

SLA-AVU-X/M/E VZX/MZX/MEU/FEU/VEU Valve Actuators

SLA-AVU-X/E/M actuators can be used with Satchwell VZX/MZX/MEU/FEU/VEU valves to control hot /cool water flow rate in two/four pipes terminal units, small heating and cooling plants, zone control systems and solar plants, and in small reheating and de-humidification coils.

The actuators have 300N force, and are available as proportional control (0..10V/4..20mA), 3-Point 24Vac and 3-Point 230Vac models.

Typical Applications

- Retrofit Actuators for MZX/VZX/MEU/FEU/VEU Valves
- Small Heating and Cooling Plants
- Air handling units
- Zone and Terminal Unit Control



Model Type	Model	Description
	SLA-AVU-M	230Vac 3-Point Control Valve Actuator for VZX/MZX/MEU/FEU/VEU Valves
	SLA-AVU-X	24Vac 3-Point Control Valve Actuator for VZX/MZX/MEU/FEU/VEU Valves
	SLA-AVU-E	0..10V/4..20mA Proportional Control Valve Actuator for VZX/MZX/MEU/FEU/VEU Valves
Technical Data	Power Supply	SLA-AVU-X/E: 24Vac $\pm 10\%$, 50/60Hz SLA-AVU-M: 230Vac $\pm 10\%$, 50/60Hz
	Power Consumption:	SLA-AVU-M: 16.2VA SLA-AVU-X: 2.2VA SLA-AVU-E: 3.5VA
	Control Signal	SLA-AVU-M: 230V 3-Point SLA-AVU-X: 24V 3-Point SLA-AVU-E: Proportional Control (0..10V - range selectable/4..20mA)
	Speed	11.5s/mm at 50Hz - 9.4s/mm at 60Hz
	Force	300N (UNI9497)
	Manual Override	Using 3mm Allen Key
	Feedback Signal (SLA-AVU-E only)	2..10V (2V fully retracted; 10V fully extended independently from the operation range or direct/reverse action)
	Ambient Temp	-5..55°C
	Storage Temp	-25..65°C
	Protection Class	IP43 CEI EN50529 Class III (IEC 950)
	Connection Cable	SLA-AVU-M/X: 3-Wire 1.5m; SLA-AVU-E: 5-Wire 1.5m
	Agency Approvals	Emissions/Immunity: EMC2004/108/CE According to EN613-1:2006 LVD 2006/95/EC According to EN61010-1
	Weight	0.250 kg
Dimensions	See Diagram	

Operation

SLA-AVU is an electric bidirectional actuator. The valve stem movement is produced by a gear train and a synchronous bidirectional motor.

Compatible Valves

The table below illustrates the compatible valves with the SLA-AVU actuators.

ACTUATOR	COMPATIBLE VALVES
SLA-AVU-M SLA-AVU-X SLA-AVU-E	VZX 2-Port Seat Valves from 1/2" to 2", 12.7mm Stroke MZX 3-Port Seat Valves from 1/2" to 2", 12.7mm Stroke

Control Signal

SLA-AVU-X can be connected to any controller with 24Vac 3-point control signal.

SLA-AVU-M can be connected to any controller with 230Vac 3-point control signal.

SLA-AVU-E can be connected to any controller with a proportional 0..10Vdc control signal. The SLA-AVU-E actuator operation direction can be selected via a bit switch, and furthermore can be used with any of the following control signals:-

- 0-10Vdc
- 2-10Vdc
- 0-5Vdc
- 6-10Vdc
- 4-20ma

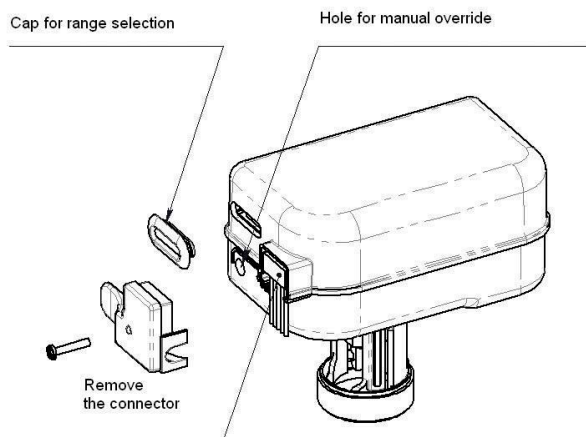
Manual Override

Removing the connector cover you can reach the hole for manual override, which can be activated through a 3mm socket head screw (not included). Before operating on the manual override, be sure that the actuator is not powered.

Range / Operation Direction Selection (SLA-AVU-E Model Only)

The actuator is supplied pre-arranged for 0-10V control signal and direct action; to modify this setting, follow these instructions:

- Remove the cap and the connector (look at the following picture)



- Change the DIP switches as indicated in the following scheme

ON		DIP1	ON = INV Action/stroke	OFF = DIR Action / stroke
OFF		DIP2	ON = 2..10 / 6-10	OFF = 0..10 / 0..5
		DIP3	ON = Range SEQ	OFF = Range NORM
		DIP4	ON = Fixed Stroke	OFF = auto calibr.stroke
		DIP5	ON = 4..20mA	OFF = Voltage range
		DIP6	ON = Learning / stroke	OFF = Running / stroke

The actuator can be coupled with push/pull valves VMB.T, VSB.T (with SLA.xx.230/24) and VX.T (with SLA.xx.ES) using auto calibration stroke; or to valves with spring return as VSX..PB and VSXT..PB or similar (withMVTx03S) using fixed stroke.

Actuators with fixed stroke (DIP 4 ON) have only reverse action.

Through DIP 4 you can choose (on the basis of the coupled valve) if the stroke must be fixed or automatically calibrated. In case of fixed stroke (DIP 4 ON) the learning function (DIP 6) and the

setting of direct/reverse action (DIP 1) change their meaning: DIP 1 and 6 will be used to choose the fixed stroke value

DIP 1	DIP 6	Valves Stroke
OFF	OFF	5mm
OFF	ON	5.5mm
ON	OFF	2.5mm
ON	ON	3.5mm

DIRECT/REVERSE ACTION

Trough DIP1 is possible to set direct or reverse action. In direct action without control signal the actuator is fully retracted with feedback set to 2V. With reverse action the actuator is fully extended and the feedback without control signal is 2 V in this position.

Through DIP 2,3 and 5 it is possible to set 5 different input ranges. If DIP 5 is ON, the input range is set at 4-20mA and DIP 2 and 3 have no meaning. If DIP 5 is OFF, the possible ranges are: 0-10/2-10 if DIP 3 is OFF and 0-5/6-10 if DIP 3 is ON.

AUTOMATIC STROKE CALIBRATION

This function helps to calibrate the maximum valve time stroke, so that the actuator can place the valve correctly following the control signal. If the actuator is powered on, this action can be repeated any time DIP 6 goes from OFF to ON and DIP 4 is OFF. During normal operation, it is possible to choose the position of DIP 6: at each start up the stroke calibration will be carried out if DIP 6 is ON; it will be maintained the previous stroke if DIP 6 is OFF.

INITIAL POSITIONING

It will be carried out every time the actuator will be powered on and the stroke calibration occurs. This procedure allows the actuator to start from a defined position and then follow the control signal. That position depends on the selection of DIP 1 (DIP 4 in OFF).

In case the DIP 4 is ON, the initial position means fully extended.

RETRY FUNCTION

If an unexpected stop during the stroke occurs, this function has the aim to make it disappear. The actuator will be driven in the opposite direction and then it will try again to reach the position.

FEEDBACK OUTPUT

The actuator is equipped with a proper output to transmit the feedback signal relating to the supposed actuator position. This signal can vary from 2 to 10V. During the “automatic stroke calibration” and “Initial positioning” function it is fixed at 2V.

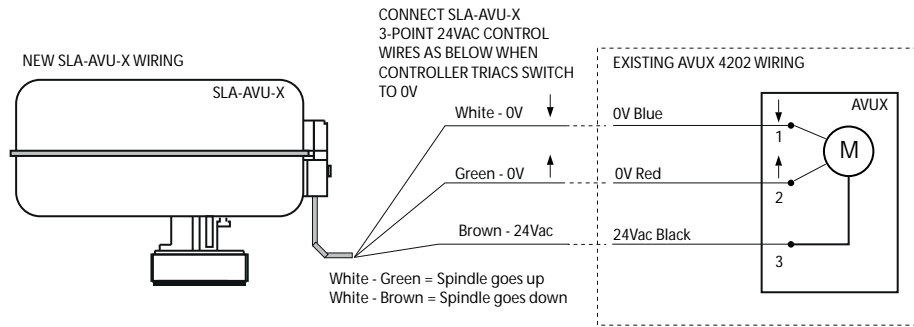
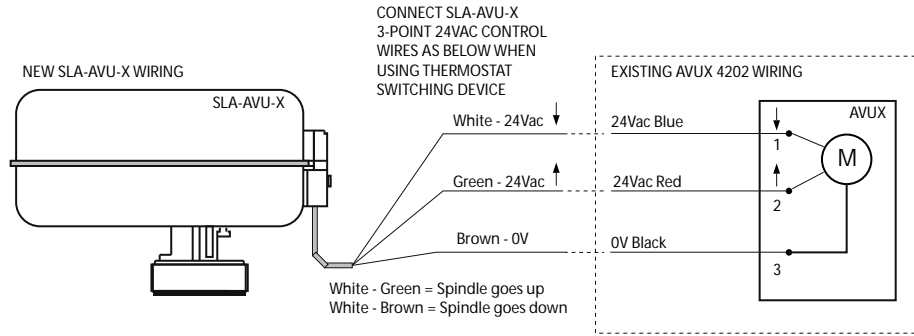
LEDs Operation

DESCRIPTION	CALIBRATION PHASE	INITIAL POSITIONING	UP POSITIONING	END STROKE UP	DOWN POSITIONING	END STROKE DOWN	ACTUATOR STOP	UNEXPECTED STALL	LOW SUPPLY VOLTAGE	ACTUATOR OFF OR UNDER RESET (LOW SUPPLY VOLTAGE)
YELLOW	ON	ON	ON	ON	ON	ON	ON	ON	BLINKING 1HZ	OFF
RED	ALTERNATING 5Hz	ALTERNATING 1HZ	OFF	OFF	BLINKING 1HZ	ON	OFF	SIMULTANEOUS 5HZ	OFF	OFF
GREEN			BLINKING 1HZ	ON	OFF	OFF	OFF	OFF	OFF	OFF

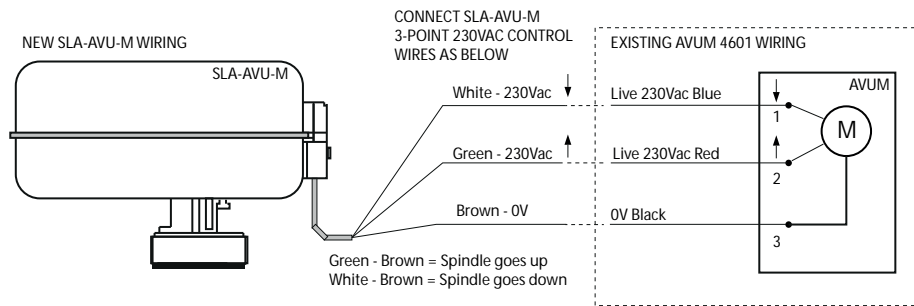
Wiring Instructions

Make electrical connections in accordance with local electrical regulations. To verify the direction of the spindle movement, compare the rotation way of the manual override with the information you find on the base. The movement of the stem valve can be observed also through the slits in correspondance to the fixing ring nut.

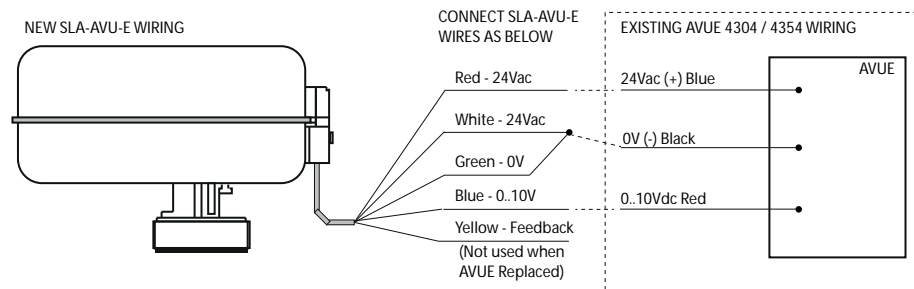
SLA-AVU-X 24V 3-POINT CONTROL



SLA-AVU-M 230V 3-POINT CONTROL

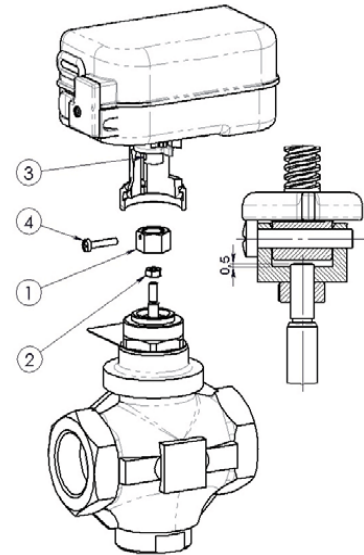


SLA-AVU-E PROPORTIONAL 0..10V CONTROL (OR 4..20mA)

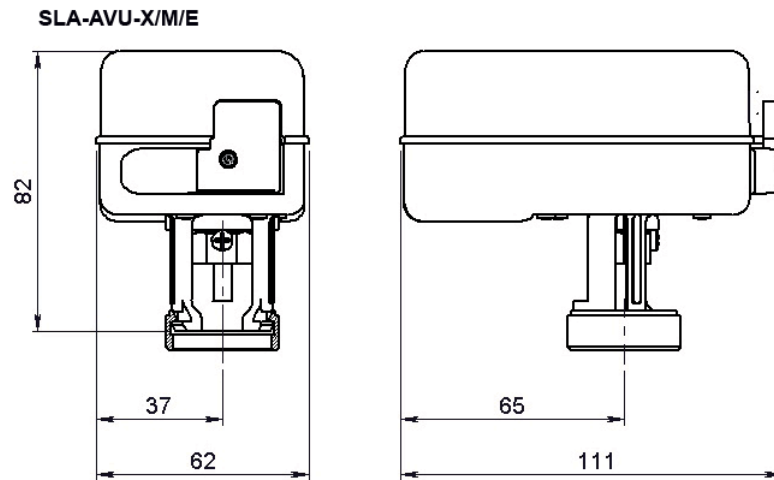


Assembly and Mechanical Installation

1. Place locknut 2 on the valve plug. You can use the existing securing nut that comes with the valve after you have removed slotted brass nut.
2. Fit the thumbscrew collar over plug and tighten screws to valve body.
3. Place locknut 1 hex nut on to the valve plug and secure with locknut 2.
4. Align actuator spindle slot with the hole in locknut 1, secure with bolt 4 through non threaded hole in locknut 1. You may need to manually override the actuator to line up the holes.
5. Tighten M30x1.5 into correct orientation.
6. Test operation.



Dimensions (mm)



Notes: In the view of a constant development of their products, the manufacturer reserves the right for changing technical data and features without prior notice.

