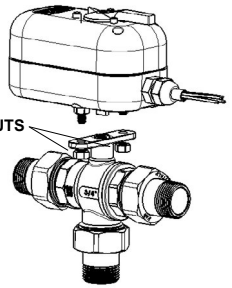
“SMALL” 3-POINT ACTUATOR

CODE	VOLTAGE FREQUENCY	ABSORBED POWER	ROTATION ANGLE	ROTATION TIME	TORQUE	ROOM TEMPERATURE	DEGREE OF PROTECTION	COLOUR
3010	230 V-50Hz	4,5 VA	90°	180 S	10 Nm	-10° + 50°C	IP54	RED/BLUE
3011	24 V-50Hz	4,5 VA	90°	180 S	10 Nm	-10° + 50°C	IP54	RED/BLUE

Description

The actuator, incorporating an appropriate servomotor, permits automatic operation of a mixing valve. It operates in response to a signal coming from a temperature control unit.



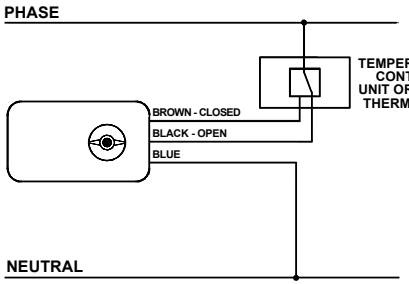
Manual release

In order to manually open or close the actuator, push the red key and simultaneously turn the position indicator clockwise or counter-clockwise through 90°. Normal functioning will return automatically.

Electrical connection

Before connecting the actuator ensure that the selected model is compatible with the available network voltage. All connections must to be made by qualified personnel, with respect for overall electrical system and taking care that the electricity supply is switched off. Incorrect connection may damage both person and equipment. All FAR actuators have been designed with an additional auxiliary microswitch, an exchange contact without voltage, for low-tension signals (max 230 V) and/or to supply applications with low electrical input (max 2A).

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 CONTACT OF THE MICROSWITCH
3		SIGNAL INDICATOR	WITH OPEN VALVE PRESENCE OF PHASE ON TERMINAL
N	BLUE	NEUTRAL	CONNECTION TO THE NEUTRAL OF SYSTEM
5	BROWN	PHASE - CLOSE	VALVE CLOSING
6	BLACK	PHASE - OPEN	VALVE OPENING
7		SIGNAL INDICATOR	WITH CLOSED VALVE PRESENCE OF PHASE ON TERMINAL



The actuator is provided with a double isolation, so earthing is not required.

3 wiring connections:
actuator with temperature control unit

To control opening and closing of a zone valve via an actuator, connect the blue wire to the neutral, the brown and the black to the temperature control unit. The valve opens in presence of phase on the black wire, while with phase on the brown the valve closes.

DECLARATION OF CONFORMITY

FAR Rubinetterie SpA under its own responsibility declares that actuators are produced in conformity to the EEC standards: 2004/108CE and 2006/95CE.

THE 2002/96/CE DIRECTIVE FOR THE RECOVERY OF WASTE FROM ELECTRICAL AND ELECTRONIC EQUIPMENT

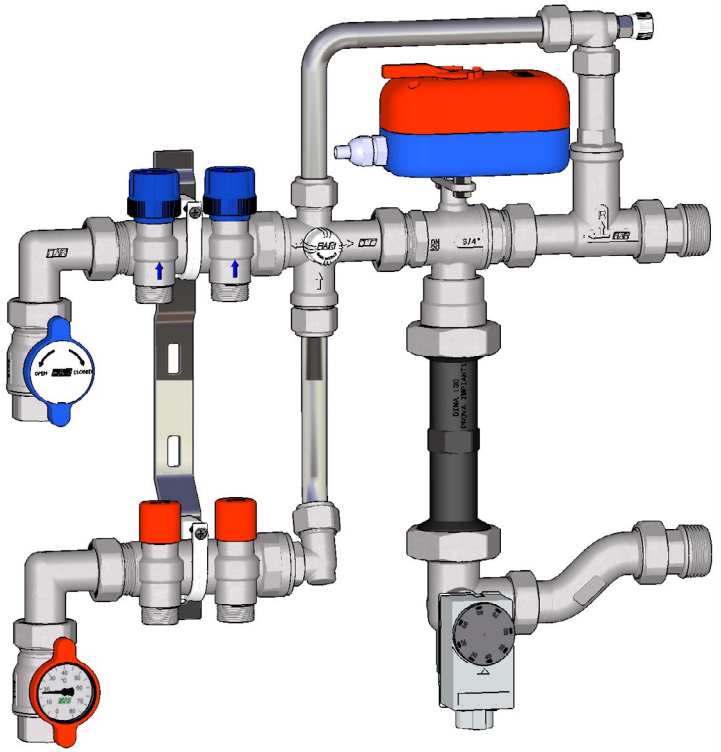
The 2002/96/CE directive on the ‘RAEE’ (waste from electrical and electronic equipment) states that they cannot be treated like the municipal solid waste, but must be managed separately. In order to carry out a correct recovery of the ‘RAEE’, apply to the local authority, which will have information about methods and procedures to follow, as well as about place and time for the waste delivery.

SYSTEM FILLING

To speed up system filling, we suggest setting the regulating knob of the thermostatic mixer to the MAX position, in order to achieve the maximum inlet opening. Once filled,the system will discharge any air in the return pipe via the manual air vent valve (N°6 on the drawing). To fill the heating circuits it is necessary to close each valve on the return manifold and then open them one by one. We recommend cleaning the system to prevent any impurities obstructing the waterways, or even causing a malfunction of the regulating controls.

flow evolution

REGULATING UNIT WITH 3-POINT ACTUATOR FOR UNDERFLOOR HEATING SYSTEMS



Art.3491-3492

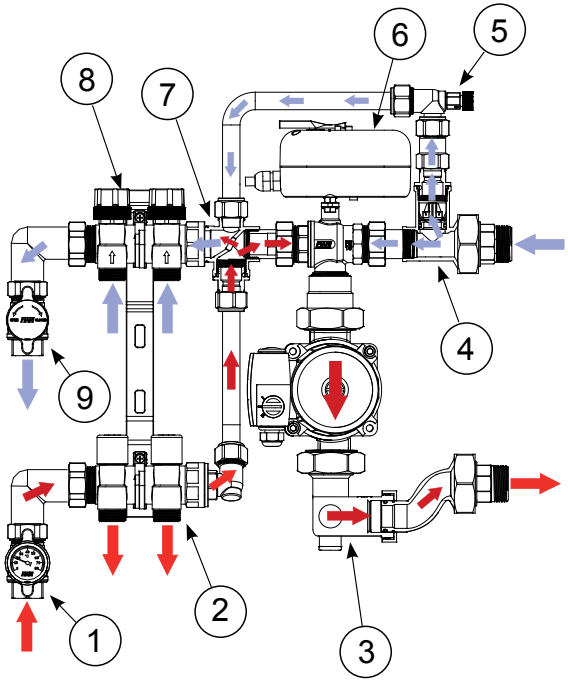
VF119A EDIZIONE N° 3: 30/05/2013

REGULATING UNIT WITH 3-POINT ACTUATOR FOR LOW AND HIGH HEATING SYSTEMS

The regulating unit with modulating actuator (art.3491-3492) are suitable for systems combining both low and high temperature circuits e.g. mixed projects with both underfloor heating and radiators. These are designed for connection of either flow or return pipework to boiler with provision for an integral pump.
A 2 or 5 port manifold can be installed for delivery to the high temperature operating system (radiators).
Flow water temperature is controlled by means of a 3-point actuator which, depending on the temperature set on the control unit, blends water coming from the return circuit with hot water coming direct from the boiler. A safety thermostat on the flow ensures that very high temperature water cannot enter the heating loops, even in the event of the mixer unit malfunctioning.

The unit consists of the following devices (see picture):

1. 3/4” ball valve with temperature gauge for the delivery pipelines connection.
2. Supply manifold for high temperature flow
3. Safety thermostat with immersion probe with adjustable temperature setting from 10 to 90°C (recommended 60°C). This limits the flow temperature, shutting down the circulator when the pre-set temperature is reached.
4. Return connection with built-in non-return valve for distribution to the mixer and the return line to the boiler.
5. Elbow with manual air vent valve.
6. Mixing valve complete with 3-point actuator
7. Diverter connection complete with adjustable by-pass for the return of hot temperature water to the boiler and the return water from the heating loops.
8. Return manifold for high temperature flow
9. 3/4” ball valve for the return pipeline connection into the boiler.



FUNCTION

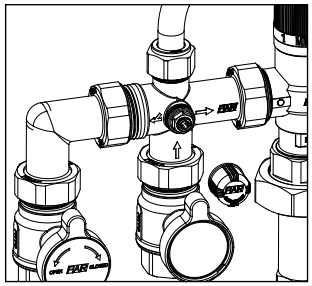
Mixing valve complete with 3-point actuator is designed to ensure a constant supply of water to the underfloor heating loops at the required temperature- blending in supplies of high temperature water from the boiler as necessary.
Circulation is as follows: water leaves the mixing valve (6), passes through the pump (installed in place of the extension piece) and is pumped to the flow side of the manifolds from whence it is distributed to the individual underfloor heating loops. Water coming back from the loops enters the return side of the manifolds and, through the connection (4), re-enters the mixing valve. Here supplies of high temperature water are blended with the return water to ensure that flow temperature to the loops is maintained at the required level. The high temperature water is supplied from the boiler via a ball valve (1) and the connection (7). As it enters the mixer unit an equal quantity of low temperature return water is diverted back from the highside of the connection (4) to the boiler via the connection (7).

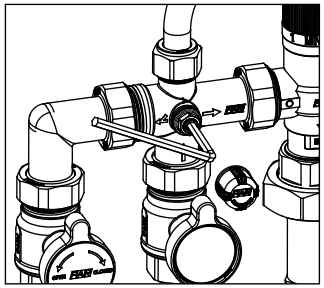
TECHNICAL FEATURES

Nominal pressure:	10 bar
Maximum working pressure:	4 bar
Centre distance of the pump to install:	130mm

BY-PASS REGULATION

By-pass calibration can be adjusted using a 5mm Allen key: unscrew the white handle and insert the key.
Turning counter-clockwise decreases the flow to the mixer, while the return flow to the boiler increases.
Turning clockwise increases the flow to the mixer, while the return flow to the boiler decreases.





IMMERSION SAFETY THERMOSTAT

The immersion thermostat located on the regulating unit, is designed to shut down the pump, or the boiler when required.It is a liquid-filled type thermostat. The graduated knob allows the operator to set the maximum temperature value for the system.

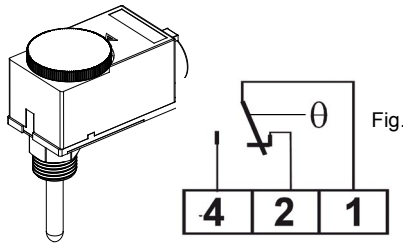


Fig.1

Technical features

Temperature setting range:	10-90°C
Level of protection:	IP40
Insulation class:	I
Maximum head temperature:	85°C
Maximum sensor temperature:	135°C
Switch action:	1
Contacts rating:	15(6)A250V~ 50Hz

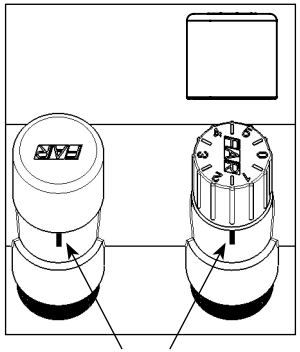
- Terminal 1 is the common contact
- Connect the circulator phase to terminal 2
- When the temperature increases circuit 1-2 opens and circuit 1-4 closes

Electric connections

All connections must be made by qualified personnel in strict compliance with all safety standards and provisions of law.
Before connecting the thermostat make sure that the selected model is fully compatible with the available network voltage, taking care that the electricity supply is switched off.
It is essential to verify that the load is compatible with the capacity of the contact.
To carry out the wiring, unscrew the four screws, remove the cover and connect the wires to the terminals (Picture 1). Snap the front cover back so that the pin lines up with the handle opening.

BALANCING MANIFOLD

The manifold with balancing lockshield valves allows an appropriate shutter regulation and an easy reading of the reference notation onto the handle itself. The handle stroke is less than 360° and it ranges between position 0 – lockshield valve fully closed and 5.5 – lockshield valve fully open. The handle position can be easily identified thanks to the reference notches onto the manifold.To carry out the adjustment simply remove the red cap and manually turn the handle to the desired value.



FLOW RESISTANCE

POSITION	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5
Kv [m³/h]	0,24	0,31	0,39	0,46	0,52	0,59	0,69	0,83	0,97	1,13	1,26
Kv 0,2 [l/min]	1,9	2,4	2,8	3,2	3,5	3,8	4,5	5,45	6,71	8	9