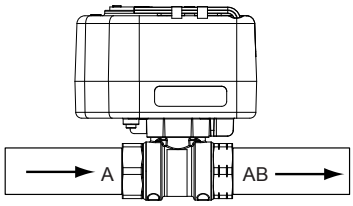
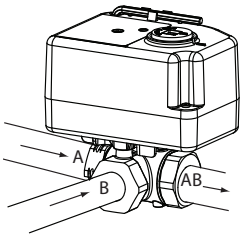
SpaceLogic VBB/VBS

Ball Valves with Two-Position Actuators



Two-Way Valve:
Flow A to AB



Three-Way Valve: Mixing
Only A and/or B to AB.

Inspection

Inspect the package for damage. If package is damaged, notify the appropriate carrier immediately. If undamaged, open the package and inspect the device for obvious damage. Return damaged products.

Requirements

NOTICE

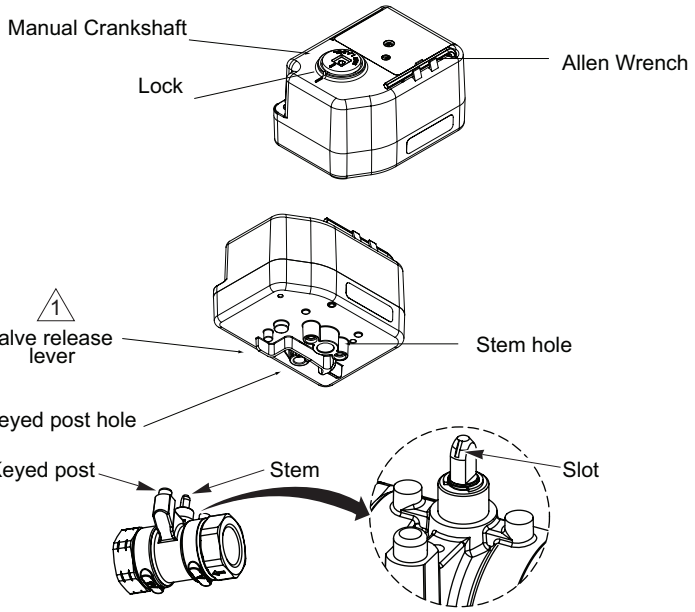
RISK OF EQUIPMENT DAMAGE

- Read and understand these instructions before installing or servicing this product.
- Do not install this product in hazardous or classified locations unless expressly permitted.
- Turn off all power supplying equipment before working on the product.
- Make all connections in accordance with the electrical wiring diagram.
- Do not exceed the product's technical ratings.
- Use copper conductors only. Make all connections in accordance with the appropriate electrical wiring diagram.
- Avoid installation locations exposed to vibration, excessive moisture, and/or corrosive or explosive vapours.
- Avoid electrical noise interference. Do not install near large conductors, electrical machinery, or welding equipment.
- When making wiring connections within the actuator, do not put leads or connectors below the motor.
- This product is a class 2 (Limited Voltage Limited Energy) device.
- The installer is responsible for conformance to all applicable codes.
- Check the Electrical terminals and any configuration switch settings before powering up the actuator.

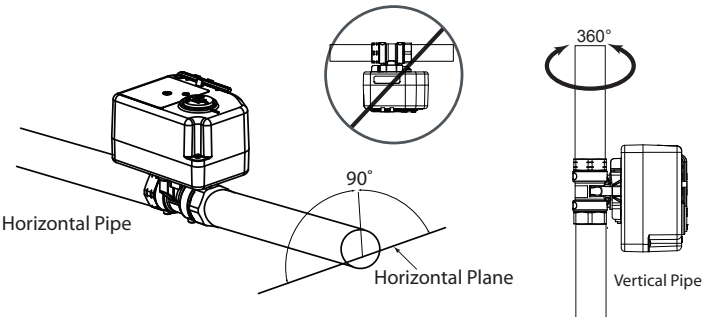
Failure to follow these instructions may cause equipment damage.

If this product is used in a manner not specified by the manufacturer, the protection provided by the product may be impaired.

No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this product.



1 Parts on bottom of both actuators are identical.



Tools (not provided)

- Wrench/adjustable spanners: 24…42mm (1"…1-5/8")
- Pipe wrench according to pipe size
- Volt-ohm multimeter
- Phillips Head screwdriver

Training

- Installer must be a qualified, experienced technician

Other accessories

- As appropriate.

© 2020 Schneider Electric. All rights reserved. All trademarks are owned by Schneider Electric Industries SAS or its affiliated companies.
Document Number: F-27392-5

January, 2021 tc

Piping

NOTICE

RISK OF EQUIPMENT DAMAGE

- Do not install in open systems using substantial make-up water.
- Follow proper water treatment practices and system procedures.

Failure to follow these instructions may cause equipment damage.

These valves must be piped according to the water flow diagram. Two-Way valve flow should go A to AB. Three-way valves should be applied only as mixing valves (see diagram).

Best Practice Guidelines

It is recommended to fit a strainer upstream of the valve to increase reliability and to follow water treatment guidelines as detailed in VDI 2035.

Recommendations

The pipework system should be flushed prior to the operation.

Mounting

The valves can be mounted in horizontal or vertical piping. When installed in horizontal piping, the actuator must be above the valve body. It can be tilted left or right but it must not be tilted below 90° from vertical.

Installation Notes

- It is the responsibility of the installer or product specifier to verify media compatibility of the valves construction materials with the supplier of water treatment/heat transfer solution.
- Confirm there is no overhead water source that may drip onto valve actuator.
- In normal service, some condensation may occur on or around the valve. A drip pan may be necessary or the valve body may be insulated.
- Do not cover the actuator or obstruct the manual operator lever.
- Reference product label and Product Datasheet F-27395 (Global) or F-27895 (EU) for additional product specifications.

Installing the Valve Body

1. Apply PTFE tape to the male pipe thread.
2. Hand screw the pipe into the valve, turning it as far as it will go.
3. Use a wrench to fully tighten the valve to the pipe. Do not over tighten or strip the threads.

Installing the Actuator

NOTICE

RISK OF EQUIPMENT DAMAGE

- Do not use the valve body to manually open the actuator.

Failure to follow this instruction will result in damage to the actuator.

Installing Normally Open M21xxxx Models

1. Turn the valve stem so the slot on top of the stem is pointing towards the large keyed post.
2. Align the valve body with the actuator to ensure the stem lines up with the large stem hole and the large keyed post lines up with the post hole on the bottom of the actuator.
3. Press the valve and actuator together to assemble.

Installing Normally Closed M22xxxx Models

1. Turn the valve stem so that the slot on the top of the stem is pointing towards the large keyed post.
2. Insert the allen wrench into the manual crank shaft on the top of the actuator. Crank eight turns in the direction indicated on the label. In the last turn, align the indicator notch to the opening in the crankshaft. Press the button around manual crankshaft to lock in place. Remove and replace allen wrench in cover slot.
3. Align the valve body with the actuator to ensure the stem lines up with the large stem hole and the large keyed post lines up with the post hole on the bottom of the actuator.
4. Press the valve and actuator together to assemble.
5. The first time the valve is operated electrically, the manual operating lever of the actuator will move to the automatic position. The manual operating lever can be used to allow flushing of the system after installation.

Removing the Actuator

1. Press and hold the valve release lever inward, towards the valve.
2. Lift the actuator from the valve.

Checkout

Make sure the valve stem rotates freely before and after installing the actuator. If the stem does not operate freely it may indicate that the stem was damaged and may require that the valve be replaced. After the piping is under pressure, check the valve body and the connections for leaks. After the valve and actuator are installed, power the actuator and check the operation by varying the control signal. On spring return models, the valve should return to its normal position when power is removed.

Theory of Operation

When powered, the actuator moves to the desired position, winding the spring return system. When power is removed the spring returns the actuator to the normal position. This series of two-position spring return valve assemblies can be purchased with an optional built-in auxiliary SPDT end switch for interfacing or signaling; for example, zone pump burner control. The auxiliary switch is designed for contact closure after the valve is more than 50% open. Do not exceed the published switch electrical ratings. The manual override lever is designed to manually position the actuator to install on the valve or to manually position the valve. Turning the allen wrench in the manual crankshaft while power is applied or in the opposite direction as shown on the label will cause permanent damage. Use only the allen wrench provided with a maximum torque of 10 in-lb.

© 2020 Schneider Electric. All rights reserved. All trademarks are owned by Schneider Electric Industries SAS or its affiliated companies.
Document Number: F-27392-5
January, 2021 tc

Power Action (Two-Position)

Control Signal	Spring Return Open Actuator	Spring Return Closed Actuator
Power On	A to AB Closed	A to AB Open
Power Off	A to AB Open	A to AB Closed

Two-Way valve operation described. For a three-way valve, A to AB operation is the same. B to AB operation is opposite that of A to AB operation.

Wiring

Make all connections according to job wiring diagrams and in compliance with local and national electrical codes. Refer to diagrams shown for typical wiring.

NOTE:

- Multiple actuators may be connected to a single controller.
- Do not exceed the maximum current draw of the controller.
- Use of a properly sized, inherently limited, Class 2 transformer is recommended.
- Use only 18…24 AWG copper wire for all connectors.

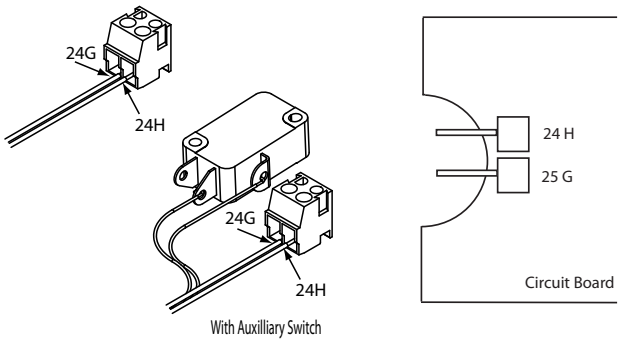
Maintenance

The ball valve assembly itself requires no maintenance. The stem and packing design eliminates the need for packing adjustment for the life of the valve. However, regular maintenance of the total heating and cooling system is recommended to ensure sustained optimum performance.

Field Repair

Neither valve nor actuator are field repairable. Replace entire unit as necessary.

Wiring Terminals			
Board Marking	Terminal Marking	AC Control Signal	DC Control Signal
24H	2	24v	+
24G	1	24v	-



24V Wiring (M2x0Axx)

Terminal Marking	AC Input 50/60 Hz	DC Input 50/60 Hz	Lead Colors
1	24 Vac	-24 Vdc	Black
2	24 Vac	+24 Vdc	Red
SPST Aux Switch			Orange
			Yellow

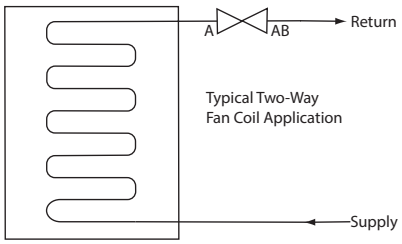
Universal Wiring (M2x0MAxx) Wire Color Table

(100 through 277 50/60 Hz)

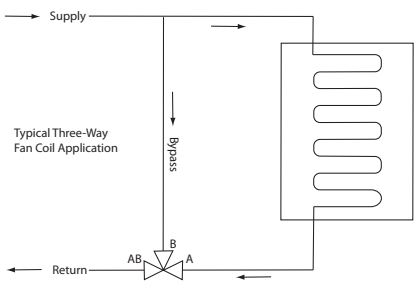
		Lead Colors
N/HOT		Blue
HOT/HOT		Brown
Ground Lead	GND	Green with Yellow Stripe
SPST Aux Switch		Orange
		Yellow

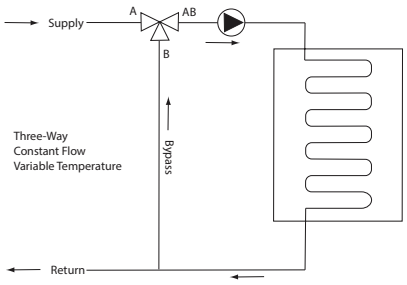
Application Drawing

Typical applications. For simplicity, balancing valves and control devices not shown.



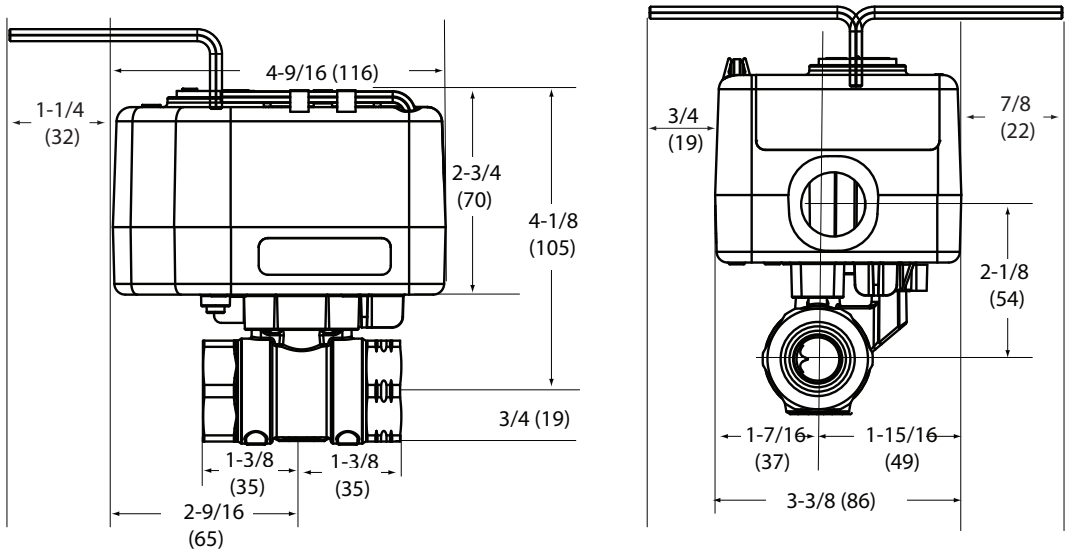
Mixing applications

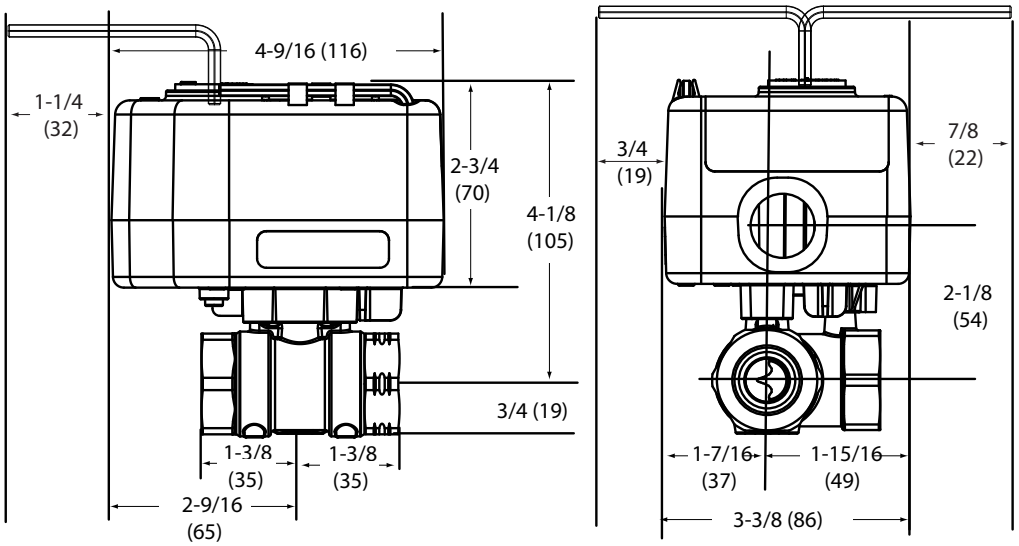




© 2020 Schneider Electric. All rights reserved. All trademarks are owned by Schneider Electric Industries SAS or its affiliated companies.
Document Number: F-27392-5
January, 2021 tc

Dimensions





All dimensions shown in inches (mm) format and are rounded to the nearest 1/16".
An additional 1 in (25 mm) is required to remove the actuator from the valve.

Agency Listings

UL873: Underwriters laboratories (File #E9429 Category Temperature Indicating and Regulating Equipment)

CUL: Listed for use in Canada by Underwriters Laboratory. Canadian Standards C22.2 No. 24.

European Community: EMC Directive (2004/108/EC). Low Voltage Directive 2014/35/EU.

Australia: This product meets requirements to bear RCM according to the terms specified by the Communications Authority under the Radio Communications Act of 1992.

© 2020 Schneider Electric. All rights reserved. All trademarks are owned by Schneider Electric Industries SAS or its affiliated companies.