

ACCUVALVE® MODEL AVR4000 SUBMITTAL

MODEL CODE

⚠ **WARNING:** NOT FOR USE WITH PERCHLORIC ACID

AVR4

VALVE HOUSING MATERIAL

2 = 304SS, 20 GAUGE
3 = 316SS, 20 GAUGE
4 = ALUMINUM, 16 GAUGE

SIZE

06 = 06" DIAMETER
08 = 08" DIAMETER
10 = 10" DIAMETER
12 = 12" DIAMETER
14 = 14" DIAMETER
18 = 12"x18" RECTANGULAR
24 = 12"x24" RECTANGULAR

-

OPTIONS

BLANK = NO OPTIONS
F = FLANGES (REF NOTES 2 & 3)
I = INSULATION (REF NOTE 4)
S = TIGHT SHUT-OFF (REF NOTE 1)
W = WIRELESS BLUETOOTH

ACTUATOR

17 = FAIL LAST POSITION (FLP), 11 SEC

MODEL CODE NOTES:
1) Blade seals are standard on all 6" valves, therefore -S option is not available for valve size -06.
2) Reference the Flange Detail - Vanstone submittal drawing for round flanges
3) Reference the Flange Detail – Rectangular submittal drawing for rectangular flanges
4) Reference the Insulation detail submittal drawing

MATERIALS

| Materials Exposed to the Airstream | | | |
|------------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Model Material Designator | (2) 304SS | (3) 316SS | (4) Aluminum |
| Housing | 304 Stainless Steel | 316 Stainless Steel | Al. Alloy 5052-H32 |
| Compression Section | 304 Stainless Steel | 316 Stainless Steel | Al. Alloy 5052-H32 |
| Static Regain Section | 304 Stainless Steel | 316 Stainless Steel | Al. Alloy 5052-H32 |
| End Plate | 304 Stainless Steel | 316 Stainless Steel | Galvanized Steel |
| Blades | 304 Stainless Steel | 316 Stainless Steel | Galvanized Steel |
| Shafts | 316 Stainless Steel | 316 Stainless Steel | 316 Stainless Steel |
| Shaft Bearings | Teflon | Teflon | Teflon |
| Vortex Sensors | Polycarbonate Plastic, UL94-V0 | Polycarbonate Plastic, UL94-V0 | Polycarbonate Plastic, UL94-V0 |
| Sensor Tubing | Polyurethane, Ether-based | Polyurethane, Ether-based | Polyurethane, Ether-based |
| Compression Seals | Viton Rubber | Viton Rubber | EPDM Rubber |
| Machine Screws | 304 Stainless Steel | 316 Stainless Steel | 304 Stainless Steel |
| Rivets | 304SS | 316SS | 304SS |
| Blade Seals (optional) | Viton Rubber | Viton Rubber | EPDM Rubber |

OPERATING RANGE

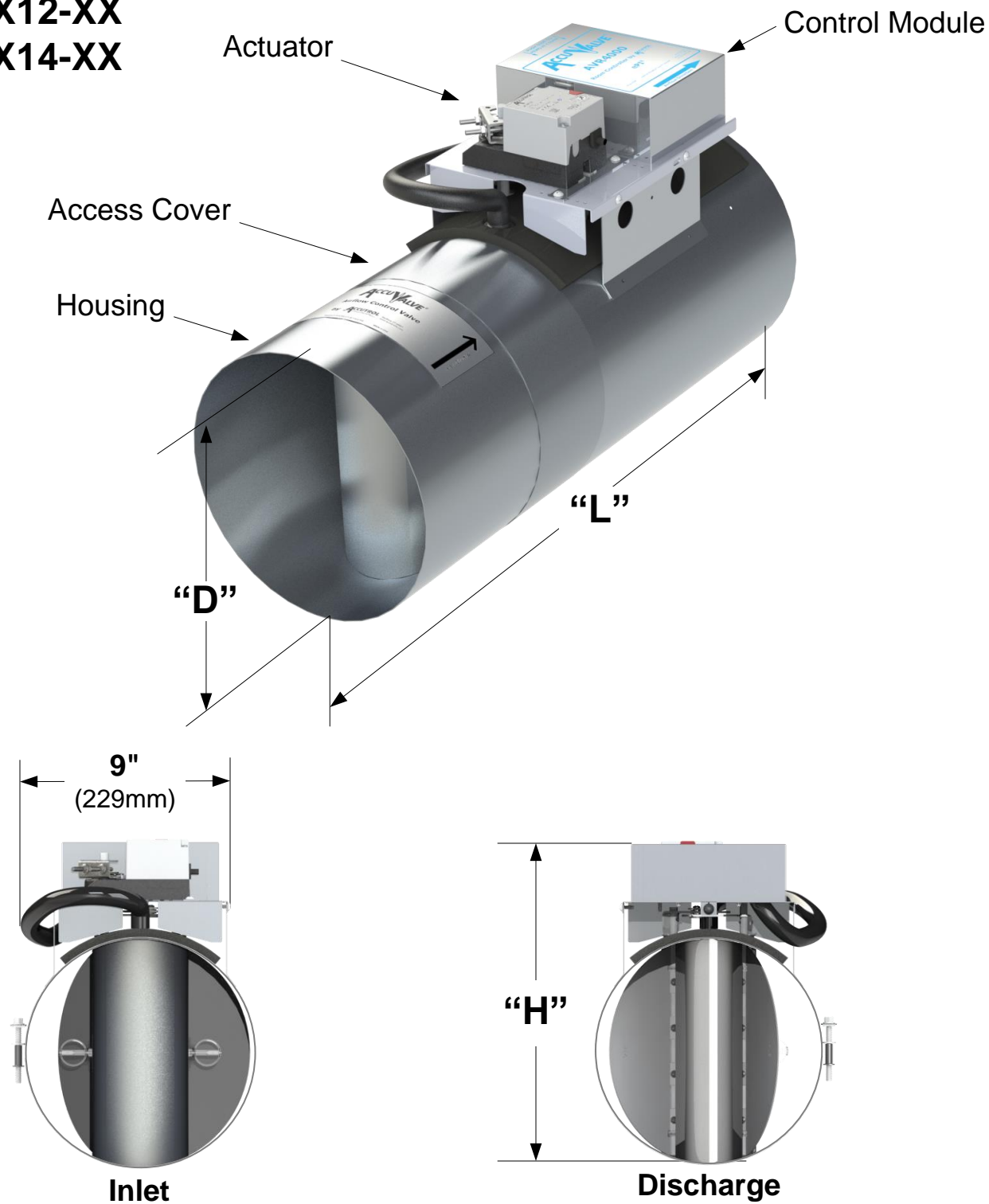
| Valve Model | Min. Flow Measured | | | Full Scale Range | | |
|-------------|--------------------|-----|-----|------------------|------|------|
| | CFM | L/S | CMH | CFM | L/S | CMH |
| AVR4X06-XX | 30 | 14 | 51 | 315 | 149 | 535 |
| AVR4X08-XX | 80 | 38 | 136 | 800 | 378 | 1359 |
| AVR4X10-XX | 120 | 57 | 204 | 1300 | 613 | 2209 |
| AVR4X12-XX | 180 | 85 | 306 | 1790 | 845 | 3041 |
| AVR4X14-XX | 250 | 118 | 425 | 2750 | 1298 | 4672 |
| AVR4X18-XX | 260 | 123 | 442 | 3200 | 1510 | 5437 |
| AVR4X24-XX | 350 | 165 | 595 | 4000 | 1888 | 6796 |

SIZE AND WEIGHT

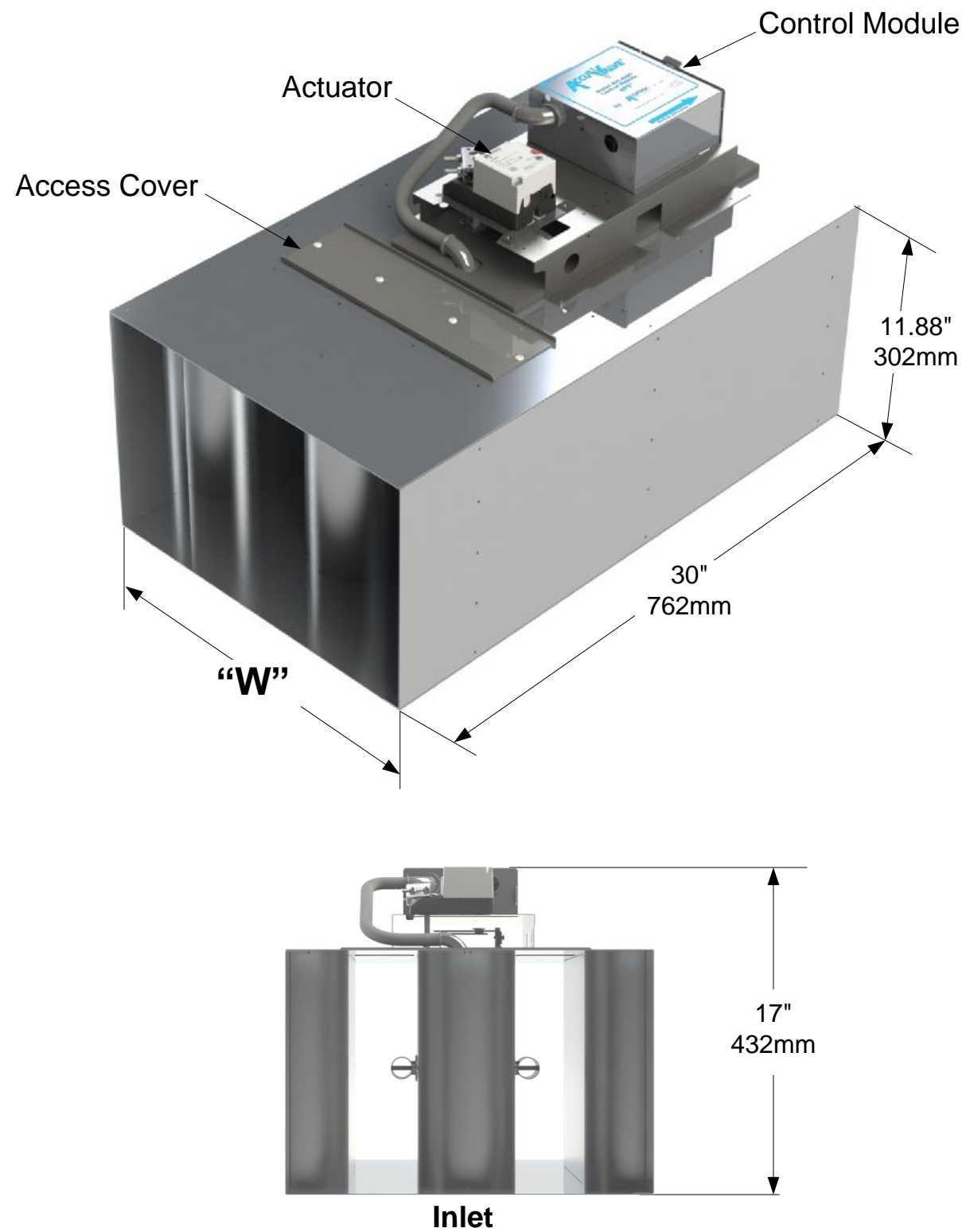
| Valve Model | Valve Dimensions (Reference Sheet 2) | | | | | | Weight | | | | | |
|-------------|--------------------------------------|-----|--------------|-----|-----|-----|-----------------|------|----------|------|------------|-----|
| | "D" or "W" | | "L" (Note 1) | | "H" | | Stainless Steel | | Aluminum | | Flange Add | |
| | in. | mm | in. | mm | in. | mm | Lbs. | kg | Lbs. | kg | Lbs. | kg |
| AVR4X06-XX | 5.88 | 149 | 22 | 559 | 10 | 254 | 13 | 5.9 | 9 | 4.1 | 2.0 | 0.9 |
| AVR4X08-XX | 7.88 | 200 | 24 | 610 | 12 | 305 | 16 | 7.3 | 12 | 5.4 | 2.6 | 1.2 |
| AVR4X10-XX | 9.88 | 250 | 24 | 610 | 14 | 356 | 20 | 9.1 | 14 | 6.4 | 3.2 | 1.5 |
| AVR4X12-XX | 11.88 | 300 | 27 | 686 | 16 | 406 | 26 | 11.8 | 16 | 7.3 | 4.5 | 2.0 |
| AVR4X14-XX | 13.88 | 350 | 30 | 762 | 18 | 457 | 30 | 13.6 | 20 | 9.1 | 5.2 | 2.4 |
| AVR4X18-XX | 17.88 | 454 | 30 | 762 | 17 | 432 | 43 | 19.5 | 26 | 11.8 | 5.0 | 2.3 |
| AVR4X24-XX | 23.88 | 607 | 30 | 762 | 17 | 432 | 49 | 22.2 | 29 | 13.2 | 5.5 | 2.5 |

SIZE AND WEIGHT NOTES:
1) Round valves with optional flanges "L" is ½" (13mm) less than standard valves

ROUND VALVE
AVR4X06-XX
AVR4X08-XX
AVR4X10-XX
AVR4X12-XX
AVR4X14-XX



RECTANGULAR VALVE
AVR4X18-XX
AVR4X24-XX



| | | | | |
|------------|-----------------------|--------|---------|--|
| DWG. NO: | AVR4000 SUBMITTAL DWG | | | |
| REVISION: | A | ECN: | 2645 | |
| REV. DATE: | 8-12-20 | SHEET: | 2 OF: 5 | |

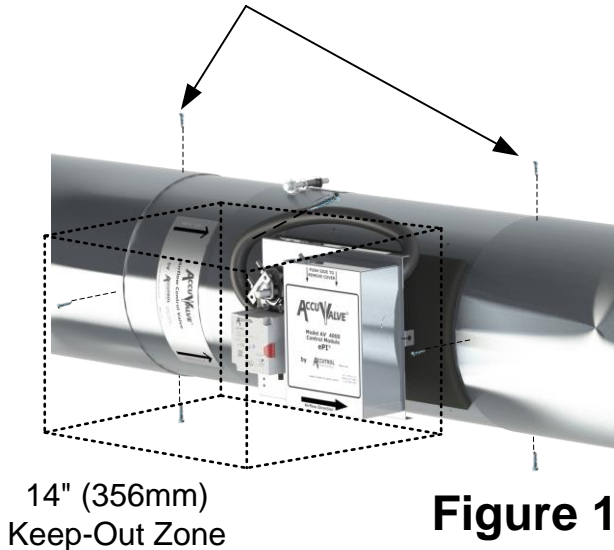
ROUND VALVE: INSTALLATION INSTRUCTIONS

! WARNING: Wear eye protection, protective gloves and clothing suitable for working with sheet metal which may have sharp edges.

1. Read all instructions prior to beginning installation.
NOTE: For detailed installation instructions, refer to the AccuValve® Installation & Operation Manual.
2. Verify the tag number located on the valve label matches the HVAC schedule, when applicable.
3. Locate the duct section which the valve is servicing and select a suitable mounting location for the valve.
NOTES: The AccuValve® does not require straight inlet duct runs to operate properly, however it's always best to locate the valve away from transitions and bends to minimize impact on system static pressure. Be sure to select a location that will provide a minimum clearance of 14 inches (356 mm) unobstructed access to the control module, actuator and valve access cover. The AccuValve® is not position sensitive. It can be installed in any plane or rotational axis without having impact on the performance.
4. Provide an opening in the selected duct section sized appropriately for the valve being installed.
NOTE: A slip-fit valve will require an opening approximately 2" (50.8 mm) smaller than the valve length, whereas a flanged valve will require an opening the same length as the valve. Reference Sheet 1 and 2 for valve dimensions.
5. Install duct hangers within 12 inches (305 mm) from each end of the valve. Reference Sheet 1 for valve weights.
! WARNING: Use duct hangers and hardware designed to support the total load of valve and associated duct sections. Failure to do so may result in serious personal injury or death.
6. Install the valve into the duct in accordance with the airflow direction label located on the valve. Position the valve for easy access to the control module side then secure to duct per the appropriate figure below.
NOTE: Screws, nuts, fasteners, duct sealant, hangers, and gaskets are not provided by Accutrol LLC.

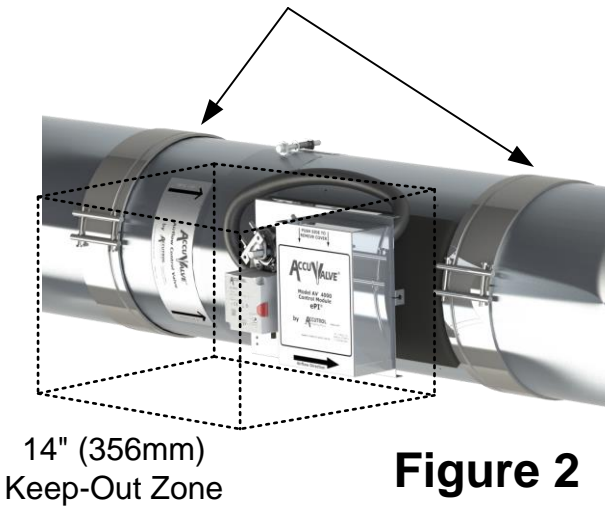
Standard Slip-fit Valve Secured Using Tek Screws

Seal joints using duct sealant and secure valve to duct at both ends using Tek screws.



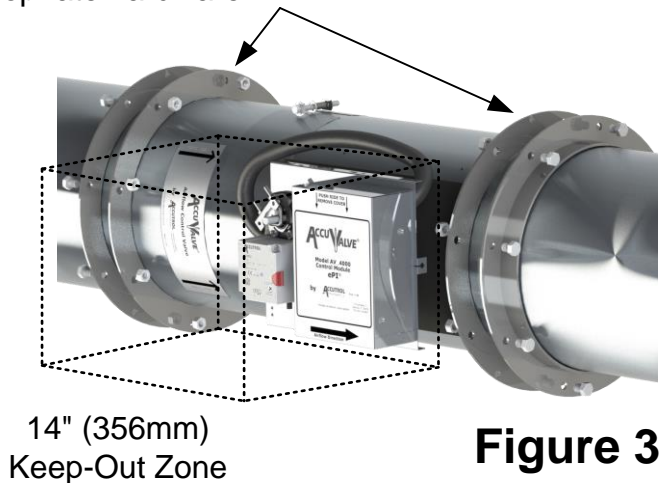
Standard Slip-fit Valve Secured Using Draw Bands
(Draw Bands are Sold Separately)

After sealing joints with appropriate type of tape, secure both ends using draw band clamps.



Flanged Valve “Option F” Secured Using Companion Flanges
(Companion Flanges are Sold Separately)

Install companion flanges to duct ends and secure to duct. Apply duct sealant and/or gasket to flange face. Install valve and rotate VanStone flanges to align with bolt holes on the duct flanges. Secure flanges using appropriate hardware.



Reference Accutrol Draw Band Clamp Submittal Drawing for Details

Reference Accutrol VanStone Flange Submittal Drawing for Details

| | | | |
|------------|-----------------------|--------|---------|
| DWG. NO: | AVR4000 SUBMITTAL DWG | | |
| REVISION: | A | ECN: | 2645 |
| REV. DATE: | 8-12-20 | SHEET: | 3 OF: 5 |

RECTANGULAR VALVE: INSTALLATION INSTRUCTIONS

1. Read all instructions completely before installing the valve.

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WARNING: Wear eye protection, protective gloves and clothing suitable for working with sheet metal which may have sharp edges.
2. Verify the tag number located on the valve label matches the HVAC schedule when applicable.
3. Select optimum mounting location for the valve.

NOTE: The AccuValve® does not require straight inlet duct runs to operate properly, however it's always best to locate any duct device away from transitions and bends to minimize impact on system static pressure.
4. Allow a minimum clearance of 14 inches (356 mm) unobstructed access to the controller, actuator and valve access cover.

NOTE: Rectangular valves are normally installed with the “access side” facing downwards for easy access. However, the AccuValve® is not position sensitive. It can be installed in any plane or rotational axis without having impact on the performance.
5. To support the weight of the valve, install duct hangers within 12 inches (305 mm) of valve connections. Reference Sheet 1 for valve weights.

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WARNING: Use duct hangers and hardware designed to support the total load of the valve and associated duct sections. Failure to do so may result in serious personal injury or death.
6. After the duct section is properly supported to carry the weight of the valve, install valve into the duct in accordance with the Airflow Direction Label located on the valve. Position valve so the controller, actuator and access cover are easily accessible.
7. Reference the appropriate diagram to the right for installation details.

NOTE: Screws, nuts, fasteners, duct sealant, hangers, companion flanges and gaskets are not provided by Accutrol LLC.

RECTANGULAR VALVE: INSTALLATION DIAGRAMS

Figure 1
Standard Slip-fit
Valve Using Tek
Screws

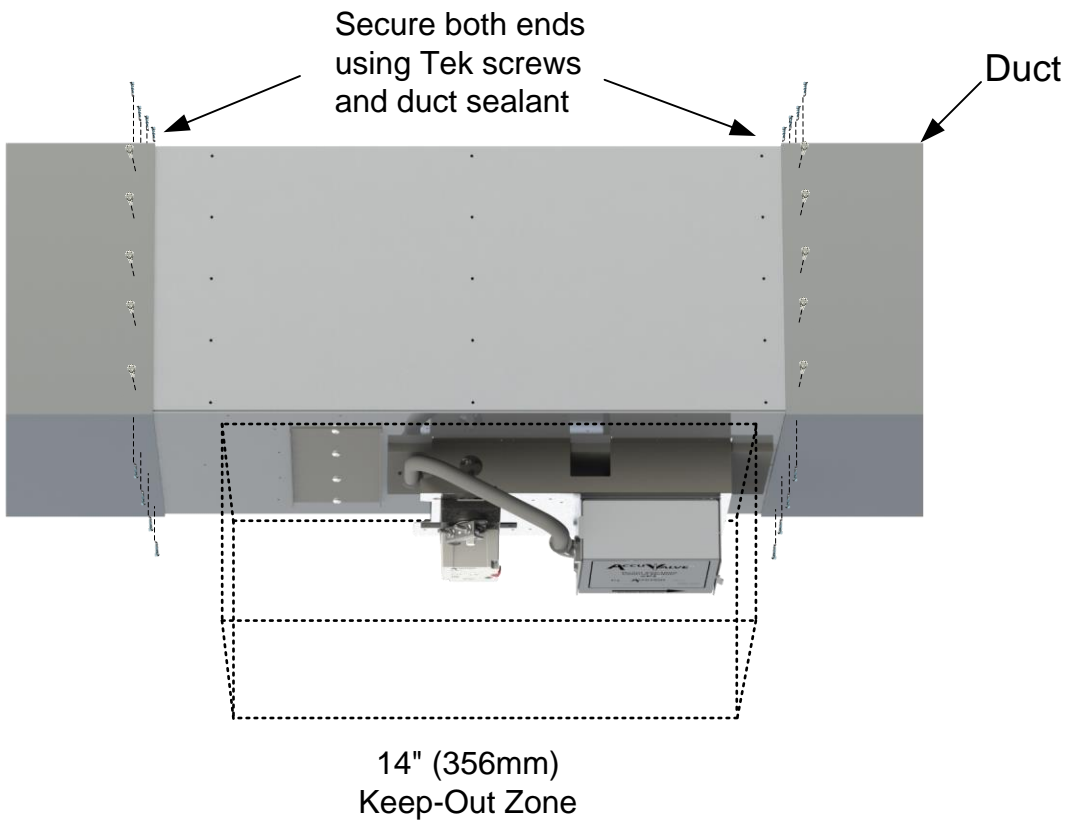
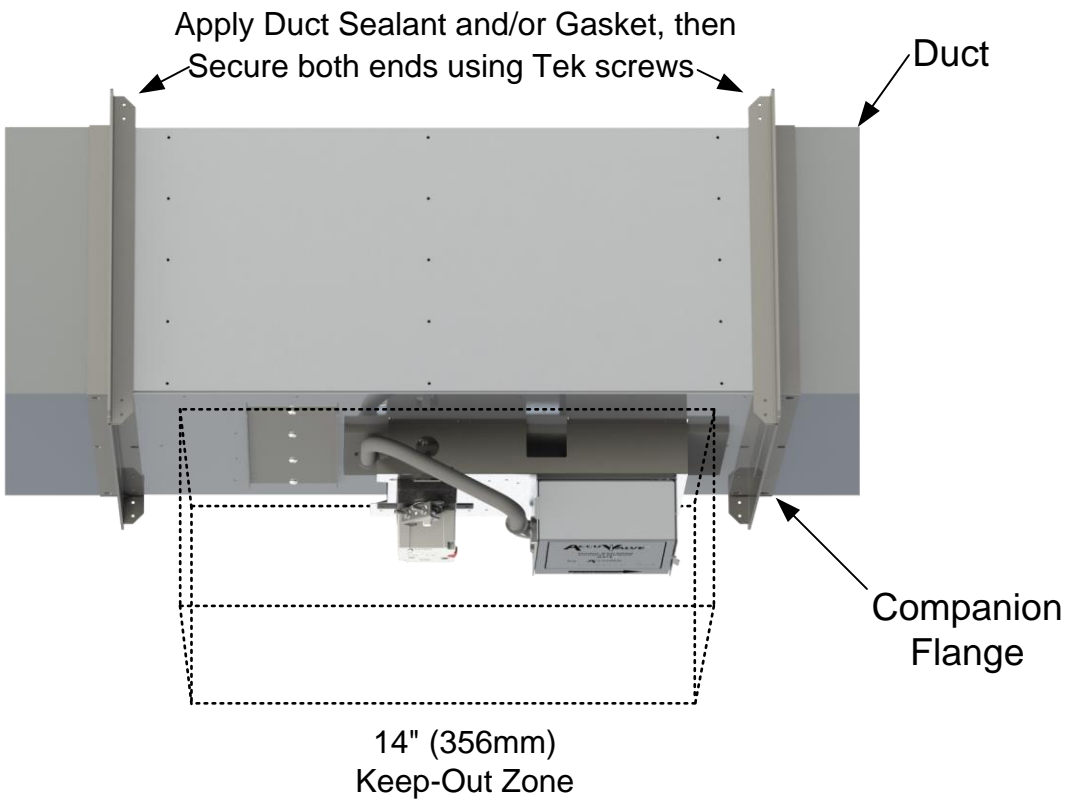


Figure 2
Flanged Valve
“Option F” Using
Companion Flanges
(Provided by Others)

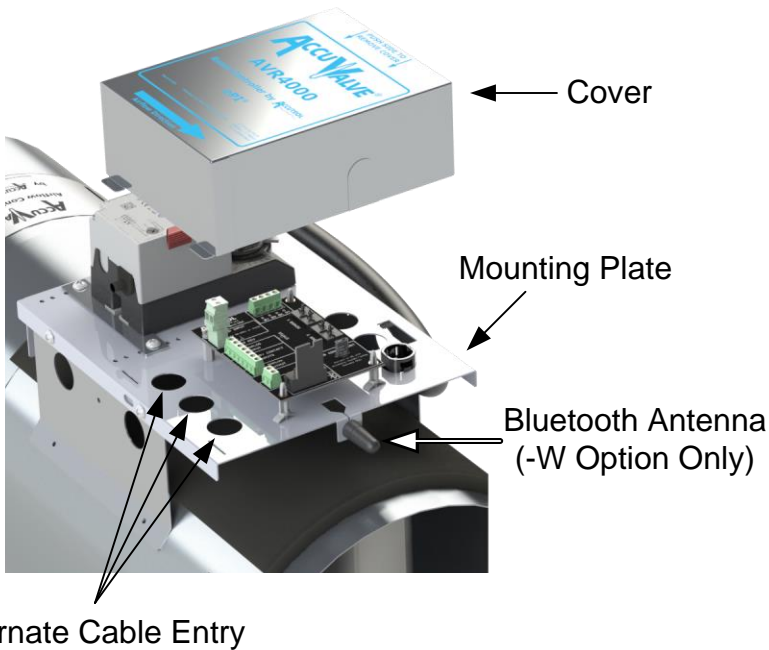


Reference Rectangular
AccuValve Flange Detail
Submittal DWG

CONTROL MODULE

Note: Do not use controller enclosure as junction box for other equipment

Note: If a conduit connection is required, the strain relief fitting and bushing can be removed and replaced with a .875" (22mm) conduit fitting. (Provided by Others)



Wiring Instructions

- 1. Remove cover and route cables through strain-relief fitting on mounting plate.
- 2. Connect wires to the appropriate terminals and secure terminal screws.
- 3. Insert the ratcheting strain relief over cable(s) and push down until snug.
- 4. Reinstall cover.

ELECTRICAL SPECIFICATIONS

POWER: 24VAC +/-20%, 50/60Hz, Class 2 Power Source, 18VA or 24VDC +/-10% 10W

INPUTS:

- AI-1: Supply Air Discharge Temperature Signal
Signal Type: Resistance: 10K-ohm Type II or III NTC Thermistor
- AI-2: Return Exhaust Airflow Volume Signal
Signal Type: Voltage: 0-10v Range, Input Impedance = 100K ohms
- AI-3: Other Exhaust Airflow Volume Signal
Signal Type: Voltage: 0-10v Range, Input Impedance = 100K ohms
- DI-1 & DI-2: Dedicated Digital Inputs Used as Setpoint Mode Selectors
Signal Type: Dry Contact Only

OUTPUTS:

- AO-1: Reheat Valve Control Signal
Signal Type: Voltage; 0-10V, 2-10V, 0-5V or 1-5V, Current; 0-20mA, 4-20mA
- AO-2: General Exhaust Control Signal
Signal Type: Voltage; 0-10V, 2-10V, 0-5V or 1-5V, Current; 0-20mA, 4-20mA

NETWORK: BACnet MS/TP
EIA 485 2-wire, Receiver Impedance: ¼ unit load
Network Bias & Termination are NOT provided internally by the AVR4000

CONFIG.: USB Type C Port, Wireless Bluetooth (Optional)
Connect to Computer running AccuValve Insight Software

DEVICE: RJ-45 Port, Connect to Accutrol Device using Factory-Supplied Cable Only

TERMNALS: Power & BACnet: 2-Position Removable Vertical Plugs, Wire Size Range 12-30 AWG
Inputs/Outputs: Dual 7-Position Terminal Block, Wire Size Range 16-30 AWG
Recommended Wire Size Range: 16-22 AWG

WIRING DIAGRAM

NOTE: Connections will vary based on application. For detailed wiring instructions, use this drawing in conjunction with the job-specific wiring diagrams.

