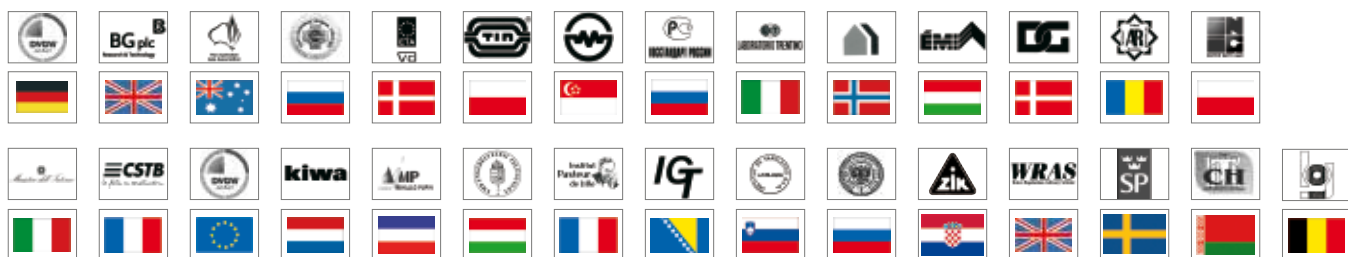


TECHNICAL CATALOGUE

STAINLESS STEEL PRE-ASSEMBLED MANIFOLDS





ITAP SpA, founded in Lumezzane (Brescia) in 1972, is currently one of the leading production companies in Italy of valves, fittings and distribution manifolds for plumbing and heating systems. Thanks to fully automated production processes, with 63 tooling machines and 25 assembly lines, we are able to produce 150,000 pieces per day. Our innate pursuit for innovation and observance of technical regulations in force is supported by the company certification ISO 9001: 2008. The company has always considered its focus on quality as the main tool to obtaining significant business results: today ITAP SpA is proud to offer products bearing the approval of numerous international certifying bodies.





STAINLESS STEEL
AISI 304L

HIGH FLOW RATE

HIGH RESISTANCE
TO CORROSION

INSTALLATION IN BOXES
WITH 90mm DEPTH

SUITABLE FOR
HEATING SYSTEMS

PRE-ASSEMBLED MANIFOLDS



ITAP SpA **PRE-ASSEMBLED MANIFOLDS**

are used to distribute heat-transfer fluid inside a system. They can be used in traditional radiator systems, and innovative under-floor radiant systems. As ITAP SpA manifolds are made with **stainless steel**, they are particularly **suitable for heating systems**. If used in cooling systems, they must be suitably insulated to avoid the formation of condensation on their outer surface. The use of ITAP SpA manifolds also allows all of the project parameters to be controlled, providing the perfect balance of each outlet. This **avoids any unnecessary waste and ensures an elevated level of thermal comfort**. In the complete version, the manifolds are equipped with flow rate regulation valves (flow meters), with preset cut-off valves set-up for electro-thermal actuator-control and with drain and air vent units. As an alternative to flow meters, it is possible to request the installation of regulation lockshields. Thanks to their increased cross-section, the bars that comprise the flow and return manifolds allow **elevated flow rate values** to be obtained. If necessary, a differential by-pass can be installed between the flow and return manifolds: this reduces any overpressure in the circuits to a minimum, protecting the service life of all of the parts and avoiding bothersome noises in the rooms where the heating system is installed. ITAP SpA manifolds, available with 1" main connections, can be housed in 90mm-deep metal boxes. This provides an extremely significant advantage: boxes having a similar depth can be positioned not only in the perimeter walls of the building, but also in the inside dividing walls. This translates into maximum freedom of choice for designers and installation technicians.



907

Complete pre-assembled manifold, with flow meters.
Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



907BY

Complete pre-assembled manifold, with flow meters and by-pass.
Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



912

Complete pre-assembled manifold, with lockshields.
Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



912BY

Complete pre-assembled manifold, with lockshields and by-pass.
Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



917

Pre-assembled manifold, with flow meters.

Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



917DE

Pre-assembled manifold with flow meters,
air vent valves and drain cock

Available sizes: 1" (from 2 to 12 Eurokonus 3/4" outlets)



922

Pre-assembled manifold, with lockshields.

Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



922MO

Pre-assembled manifold, with air vent valves.

Available sizes: 1" (from 2 to 12 Eurokonus 3/4" outlets)



927

Single manifold, with lockshields.

Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



932

Single manifold, with flow meters.

Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



937

Single manifold, with cut-off valves set up for electro-thermal control, with hand-wheels.

Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



942

Single manifold, with cut-off valves set up for electro-thermal control, with cap.

Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



947

Single manifold.

Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



PRE-ASSEMBLED MANIFOLDS ARE COMPOSED OF

AISI 304L stainless steel flow manifold, equipped with flow meters or regulation lockshields.

AISI 304L stainless steel return manifold, equipped with cut-off valves set up for electro-thermal control.

Ball valves CW617N nickel-plated brass, equipped with thermometer

End pieces with drain valve and air vent valve

Complete metal brackets, to install the pre-assembled manifold inside the metal box

CONDITIONS OF USE

- Required fluid: water (maximum admissible percentage of glycol: 30%).
- Maximum operating pressure with installed flow meters: 6 bar.
- Maximum operating pressure with installed lockshields: 10 bar.
- Maximum operating temperature with installed flow meters: 70°C.
- Maximum operating temperature with installed lockshields: 80°C.
- Main ISO 228 connections: 1" .
- Main centre-distance connections: 200 mm.
- 3 to 13 outlets with 3/4" Eurokonus connections.
- Outlet centre-distance: 50 mm.
- Flow meter regulation: 0-6 l/min.
- Flow meter precision: +/- 10%.

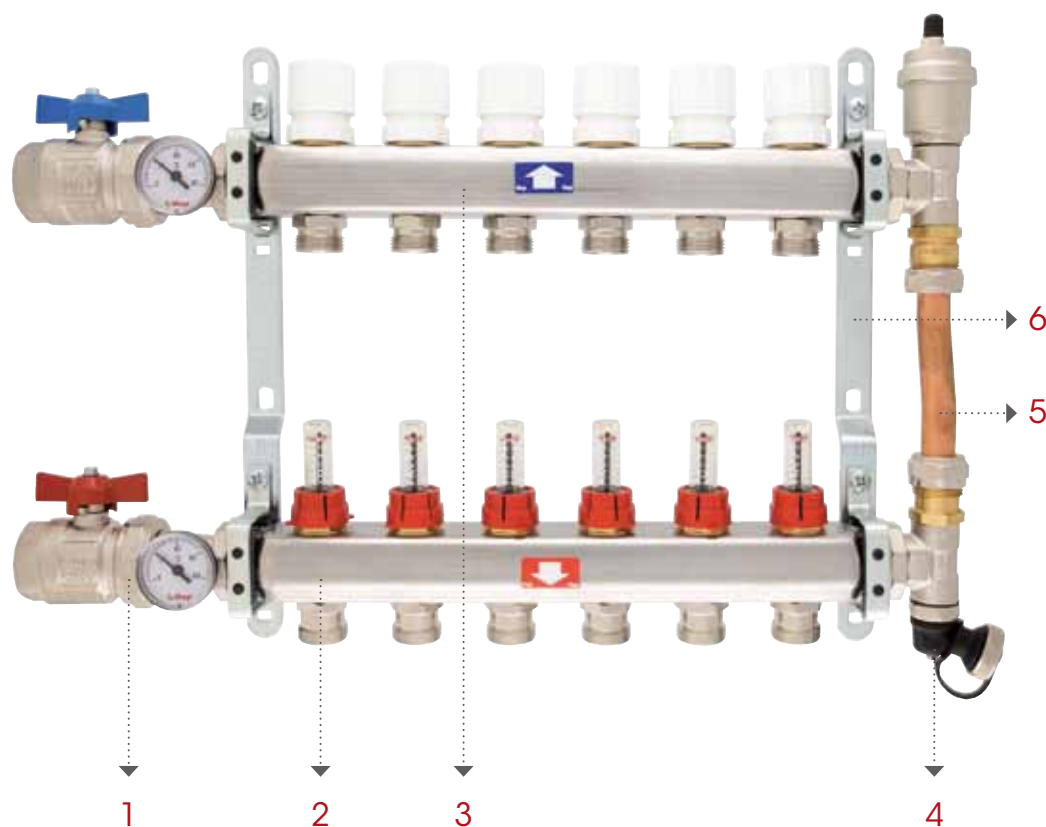


COMPONENTS

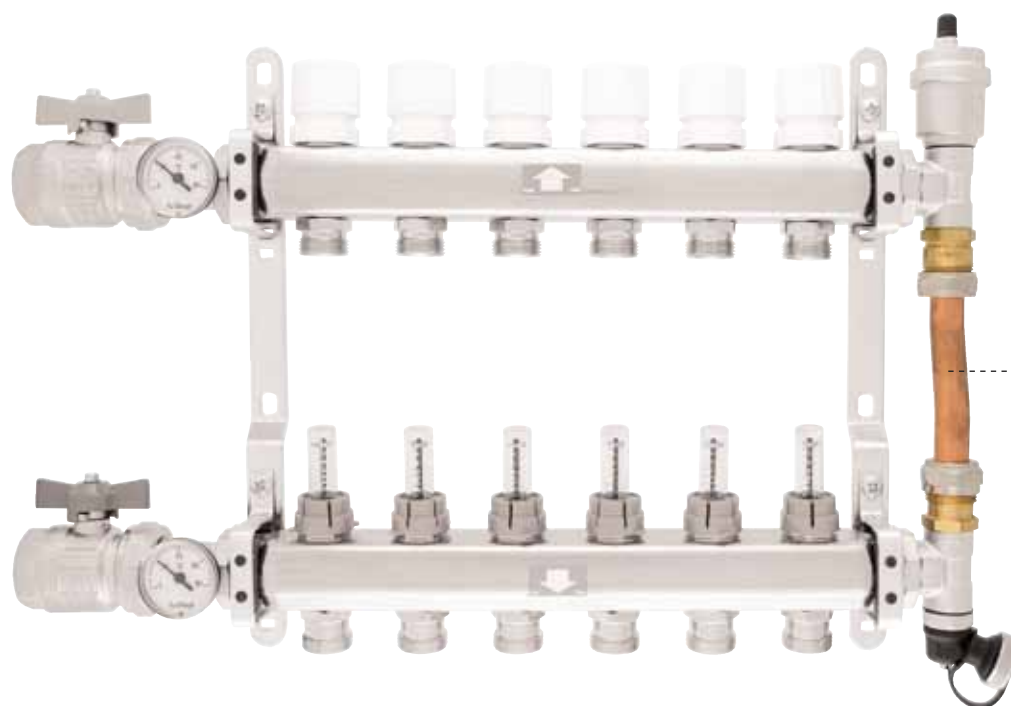
907BY

Complete pre-assembled manifold, with flow meters and by-pass.

Available sizes: 1" (from 3 to 13 Eurokonus 3/4" outlets)



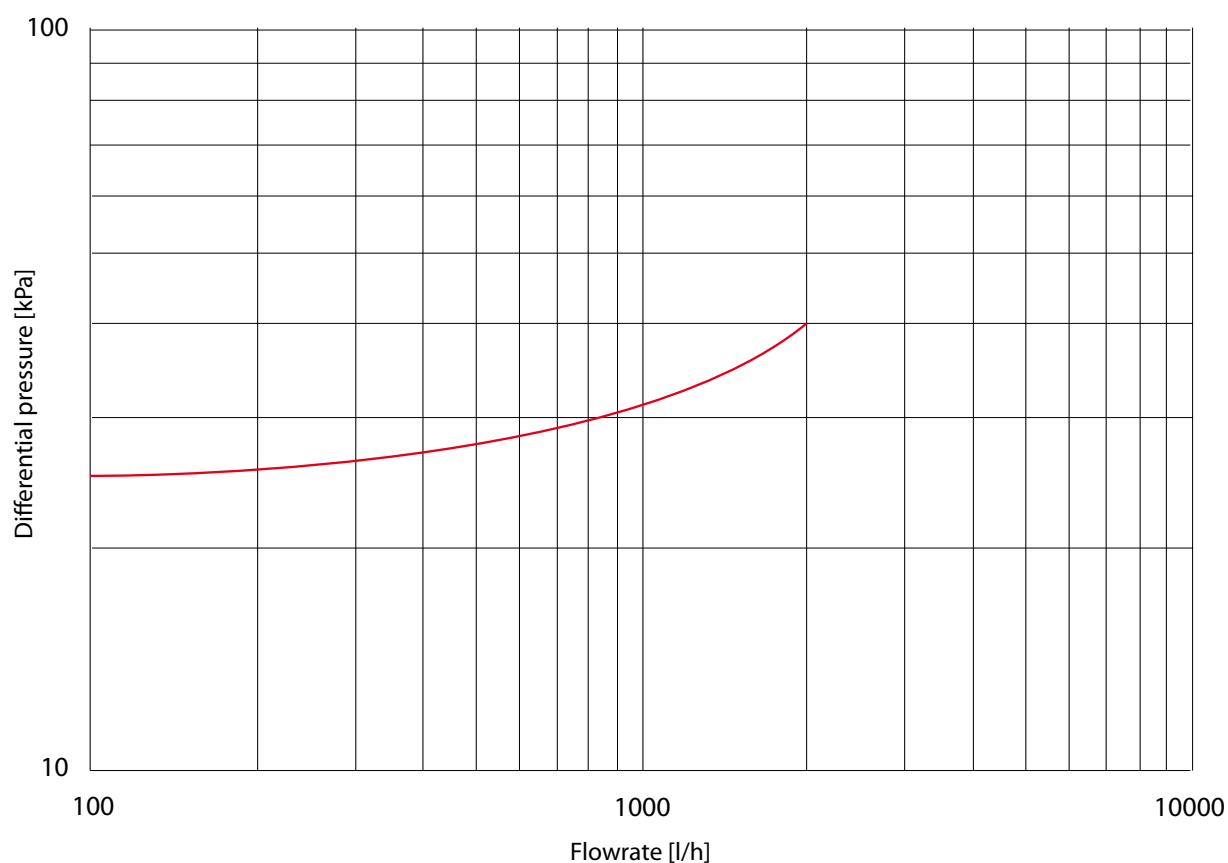
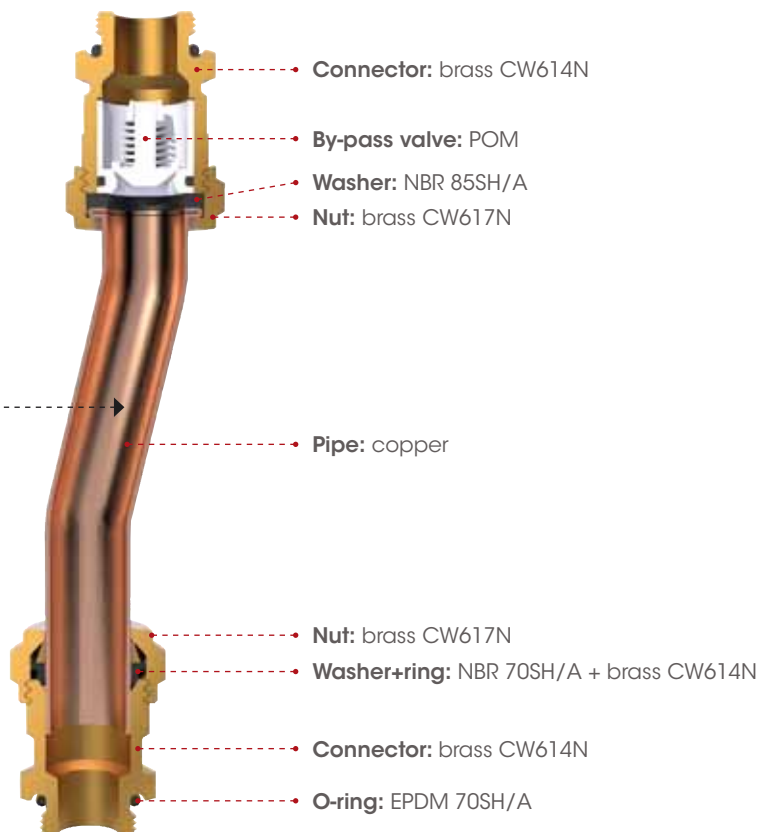
- 1 Cut-off ball valve with union and thermometer
- 2 Flow manifold with flow meter
- 3 Return manifold with cut-off valves, preset for electro-thermal actuators
- 4 End piece with drain and air vent
- 5 Differential by-pass
- 6 Mounting brackets



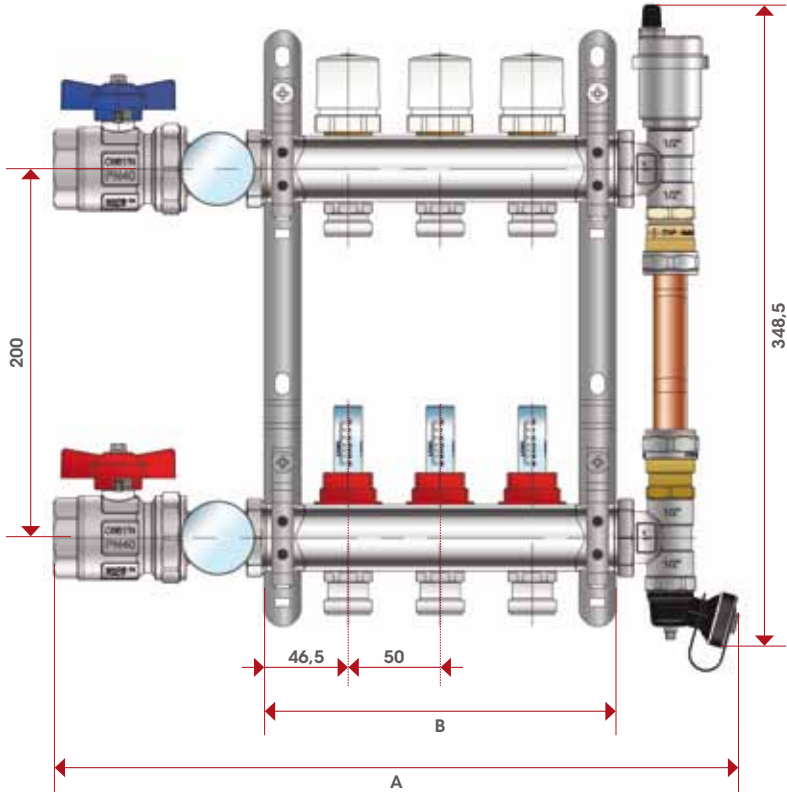
BY-PASS

This accessory is used to limit a rise in differential pressure inside the circuits, when electro-thermal actuators are installed on the return manifolds. When the various electro-thermal actuators close the outlet circuits, the differential pressure inside the system rises significantly, causing the noise level to increase and subjecting the various mechanical parts to increasingly greater stress. When this phenomenon occurs, the by-pass kit allows an overpressure drain outlet to open, connecting the flow manifold directly to the return one. In fact, the by-pass kit is equipped with a fixed setting spring check valve: when the differential pressure exceeds 25kPa (= 0.25 bar), the valve opens, connecting the flow manifold directly to the return one. As the differential pressure increases, the check valve opens proportionally, as shown in the following diagram.

860BY

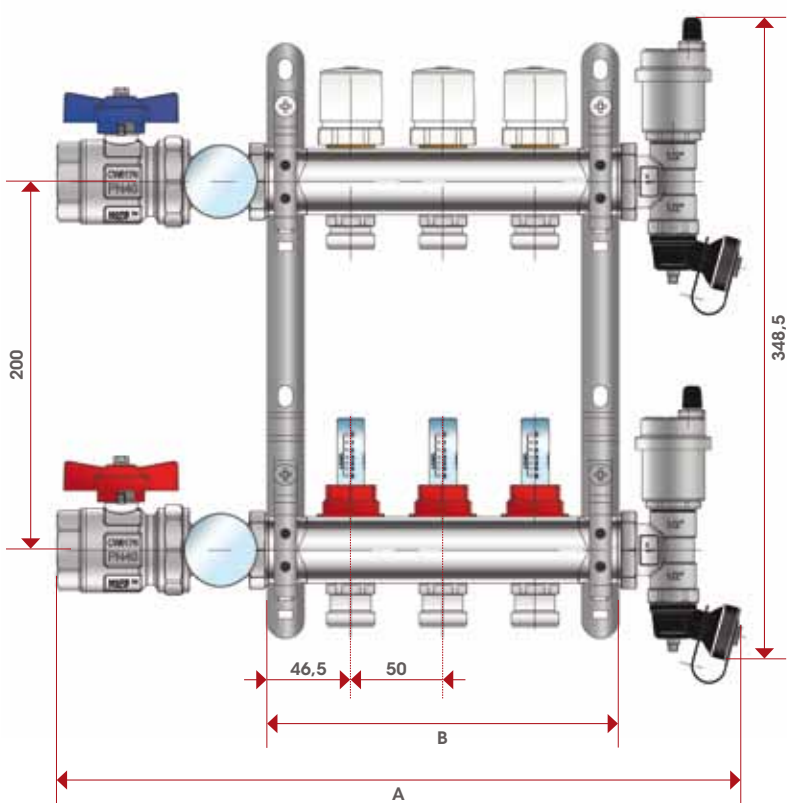


907BY



	3	4	5	6	7	8	9	10	11	12	13
A	373	423	473	523	573	623	673	723	773	823	873
B	193	243	293	343	393	443	493	543	593	643	693

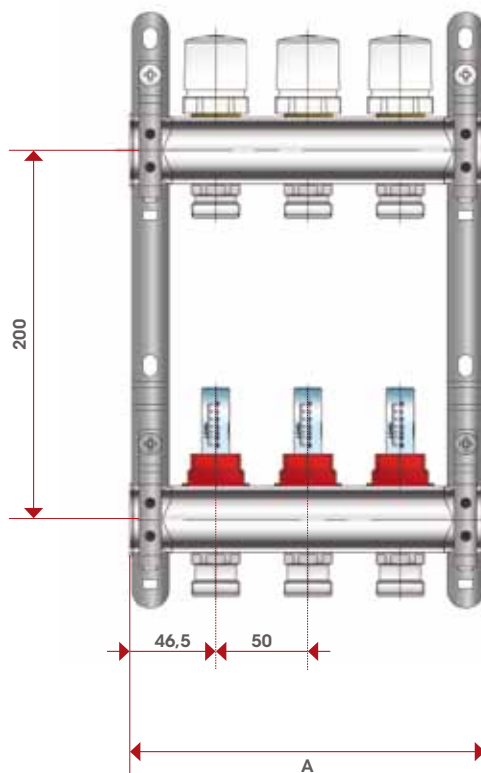
907



	3	4	5	6	7	8	9	10	11	12	13
A	373	423	473	523	573	623	673	723	773	823	873
B	193	243	293	343	393	443	493	543	593	643	693

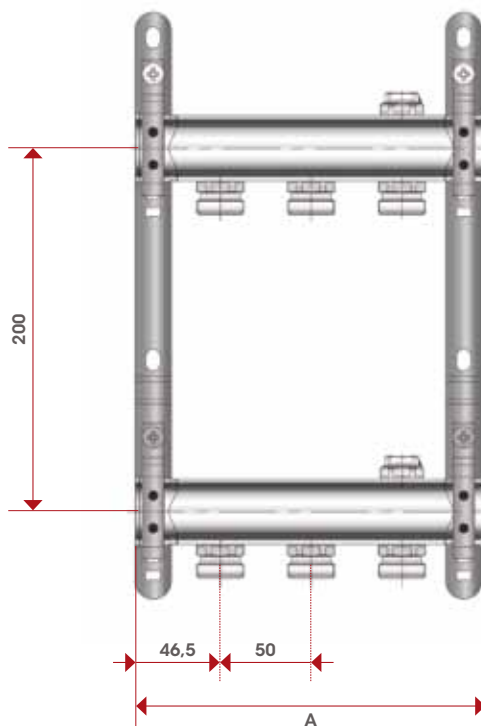


917



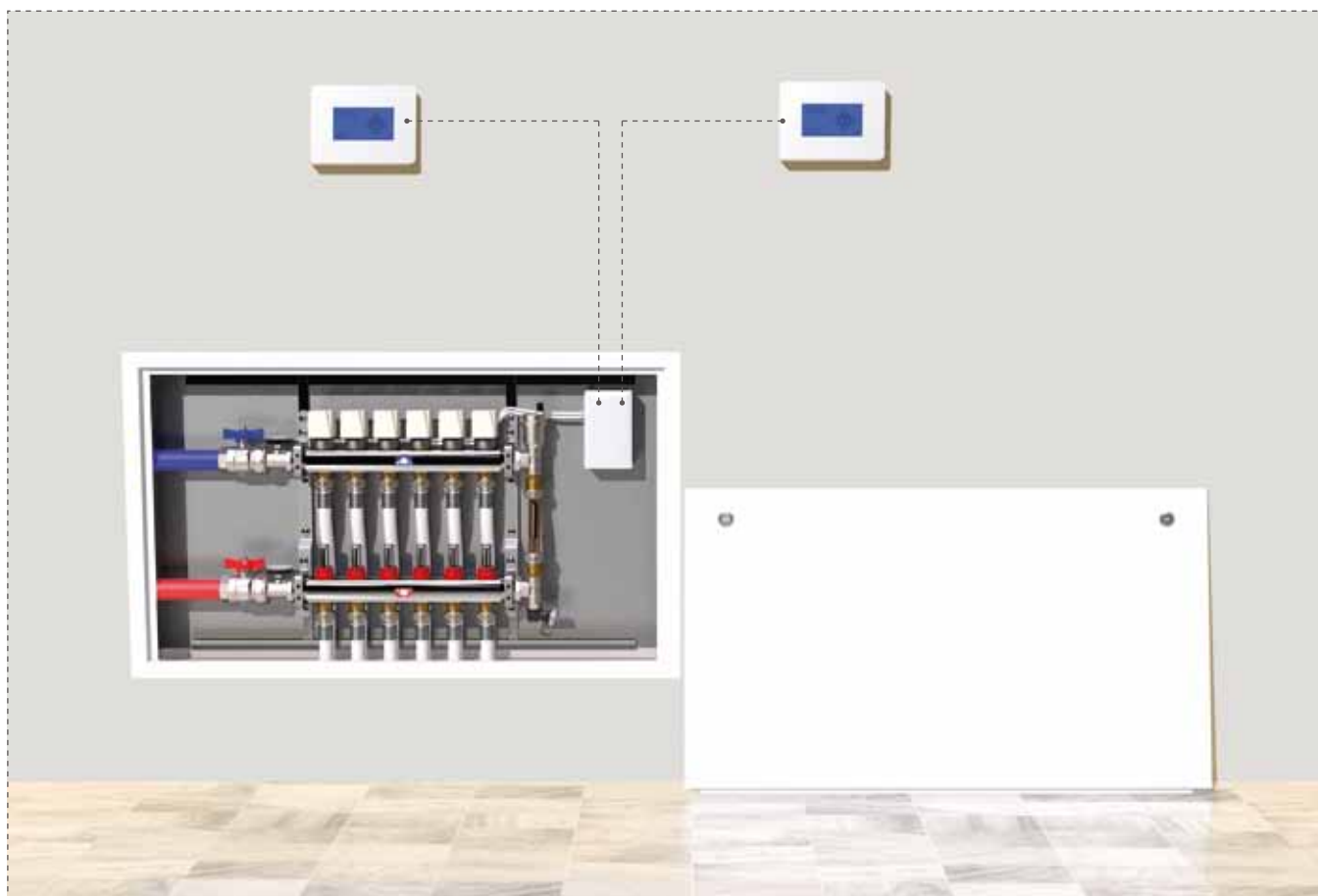
	3	4	5	6	7	8	9	10	11	12	13
A	193	243	293	343	393	443	493	543	593	643	693

922MO



	2	3	4	5	6	7	8	9	10	11	12
A	143	193	243	293	343	393	443	493	543	593	643

Pre-assembled manifold with electrothermal actuators



INSTALLATION



fig.1

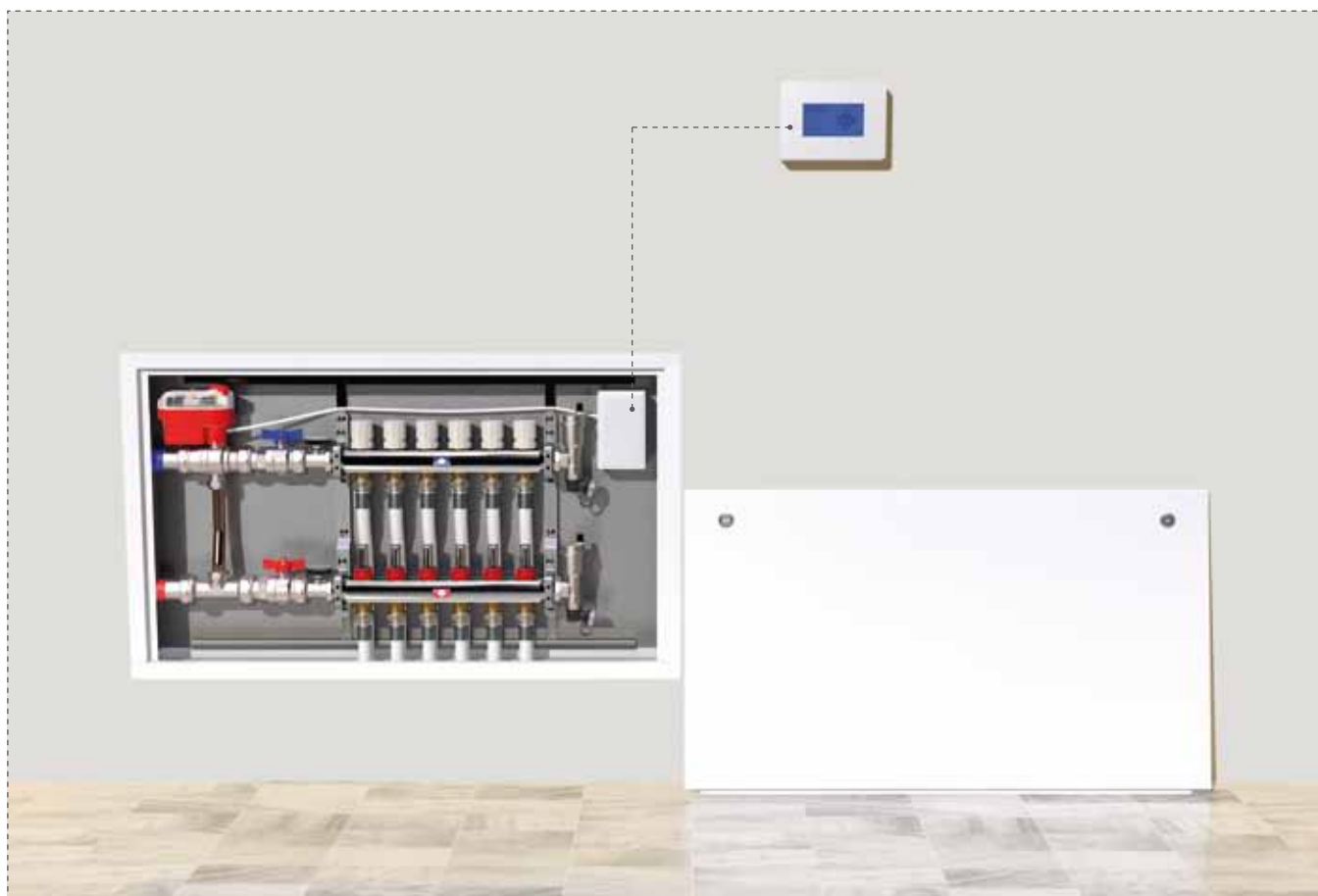
The ITAP SpA pre-assembled manifolds are installed in metal boxes Art.498, with a max depth of 90 mm. Accordingly, this type of installation is not only possible along the perimeter walls of the building, but also in the indoor dividing walls. Thanks to this distinguishing feature, maximum freedom applies to installation inside buildings. In order to control the temperature of every single room, it is advisable to use pre-assembled manifolds combined with electro-thermal actuators Art. 891M. These actuators provide maximum flexibility in terms of temperature control: a room thermostat can be connected to each

Pre-assembled manifold with two-way zone ball valve



actuator, stopping the flow of heat transfer fluid when the project temperature of the individual room is reached. Accordingly, the thermal comfort of each room is controlled independently. To balance every circuit, the flow manifold outlets require the installation of a micro-metric valve, equipped with a flow meter [fig.1]. Accordingly, it is possible to regulate the flow rate by simply turning the transparent part of the valve until the project flow rate is reached (read directly on the graduated scale of the valve). ITAP SpA flow meters are also equipped with regulation protection: it is in fact possible to lock the micro-metric valve in its open position, using the standard-supply red cover. If, due to debris in the circuit, the transparent part of the flow meter does not guarantee the correct reading of the graduated scale, simply close this valve to remove the transparent part and clean it thoroughly, without losing any water from the system. If no direct reading of the project flow rate is required, it is possible to request regulation lockshields to be installed on the flow manifold instead of flow meters.

Pre-assembled manifold with three-way zone ball valve



If, for the design, it is not necessary to control the thermal comfort of every room independently, it is advisable to install ITAP SpA pre-assembled manifolds with motorised ball zone valves Art. 980, 981, 984+988. If these valves are driven by servomotors Art. 989, 990, 991 and connected to a room thermostat, they can stop the flow of heat transfer fluid feeding into the manifold, when the thermostat reaches the set temperature. The use of motorised zone valves is particularly useful when the thermal system of a dwelling is divided into two zones. Typically, in the most common projects, it is necessary to manage two individual zones: a day zone and a night zone. Thanks to the installation of two pre-assembled manifolds, each with a motorised zone valve, it will be possible to control each zone independently, by simply connecting a room thermostat to the aforementioned valves.

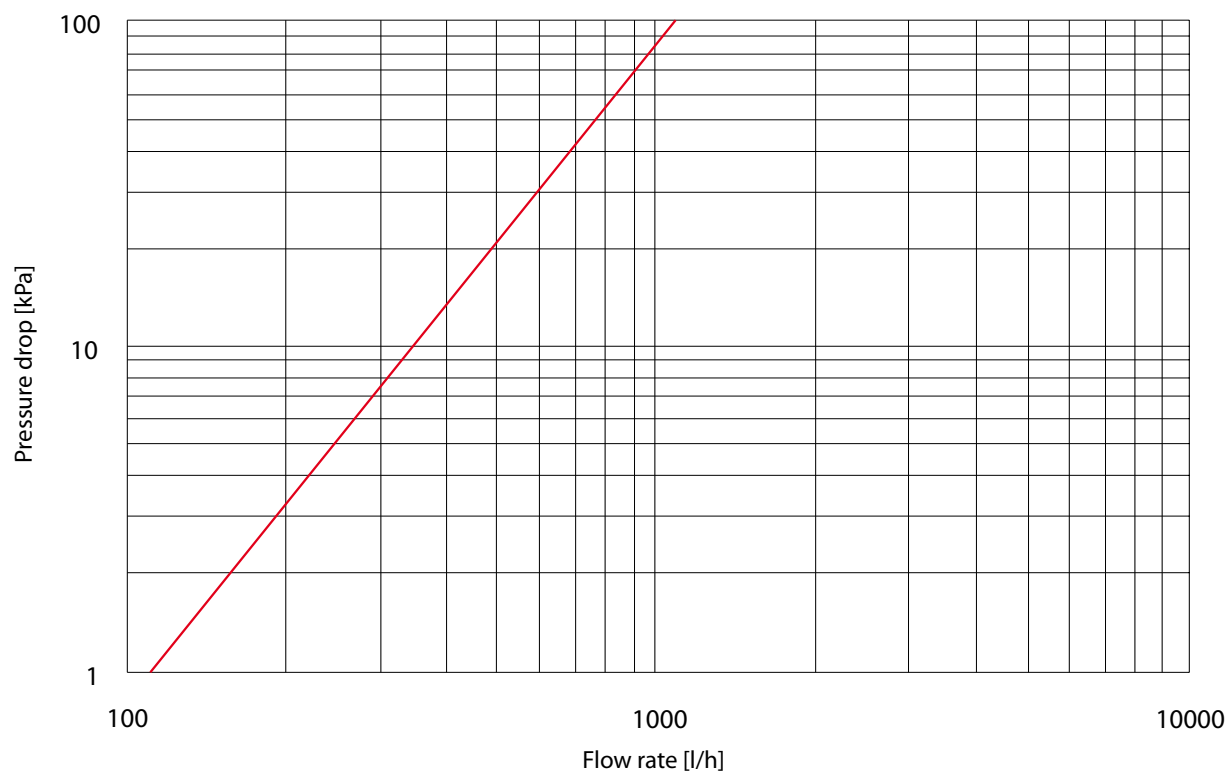
FLOW RATE / PRESSURE DROP DIAGRAMS

Below are the flow rate / pressure drop diagrams relative to the following parts:

- Flow meter (flow manifold)
- Regulation lockshield (flow manifold)
- Shut-off valve (return manifold)

The aforementioned diagrams apply to pre-assembled manifolds with main 1" connections.

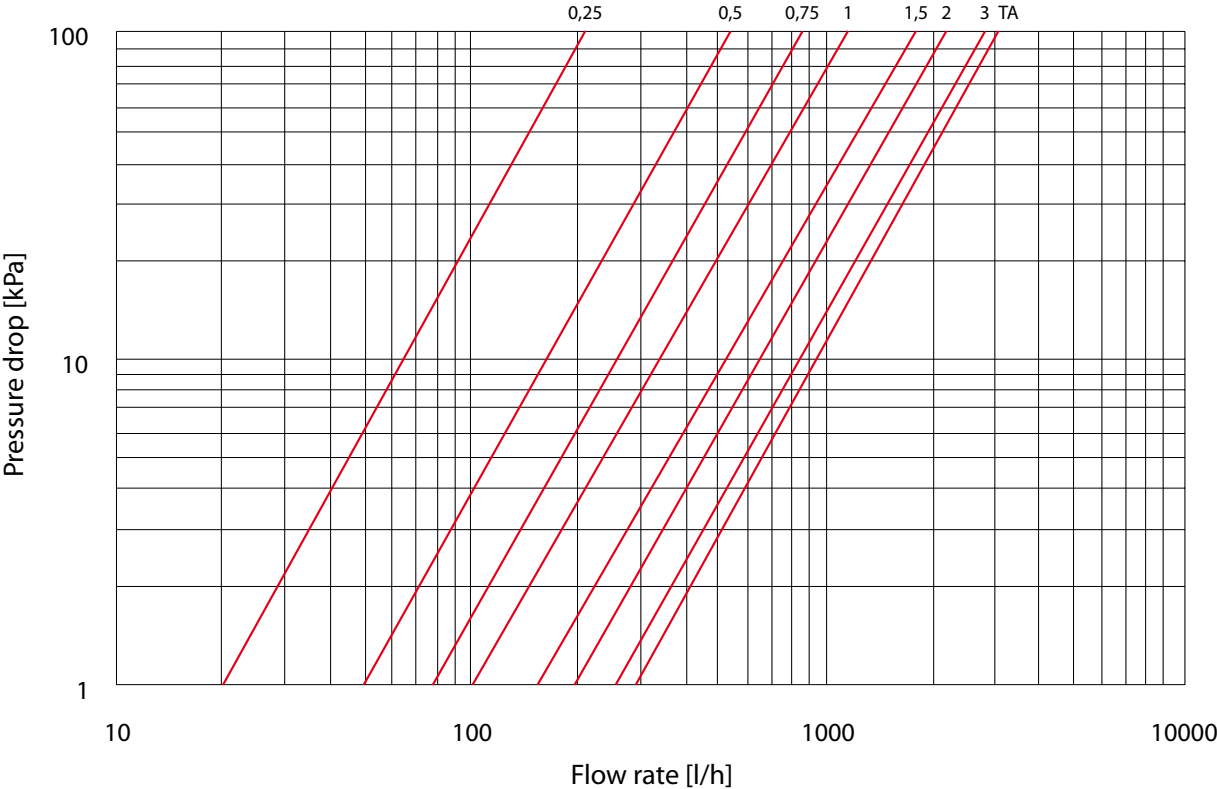
Diagram of flow meter fully open (flow manifold)



$K_v = 1,1 \text{ m}^3/\text{h}$

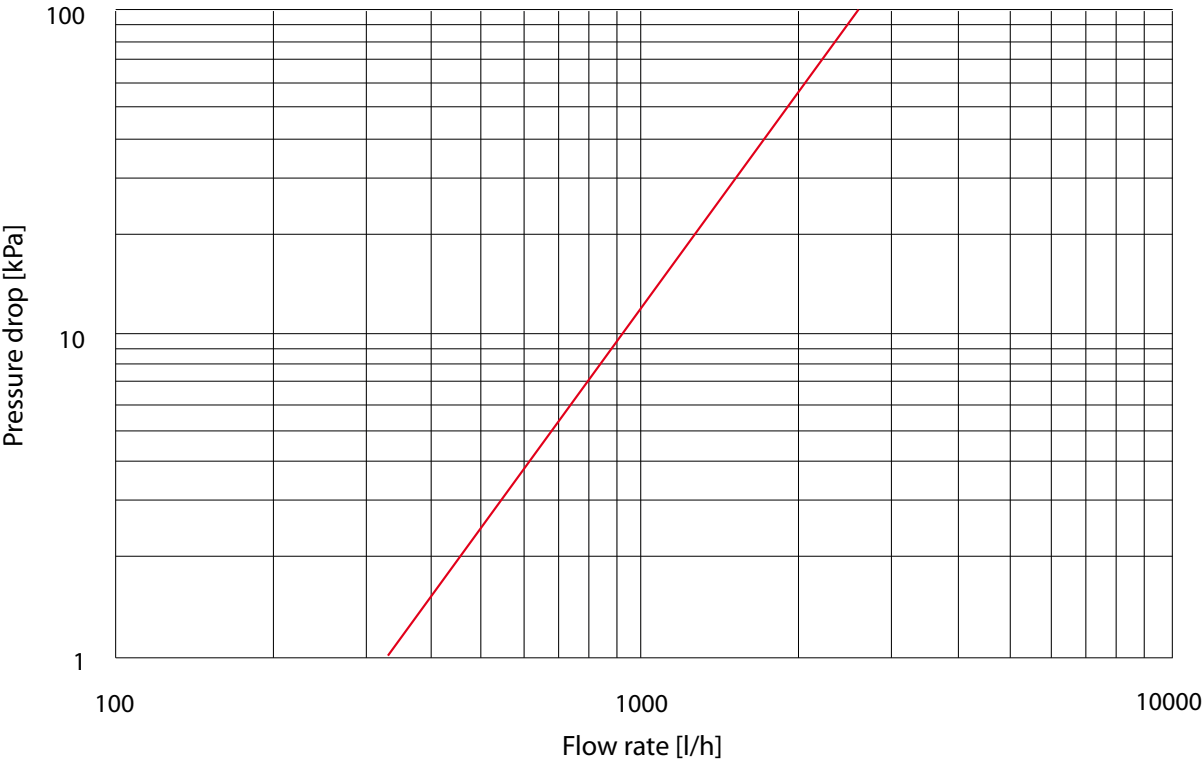


Regulation lockshield diagram (flow manifold)



Regulation (rpm)	0,25	0,5	0,75	1	1,5	2	3	FO (open)
Kv [m3/h]	0,21	0,54	0,86	1,13	1,72	2,27	2,82	3,06

Shut-off valve (return manifold)



Kv = 2,60 m³/h



TEC

NOTES

We reserve the right to make improvements and changes to the products described herein and to the relative technical data, at any time and without forewarning.



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