box 2 Encl. with 51mm Thermowell, 2-Part 304 SS	$59
	Call for #	Immersion with 51mm (2") Probe, BAPI-Box 2 Encl. with 51mm Thermowell, Machined Brass	$60
	Call for #	Immersion with 51mm (2") Probe, BAPI-Box 4 Encl. with 51mm Thermowell, 2-Part 304 SS	$47
	Call for #	Immersion with 51mm (2") Probe, BAPI-Box 4 Encl. with 51mm Thermowell, Machined Brass	$48
		Immersion Temperature Sensors with 102mm (4") Probe and 102mm (4") Thermowell	
16-17	Call for #	Immersion with 102mm (4") Probe, J-Box Encl. with 102mm Thermowell, 2-Part 304 SS	$49
	Call for #	Immersion with 102mm (4") Probe, J-Box Encl. with 102mm Thermowell, Machined Brass	$51
	Call for #	Immersion with 102mm (4") Probe, BAPI-Box 2 Encl. with 102mm Thermowell, 2-Part 304 SS	$61
	Call for #	Immersion with 102mm (4") Probe, BAPI-Box 2 Encl. with 102mm Thermowell, Machined Brass	$63
	Call for #	Immersion with 102mm (4") Probe, BAPI-Box 4 Encl. with 102mm Thermowell, 2-Part 304 SS	$49
	Call for #	Immersion with 102mm (4") Probe, BAPI-Box 4 Encl. with 102mm Thermowell, Machined Brass	$51
		Immersion Temperature Sensors with 203mm (8") Probe and 203mm (8") Thermowell	
16-17	Call for #	Immersion with 203mm (8") Probe, J-Box Encl. with 203mm Thermowell, 2-Part 304 SS	$53
	Call for #	Immersion with 203mm (8") Probe, J-Box Encl. with 203mm Thermowell, Machined Brass	$70
	Call for #	Immersion with 203mm (8") Probe, BAPI-Box 2 Encl. with 203mm Thermowell, 2-Part 304 SS	$65
	Call for #	Immersion with 203mm (8") Probe, BAPI-Box 2 Encl. with 203mm Thermowell, Machined Brass	$82
	Call for #	Immersion with 203mm (8") Probe, BAPI-Box 4 Encl. with 203mm Thermowell, 2-Part 304 SS	$53
	Call for #	Immersion with 203mm (8") Probe, BAPI-Box 4 Encl. with 203mm Thermowell, Machined Brass	$70
		Clamp-On Strap - Fits 2" to 4.5" (5.1 to 11.4 cm) pipe with adjustable SS hose clamp.	
18	400402	Clamp-On Strap Temperature Sensor, J-Box Enclosure	$28
	Call for #	Clamp-On Strap Temperature Sensor, BAPI-Box 2 Enclosure	$40
	401853	Clamp-On Strap Temperature Sensor, BAPI-Box 4 Enclosure	$28
		Spring-Loaded Strap - Fits 5" to 14.5" (12.7 to 36.8 cm) pipe with adjustable nylon straps.	
19	400401	Spring-Loaded Strap Temperature Sensor, J-Box Enclosure	$43
	Call for #	Spring-Loaded Strap Temperature Sensor, BAPI-Box 2 Enclosure	$55
	Call for #	Spring-Loaded Strap Temperature Sensor, BAPI-Box 4 Enclosure	$43
		Thermobuffer with 25mm (1") Stainless Steel Hanging Bracket and No Box	
20-21	Call for #	Thermobuffer with 25mm (1") SS Hanging Bracket, No Box, 5' (1.5m) FEP-Jacketed Cable	$110
	Call for #	Thermobuffer with 25mm (1") SS Hanging Bracket, No Box, 10' (3m) FEP-Jacketed Cable	$115
	Call for #	Thermobuffer with 25mm (1") SS Hanging Bracket, No Box, 25' (7.6m) FEP-Jacketed Cable	$130

Gray shaded items follow the Buy and Resale Multiplier.

Page	Delta #	Description	List Price
		Thermobuffer with 25mm (1") SS Hanging Bracket and BAPI-Box 2 Enclosure	
20-21	Call for #	Thermobuffer with 25mm (1") SS Hanging Bracket, BAPI-Box 2, 1.5m (5') FEP-Jacketed Cable	$122
	Call for #	Thermobuffer with 25mm (1") SS Hanging Bracket, BAPI-Box 2, 3m (10') FEP-Jacketed Cable	$127
	Call for #	Thermobuffer with 25mm (1") SS Hanging Bracket, BAPI-Box 2, 7.6m (25') FEP-Jacketed Cable	$142
		Thermobuffer with 51mm (2") Buffer and BAPI-Box 2 Enclosure	
20-21	Call for #	Thermobuffer with 51mm (2") Stainless Steel Buffer, BAPI Box 2 Enclosure	$222
	Call for #	Thermobuffer with 51mm (2") Aluminum Buffer, BAPI Box 2 Enclosure	$162
		Remote Sensors with Epoxy Shell	
22	400062	Remote Temp. Sensor with Epoxy Shell, 152mm (6") of Etched Teflon Leads, No Enclosure	$18
	400021	Remote Temp. Sensor with Epoxy Shell, 457mm (18") of Plenum Rated Leads, No Enclosure	$18
	400337	Remote Temp. Sensor with Epoxy Shell, 1.5m (5') of Plenum Rated Leads, No Enclosure	$20
	400386	Remote Temp. Sensor with Epoxy Shell, 3m (10') of Plenum Rated Leads, No Enclosure	$22
		Remote Probes with Plenum Rated Cable	
22	400036	Remote SS Probe, 457mm (18") of Plenum Rated Cable, No Enclosure	$18
	400411	Remote SS Probe, 1.5m (5') of Plenum Rated Cable, No Enclosure	$20
	400487	Remote SS Probe, 3m (10') of Plenum Rated Cable, No Enclosure	$22
		Remote Probes with FEP-Jacketed Cable	
22	400366	Remote SS Probe, 457mm (18") of FEP-Jacketed Cable, No Enclosure	$21
	400789	Remote SS Probe, 1.5m (5') of FEP-Jacketed Cable, No Enclosure	$23
	400143	Remote SS Probe, 3m (10') of FEP-Jacketed Cable, No Enclosure	$28
		BAPI-Stat 3 Temp/Humidity Room Units with °F Indication and Off White Logo Plate	
24-25	Call for #	BAPI-Stat 3 Sensor, °F Ind., Humidity Setpoint, Temp. Setpoint, Override, Off White Logo Plate	$448
	Call for #	BAPI-Stat 3 Sensor, °F Ind., Temperature Setpoint, Occupant Override, Off White Logo Plate	$398
	Call for #	BAPI-Stat 3 Sensor, °F Ind., Temperature Setpoint, No Override, Off White Logo Plate	$398
	Call for #	BAPI-Stat 3 Sensor, °F Ind., No Setpoint, No Override, Off White Logo Plate	$348
		BAPI-Stat 3 Temp/Humidity Room Units with °C Indication and Off White Logo Plate	
24-25	Call for #	BAPI-Stat 3 Sensor, °C Ind., Humidity Setpoint, Temperature Setpoint, Override, Off White Logo Plate	$448
	Call for #	BAPI-Stat 3 Sensor, °C Ind., Temperature Setpoint, Occupant Override, Off White Logo Plate	$398
	Call for #	BAPI-Stat 3 Sensor, °C Ind., Temperature Setpoint, No Override, Off White Logo Plate	$398
	Call for #	BAPI-Stat 3 Sensor, °C Ind., No Setpoint, No Override, Off White Logo Plate	$348
		X-Combo Temp/Humidity Unit, BAPI-Stat 4, °F Indication, with Warm White Logo Plate	
26-27	Call for #	BAPI-Stat 4 X-Combo Sensor, °F Indication, Pushbutton Temp Setpoint, Override	$403
	Call for #	BAPI-Stat 4 X-Combo Sensor, °F Indication, Pushbutton Temp Setpoint, No Override	$398
	Call for #	BAPI-Stat 4 X-Combo Sensor, °F Indication, Pushbutton Temp and Humidity Setpoint, Override	$453
	Call for #	BAPI-Stat 4 X-Combo Sensor, °F Indication, Pushbutton Temp and Humidity Setpoint, No Override	$448
		X-Combo Temp/Humidity Unit, BAPI-Stat 4, °C Indication, with Warm White Logo Plate	
26-27	Call for #	BAPI-Stat 4 X-Combo Sensor, °C Indication, Pushbutton Temp Setpoint, Override	$403
	Call for #	BAPI-Stat 4 X-Combo Sensor, °C Indication, Pushbutton Temp Setpoint, No Override	$398
	Call for #	BAPI-Stat 4 X-Combo Sensor, °C Indication, Pushbutton Temp and Humidity Setpoint, Override	$453
	Call for #	BAPI-Stat 4 X-Combo Sensor, °C Indication, Pushbutton Temp and Humidity Setpoint, No Override	$448

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Page	Delta #	Description	List Price
		Dew Point Sensor with Display, °F Indication and Warm White Logo Plate	
28-29	Call for #	BAPI-Stat 4 Dew Point Sensor, Display, °F Ind., Temp. Sensing, Temp. Slider Setpoint, Override	$324
	Call for #	BAPI-Stat 4 Dew Point Sensor, Display, °F Ind., Temp. Sensing, Temp. Slider Setpoint, No Override	$319
	Call for #	BAPI-Stat 4 Dew Point Sensor, Display, °F Ind., Temp. Sensing, No Setpoint, No Override	$313
	Call for #	BAPI-Stat 4 Dew Point Sensor, Display, No Temp. Sensing, No Setpoint, No Override	$295
		Dew Point Sensor with Display, °C Indication and Warm White Logo Plate	
28-29	Call for #	BAPI-Stat 4 Dew Point Sensor, Display, °C Ind., Temp. Sensing, Temp. Slider Setpoint, Override	$324
	Call for #	BAPI-Stat 4 Dew Point Sensor, Display, °C Ind., Temp. Sensing, Temp. Slider Setpoint, No Override	$319
	Call for #	BAPI-Stat 4 Dew Point Sensor, Display, °C Ind., Temp. Sensing, No Setpoint, No Override	$313
	Call for #	BAPI-Stat 4 Dew Point Sensor, Display, No Temp. Sensing, No Setpoint, No Override	$295
		Dew Point Sensor without Display and Warm White Logo Plate	
28-29	Call for #	BAPI-Stat 4 Dew Point Sensor without Display,, Temp. Sensing, Temp. Slider Setpoint, Override	$289
	Call for #	BAPI-Stat 4 Dew Point Sensor without Display,, Temp. Sensing, Temp. Slider Setpoint, No Override	$284
	Call for #	BAPI-Stat 4 Dew Point Sensor without Display,, Temp. Sensing, No Setpoint, No Override	$278
	Call for #	BAPI-Stat 4 Dew Point Sensor without Display,, No Temp. Sensing, No Setpoint, No Override	$260
		Duct Combination Temp/Humidity Sensor in a BAPI-Box 2 Enclosure	
30-31	402103	Duct Sensor, 2%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, 10K-3 Therm, BAPI-Box 2 Encl.	$290
	402105	Duct Sensor, 3%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, 10K-3 Therm, BAPI-Box 2 Encl.	$270
		Duct Humidity Sensor in a BAPI-Box 2 Enclosure	
30-31	401104	Duct Humidity Sensor, 2%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, BAPI-Box 2 Encl.	$272
	401106	Duct Humidity Sensor, 3%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, BAPI-Box 2 Encl.	$252
		Outside Air Combination Temp/Humidity Sensor in a BAPI-Box 2 Enclosure	
32-33	402204	Outside Air Sensor, 2%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, 10K-3 Therm, BAPI-Box 2 Encl.	$290
	402206	Outside Air Sensor, 3%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, 10K-3 Therm, BAPI-Box 2 Encl.	$270
		Outside Air Humidity Sensor in a BAPI-Box 2 Enclosure	
32-33	401059	Outside Air Sensor, 2%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, BAPI-Box 2 Enclosure	$272
	401202	Outside Air Sensor, 3%RH Accuracy, 0 to 5V or 4 to 20mA %RH Output, BAPI-Box 2 Enclosure	$252
		Pressure Sensor, Panel Mount, Standard Ranges	
36	400398	Panel Mount Pressure, Standard Range, Inches of W.C. Ranges, Display, No Tube or Probe	$320
	401311	Panel Mount Pressure, Standard Range, Pascals Ranges, Display, No Tube or Probe	$320
		Pressure Sensor, Panel Mount, Low Ranges	
37	400399	Panel Mount Pressure, Low Range, Inches of W.C. Ranges, Display, No Tube or Probe	$320
	401306	Panel Mount Pressure, Low Range, Pascals Ranges, Display, No Tube or Probe	$320
		BAPI-Box Pressure Sensor, Standard Ranges	
38	400094	BAPI-Box Standard Pressure with Display, Inches of W.C. ranges, No Tube/Probe included	$320
	401278	BAPI-Box Standard Pressure with Display, Pascal ranges, No Tube or Probe included	$320
		BAPI-Box Pressure Sensor, Low Ranges	
39	401260	BAPI-Box Low Pressure with Display, Inches of W.C. ranges, No Tube/Probe included	$320
	Call for #	BAPI-Box Low Pressure with Display, Pascal ranges, No Tube or Probe included	$320

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Page	Delta #	Description	List Price
		Pressure Sensor, BAPI-Box, High Ranges	
40	401290	BAPI-Box Pressure Sensor, High Range, Inches of W.C. Ranges, Display, No Tube or Probe	$340
	401293	BAPI-Box Pressure Sensor, High Range, Pascal Ranges, Display, No Tube or Probe	$340
		Pressure Probe Assemblies	
41	400328	Static Probe Assembly, 152mm (6") Probe	$25.50
	401255	Pitot Probe Assembly, 89mm (3.5") Probes (includes 89mm Static & Total Probe Assemblies)	$72
	400391	Pitot Probe Assembly, 152mm (6") Probes (includes 152mm Static & Total Probe Assemblies)	$72
		Pressure Pickup Ports, Wall and Ceiling	
42-43	400084	Stainless Steel Wall Plate with Static Pickup	$18
	400382	Stainless Steel Wall Plate with Static Pickup, 10K-3 Thermistor Temperature Sensor	$36
	400331	Room Mount Delta Style Enclosure with Static Pickup	$15
	401252	Room Mount Delta Style Enclosure with Static Pickup, 10K-3 Thermistor Temperature Sensor	$33
	400325	Ceiling Mount Square Cover with Static Pickup	$15
	400332	Ceiling Mount Rectangular Cover and Box with Static Pickup	$17
		Pressure Pickup Port, Outside Air	
44	400385	Outside Air Pressure Pickup Port, Vertical Mount	$40
	400083	Outside Air Pressure Pickup Port	$40
		Pressure Pickup Port, Low Profile	
45	Call for #	Low Profile Pressure Pickup Port	$30
		Pressure Switches	
46	400454	Differential Pressure Switch, 30 to 130 Pascals (0.12" to 0.52" W.C.)	$79
	400115	Differential Pressure Switch, 100 to 350 Pascals (0.40" to 1.40" W.C.)	$79
	400285	Differential Pressure Switch, 300 to 600 Pascals (1.20" to 2.40" W.C.)	$79
	400855	Differential Pressure Switch, 600 to 1,600 Pascals (2.40" to 6.42" W.C.)	$79
	401257	Differential Pressure Switch, 1,300 to 3,200 Pascals (5.22" to 12.84" W.C.)	$79
	401258	Differential Pressure Switch, 2,900 to 5,900 Pascals (11.64" to 23.68" W.C.)	$79
	401259	Differential Pressure Switch, 5,400 to 8,800 Pascals (21.68" to 35.32" W.C.)	$79
	Call for #	Square Screwdriver Bit to turn the Pressure Adjustment Screw	$1 (Net)
		VOC BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and Override	
48-49	400594	BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level	$619
	400596	BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level	$619
	400595	BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override	$619
		VOC BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and No Override	
48-49	400591	BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level	$614
	400593	BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level	$614
	400592	BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override	$614
		VOC BAPI-Stat 3 Sensor, °F Indication, Humidity Sensing, No Setpoint, No Override	
48-49	Call for #	BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, No Setpoint, No Override, LED Level	$590
	400587	BAPI-Stat 3, °F, 0 to 10V VOC and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level	$590
	401633	BAPI-Stat 3, °F, 0 to 10V VOC Output, 0 to 10V %RH Output, No Setpoint, No Override	$590

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		VOC BAPI-Stat 3 Sensor, °F Indication, No Setpoint, No Override	
48-49	400582	BAPI-Stat 3, °F, 0 to 10V VOC Output, No Setpoint, No Override, LED Level	$510
	401632	BAPI-Stat 3, °F, 0 to 10V VOC Output, No Setpoint, No Override, Arrow Level	$510
	400583	BAPI-Stat 3, °F, 0 to 10V VOC Output, No Setpoint, No Override	$510
		VOC BAPI-Stat 3, °C Indication, Temp & Humidity Sensing, Temp Setpoint and Override	
48-49	400654	BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level	$619
	400656	BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level	$619
	400655	BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override	$619
		VOC BAPI-Stat 3, °C Indication, Temp & Humidity Sensing, Temp Setpoint and No Override	
48-49	400651	BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level	$614
	400653	BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level	$614
	400652	BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override	$614
		VOC BAPI-Stat 3 Sensor, °C Indication, Humidity Sensing, No Setpoint, No Override	
48-49	400645	BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, No Setpoint, No Override, LED Level	$590
	400647	BAPI-Stat 3, °C, 0 to 10V VOC and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level	$590
	400646	BAPI-Stat 3, °C, 0 to 10V VOC Output, 0 to 10V %RH Output, No Setpoint, No Override	$590
		VOC BAPI-Stat 3 Sensor, °C Indication, No Setpoint, No Override	
48-49	400642	BAPI-Stat 3, °C, 0 to 10V VOC Output, No Setpoint, No Override, LED Level	$510
	400644	BAPI-Stat 3, °C, 0 to 10V VOC Output, No Setpoint, No Override, Arrow Level	$510
	400643	BAPI-Stat 3, °C, 0 to 10V VOC Output, No Setpoint, No Override	$510
		VOC Room Sensor, BAPI-Stat 4 Enclosure, No Display	
50	400580	BAPI-Stat 4 VOC, 0 to 10V Output of 0 to 2,000 PPM CO2 Equivalent, LED Indication of VOC Level	$425
	400581	BAPI-Stat 4 VOC, 0 to 10V Output of 0 to 2,000 PPM CO2 Equivalent, No Indication of VOC Level	$425
		VOC Duct Sensors, BAPI-Box Enclosure	
51	400597	Duct VOC Sensor in a BAPI-Box Enclosure, 0 to 10V Output of 0 to 2,000 PPM CO2 Equivalent	$487
		CO2 BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and Override	
52-53	400576	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level	$618
	400574	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level	$618
	400575	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override	$618
		CO2 BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and No Override	
52-53	400573	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level	$613
	400571	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level	$613
	400572	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override	$613
		CO2 BAPI-Stat 3, °F Indication, Humidity Sensing, No Setpoint, No Override	
52-53	400567	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, LED Level	$590
	400565	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level	$590
	400566	BAPI-Stat 3, °F, 0 to 10V CO2 Output, 0 to 10V %RH Output, No Setpoint, No Override	$590
		CO2 BAPI-Stat 3 Sensor, °F Indication, No Setpoint, No Override	
52-53	400564	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override, LED Level	$510
	401630	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override, Arrow Level	$510
	401631	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override	$510

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		CO2 BAPI-Stat 3, °C Indication, Temp & Humidity Sensing, Temp Setpoint and Override	
52-53	400676	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level	$618
	400674	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level	$618
	400675	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override	$618
		CO2 BAPI-Stat 3, °C Indication, Temp & Humidity Sensing, Temp Setpoint and No Override	
52-53	400673	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level	$613
	400671	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level	$613
	400672	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override	$613
		CO2 BAPI-Stat 3 Sensor, °C Indication, Humidity Sensing, No Setpoint, No Override	
52-53	400667	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, LED Level	$590
	400665	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level	$590
	400666	BAPI-Stat 3, °C, 0 to 10V CO2 Output, 0 to 10V %RH Output, No Setpoint, No Override	$590
		CO2 BAPI-Stat 3 Sensor, °C Indication, No Setpoint, No Override	
52-53	400664	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override, LED Level	$510
	400662	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override, Arrow Level	$510
	400663	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override	$510
		CO2 "24/7" BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and Override	
54-55	400636	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level	$649
	Call for #	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level	$649
	400638	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override	$649
		CO2 "24/7" BAPI-Stat 3, °F Indication, Temp & Humidity Sensing, Temp Setpoint and No Override	
54-55	Call for #	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level	$644
	400631	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level	$644
	Call for #	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override	$644
		CO2 "24/7" BAPI-Stat 3 Sensor, °F Indication, Humidity Sensing, No Setpoint, No Override	
54-55	401625	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, LED Level	$620
	401623	BAPI-Stat 3, °F, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level	$620
	401624	BAPI-Stat 3, °F, 0 to 10V CO2 Output, 0 to 10V %RH Output, No Setpoint, No Override	$620
		CO2 "24/7" BAPI-Stat 3 Sensor, °F Indication, No Setpoint, No Override	
54-55	401622	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override, LED Level	$540
	401620	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override, Arrow Level	$540
	401621	BAPI-Stat 3, °F, 0 to 10V CO2 Output, No Setpoint, No Override	$540
		CO2 "24/7" BAPI-Stat 3, °C Indication, Temp & Humidity Sensing, Temp Setpoint and Override	
54-55	400696	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, LED Level	$649
	400694	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override, Arrow Level	$649
	400695	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., Override	$649
		CO2 "24/7" BAPI-Stat 3, °C Indication, Temp & Humidity Sensing, Temp Setpoint and No Override	
54-55	400693	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, LED Level	$644
	400691	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override, Arrow Level	$644
	400692	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, Setpoint, 10K-3 Therm., No Override	$644
		CO2 "24/7" BAPI-Stat 3 Sensor, °C Indication, Humidity Sensing, No Setpoint, No Override	
54-55	400687	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, LED Level	$620
	400685	BAPI-Stat 3, °C, 0 to 10V CO2 and 0 to 10V %RH Output, No Setpoint, No Override, Arrow Level	$620
	400686	BAPI-Stat 3, °C, 0 to 10V CO2 Output, 0 to 10V %RH Output, No Setpoint, No Override	$620

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		CO2 "24/7" BAPI-Stat 3 Sensor, °C Indication, No Setpoint, No Override	
54-55	400684	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override, LED Level	$540
	400682	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override, Arrow Level	$540
	400683	BAPI-Stat 3, °C, 0 to 10V CO2 Output, No Setpoint, No Override	$540
		CO2 BAPI-Stat 4 Sensor	
56	400558	BAPI-Stat 4 CO2 Sensor for Periodically Occupied Areas, 0 to 10VDC Output, LED Level	$425
	400559	BAPI-Stat 4 CO2 Sensor for Periodically Occupied Areas, 0 to 10VDC Output	$425
		CO2 "24/7" BAPI-Stat 4 Sensor	
57	400578	BAPI-Stat 4 "24/7" CO2 Sensor for Continuously Occupied Areas, 0 to 10VDC Output, LED Level	$455
	400579	BAPI-Stat 4 "24/7" CO2 Sensor for Continuously Occupied Areas, 0 to 10VDC Output	$455
		CO2 Duct Sensor, BAPI-Box Enclosure	
58	400577	Duct CO2 Sensor, BAPI-Box, for Periodically Occupied Areas, 0 to 10VDC Output, LED Level	$470
	Call for #	Duct CO2 Sensor, BAPI-Box, for Periodically Occupied Areas, 0 to 10VDC Output, No LED	$470
		CO2 "24/7" Duct Sensor, BAPI-Box Enclosure	
59	400637	Duct "24/7" CO2 Sensor, BAPI-Box, for Continuously Occupied Areas, 0 to 10VDC Output, LED Level	$500
	Call for #	Duct "24/7" CO2 Sensor, BAPI-Box, for Continuously Occupied Areas, 0 to 10VDC Output, No LED	$500
		CO SENSORS with Display	
60	401605	CO Sensor, 4 to 20 mA, 0 to 100PPM, Outdoor EU Enclosure with Display	$490
	401607	CO Sensor, 4 to 20 mA, 0 to 300PPM, Outdoor EU Enclosure with Display	$490
		CO SENSORS without Display	
60	401601	CO Sensor, 4 to 20 mA, 0 to 100PPM, Outdoor EU Enclosure	$400
	401603	CO Sensor, 4 to 20 mA, 0 to 300PPM, Outdoor EU Enclosure	$400
		CO2 Calibration Kit	
61	Call for #	CO2 Calibration Kit	$155
	Call for #	CO2 Sensor Calibration Kit with Case	$600
	Call for #	Empty Case with Foam Cutouts	$455
		VOC Verification Kit	
62	Call for #	VOC Verification Kit	$18
		Adaptor Plates	
64-65	400023	Adaptor Plate, 133 x 178mm (5.25 x 7") Warm White	$18
	400098	Adaptor Plate, 133 x 178mm (5.25 x 7") Off White	$18
	400515	Adaptor Plate, 133 x 178mm (5.25 x 7") Copla White	$21
	401558	Adaptor Plate, 133 x 178mm (5.25 x 7") Cloud White	$21
	Call for #	Adaptor Plate, 135 x 135mm (5.3 x 5.3") Warm White	$18
	Call for #	Adaptor Plate, 135 x 135mm (5.3 x 5.3") Off White	$18
	Call for #	Adaptor Plate, 135 x 135mm (5.3 x 5.3") Copla White	$21
	Call for #	Adaptor Plate, 135 x 135mm (5.3 x 5.3") Cloud White	$21

Gray shaded items follow the Buy and Resale Multiplier.

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Page	Delta #	Description	List Price
64-65	Call for #	Adaptor Plate, 95 x 140mm (3.75 x 5.5") Warm White	$18
	Call for #	Adaptor Plate, 95 x 140mm (3.75 x 5.5") Off White	$18
	Call for #	Adaptor Plate, 95 x 140mm (3.75 x 5.5") Copla White	$21
	Call for #	Adaptor Plate, 95 x 140mm (3.75 x 5.5") Cloud White	$21
64-65	Call for #	Adaptor Plate (Europe), 95 x 140mm (3.75 x 5.5") Warm White	$18
	Call for #	Adaptor Plate (Europe), 95 x 140mm (3.75 x 5.5") Off White	$18
	Call for #	Adaptor Plate (Europe), 95 x 140mm (3.75 x 5.5") Copla White	$21
	Call for #	Adaptor Plate (Europe), 95 x 140mm (3.75 x 5.5") Cloud White	$21

BAPI-Guard Thermostat Protector

Page	Delta #	Description	List Price
66	400602	Larger BAPI-Guard Thermostat Protector	$45
	400603	Smaller BAPI-Guard 2 Thermostat Protector	$35
	400617	Replacement Key for BAPI-Guard and BAPI-Guard 2	$2

VC350A-EZ Panel Mount Voltage Converter

Page	Delta #	Description	List Price
67	401557	Panel Mount Voltage Converter, 5 VDC at 350 mA	$33
	400241	Panel Mount Voltage Converter, 12 VDC at 350 mA	$33
	401514	Panel Mount Voltage Converter, 15 VDC at 350 mA	$33
	400488	Panel Mount Voltage Converter, 5 to 24 VDC at 350 mA	$33

VC3000 3 Amp Voltage Converter

Page	Delta #	Description	List Price
68	401500	Full Wave Voltage Convertor, 2.5 Amp, Adjustable 1.28 to 24Vdc, Cartidge Fuse	$120
	401805	Half Wave Voltage Convertor, 2.5 Amp, Adjustable 1.28 to 24Vdc, Cartidge Fuse	$120
	401502	Full Wave Voltage Convertor, 2.5 Amp, Adjustable 1.28 to 24Vdc, Cartidge Fuse, Backplate	$120
	401503	Half Wave Voltage Convertor, 2.5 Amp, Adjustable 1.28 to 24Vdc, Cartidge Fuse, Backplate	$120

Clean Cut Tool for BAPI-Boxes

Page	Delta #	Description	List Price
69	Call for #	12.7mm (1/2") Threaded Knockout Cutting Tool for BAPI-Box and BAPI-Box 2	$100
	Call for #	12.7mm (1/2") Unthreaded Knockout Cutting Tool for BAPI-Boxes	$100

Flexible Probe Brackets

Page	Delta #	Description	List Price
70	400405	50 Flexible Probe Brackets	$157
	400406	100 Flexible Probe Brackets	$314
	Call for #	500 Flexible Probe Brackets	$1,443

TB18 - Pluggable Terminal Block

Page	Delta #	Description	List Price
71	400833	TB18 Pluggable Terminal Block (NEC Class 2 Circuits, 4 A max.)	$55
	400834	TB18C Pluggable Term. Block (NEC Class 2 Circuits, 4 A max.) All odd numbered terminals are common	$90
	400835	TB18C2 Pluggable Terminal Block (NEC Class 2 Circuits, 4 A max.) All odd numbered terminals are common and all even numbered terminals are common	$125

Sealant Filled Connectors

Page	Delta #	Description	List Price
71	401551	100 Crimp-On Style SFCs	$10
	401550	1,000 Crimp-On Style SFCs	$100
	401553	100 Twist-On Style SFCs	$120
	401552	1,000 Twist-On Style SFCs	$1,200

Gray shaded items follow the Buy and Resale Multiplier.

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Page	Delta #	Description	List Price
		Water Leak Detector in a BAPI-Box Enclosure	
72-73	Call for #	Detector w/ one 0.5A SPST contacts, Probe Sensor built into the enclosure	$146.00
	Call for #	Detector w/ one 0.5A SPST contacts, Remote Spot Sensor with 1.5m FEP cable	$162.00
	Call for #	Detector w/ one 0.5A SPST contacts, Remote Spot Sensor with 3m FEP cable	$167.00
	Call for #	Detector w/ one 0.5A SPST contacts, Remote Spot Sensor with 7.6m FEP cable	$182.00
	Call for #	Detector w/ one 0.5A SPST contacts, Remote Rope Sensor with 3m Plenum Rated Cable	$300.00
	Call for #	Detector w/ one 0.5A SPST contacts, Remote Rope Sensor w/ 7.6m Plenum Rated Cable	$549.00
	Call for #	Detector w/ one 0.5A SPST contacts, Remote Rope Sensor w/ 15m Plenum Rated Cable	$965.00
	Call for #	Detector w/ one 0.5A SPST contacts, Remote Rope Sensor w/ 30m Plenum Rated Cable	$1,381.00
		SQ4, Four-Step Sequencer	
74	400803	SQ4, 4-Step Sequence Module	$105
	400804	SQ4-R, 4-Step Sequence Module (Rotational)	$105
	Call for #	SQ4-A, 4-Step Sequence Module (with Alarm)	$280
	Call for #	SQ4-RA, 4-Step Sequence Module (Rotational with Alarm)	$280
		DS6R, Dry Switch Monitor	
75	400810	DS6R, Dry Switch Monitor, 30K Output	$95
	Call for #	DS6R-10K, Dry Switch Monitor, 10K Output	$95
		PMPB5, Pulse Meter Pulse Buffer	
76	400811	PMPB5 Pulse Meter Pulse Buffer	$27.50
		TS1 & TS2, Transient Suppressor	
76	400812	TS1, Transient Suppressor (Voltage)	$7.50
	400813	TS2, Transient Suppressor (Current)	$7.50
		DS8, Discrete Summary Module	
77	400800	DS8, Discrete Summary Module, 8 Input	$95
		EA1, Two Position Actuator Interface	
78	400801	EA1 - 2 Position Actuator Interface	$105
		TR2 Snaptrack	
79	400824	TR2 Snaptrack, 32mm (1.25") length	$5
	401638	TR2 Snaptrack, 51mm (2") length	$6
	Call for #	TR2 Snaptrack, 102mm (4") length	$8
	400829	TR2 Snaptrack, 203mm (8") length	$10
	400828	TR2 Snaptrack, 305mm (12") length	$12
	Call for #	TR2 Snaptrack, 457mm (18") length	$14
	400830	TR2 Snaptrack, 1.22m (48") length	$40
		PAN16 - Panduit Wire Duct	
79	400831	PAN16 - Panduit 25 x 76 x 406mm (1 x 3 x 16") Wire Duct	$39
		EA2 - Modulating Actuator Interface	
80	400802	EA2 - Modulating Actuator Interface	$87

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Page	Delta #	Description	List Price
81	400808	**OAM - Output Adjust Module** OAM - Output Adjust Module	$23
82	400839	**RBP - Communications Repeater Backplane** RBP - Communications Repeater Backplane	$90
83	400841	**SRBP - Single Repeater Backplane** SRBP - Single Repeater Backplane	$50
84	400838	**FOX - RS-485 Fiber Optic Transceiver** FOX - RS-485 Fiber Optic Transceiver	$340
85	Call for #	**FOX Communication Kit** FOX Communication Kit (includes one FOX Module, a 350 mA voltage conv., an SRBP and a 4" piece of 2.75" snaptrack)	$460
86	400837	**RPTR - RS-485 Repeater** RPTR - RS-485 Repeater	$215
87	Call for #	**RPTR-KIT - RS-485 Repeater Communication Kit** RPTR-KIT - RS-485 Repeater Communication Kit (includes one RPTR Module, a 350 mA voltage conv., an SRBP and a 4" piece of 2.75" snaptrack)	$335
88	400809	**R49 - Relay Interface, 9 Output** R49 - Relay Interface, 9 Output	$125
89	400204	**BELCON - Mating Pair of Connectors** BELCON - Mating Pair of Connectors	$12
89	400203	**TUCOM - Terminal Unit Communications Block** TUCOM - Terminal Unit Communications Block	$22
90	400816 400817 400818	**BP2, BP4 or BP8 - Backplane** BP2 - 2-Position Interface Backplane BP4 - 4-Position Interface Backplane BP8 - 8-Position Interface Backplane	$30 $40 $65
91	Call for # Call for #	**BP4V - Vertical Backplane & BR - Bridge** BP4-V - Vertical Backplane BP-BR - Bridge (to connect Vertical Backplanes)	$40 $22

Gray shaded items follow the Buy and Resale Multiplier.

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Page	Delta #	Description	List Price
		Foamback Insulators, WxHxD	
92	400060	White Foamback Insulator, 66 x 112 x 6.4mm (2.6 x 4.4 x 0.25")	$1
	400390	White Foamback Insulator, 66 x 112 x 3.2mm (2.6 x 4.4 x 0.125")	$1
	400359	Grey Foamback Insulator, 71 x 117 x 6.4mm (2.8 x 4.6 x 0.25")	$1
		Replacement Humidity Filter	
92	Call for #	Flush Stainless Steel Replacement Humidity Filter for Duct and Outside Air Units	$5.75
	Call for #	Stainless Steel Replacement Humidity Filter for Duct and Outside Air Units	$30
		Replacement Key for BAPI-Guard and BAPI-Guard 2	
92	400617	Replacement Key for BAPI-Guard and BAPI-Guard 2	$2
		Screwdriver and Allen Wrench Combo	
93	400157	171mm (6.75") Screwdriver & Allen Wrench Combination	$20
	400159	152mm (6") Screwdriver & Allen Wrench Combination	$5
		Wireless Temperature Transmitters	
96	402130	Wireless Temperature Transmitter	$215
	401702	Wireless Temperature Transmitter with Occupant Override	$220
	401703	Wireless Temperature Transmitter with Setpoint Adjustment	$221
	401704	Wireless Temperature Transmitter with Setpoint & Override	$226
	400219	Lithium Battery 3.6V	$30
		Wireless Temperature & Humidity Transmitters	
97	402131	Wireless Temperature & Humidity Transmitter	$300
	401705	Wireless Temperature & Humidity Transmitter with Occupant Override	$305
	401706	Wireless Temperature & Humidity Transmitter with Setpoint Adjustment	$306
	401707	Wireless Temp. & Humidity Transmitter with Setpoint & Override	$311
	400219	Lithium Battery 3.6V	$30
		Wireless Duct Temperature Transmitters	
98	401720	Wireless Duct Temperature Transmitter, 102mm (4") Probe Length	$335
	401721	Wireless Duct Temperature Transmitter, 203mm (8") Probe Length	$335
	401722	Wireless Duct Temperature Transmitter, 306mm (12") Probe Length	$335
	401723	Wireless Duct Temperature Transmitter, 457mm (18") Probe Length	$335
	Call for #	Wireless Duct Temperature Transmitter, Custom Probe Length	
	400219	Lithium Battery 3.6V	$30
		Wireless Duct Temperature & Humidity Transmitters	
99	401725	Wireless Duct Temp. & Humidity Transmitter, 127mm (5") Probe Length	$406
	400219	Lithium Battery 3.6V	$30
		Wireless Immersion Temperature Transmitters	
100	401710	Wireless Immersion Temperature Transmitter, 51mm (2") Probe Length	$335
	401711	Wireless Immersion Temperature Transmitter, 102mm (4") Probe Length	$335
	401712	Wireless Immersion Temperature Transmitter, 203mm (8") Probe Length	$335
	400219	Lithium Battery 3.6V	$30

Gray shaded items follow the Buy and Resale Multiplier.

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Page	Delta #	Description	List Price
		Wireless Remote Probe Transmitter	
101	401730	Remote Probe, Plenum Rated Cable - 1.5 meter (5') Leads	$347
	401731	Remote Probe, Plenum Rated Cable - 3 meter (10') Leads	$349
	401732	Remote Probe, Plenum Rated Cable - 4.6 meter (15') Leads	$351
	401733	Remote Probe, Plenum Rated Cable - 6 meter (20') Leads	$353
	401734	Remote Probe, Plenum Rated Cable - 7.6 meter (25') Leads	$355
	401735	Remote Probe with FEP-Jacketed Cable - 1.5 meter (5') Leads	$350
	401736	Remote Probe with FEP-Jacketed Cable - 3 meter (10') Leads	$355
	401737	Remote Probe with FEP-Jacketed Cable - 4.6 meter (15') Leads	$360
	401738	Remote Probe with FEP-Jacketed Cable - 6 meter (20') Leads	$365
	401739	Remote Probe with FEP-Jacketed Cable - 7.6 meter (25') Leads	$370
	400219	Lithium Battery 3.6V	$30
		Wireless Outside Air Temperature Transmitter	
102	401715	Wireless Outside Air Temperature Transmitter	$335
	400219	Lithium Battery 3.6V	$30
		Wireless Outside Air Temperature & Humidity Transmitter	
103	401716	Wireless Outside Air Temperature & Humidity Transmitter,	$406
	400219	Lithium Battery 3.6V	$30
		Wireless Thermobuffer	
104	Call for #	Wireless Thermobuffer, 304 Stainless Steel Chamber, 51mm (2") Probe	$532
	Call for #	Wireless Thermobuffer, 304 Stainless Steel Chamber, 102mm (4") Probe	$532
	Call for #	Wireless Thermobuffer, Machined Aluminum Chamber, 51mm (2") Probe	$472
	Call for #	Wireless Thermobuffer, Machined Aluminum Chamber, 102mm (2") Probe	$472
	400219	Lithium Battery 3.6V	$30
		Wireless Universal Input Transmitter	
105	Call for #	0 to 5VDC Analog Input Transmitter	$315
	Call for #	0 to 10VDC Analog Input Transmitter	$315
	Call for #	4 to 20mA Analog Input Transmitter	$315
	Call for #	Digital Input Transmitter	$315
	400418	Thermistor Sensor Transmitter	$315
		BAPI-Slim Wireless Temperature Transmitter	
106	Call for #	BAPI-Slim, Internal Sensor - On board 10K-2 thermistor (no external sensor jack connector)	$274.00
	Call for #	BAPI-Slim, External Sensor - 44mm SS Remote Probe, PVC Ribbon Cable 5 feet, RJ11 Plug	$300.00
	Call for #	BAPI-Slim, External Sensor - 44mm SS Remote Probe, PVC Ribbon Cable 10 feet, RJ11 Plug	$303.00
	Call for #	BAPI-Slim, External Sensor - 44mm SS Remote Probe, FEP Round Cable 5 feet, RJ11 Plug	$302.00
	Call for #	BAPI-Slim, External Sensor - 44mm Remote Probe, FEP Round Cable 10 feet, RJ11 Plug	$307.00
	Call for #	BAPI-Slim, External Sensor - 25mm Hanging Thermobuffer, PVC Ribbon Cable 5 feet, RJ11 Plug	$387.00
	Call for #	BAPI-Slim, External Sensor - 25mm Hanging Thermobuffer, PVC Ribbon Cable 10 feet, RJ11 Plug	$390.00
	Call for #	BAPI-Slim, External Sensor - 25mm Hanging Thermobuffer, FEP Round Cable 5 feet, RJ11 Plug	$389.00
	Call for #	BAPI-Slim, External Sensor - 25mm Hanging Thermobuffer, FEP Round Cable 10 feet, RJ11 Plug	$394.00
		418 MHz Wireless Receiver	
108	400220	418 MHz Wireless Receiver	$300

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Page	Delta #	Description	List Price
		900 MHz Wireless Receiver	
109	402137	900 MHz Wireless Receiver with Attached Antenna	$550
	400230	900 MHz Wireless Receiver with Extendable Antenna	$550
		Wireless 418 MHz to 900 MHz Repeater	
110	402136	418 to 900 MHz Repeater	$735
	Call for #	418 to 900 MHz Repeater with Extendable Antenna Replacement	$735
		Resistance Output Module (ROM)	
111	401740	Resistance Output Module (ROM) with 10K-3 Thermistor Curve	$150
	Call for #	Pluggable Terminal Block Kit	$15
		Voltage Output Module (VOM) with °F Ranges	
112	401750	0 to 5V Output, 50 to 90°F Temp. Range	$150
	401751	0 to 5V Output, 55 to 85°F Temp. Range	$150
	401752	0 to 5V Output, 60 to 80°F Temp. Range	$150
	401753	0 to 5V Output, 65 to 80°F Temp. Range	$150
	401754	0 to 5V Output, 45 to 96°F Temp. Range	$150
112	401756	0 to 10V Output, 50 to 90°F Temp. Range	$150
	401757	0 to 10V Output, 55 to 85°F Temp. Range	$150
	401758	0 to 10V Output, 60 to 80°F Temp. Range	$150
	401759	0 to 10V Output, 65 to 80°F Temp. Range	$150
	401760	0 to 10V Output, 45 to 96°F Temp. Range	$150
		Voltage Output Module (VOM) with °C Ranges	
112	Call for #	0 to 5V Output, 10 to 32°C Temp. Range	$150
	Call for #	0 to 5V Output, 13 to 30°C Temp. Range	$150
	Call for #	0 to 5V Output, 15 to 27°C Temp. Range	$150
	Call for #	0 to 5V Output, 18 to 27°C Temp. Range	$150
	Call for #	0 to 5V Output, 7 to 35°C Temp. Range	$150
112	Call for #	0 to 10V Output, 10 to 32°C Temp. Range	$150
	Call for #	0 to 10V Output, 13 to 30°C Temp. Range	$150
	Call for #	0 to 10V Output, 15 to 27°C Temp. Range	$150
	Call for #	0 to 10V Output, 18 to 27°C Temp. Range	$150
	Call for #	0 to 10V Output, 7 to 35°C Temp. Range	$150
		Voltage Output Module (VOM) with %RH Ranges	
112	Call for #	0 to 5V Output, 0 to 100% RH	$150
	Call for #	0 to 10V Output, 0 to 100% RH	$150
	Call for #	Pluggable Terminal Block Kit	$15
		Current Output Module (COM) with °F Ranges	
113	400236	4 to 20 mA Output, 50 to 90ºF Temp. Range	$150
	401766	4 to 20 mA Output, 55 to 85ºF Temp. Range	$150
	401767	4 to 20 mA Output, 60 to 80ºF Temp. Range	$150
	401768	4 to 20 mA Output, 65 to 80ºF Temp. Range	$150
	401769	4 to 20 mA Output, 45 to 96ºF Temp. Range	$150

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Page	Delta #	Description	List Price
		Current Output Module (COM) with °C Ranges	
113	Call for #	4 to 20 mA Output, 10 to 32ºC Temp. Range	$150
	Call for #	4 to 20 mA Output, 13 to 30ºC Temp. Range	$150
	Call for #	4 to 20 mA Output, 15 to 27ºC Temp. Range	$150
	Call for #	4 to 20 mA Output, 18 to 27ºC Temp. Range	$150
	Call for #	4 to 20 mA Output, 7 to 35ºC Temp. Range	$150
		Current Output Module (COM) with %RH Ranges	
113	401770	4 to 20 mA Output, 0 to 100% RH	$150
	Call for #	Pluggable Terminal Block Kit for AOMs	$15
		Setpoint Output Module (SOM) with Voltage Output	
114	Call for #	0 to 5 Volts Output	$150
	Call for #	0 to 10 Volts Output	$150
		Setpoint Output Module (SOM) with Resistance Output	
114	Call for #	0 to 20k Ohms Output	$150
	Call for #	Pluggable Terminal Block Kit	$15
		Relay Output Module (RYOM & RYOL)	
115	401775	Relay Output Momentary, Normally Open Output	$150
	401776	Relay Output Momentary, Normally Closed Output	$150
	400221	Relay Output Latching, Normally Open Default	$150
	401778	Relay Output Latching, Normally Closed Default	$150
	Call for #	Pluggable Terminal Block Kit	$15
		Wireless Antennas	
116	Call for #	Dipole, 79 inch cord, 418 MHz	$40
	Call for #	Flexible Whip, 900MHz	$40
	Call for #	Dipole, 79 inch cord, 900 MHz	$40
		Wireless Field Verifiers	
117	Call for #	Loaner Combined Field Verifier Kit (includes 418 MHz & 900 MHz Verifiers)	$2608
		Wireless Asset Monitoring (WAM) Receiver	
118	Call for #	Wireless 418MHz WAM Receiver with 2 meter (79") Dipole Antenna	$715
	Call for #	Wireless 418MHz WAM Receiver with 4.5 meter (180") Dipole Antenna	$755
	Call for #	Wireless 418MHz WAM Receiver with 127mm (5") Whip Antenna	$735
		Web-Based Wireless Asset Monitoring (WAM)	
119	Call for #	10 Monitored Points on Custom WAM Website, 1 year service	$240
	Call for #	10 Monitored Points on Custom WAM Website, 2 year service	$480
	Call for #	10 Monitored Points on Custom WAM Website, 3 year service	$720

Page	Delta #	Description	List Price
		Wireless Food Temperature Probes	
120	Call for #	Bent Stainless Steel Probe, 86mm (3.4") Insertion with 54mm (2.11") Bend	$300
	Call for #	Bent Stainless Steel Probe 103.5mm (4.1") insertion with 36.5mm (1.4") Bend	$300
	Call for #	Straight Stainless Steel probe 133mm (5") insertion	$300
		Wireless Food Temperature Probes Accessories	
121	Call for #	Fixed Depth Clip for Stainless Steel Square Food Bins (Black Plastic) [Use with B4 or B3 probes for 152mm (6") deep bins or S5 probe for 178mm (7") deep bins.]	$15
	Call for #	Fixed Depth Clip for Plastic Square Food Bins (Amber Plastic) [Use with B4 or B3 probes for 152mm (6") deep bins.]	$15
	Call for #	Adjustable Depth Clip for Plastic Square Bins ("6" stamp on flat) [Use with B4 or B3 probes for 152mm (6") deep bins.]	$25
	Call for #	Adjustable Clip for SS Square Bins ("7" stamp on flat) [Use with B4 or B3 probes for 152mm (6") deep bins or S5 probe for 178mm (7") deep bins.]	$25
	Call for #	Clip Kit (includes 1 each of BA/FP-CLP4, BA/FP-CLP5, BA/FP-CLP6, BA/FP-CLP7)	$75
	Call for #	Replacement Battery, 3.6V, 1/2-AA, High Temperature	$15
	Call for #	Food Probe O-Ring (5 per package)	$15
	Call for #	Food Probe Label Sheet, 70 Round Labels (Numbered 1 to 40 and 30 Blanks)	$20
	Call for #	Food Probe Label Sheet, 70 Blank Labels	$20
	Call for #	Stainless Food Bin Lid, 152 x 178mm (6 x 7"), 1/6 Square w/ Ladle and Food Probe Cutout	$44
	Call for #	Stainless Food Bin Lid, 305 x 178mm (12 x 7"), 1/3 Square w/ Ladle and Food Probe Cutout	$53
	Call for #	Stainless Food Bin Lid, 324 x 264mm (12.75 x 10.4"), 1/2 Square w/ Ladle & Food Probe Cutout	$60
	Call for #	Stainless Food Bin Hinged Lid, 229mm (9") 7-QT Round w/ Ladle and Food Probe Cutout	$54
	Call for #	Desiccant Pack (5 per package)	$10
	Call for #	Food Probe Plastic Cap Removal Tool	$15
		Blü-Test Bluetooth Probe	
122	401843	Blü-Test Bluetooth Temp and Humidity Measurement Probe	$500
	401844	Blü-Test Bluetooth Temp/Humidity Probe and Carrying Case (room for up to 4 probes)	$535
	Call for #	Blü-Test probe recertification with NIST certificate and battery	$165
	Call for #	Probe Clip Hanger (one included with each Blü-Test Probe)	$10

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