

VALVE ACTUATORS

The AVUX and AVUM valve actuators are designed for use on the VZX two port valve and the MZX three port valve. The AVUX is a 24Vac reversing actuator suitable for modulating the VZX and MZX valves from any 24Vac controller or device. The AVUM is a mains voltage reversing actuator and can be controlled from any controller or device having a mains switched output.



FEATURES

- Simple to install. Direct coupling to valve without use of tools.
- Fly lead to ease site wiring.
- EMC approved product.
- Minimal commissioning. No site adjustments required (self-stroking).
- Compact size.
- Universal for use with Satchwell VZX and MZX valves from ½" to 2" and Satchwell unit valves (½" and ¾").
- Built-in manual operator.



Data Sheets

Valves
DS 4.101 - VEU, MEU, FEU
DS 4.401 - VZX
DS 4.601 - MZX

Multi-Lingual Instructions
MLI 3.005 - Mounting Details

SPECIFICATION

Type:	AVUX4202 - 24Vac reversing actuator AVUM4601 - 220 to 240Vac reversing actuator
Power Supply:	AVUX: 24Vac ($\pm 10\%$), 50/60Hz AVUM: 230Vac ($\pm 10\%$), 50/60Hz
Power Consumption:	AVUX: 2VA AVUM: 2.5VA
Action:	Reversing, modulating
Stroke:	12.7mm
Stroke Time:	100s
Thrust:	220N
Electrical Connection:	Colour coded fly lead 3 core (AVUX) and 4 core (AVUM), 1.5m long
Ambient Temperature Limits:	Operating: -20 to 50°C Storage/Transit: -40 to 70°C
Maximum Ambient Humidity:	Operation and storage: 95% non condensing
Associated Valves:	See table.
Associated Controllers:	AVUX: CSC - DS 2.021 CSMC - DS 2.541 MMC - DS 2.701 CXT - DS 2.101 CXR - DS 2.110 IAC - DS 2.801, 2.951 URC - DS 13.301 AVUM: CSC - DS 2.021 CSMC - DS 2.541

CONSTRUCTION

Case:	Mild steel baseplate with moulded plastic cover. Fire resistant to UL94V-0.
Mounting Bracket:	Die cast aluminium with angled fixing screws.
Motor:	Reversible capacitor phased synchronous motor fitted with magnetic clutch. Continuously rated. Actuator travel limited by magnetic clutch slipping at either end of the stroke.
Spindle Coupling:	Simple claw type engagement for quick assembly.
Manual Operator:	By thumb rotation of the partially exposed gear wheel.
Accessories:	Rain Protection Cover AVA1752.

VALVE/ACTUATOR COMPATIBILITY

ACTUATOR	VALVE								
	VEU Mk2 (2 Port) 623-2 series	MEU Mk2 (3 Port) 627-2 series	FEU Mk2 (4 Port) 628-2 series	VEU Mk4/5 (2 Port) 623-4 or 5 series	MEU Mk4/5 (3 Port) 627-4 or 5 series	FEU Mk4 (4 Port) 628-4 series	FEU Mk5/6 (4 Port) FEU 5 or 6 series	VZX (2 Port) VZX 4 series	MZX (3 Port) MZX 4 series
AVUX AVUM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

INSTALLATION

Observe the following important installation points:

LOCATION

Select a location that is reasonably clean and free from damp and condensation. Ambient temperatures must be within the limits shown under specification.

WARNING -

STEAM OR HOT WATER HAZARD. BEFORE REMOVING ACTUATOR FROM VALVE OR OPENING VALVE, ENSURE THAT THE VALVE CONTROL MEDIUM IS ISOLATED AND RELIEVE THE PRESSURE. WORK SHOULD ONLY BE CARRIED OUT BY A COMPETENT ENGINEER.



WARNING - DO NOT REMOVE THE ACTUATOR COVER AS LIVE PARTS ARE EXPOSED.

Caution

Do not apply any voltages until a qualified technician has checked the system and the commissioning procedures have been completed.

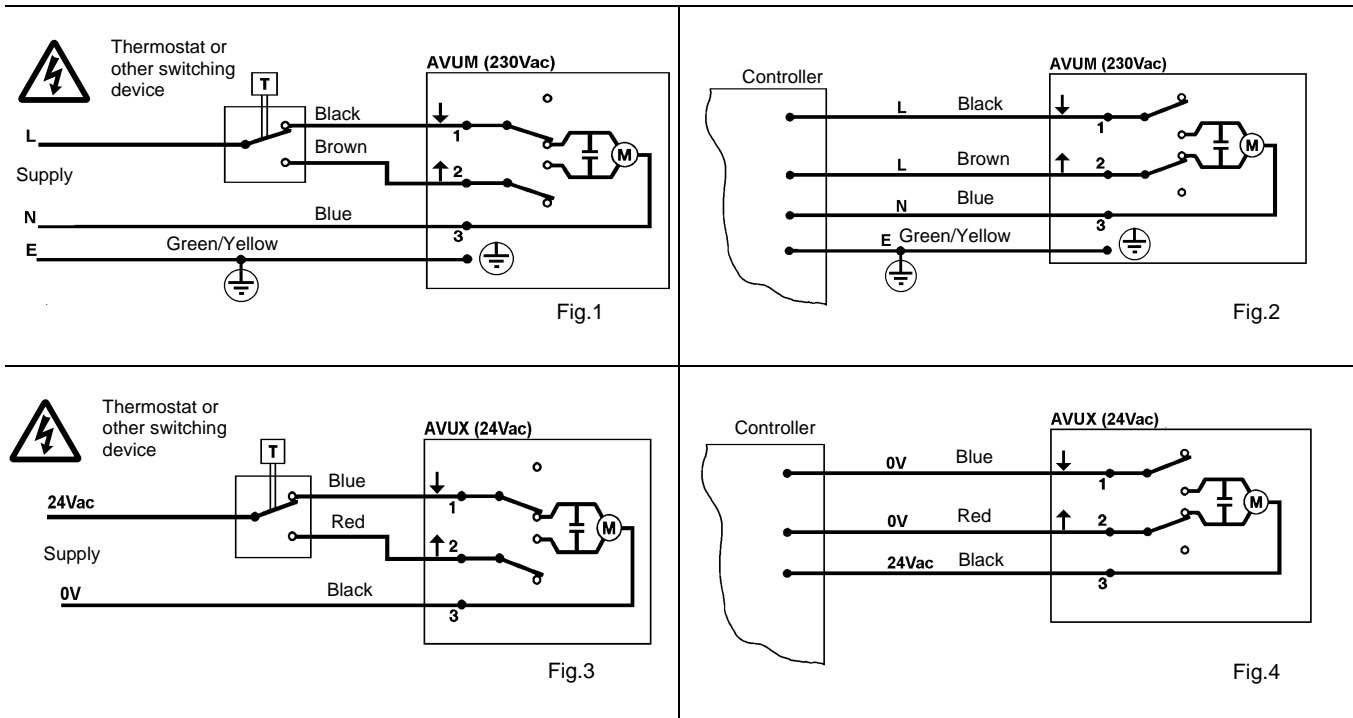
1. Check that the actuator is the correct voltage for the controller or device being used.
2. Unscrew the two captive angled fixing screws in the mounting frame and with the valve spindle fully withdrawn, tilt the actuator and lower it over the valve so that the claw coupling on the actuator spindle engages with the grooved bush on the top of the valve spindle.

3. Now lower the actuator frame onto the valve clamping face and finger tighten the two angled screws. Tools are not required.
4. Connect the colour coded fly lead to the controller observing the appropriate wiring precautions and wiring diagrams below.

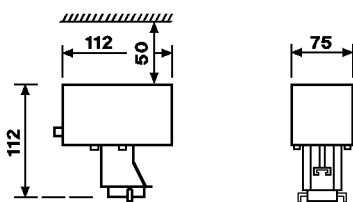
COMMISSIONING

1. Check that the actuator is the correct voltage for the controller or device being used.
2. Check that the actuator is wired in accordance with the wiring precautions and diagrams.
3. Check that the actuator is correctly fitted to the valve and that the fly lead is routed clear of the valve body and pipework.
4. Check for correct operation of the valve when power is applied from the controller or device and that the actuator operates in both directions.

CONNECTION DIAGRAMS



DIMENSION DRAWING



Dimensions in mm
Weight: 0.62kg

WIRING PRECAUTIONS

Wiring from actuator to controller ^a :	Max. length of 1.5mm ² cable unscreened	Max. resistance per conductor
AVUX - 24Vac	100m	5Ω
AVUM - 230Vac	100m	10Ω

a When wiring to a BAS outstation refer to the appropriate outstation data sheet for the wiring precautions.

For longer lengths, increase cable size and observe the maximum resistance shown in the table. Screen the wiring, earthing the screen at the controller end only.



WARNING -
AVUM ACTUATORS ARE AT MAINS POTENTIAL.
OBSERVE LOCAL WIRING REGULATIONS AND
USUAL SAFETY PRECAUTIONS.

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WARNINGS -

STEAM OR HOT WATER HAZARD. BEFORE REMOVING ACTUATOR FROM VALVE OR OPENING VALVE, ENSURE THAT THE VALVE CONTROL MEDIUM IS ISOLATED AND RELIEVE THE PRESSURE. WORK SHOULD ONLY BE CARRIED OUT BY A COMPETENT ENGINEER.

THE AVUM IS AT MAINS POTENTIAL. LOCAL WIRING PRECAUTIONS AND USUAL SAFETY PRECAUTIONS MUST BE OBSERVED.

DO NOT REMOVE THE COVER AS MAINS POTENTIAL WILL BE EXPOSED.

Cautions

- The AVUX is a low voltage (24Vac) device. Local wiring regulations and usual safety precautions must be observed.
- Observe wiring precautions.
- Observe installation instructions.
- Do not apply any voltages until a qualified technician has checked the system and the commissioning procedures have been completed.
- If any equipment covers have to be removed during the installation of this equipment, ensure that they are refitted after installation to comply with UL and CE safety requirements.
- Observe maximum and minimum ambient temperatures.
- Check maximum differential pressure of valve to be driven. Do not exceed maximum differential pressure.
- Interference with parts under sealed covers invalidates the guarantee.
- Design and performance of Satchwell equipment is subject to improvement and therefore liable to alteration without notice.
- Information is given for guidance only and Satchwell does not accept responsibility for the selection and installation of its products unless information has been given by the Company in writing relating to a specific application.
- A periodic system and tuning check of the control system is recommended. Please contact your local Satchwell office for details.