ACCUVALVE® MODEL AVR4000 SUBMITTAL

MODEL CODE

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

AVR4 ☐☐☐ - ☐☐ - ☐☐☐☐

VALVE MATERIAL
(Housing / End Plate & Blades)
2 = 304SS / 304SS
3 = 316SS / 316SS
4 = ALUMINUM / 304SS

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
07 = FAIL LAST POSITION (FLP), 21 SEC
17 = FAIL LAST POSITION (FLP), 10 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			
Valve Material Code	**(2) 304SS**	**(3) 316SS**	**(4) Aluminum**
Housing	304L SS (20 GA.)	316L SS (20 GA.)	Alum 5052-H32 (18 GA.)
Compression Section	304L SS (20 GA.)	316L SS (20 GA.)	Alum 5052-H32 (16 GA.)
Static Regain Section	304L SS (20 GA.)	316L SS (20 GA.)	Alum 5052-H32 (18 GA.)
End Plate	304L SS (16 GA.)	316L SS (16 GA.)	304L SS (16 GA.)
Blades	304L SS (16 GA.)	316L SS (16 GA.)	304L SS (16 GA.)
Shafts	316L SS	316L SS	316L SS
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	EPDM Rubber	EPDM Rubber	EPDM Rubber
Machine Screws	304 SS	316 SS	304 SS
Rivets	304 SS	316 SS	304 SS
Blade Seals (optional)	EPDM Rubber	EPDM 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

Temperature Range				
Valve Material	Airstream		Ambient	
	Min. Temp.	Max.Temp.	Min. Temp.	Max.Temp.
2, 3, 4	-20° F (-29° C)	165° F (74° C)	-20° F (-29° C)	125° F (52° C)

SIZE AND WEIGHT

Valve Model	Valve Dimensions (Reference Sheet 2)						Weight					
	"D" or "W"		"L" (Note 1)		"H"		Stainless Stee		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

ACCUTROL LLC
21 Commerce Dr
Danbury, CT 06810
Tel: 203-445-9991
accutrolllc.com

Accutrol Representative:

SUBMITTAL DRAWING

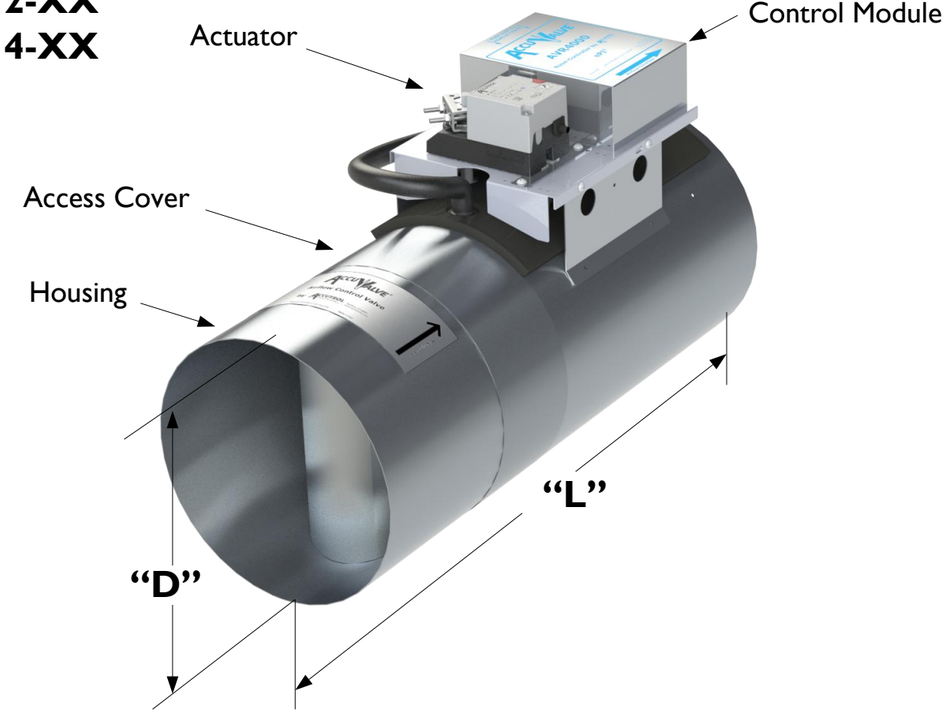
AccuValve® Model AVR4000

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.
THIS DOCUMENT OR THE CONTENTS THEREOF SHALL NOT BE MODIFIED WITHOUT PRIOR WRITTEN PERMISSION BY ACCUTROL LLC.

DWG. NO:	AVR4000 SUBMITTAL DWG		
REVISION:	H	ECN:	3219
REV. DATE:	10-07-26	SHEET: 1	OF: 5

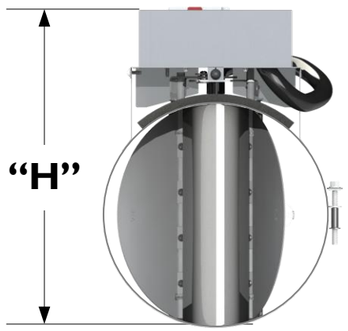
ROUND VALVE

AVR4X06-XX
AVR4X08-XX
AVR4X10-XX
AVR4X12-XX
AVR4X14-XX





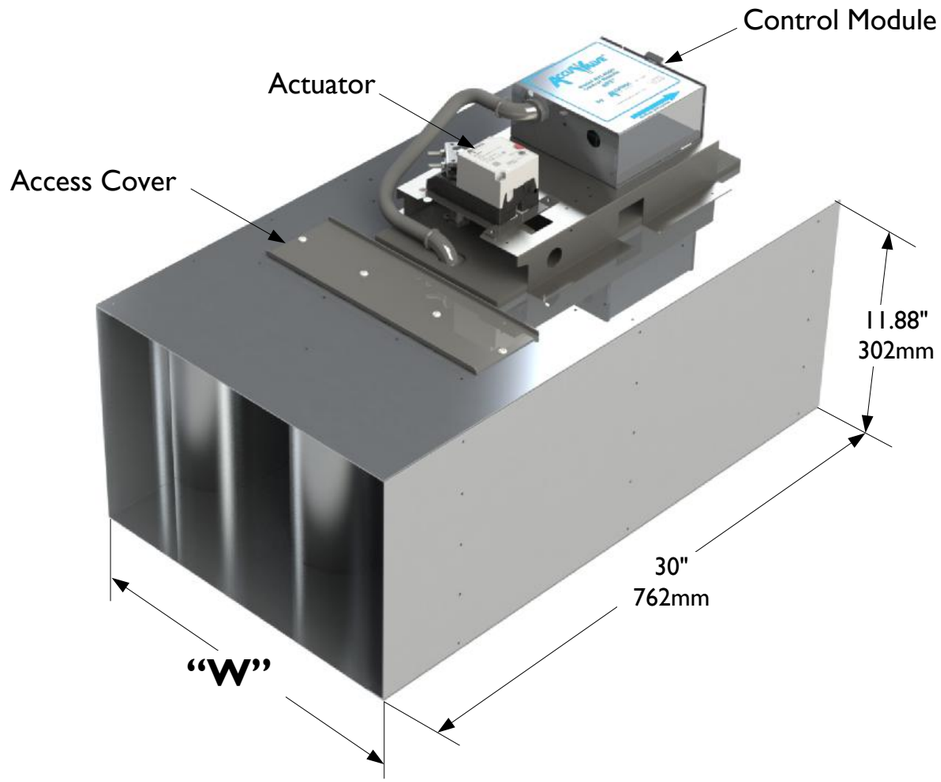
Inlet

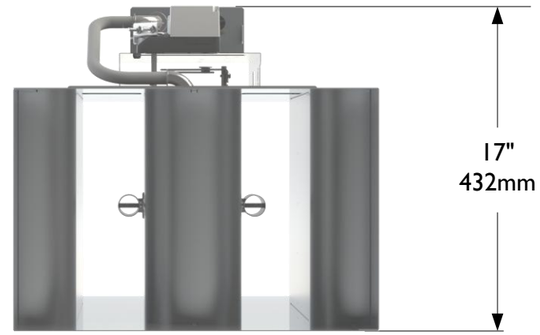


Discharge

RECTANGULAR VALVE

AVR4X18-XX
AVR4X24-XX





Inlet

ACCUTROL LLC
21 Commerce Dr
Danbury, CT 06810
Tel: 203-445-9991
accutrolllc.com

Accutrol Representative:

SUBMITTAL DRAWING

AccuValve® Model AVR4000

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.

THIS DOCUMENT OR THE CONTENTS THEREOF SHALL NOT BE MODIFIED WITHOUT PRIOR WRITTEN PERMISSION BY ACCUTROL LLC.

DWG. NO:	AVR4000 SUBMITTAL DWG		
REVISION:	H	ECN:	3219
REV. DATE:	10-07-26	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.

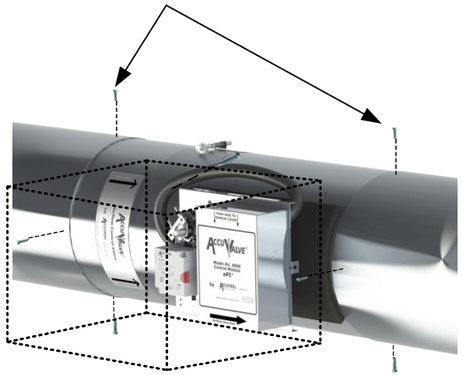
   ⚠ ***WARNING:*** *Use duct hangers and hardware designed to support the total load of valve and associated duct sections. Failure to do so may result in serious personal injury or death.*

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 <u>not</u> 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.



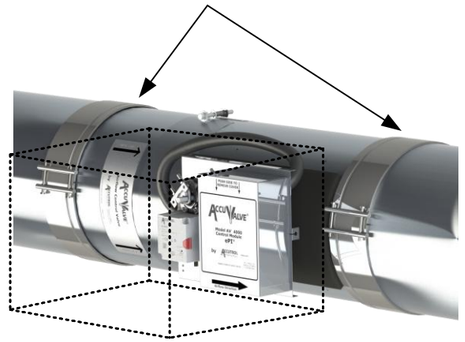
14" (356mm) Keep-Out Zone

Figure 1

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.



14" (356mm) Keep-Out Zone

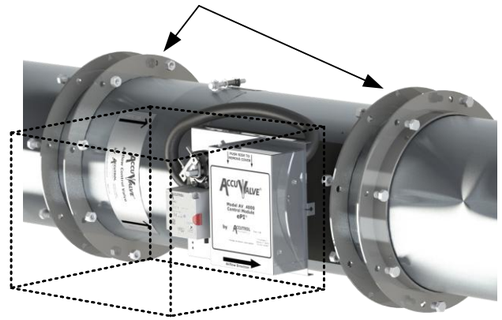
Figure 2

Reference Accutrol Draw Band Clamp Submittal Drawing for Details

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.



14" (356mm) Keep-Out Zone

Figure 3

Reference Accutrol VanStone Flange Submittal Drawing for Details

ACCUTROL LLC
21 Commerce Dr
Danbury, CT 06810
Tel: 203-445-9991
accutrolllc.com

Accutrol Representative:

SUBMITTAL DRAWING

AccuValve® Model AVR4000

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.
THIS DOCUMENT OR THE CONTENTS THEREOF SHALL NOT BE MODIFIED WITHOUT PRIOR WRITTEN PERMISSION BY ACCUTROL LLC.

DWG. NO:	AVR4000 SUBMITTAL DWG		
REVISION:	H	ECN:	3219
REV. DATE:	10-07-26	SHEET: 3	OF: 5

RECTANGULAR VALVE: INSTALLATION INSTRUCTIONS

1. Read all instructions completely before installing the valve.
   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.
   CAUTION: *Do not install duct hangers directly on valve. Doing so may cause mechanical damage, misalignment, or interference with internal components.*
   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.*

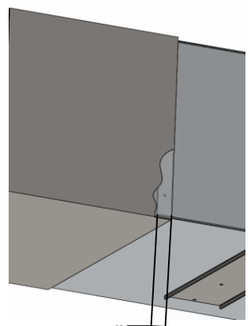
6. After the duct section is properly supported to carry the weight of the valve, install valve into the duct in accordance with the Airflow Direction Label located on the valve. Position valve so the controller, actuator and access cover are easily accessible.

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



For slip-fit applications valve must be inserted at least 1" into ductwork to cover open holes on valve housing.

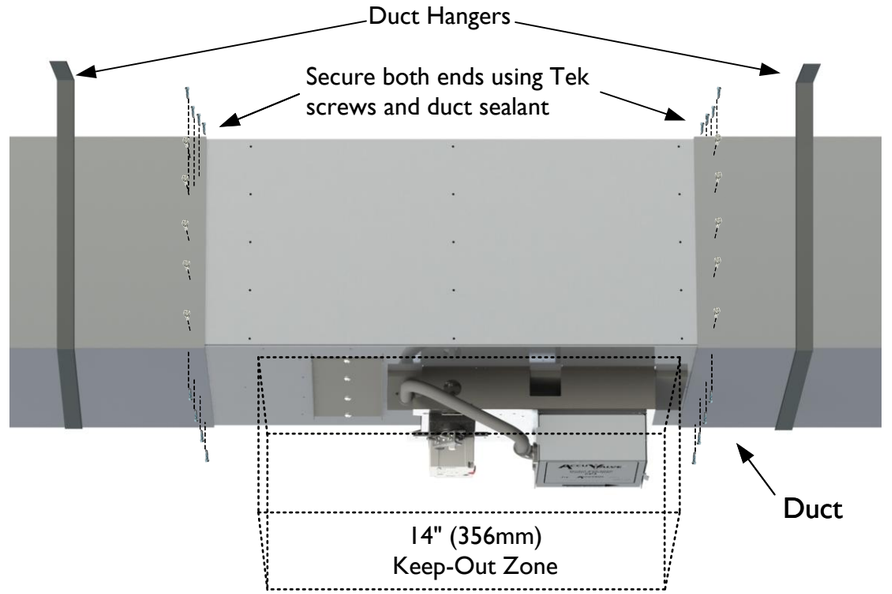
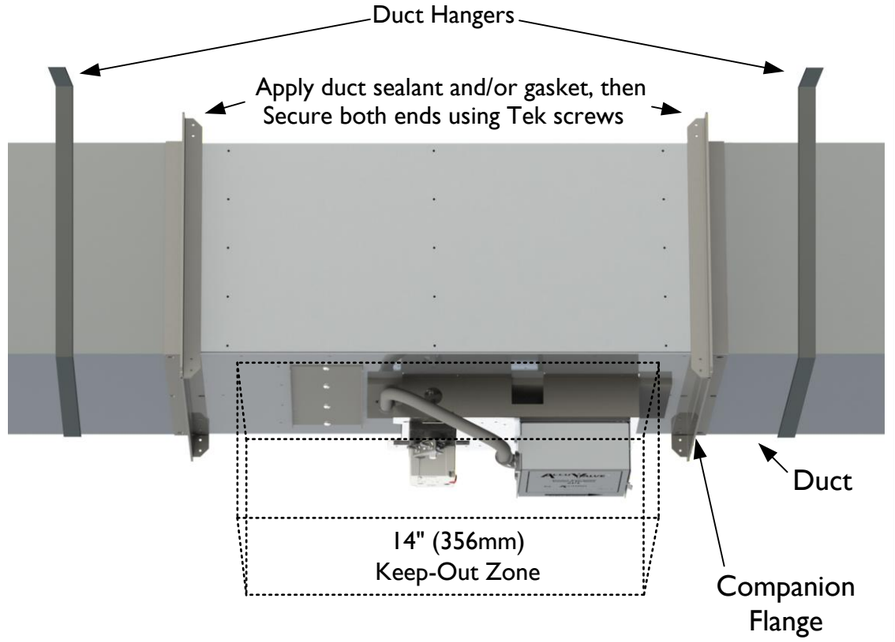


Figure 2

Flanged Valve "Option F" Using Companion Flanges

(Provided by Others)



Reference Rectangular AccuValve Flange Detail Submittal DWG

ACCUTROL LLC
21 Commerce Dr
Danbury, CT 06810
Tel: 203-445-9991
accutrolllc.com

Accutrol Representative:

SUBMITTAL DRAWING

AccuValve® Model AVR4000

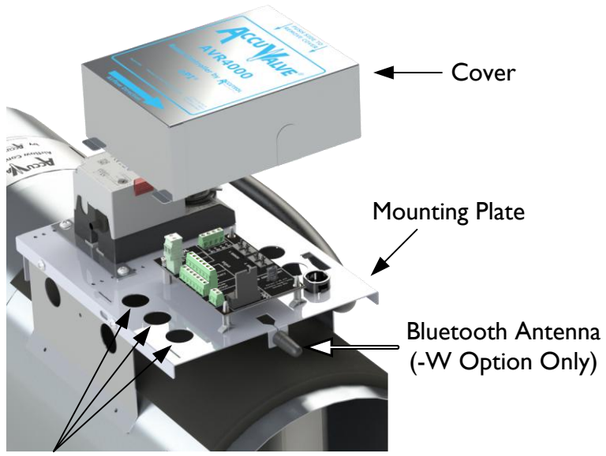
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.
THIS DOCUMENT OR THE CONTENTS THEREOF SHALL NOT BE MODIFIED WITHOUT PRIOR WRITTEN PERMISSION BY ACCUTROL LLC.

DWG. NO:	AVR4000 SUBMITTAL DWG		
REVISION:	H	ECN:	3219
REV. DATE:	10-07-26	SHEET:	4 OF 5

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:
"-07 Actuator": 24VAC +/-20%, 50/60Hz. (Class 2 Power Source) 12VA or 24VDC +/-10%, 8W
"-17 Actuator": 24VAC +/-20%, 50/60Hz. (Class 2 Power Source) 15VA or 24VDC +/-10%, 8.5W

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 12-30 AWG

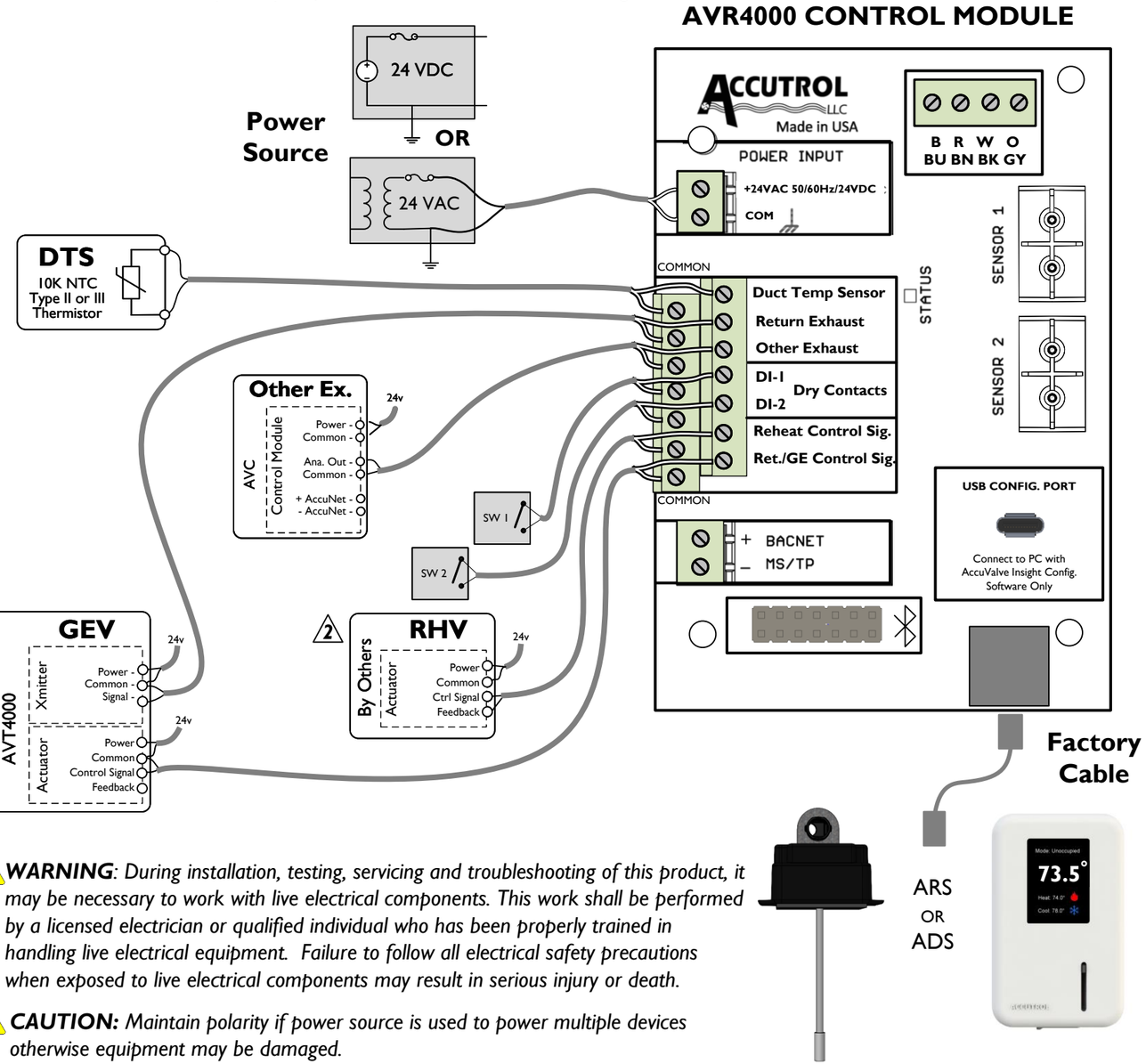
Note: *Consult local electrical building codes to determine wire size required for application.*

WIRING DIAGRAM

Notes:

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

2. Electric reheats can induce EMI onto cables which can cause latch-up on connected devices. To reduce EMI, use shielded cable and ground the shield on one end only. Clamp-on ferrites can also be installed over the signal cables to reduce EMI.



WARNING*: During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. This work shall be performed by a licensed electrician or qualified individual who has been properly trained in handling live electrical equipment. Failure to follow all electrical safety precautions when exposed to live electrical components may result in serious injury or death.*

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

ACCUTROL LLC
21 Commerce Dr
Danbury, CT 06810
Tel: 203-445-9991
accutrolllc.com

Accutrol Representative:

SUBMITTAL DRAWING

AccuValve® Model AVR4000

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.
THIS DOCUMENT OR THE CONTENTS THEREOF SHALL NOT BE MODIFIED WITHOUT PRIOR WRITTEN PERMISSION BY ACCUTROL LLC.

DWG. NO:	AVR4000 SUBMITTAL DWG		
REVISION:	H	ECN:	3219
REV. DATE:	10-07-26	SHEET: 5	OF: 5