



Manifolds for underfloor heating



ABOUT FAR MANIFOLDS

FAR is an Italian company manufacturing high quality heating and sanitary products since 1974. The FAR Underfloor manifolds are a high specification commercial quality product used globally in the heating and cooling industry. Mechanical specifiers select FAR Underfloor Manifolds and control units for high end projects due to their superior flow characteristics, specification and ease of installation and service.

FEATURES

- Off-set full bore configuration allows high flow, low pressure loss operation
- Max working pressure 10 bar
- Chrome plated brass components
- Can connect to pipes up to DN20 or 3/4"
- Temperature control by fixed point thermostatic or electronically controlled modulating valve
- Mixing valves only need only 5°C between supply and load temperature, ideal for low temperature and mixed heat source systems
- Integral flow meters, temperature gauges and AAVs as standard
- By-pass components available
- Supplied in 2 and 3 port modules for creating custom configurations



HIGH FLOW RATE

Commercial quality off-set full bore manifolds give superior flow characteristics than other manifolds of similar dimension.

The design of the manifold with an unobstructed main pipe greatly reduces flow resistance and pressure drop across the manifold. FAR manifolds have less hydraulic resistance and more even pressure drop across each underfloor loop as the connections to each loop are offset from the primary pipes as shown right; compared to other types that have the connections to each loop on the centre line of the manifold.

For example a 25mm FAR manifold delivering 1.2m³/hour of water has a pressure drop of only 0.67 kPa (0.067m head of water)

An equivalent 25mm Watts manifold has a pressure drop of 5.3 kPa (0.53m head of water)



DESIGN FLEXIBILITY

Three and two port sections allow any number of ports to be used on one manifold.

Flexibility to build manifolds with the exact number of loops required and can provide more loops on one manifold than with others available in the market.



INTEGRAL FLOWMETERS

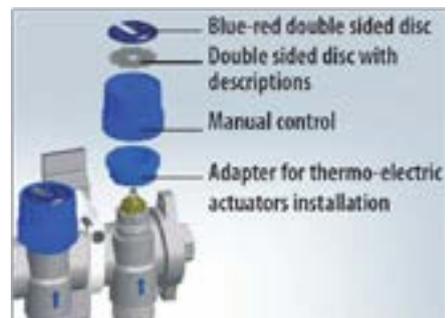
Flow meters can be adjusted from 1-5lpm.

If a flow meter needs maintenance the supply and return can be closed at both ends of the loop and the flow meter removed for maintenance.



BALANCING LOCKSHIELD VALVES

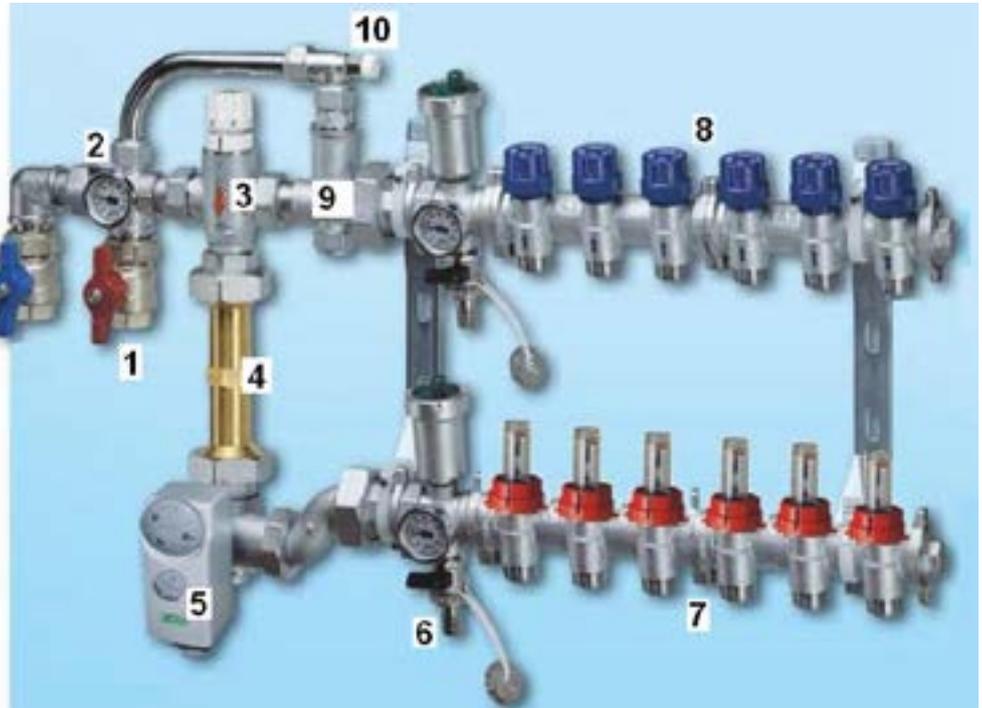
Balancing the circuits can be achieved by adjusting the return valves. It is also possible to fit electrical actuators.



KEY COMPONENTS

All manifolds will contain some or all of the components shown right or other versions of those shown.

1. 3/4" ball valve for connection to the flow and return
2. Diverter connection complete with fixed by-pass for the return of excess flow water to the boiler and the return water from the heating loops; complete with thermometer showing the temperature of water entering the mixer.
3. Thermostatic mixing valve for controlling the temperature of the water circulating in the UFH system; adjustable to a range of temperature levels from 20°C to 55°C. (Could be electrically modulated valve instead.)
4. Spacer with set distance of 130mm between the connections for correct pump selection
5. Safety thermostat with immersion probe with adjustable temperature setting from 0 to 90°C (preset at 55°C). This limits the flow temperature, shutting down the circulator when the pre-set temperature is exceeded
6. Intermediate connection complete with automatic air vent valve, bimetallic thermometer with scale from 0 to 80°C for reading temperature of premixed water flow to the UFH loops; and drain cock.
7. Pre-assembled, chrome-plated, flanged 1" brass distribution manifolds for supply of water flow to the heating loops. Connections have interchangeable sizes



for copper, plastic and multilayer pipe; and built-in flow meters for system set-up.

8. Pre-assembled, chrome-plated, flanged 1" brass manifolds with built-in valves available in interchangeable sizes for copper, plastic and multilayer pipe. These are return manifolds from the heating loops.
9. Return connection with built-in non-return valve for distribution to the mixer and the

return line to the boiler. Enables return water to by-pass mixing valve.

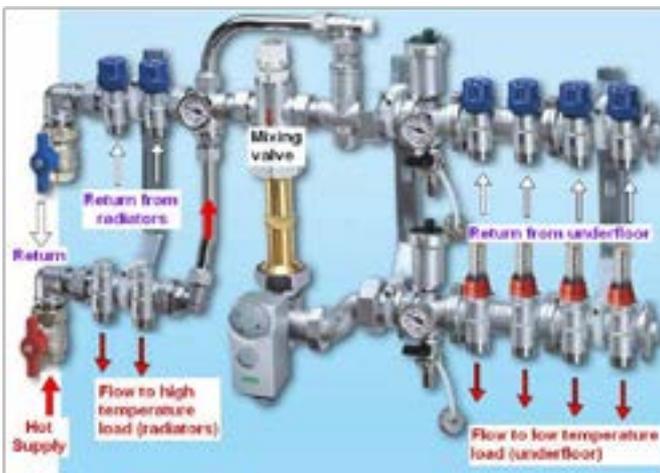
10. Elbow with manual air vent valve. Pump not included and must be specified for system

MIXED HIGH AND LOW TEMPERATURE MANIFOLD

Any manifold can have high temperature flow and return connections to the left of the mixing valve as shown right. This applies to thermostatic and electrically modulating mixing valves.

Mixing units are available with 2 to 5 high temperature ports.

*A system boiler or extra pump is needed to circulate water through the high temperature part of the circuit.



MIXING VALVE TECHNOLOGY

– only needs 4°C temperature head

1. Thermostatic mixing valve for heating – fixed temperature operation; manually adjusted
2. Electrically modulating 3-way valve for heating and cooling applications – requires control box

Applications for this include Systems where the heat source provides a greatly varying supply temperature such as a buffer tank heated by solar and heat pumps.

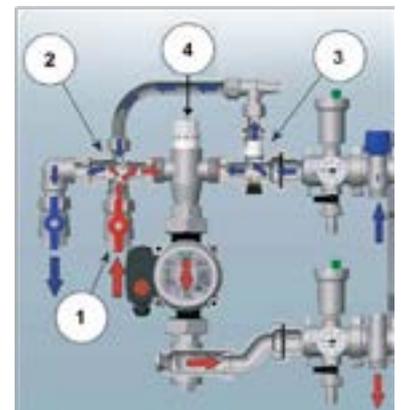
Thermostatic, fixed temperature mixing valve

1. flow inlet
2. Primary by-pass diverter connection
3. Return by-pass connection with non-return valve
4. Thermostatic valve

This configuration allows all the underfloor return water to by-pass the thermostatic valve allowing all the flow water to go into the floor without being mixed with the return water from the floor.

This means the flow temperature from the heat source need only be around 4°C higher than the flow temperature into the floor, unlike some other thermostatic mixing valves that need a difference of 15°C.

This applies to the thermostatic and electrical mixing valves.



Manually adjusted mixing valve

MODULATING CONTROL UNITS: CONTROL UNIT WITH 3-POINT ACTUATOR FOR DYNAMIC TEMPERATURE CONTROL

The control unit with modulating actuator (art. 3490) is suitable for high and low temperature water distribution systems serving underfloor heating loops.

Flow water temperature is controlled by means of a 3-way actuator which is controlled via a BMS system or the FAR heating controller. This dynamic control enables rapid and precise adjustment of flow temperature for better room temperature and running cost efficiency.

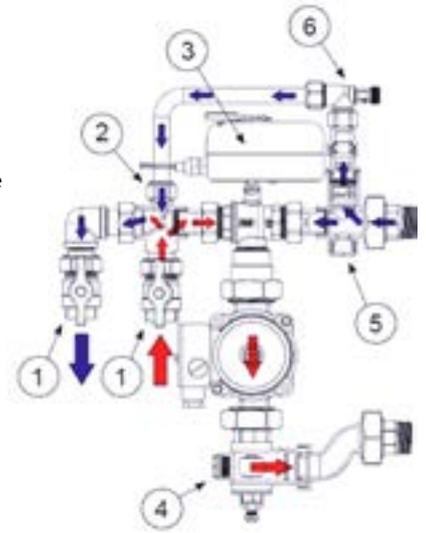


The unit comprises the following components (see right):

1. 3/4" ball valve for flow and return pipeline connection
2. Diverter connection complete with fixed bypass for return of higher temperature water to the heat source and return water from the heating loops

3. Mixing valve complete with 3-way electric actuator
4. Safety thermostat with probe
5. Return connection with integral non-return valve for water distribution to the mixer and to the return pipeline into the heat source
6. Elbow with manual air vent valve

As it enters the mixing valve an equal quantity of lower temperature return water is diverted back to the boiler, thus automatically keeping the system in balance.



AVAILABLE COMPONENTS

ELECTRICAL ACTUATORS

Actuators provide automatic control of the flow through the pipe loops. These actuators have micro-switches which ensure the pump is only switched on when there is flow.

2 wire valves

Part no	Voltage	Opening time	Type
1909	24 V	180 s	NC
1919	230 V	180 s	NC
1929	24 V	180 s	NO
1939	230 V	180 s	NO

4 wire valves with microswitch

Part no	Voltage	Opening time	Type
1914	24 V	180 s	NC
1924	230 V	180 s	NC
1913	24 V	90 s	NC
1923	230 V	90 s	NC



BY-PASS KIT

If actuators are used the flow through the system will reduce as actuators close and the pressure across the system will increase.

The automatic by-pass will allow flow through the by-pass when the set pressure difference is reached, allowing the pump to work at a constant pressure.

1" by-pass Part no: 3422 1



TEMPERATURE GAUGE FITTING

With additional temperature gauges it is possible to balance the system by temperature instead of flowrate.



HEATING AND COOLING CONTROLLER

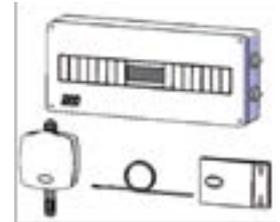
- Supply temperature sensor
- Pocket for supply temperature sensor
- Outside temperature sensor. (Optional)
- Inside temperature and humidity sensor
- Box for controller



Outside temperature sensor & controller. Sensor pocket takes 6mm sensor & has a 1/2" thread. Comes with M1" x 1/2" reducer.

HEATING ONLY CONTROLLER (FOR USE WITH MODULATING CONTROL UNITS INSTEAD OF BMS)

- Heating Controller
 - Supply temperature sensor
 - Pocket for supply temperature sensor
 - Outside temperature sensor. (Optional)
- Room temperature thermostat can be connected to the controller.



Controller modes

Fixed Supply Temperature

No outside temperature sensor needed. Valve modulated to provide a fixed supply temperature.

Outside temperature compensation mode.

Modulates the supply temperature in relation to the outside temperature for improved comfort, greater efficiency, and reduced running costs. Outside temperature sensor needed. Temperature relationship can be altered. Curves for radiators and underfloor heating.

PIPE CONNECTORS

Composite pipe 16 x 2mm x 3/4 eurocone
Part no: 6055 58190

Composite pipe 20 x 2.25mm x 3/4 eurocone
Part no: 6055 80192

Pex or PE-RT pipe 16 x 2mm x 3/4 eurocone
Part no: 6052 5861



ANTI CONDENSATE PROTECTION FOR CONNECTIONS



Part no	Size
9301 1	1"
9301 114	1"1/4
9301 112	1"1/2

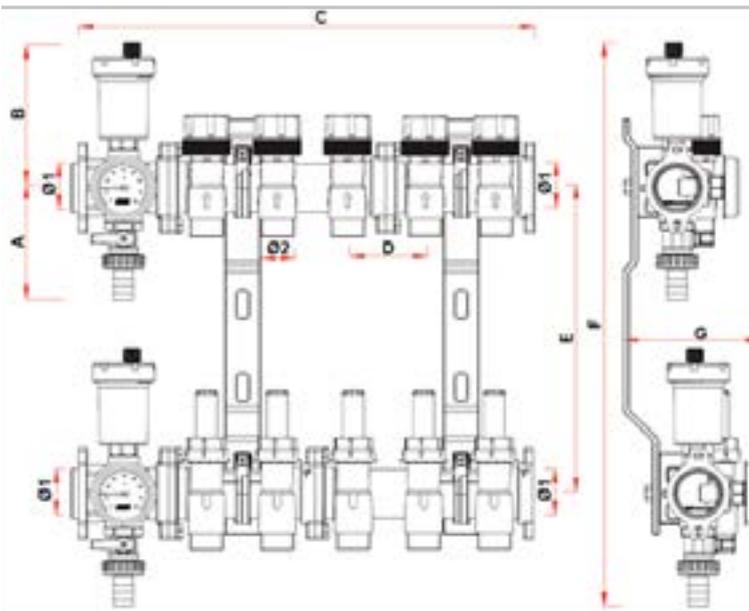
ANTI CONDENSATE PROTECTION FOR MANIFOLD

- For cooling systems, comes in sections of 2 or 3 outlets to fit manifolds of specified size.



Part no	Ports	Size
9300 102	2	1"
9300 103	3	1"
9300 104	4	1"
9300 11402	2	1"1/4
9300 11403	3	1"1/4
9300 11202	2	1"1/2
9300 11203	3	1"1/2
9300 11203	3	1"1/2

DIMENSIONS OF ASSEMBLED MANIFOLDS (1" & 1¼")



Parts

- Supply - manifold with flow-meters and flow-rate balancing valves
- Return manifold with built-in shut-off valves suitable for thermo-electric actuators
- Intermediate connections with thermometers, AAVs, fill and drain point
- Fixing brackets
- Screws and O-rings for connection
- Connection: 1" female-female
- Centre line between ports: 50 mm

Dimensions (mm)

Ø1	G1	C	see below	F	395-415
A	82	D	50	G	96
B	105	E	210-320	Ø2	24x19

Available Cabinets

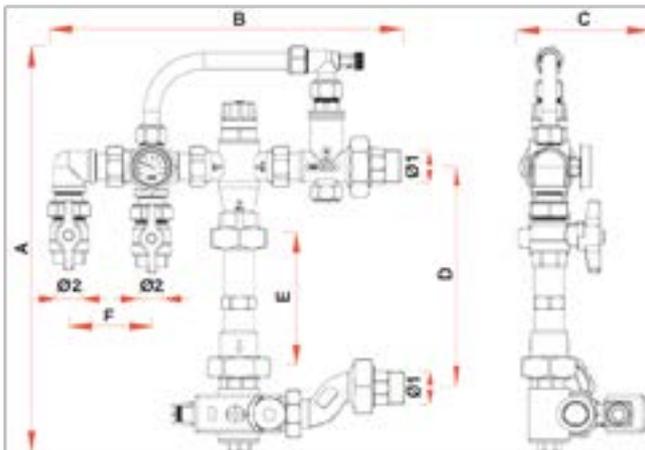
Width x Height x Depth
750 x 600 x 120
900 x 600 x 120
1100 x 600 x 120
1200 x 600 x 120

Total Length of assembly (dimension C above) including end parts

Loops	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
C	170	220	270	325	375	425	475	530	580	630	680	730	780	830	880	930	980

DIMENSIONS OF ASSEMBLED THERMOSTATIC MIXING UNIT

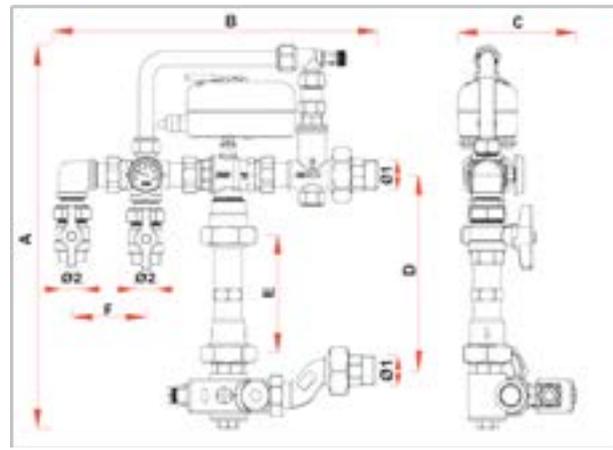
- Thermostatic mixing valve
- High Limit thermostat
- By-pass diverter connection with thermometer showing supply temperature to mixing valve
- Return by-pass connection with non-return valve
- Ball-valve connections to supply & return



Code	A	B	C	D	E	F	Ø1	Ø2
3480 34	408	352	129	221	130	80	G¾	G¾
3480 1	408	352	129	221	130	80	G1	G¾
3480 114	408	352	129	221	130	80	G1¼	G¾

DIMENSIONS OF ASSEMBLED ELECTRICAL THERMOSTATIC MIXING UNIT

- Mixing valve with electrical actuator
- High Limit thermostat
- By-pass diverter connection with thermometer showing supply temperature to mixing valve
- Return by-pass connection with non-return valve
- Ball-valve connections to supply & return



Code	A	B	C	D	E	F	Ø1	Ø2
3480 34	408	352	129	221	130	80	G¾	G¾
3480 1	408	352	129	221	130	80	G1	G¾
3480 114	408	352	129	221	130	80	G1¼	G¾

A range of accessories is also available.

Contact us for more details or see the CD accompanying the Specifiers Information Kit for FAR Specification documents.



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