

## MIXING VALVE

Art. 301021



Art. 301021 Female connections

Art. 301022



Art. 301022 Male-female connections

Art. 301020

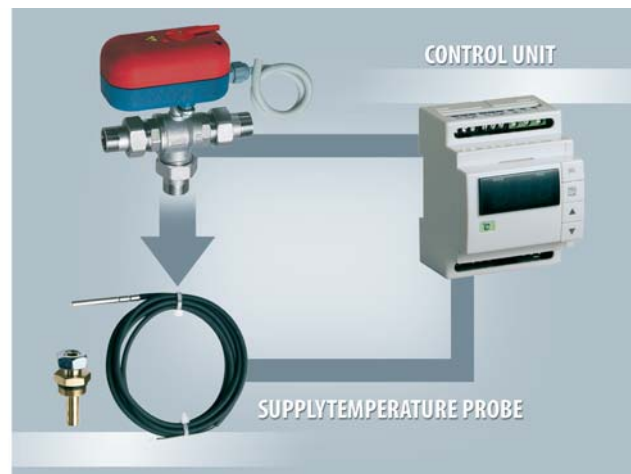
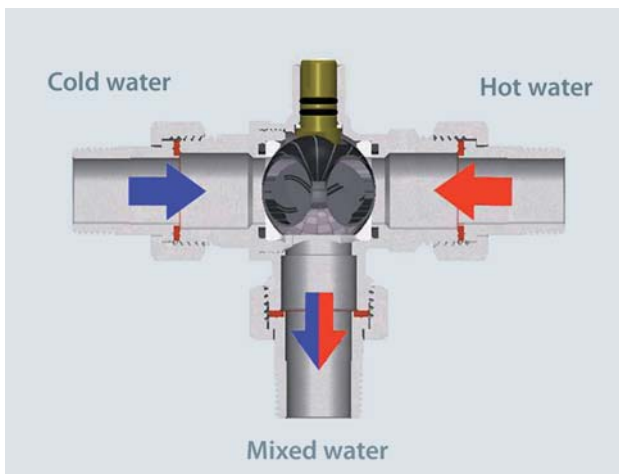


Art. 301020 Male connections

### 1. DESCRIPTION

The 3-way mixing valve is a ball valve with full bore flow. Valve bodies are available in M-M, M-F and F-F versions with 1/2", 3/4", 1" and 1 1/4" sizes.

The actuator incorporates a servomotor, which permits automatic operation of the mixing valve. It operates in response to a signal from a control unit.



#### 3 wiring connection: control through an electronic unit

To control opening and closing of a zone valve via an actuator, connect the blue wire to the neutral and the brown and the black to the control unit. In the presence of phase on the black

wire the valve turns clockwise, while it turns counterclockwise with phase on the brown wire. (Later we will go through different kinds of connection).

### 2. WIRING SCHEME

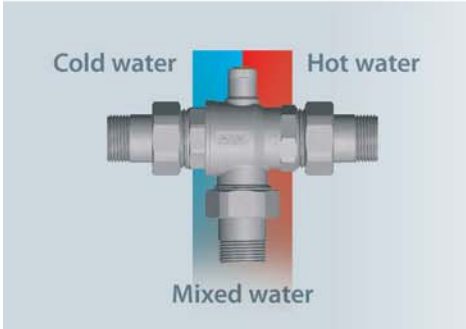
Wiring scheme:

N°	COLOUR	CONNECTION	DESCRIPTION
1	GREY	MICROSWITCH COMMON CONTACT	CONNECTED TO THE COMMON CONTACT OF THE MICROSWITCH
2	WHITE	N.O. OF THE MICROSWITCH	CONNECTED TO THE NORMALLY OPEN OF THE MICROSWITCH
3		SIGNAL INDICATOR	WITH OPEN VALVE PRESENCE OF PHASE ON TERMINAL
4	BLUE	NEUTRAL	CONNECTION TO THE NEUTRAL
5	BROWN	PHASE	COUNTERCLOCKWISE ROTATION
6	BLACK	PHASE	CLOCKWISE ROTATION
7		SIGNAL INDICATOR	WITH CLOSED VALVE PRESENCE OF PHASE ON TERMINAL

A control unit – properly connected to an actuator – permits adjustment of the ball position in response to a signal from a temperature probe located on the valve outlet to maintain the mixed water at the desired temperature.

## 2.1 Connection examples

### Connection example No. 1



Position of valve pin

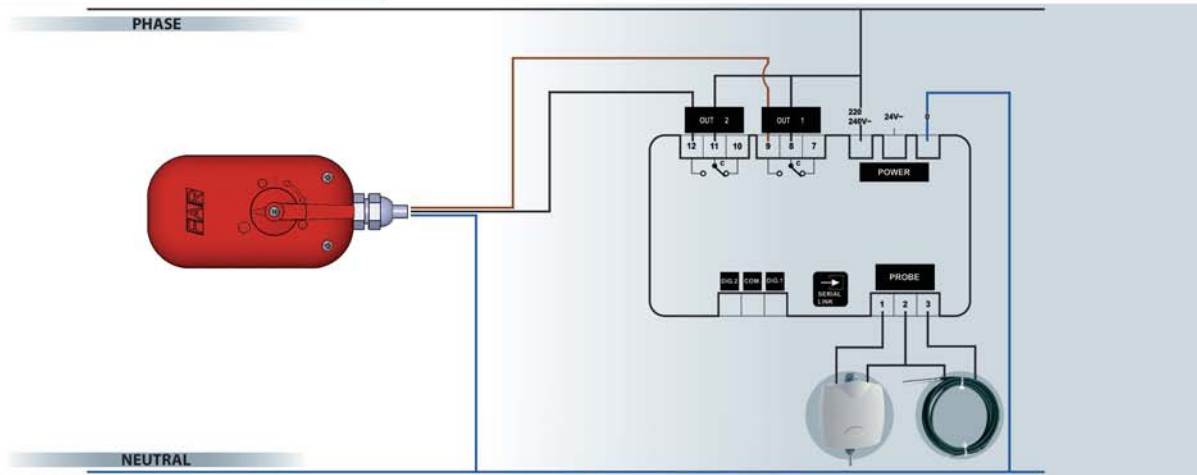
If the desired connection arrangement is as follows i.e. with cold water on the left and the hot on the right, position the mixing valve with the aid of a screwdriver and then the actuator in the indicated position.

Afterwards connect the wires to the control unit by referring to the terminal schematic shown below.

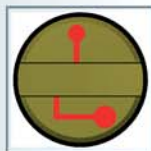
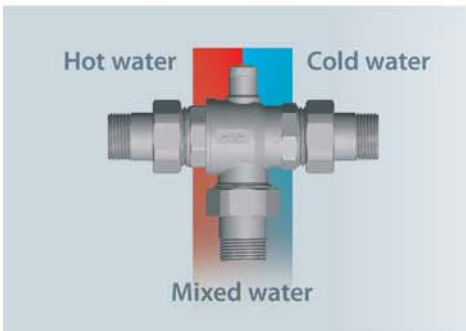


- Connect the BLUE wire to the Neutral
- Connect the BROWN wire to OUT1 No. 9 terminal
- Connect the BLACK wire to OUT2 No. 12 terminal

### Layout of control unit terminal



### Connection example No. 2



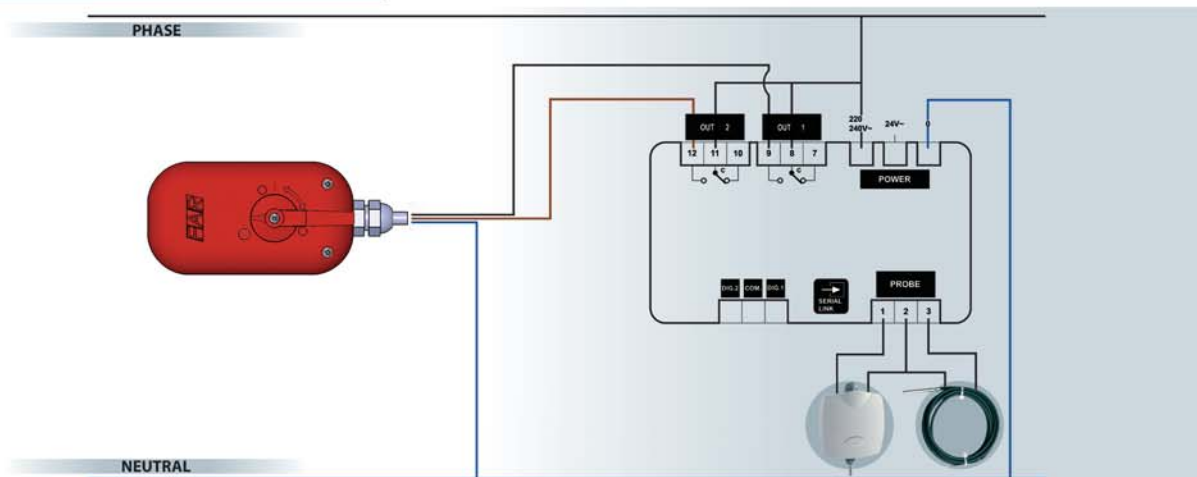
Position of valve pin

If the valve pin is positioned as shown below, proceed with connection as follows:

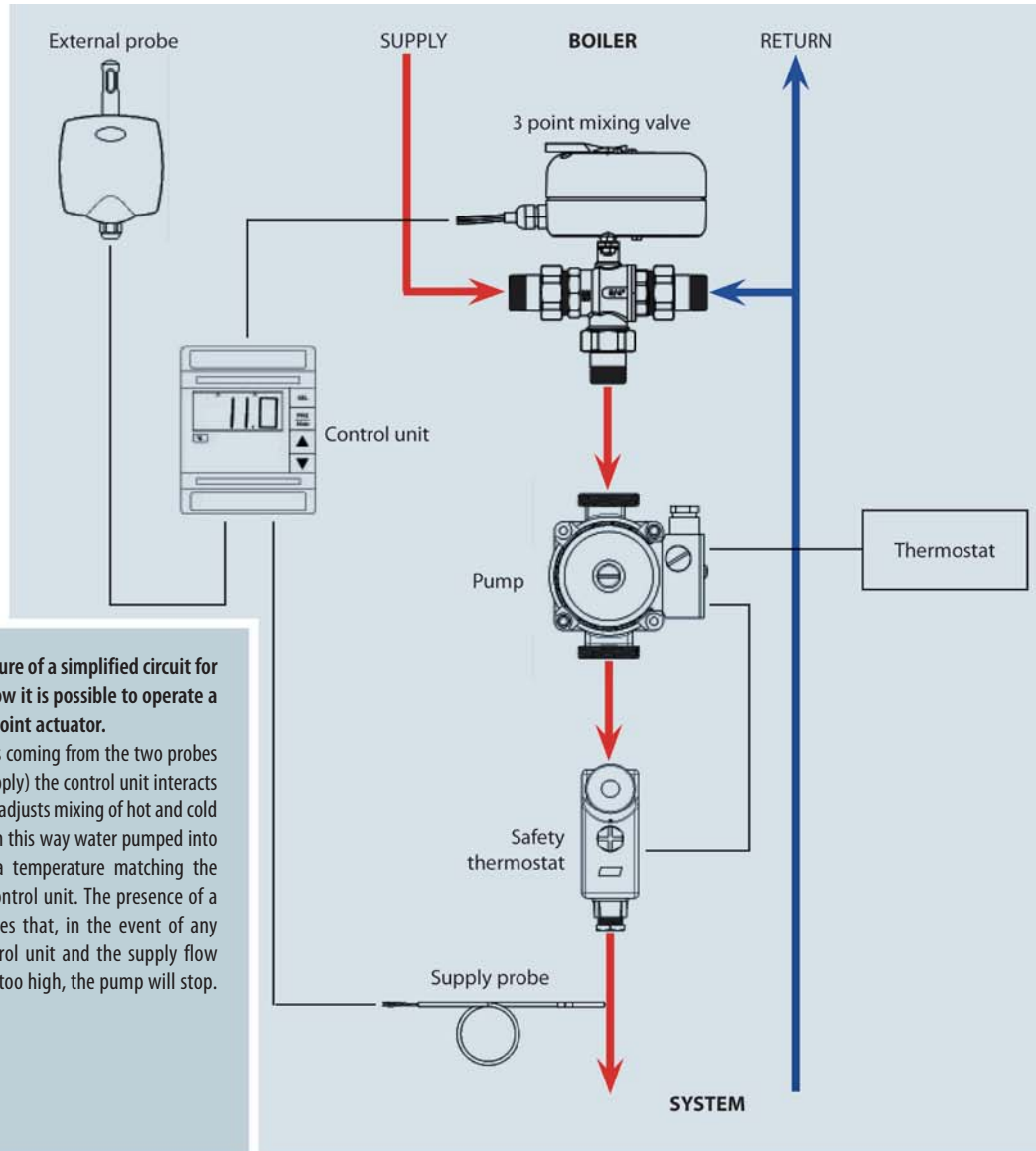


- Connect the BLUE wire to the Neutral
- Connect the BROWN wire to OUT1 No. 9 terminal
- Connect the BLACK wire to OUT2 No. 12 terminal

### Layout of control unit terminal



## 2.2 Installation overview



The example in the picture of a simplified circuit for space heating shows how it is possible to operate a mixing valve with a 3-point actuator. By comparing the signals coming from the two probes (the external and the supply) the control unit interacts with the actuator, which adjusts mixing of hot and cold water via a zone valve. In this way water pumped into the system will be at a temperature matching the degree setting on the control unit. The presence of a safety thermostat ensures that, in the event of any malfunction of the control unit and the supply flow temperature thus being too high, the pump will stop.

For the version with a mixing valve probes must be provided for the control unit depending on the type of operation desired:

### Fixed point operation:

Unit for control of mixed water temperature. Preset for fixed point operation. Complete with supply probe and 3/8" seat.



Art. 9612

### Temperature operation:

Unit for control of mixed water temperature. Preset for temperature operation. Complete with supply probe, 3/8" seat and external temperature probe.



Art. 9613



Art. 7951

Safety thermostat with contact probe.  
 - 60 mm length  
 - control temperature range: 0/90°C  
 - regulator handle

**3. TECHNICAL FEATURES**

**Art. 3010-3011**

3-point actuator with manual release for mixing ball valves. Complete with auxiliary microswitch.

Actuator: 3-point
Voltage: 24V - 50Hz / 230V - 50Hz
Torque: 10Nm
Rotation angle: 90°
Protection level: IP54
Absorbed power: 4,5 VA
Rotation time: 180 s
Working room temperature: from -10°C to +70°C


**Art. 3020**

**Art. 3021**

**Art. 3022**

3-way chrome-plated diverter ball zone valves with full bore flow.

Body of ball valve: CW617N brass
Sealing gasket: O-ring in EPDM and seats in PTFE
Nominal pressure: 16 bar
Max. differential pressure: 5 bar
Flow temperature: from -10°C (with antifreeze) to +100°C
Compatible media: water and water with glycol

**4. DIMENSIONAL FEATURES**
