

MODEL CODE

IAQ3 [] [] [] [] - [] [] [] [] - [] [] [] []

Primary Transducer Pressure Range

- 1 = 0.1" WC (973 FPM)
- 2 = 0.4" WC (1945 FPM)

*See note 2

Primary Transducer Probe Type

- 0 = No Accutrol Probes
- 1 = Standard Accutrol Probe

Primary Transducer Probe Quantity

- 0 = 0 Probes
- 1 = 1 Probe
- 2 = 2 Probes
- 3 = 3 Probes
- 4 = 4 Probes
- 5 = 5 Probes
- 6 = 6 Probes
- 7 = 7 Probes
- 8 = 8 Probes

*For probe quantities greater than 8 see note 1

Cable Length To I/O Module

- 1 = 25' Cable
- 2 = 50' Cable

Options

W = Wireless Bluetooth

Communications

- 0 = No Comm
- 1 = MS/TP BACNET

Secondary Transducer Probe Quantity

- 0 = 0 Probes
- 1 = 1 Probe
- 2 = 2 Probes
- 3 = 3 Probes
- 4 = 4 Probes
- 5 = 5 Probes
- 6 = 6 Probes
- 7 = 7 Probes
- 8 = 8 Probes

*For probe quantities greater than 8 see note 1

Secondary Transducer Probe Type

- 0 = No Accutrol Probes
- 1 = Standard Accutrol Probe

Secondary Transducer Pressure Range

- 0 = No Secondary Transducer
- 1 = 0.1" WC (973 FPM)
- 2 = 0.4" WC (1945 FPM)

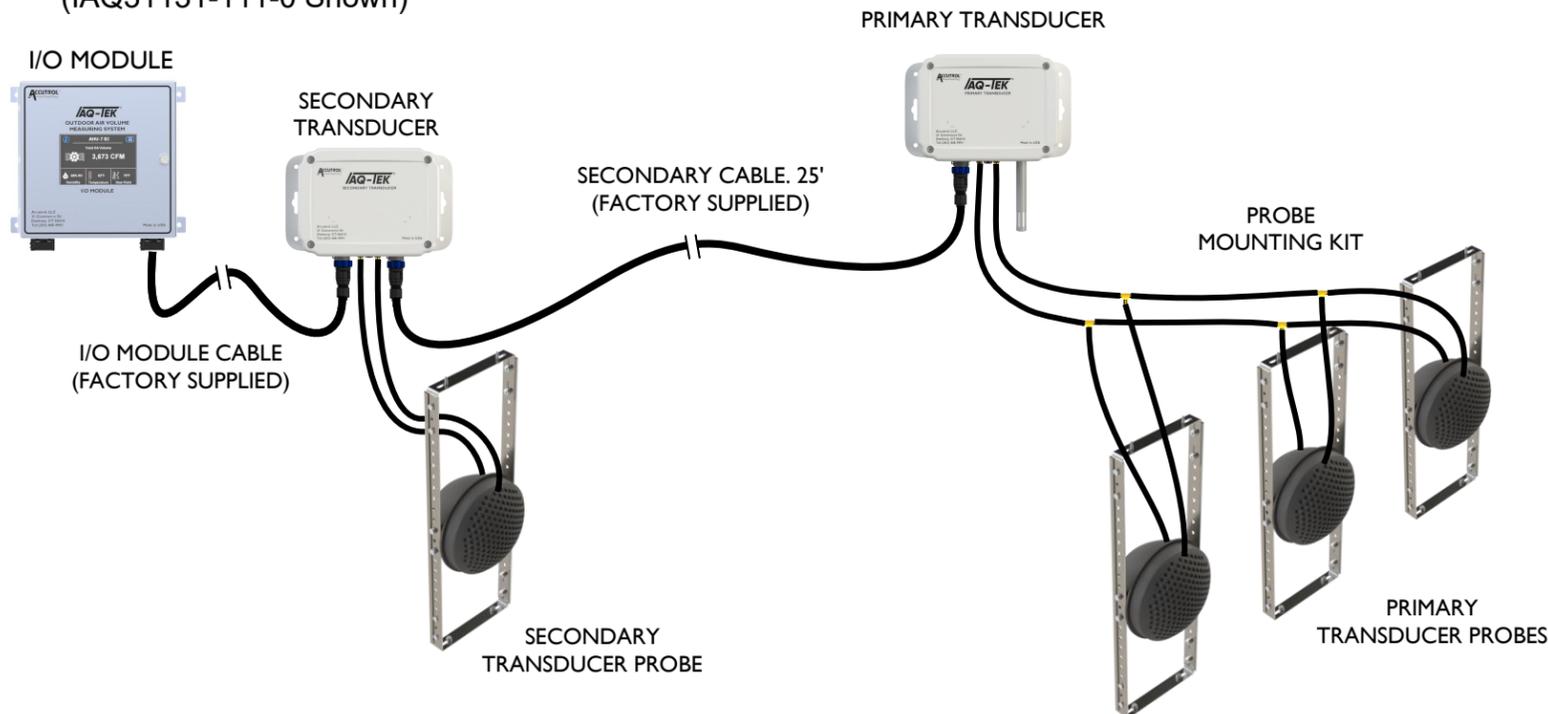
*See note 2

Notes:

1. For additional probe kits, consult the factory.
2. All Velocities for transducer range shown at standard conditions for standard Accutrol probe.

SYSTEM DIAGRAM

(IAQ31131-111-0 Shown)



SPECIFICATIONS

| SYSTEM | |
|---|---|
| System Input Power | 24VAC +/-20%, 22VA, 50-60Hz (Class 2 Power Source) or 24 VDC +/- 20%, 10W |
| Vel. Range (Standard Accutrol Probe) | 0-973 fpm (0.1"wc FS) 0-1945 fpm (0.4"wc FS) |
| Accuracy | +/- 3% of Reading above 75 fpm |
| Compliance | RoHS |
| TRANSDUCER | |
| Pressure Measurement | |
| Full Scale Range | 0.1"wc (25Pa) 0.4"wc (100Pa) |
| Resolution | 0.0000335"wc (0.00083Pa) 0.00001338"wc (0.00333Pa) |
| Zero Offset (Max) | +/- 0.00001"wc (0.00025Pa) |
| Span Accuracy | +/- 1.5% of reading |
| Static Error Band | +/- 3% of reading Note: Includes linearity, hysteresis, & repeatability |
| Long Term Stability | +/- 0.00008"wc (+/- 0.02Pa) per year max |
| Temperature Measurement | |
| Range | -35 to 158 deg F (-37 to 70 deg C) |
| Accuracy | +/- 1.0 deg F (+/- 0.56 deg C) |
| Response Time | 10 sec |
| Long Term Stability | < 0.054 deg F/year (< 0.03 deg C/year) |
| Relative Humidity Measurement | |
| Range | 0 to 100% |
| Accuracy | ±2% (10...90% RH non-condensing) |
| Response Time | 10 sec |
| Long Term Stability | < 0.25% RH/year |
| Barometric Pressure Measurement | |
| Range | 7.7 to 32.2 "hg |
| Accuracy | +/- .007 "hg (for reference only) |
| Environmental | |
| Operating Temp Range | -40 to 120 deg F (-40 to 49 deg C) |
| Storage Temp Range | -40 to 150 deg F (-40 to 66 deg C) |
| Humidity | 0 to 95% non-condensing |
| Enclosure | |
| IP65; NEMA 4X | |
| Cable Assembly | |
| Plenum-rated communications cable assembly for harsh environments | |
| Operating Temp Range | -40 to 176 deg F (-40 to 80 deg C) |
| IP68 connection to transducer | |
| Materials of Construction | |
| Enclosure | Polycarbonate Plastic, Silicone Gasket, Stainless Steel Hardware |
| Temp/RH Probe | AISI 316SS with sintered polyethylene 100-micron filter |
| Cable Assembly | PL-PVC plenum rated cable with Polyamide UL94V-0 connector |
| I/O MODULE (INTEGRAL DISPLAY) | |
| System Input Power | 24VAC +/-20%, 22VA, 50-60Hz (Class 2 Power Source) or 24 VDC +/- 20%, 10W |
| Configuration Port | USB 2.0, Isolated, Type C Conn., connect PC with Insight |
| Relay Outputs | 2 Independent SPST Relay Contacts (Software Configurable) Contact Rating: 2A @ 30VDC, 0.5A @ 60VDC, 0.3A @ 125VAC |
| Analog Outputs | 2 Analog Outputs (Software Configurable) 0-5v, 1-5v, 0-10v, 2-10v, 0-20mA or 4-20mA capable of driving 1 K-ohm load |
| Transducer Connection | 5-pos. pluggable screw terminal (use factory cable only) |
| Touchscreen Display | Type: 3.5" LCD-TFT Resistive touch display with LED backlight Color: RGB 65K colors Active Area: 2.91" x 1.91" (73.44mm x 48.96mm) Resolution: 480 x 320 pixel |
| BACnet MS/TP (Optional) | EIA 485 2-wire, BACnet MS/TP, Galvanically Isolated 1/8 unit load transceiver impedance Full Master Node State Machine Data Rates 9600, 19200, 38400, 76800 and 115200 MAC address is software configurable |
| BACnet IP (Optional) | Future |
| Status Indicators | LED Indicators for Power, Pressure Sensor, Display, BACnet, & Bluetooth |
| I/O Terminal Blocks | Removable Vertical Plugs, Wire Size Range 12-30 AWG |
| Bluetooth (Optional) | Bluetooth Version 4.2 or later, connect to PC with IAQ-TEK Insight |
| Environmental | |
| Operating Temp Range | -4 to 120 deg F (-20 to 49 deg C) |
| Storage Temp Range | -22 to 176 deg F (-30 to 80 deg C) |
| Humidity | 10 to 90% non-condensing |
| PROBE KIT | |
| Probe | Kydex® T, Fire Rating: UL 94 V-0 |
| Pneumatic Tubing | Polyethylene Plastic, Plenum Rated, UL 94 V-2 |
| Tubing Connections | 1/4" Barb Fittings, Brass |
| Mounting Brackets | 304 Stainless Steel |
| Hardware | 18-8 Stainless Steel |



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IAQ-TEK®

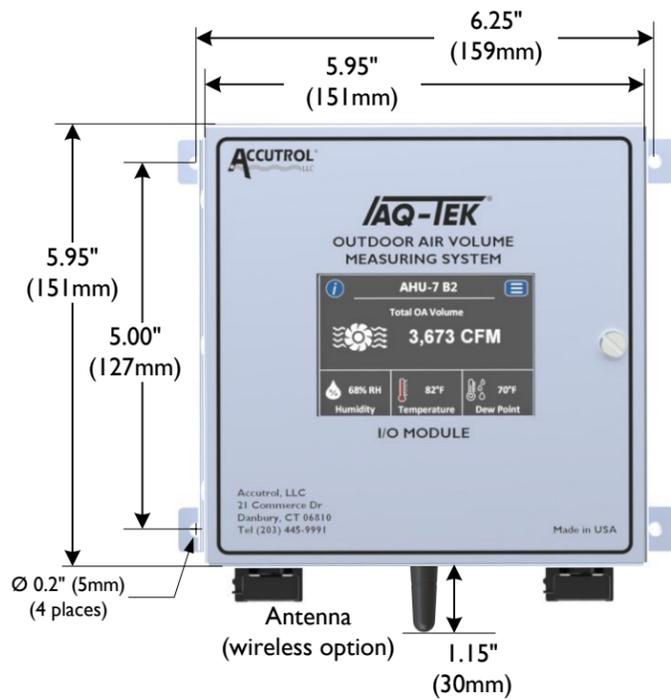
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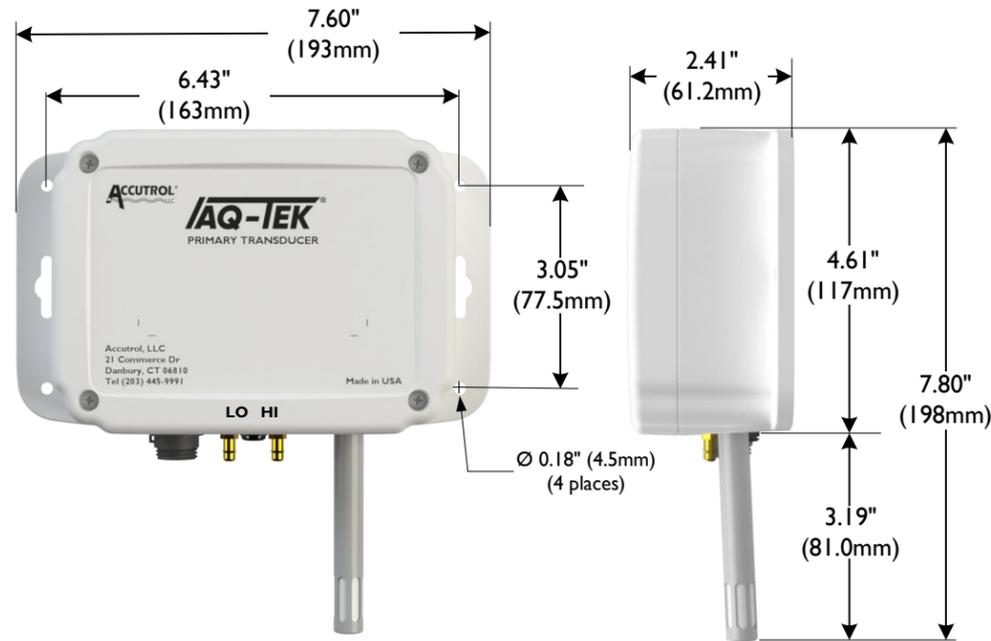
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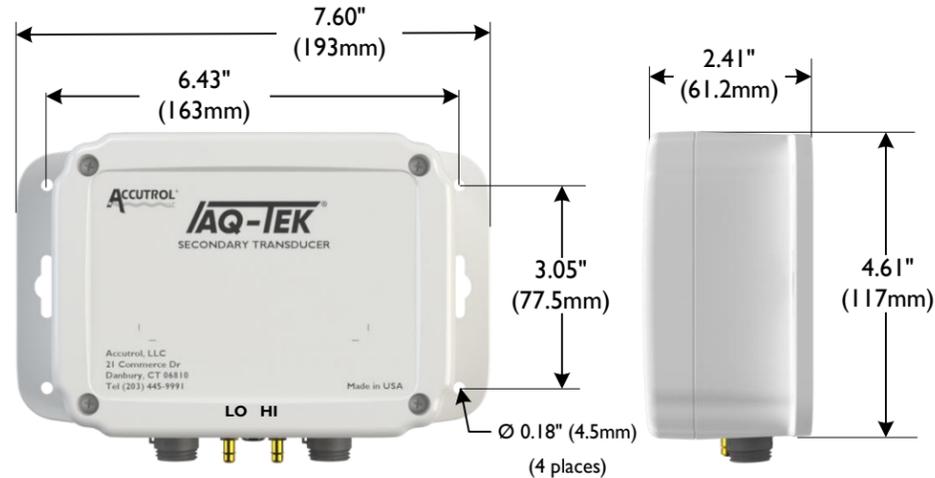
DIMENSIONS I/O Module



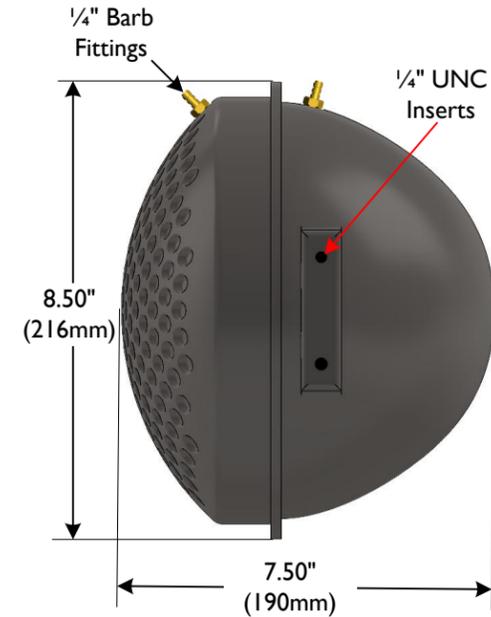
Primary Transducer



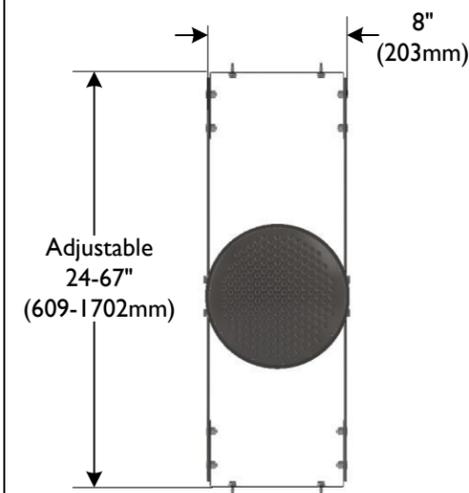
Secondary Transducer



Standard Accutrol Probe



Probe Kit



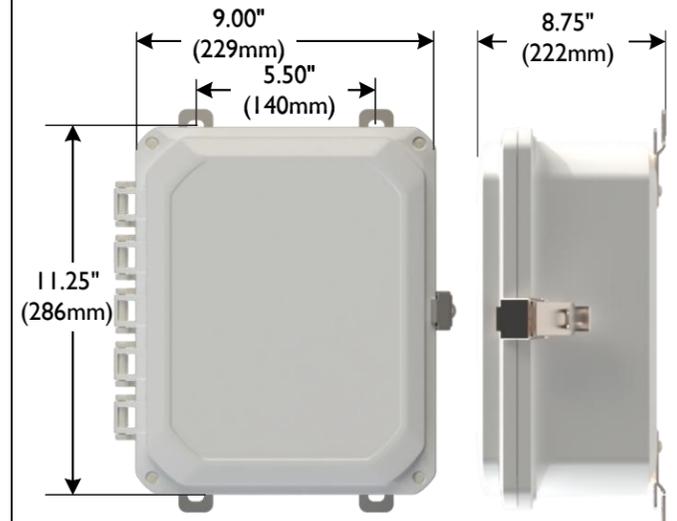
I/O Module Enclosure for Wet Locations

For wet applications the I/O Module must be installed inside of a watertight enclosure. Accutrol has selected a suitably sized enclosure for the I/O Module that can be purchased from Accutrol or directly from the manufacturer using the information provided below.

| Item | Accutrol PN | Polycase PN |
|------------------------|-------------|-------------------------|
| Watertight Enclosure | 14-0069 | ZH-100804-40 |
| Cable Glands | By Others | CG-1x or CG-3x (x=size) |
| Vent Plug ¹ | By Others | UA-005 or UA-006 |

Notes:

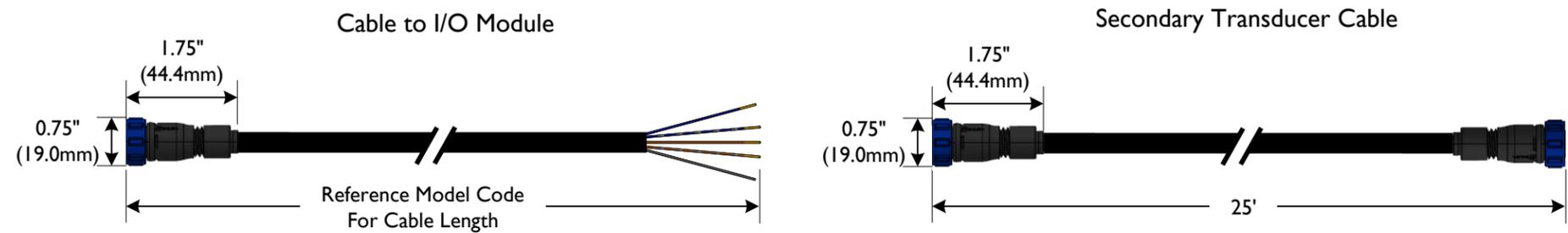
1. The vent plug is required to prevent pressure buildup without compromising the liquid-tight seal.
2. It's the responsibility of the "installing contractor" to drill properly sized holes in the enclosure, provide appropriately sized cable glands and vent plug to ensure enclosure is liquid tight.



Materials

All Materials are RoHS Compliant
 I/O Module Enclosure: 16 Gauge Aluminum Alloy 5052-H32
 Transducer Enclosure: Polycarbonate. UL94-5VA.
 Cable Assembly: PL-PVC Plenum-rated shielded cable with Polyamide UL94 V0 Connector
 Probe: Kydex® T, Brass Fittings, UL94 V-0
 NEMA 4X Enclosure (Optional): Polycarbonate. UL94-5VA.

Cables



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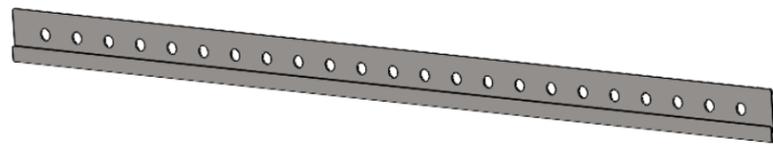
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Probe Installation

Kit Contents: (Quantity Per Probe)

- 1) Mounting Brackets
(6 Pcs)



- 2) End Bracket
(2 Pcs)



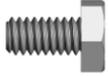
- 3) Diagonal Brace
(2 Pcs)



- 4) Sheet Metal Screw
(4 Pcs)



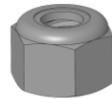
- 5) Bolts
(28 Pcs)



- 6) Probe
(1 Pc)



- 7) Lock Nut
(24 Pcs)



- 8) Lock Washer
(8 Pcs)



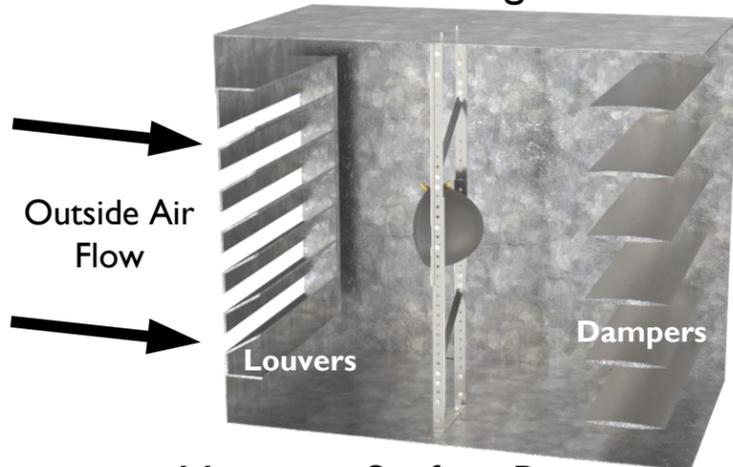
- 9) Pneumatic Tubing
(10 Feet)



- 10) "T" Fitting (2 Pcs)
(2+ Probes Only)

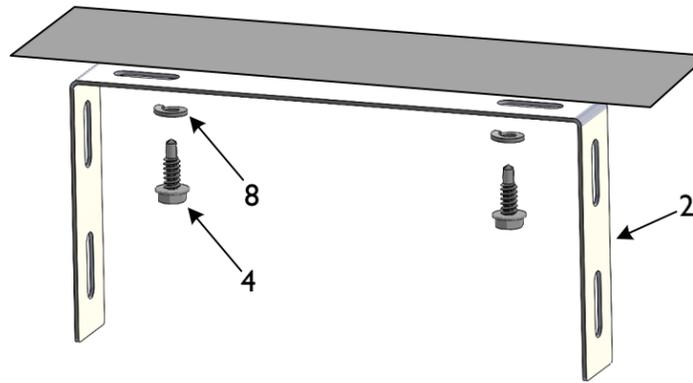


Mounting Surface A

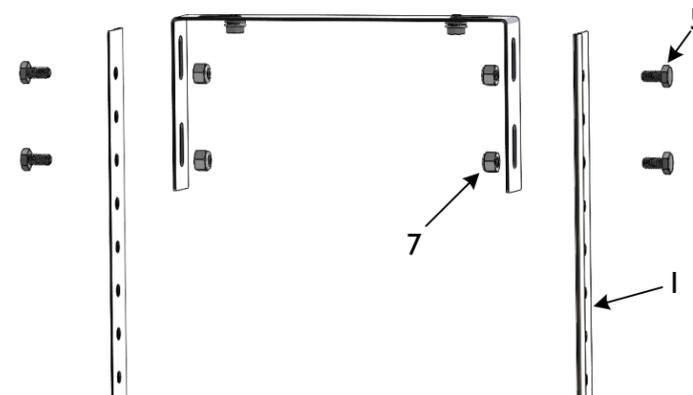


Mounting Surface B

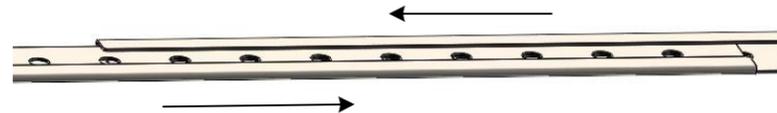
1. Attach End bracket to "Mounting Surface A" using (2) lock washers and (2) sheet metal screws provided. Ensure the back of the Probe is at least six inches from the fully open dampers.



2. Attach the (2) mounting brackets to the upper end bracket using (4) 1/4-20x 1/2 Bolts and (4) lock nuts provided.

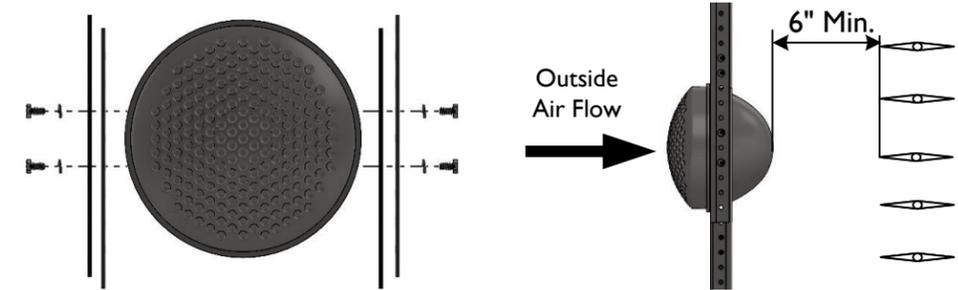


3. If mounting brackets do not reach the lower mounting surface, slide the (2) mounting brackets onto the upper mounting brackets as shown and extend to the lower mounting surface.



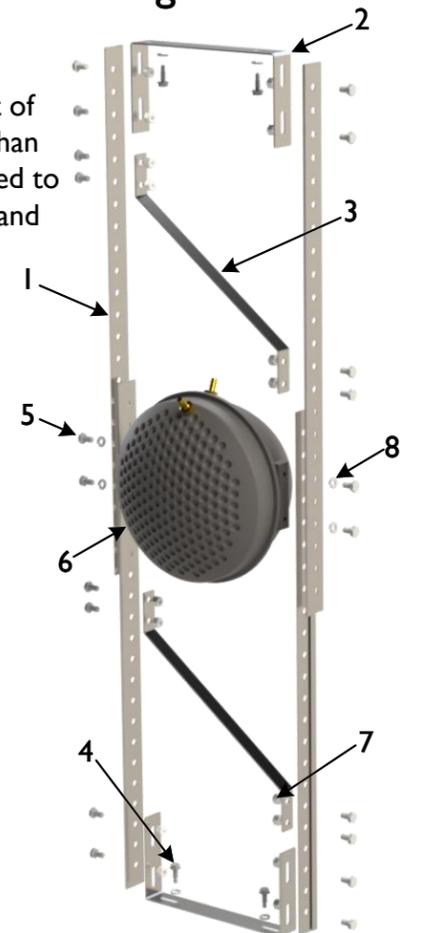
4. Repeat steps 1 and 2 to attach remaining "End Bracket" to the "Mounting Surface B" and (2) "Mounting Brackets".

5. Locate the Probe in center of the damper and secure to the mounting brackets using (4) 1/4-20x 1/2 Bolts and (4) lock washers provided. Ensure the side of the probe with the dimples is pointing towards the oncoming outdoor air.



Mounting Surface A

6. For installations where the Height of the mounting bracket is greater than 40" the "Diagonal Brace" is needed to stiffen fixture. Mount using Bolts and lock nuts provided.



Mounting Surface B

TRANSDUCER AND I/O MODULE INSTALLATION

Transducer Enclosure

The transducer is designed to be mounted in the air intake plenum, the transducer must be mounted higher than the probe(s) and the tubing to prevent condensation from blocking the pressure signal. No loops are permitted when routing tubing from the transducer to the probe.

1. Choose a location in intake plenum where transducer enclosure can be installed above probes and tubing.
2. When installed all connections are to point towards the ground.
3. Secure transducer to mounting surface using either (4) #8 or #10 screws (Provided by others).



Connections pointing towards ground.

I/O Module

The I/O Module enclosure includes 4 flanges with 0.2" dia holes provided for securing the I/O Module to a wall or panel plate. The I/O Module is intended to be installed in an area accessible and visible to access the touchscreen. This enclosure should be installed in a location protected from the environment unless waterproof enclosure is purchased.

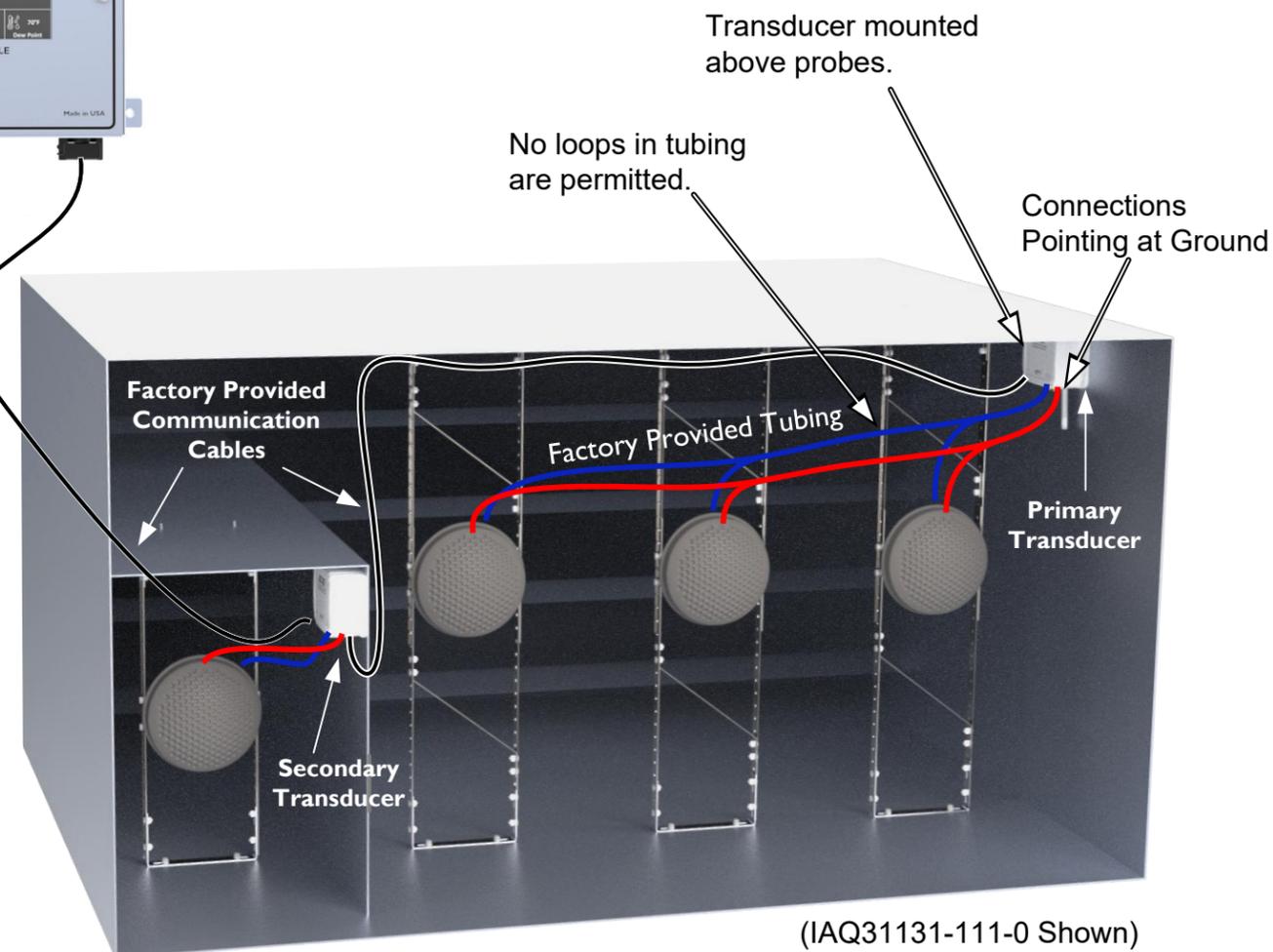
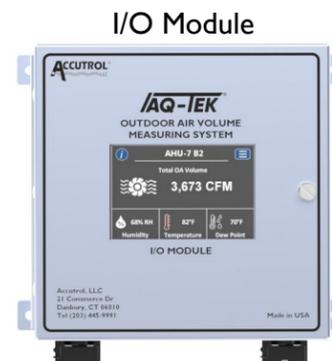
Secure I/O Module to mounting surface using either (4) #8 or #10 screws (Provided by others).

For sheetrock installation, use the appropriate wall anchors (Provided by others).



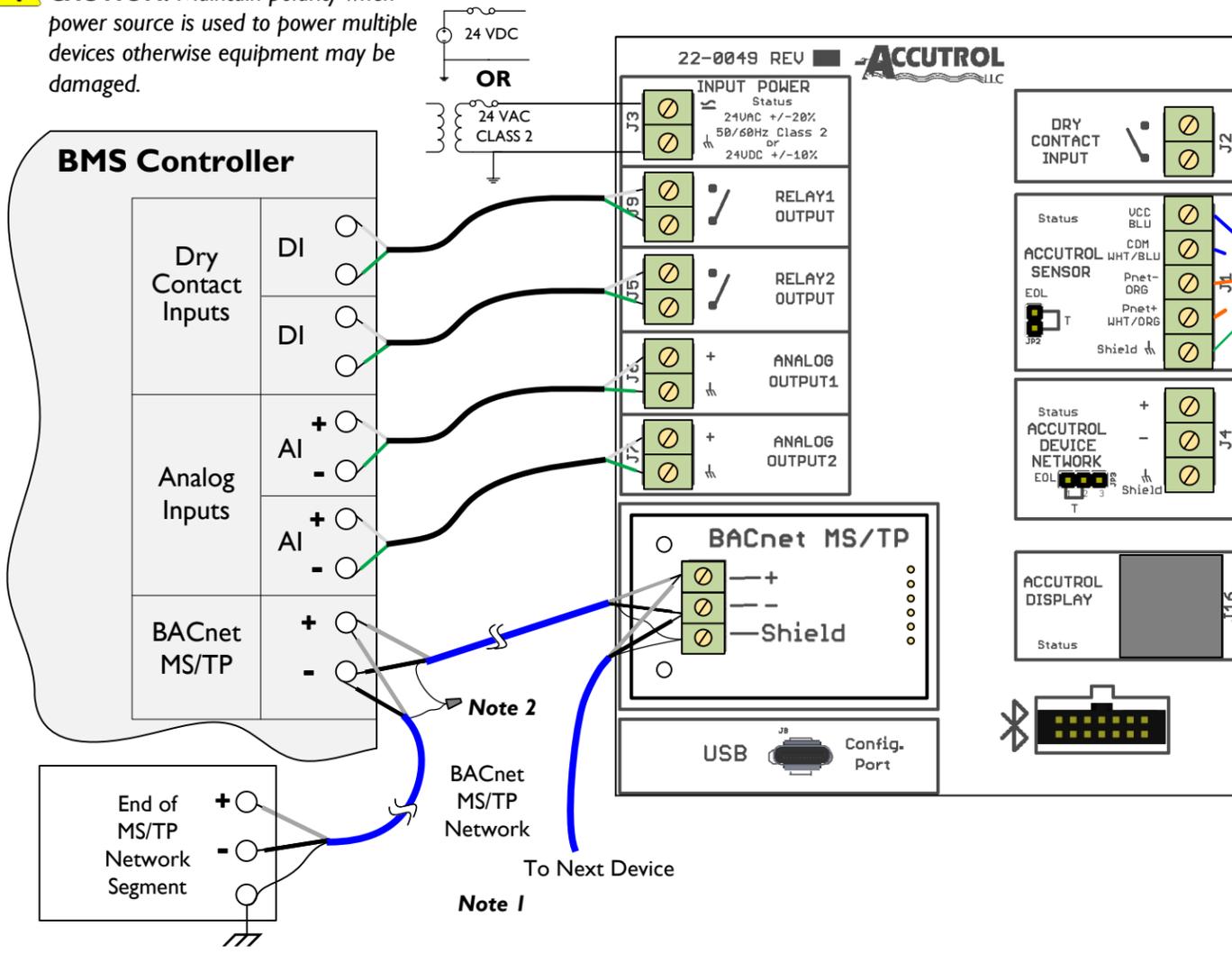
Warning: Do not install in direct sunlight.

Multiple Probe Installation



WIRING

CAUTION: Maintain polarity when power source is used to power multiple devices otherwise equipment may be damaged.



| I/O Module Connection | Recommended Cable Type |
|-----------------------------------|---|
| BACnet MS/TP Network | Twisted-shielded-pair, low-capacitance communications cable |
| Relay Outputs & Dry Contact Input | Twisted-pair cable, 18-22 AWG |
| Analog Outputs | Twisted-shielded-pair cable, 18-22 AWG |

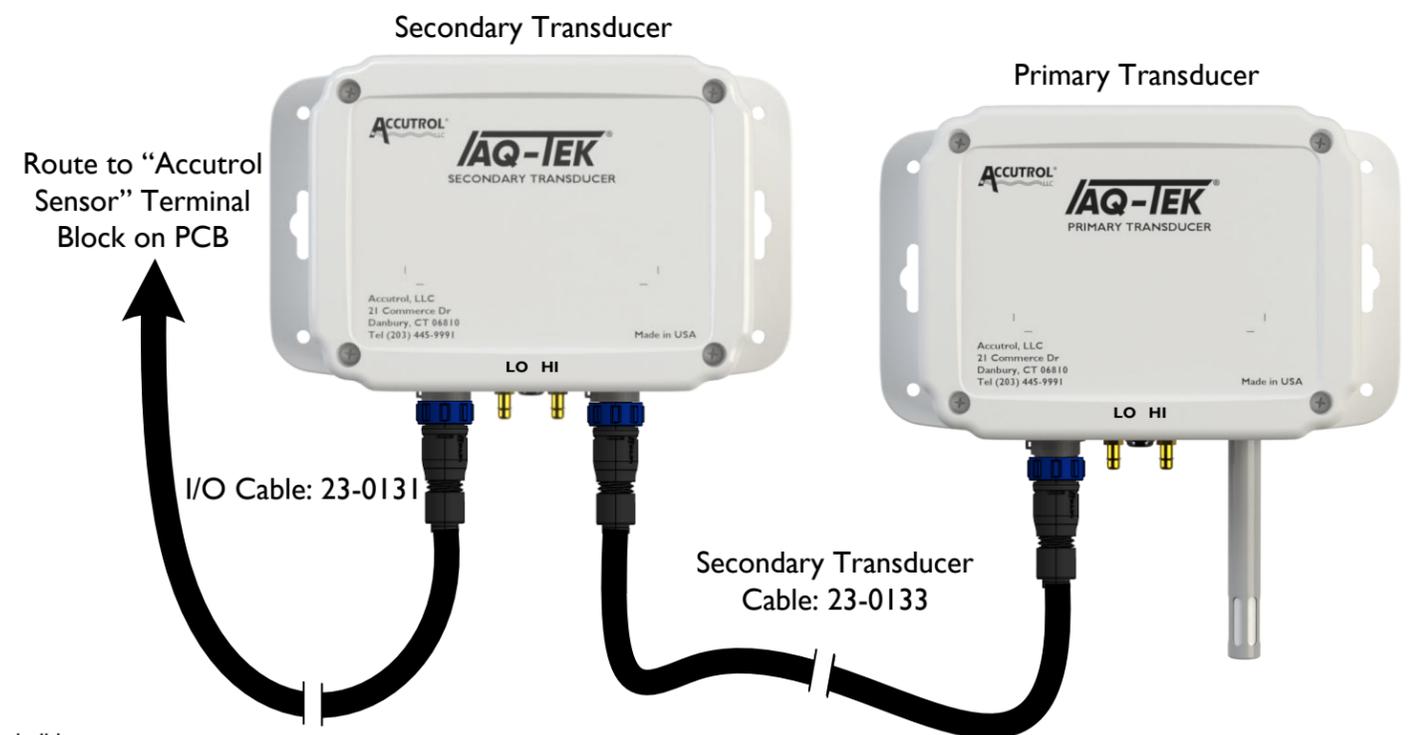
- NOTES:**
- BACnet network bias and end-of-line terminations are NOT provided by the IAQ-TEK BACnet MS/TP module. BACnet MS/TP bias and termination shall be provided by others.
 - Tie communications cable shields together and ground at single point only.

Primary Transducer Only Installation



Note: On installation with only a Primary Transducer the 23-0131 Cable that routes to the I/O Module attaches to the Primary Enclosure (IAQP_).

Primary and Secondary Transducer Installation



Note: On installation with a Primary and Secondary Transducer the 23-0131 cable that routes to the I/O Module attaches to the Secondary transducer (IAQS_). Cable 23-0133 connects the primary to the secondary transducer.



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