01F151-GB

FAN COIL VALVES
SERIES 2131 - 3131 - 4131

MAIN FEATURES

- Available in the following versions :

- *2 way, Size : 1/2" - 3/4" - 1"*
- *3 way, Size : 1/2" - 3/4" - 1"*
- *3 way 4 ports, Size : 1/2" - 3/4"*

- Compact sizes and reduced weights.

- Conforms to Italian Law UNI 8156/81.

WATTS Cazzaniga

DESCRIPTION

The control valves for fan-coils, **Series 2131**, **3131**, **4131**, are normally used for controlling flows of hot and cold water in heating and/or air conditioning systems, through an electric ON/OFF command.
The valves, made of brass, are offered in the male thread configuration and in the following versions:

- 2-way series 2131
- 3-way series 3131
- 3-way 4 ports series 4131 with built-in by-pass.

They can be actuated by electrothermic actuators with ON/OFF action:

- Series 10C, available in the following versions

- NO (normally open)
- NC (normally closed)

2-wire (Standard) or 4-wire (**with auxiliary contact**)

- Series 20C, available in the following version

- 2-wire, NC (normally closed)

both easily to fix to the valve body through a threaded ring nut.

APPLICATION

The valves are used for shutting off (**Series 2131,**2-way) or diverting/mixing (**Series 3131 - 4131**, 3-way - 3-way 4 ports size 1/2" and 3/4"), or diverting (**Item 31311** 3-way size 1") the heat transfer fluid to a heating or air conditioning system as required by the room thermostat (or timing thermostat).
Thanks to the very compact size, the control valves **Series 2131**,**3131**,**4131** are suitable for installation on banks of single terminal units (fan-coils, ventilating units).

OPERATION

Operation of the fan-coil control valves **Series 2131**, **3131**, **4131** is through the automatic movement of the plug which shut-offs the heat-transfer fluid: the ON/OFF action of the plug is controlled by a wax thermostatic element located inside the actuators **Series 10C** and **20C** activated by a PTC thermistor against a signal sent by a room thermostat (or timing thermostat).

The electrothermic actuator series 10C, in the 4-wire version, is provided with an auxiliary contact for additional controls (metering, control of pumps, fans or other equipment).

The mechanical operation of the valves is of NO type. When coupled to the actuator, under rest conditions (actuator not energized), the valve can be:

- Normally closed (NC)
  (closed, straight way and by-pass open if 3-way)
- Normally open (NO)
  (open, straight way and by-pass closed if 3-way)

The hydraulic flow rate and pressure drop characteristics of the valves are given in appropriate charts; when they are coupled with the ON/OFF actuators, they assume the characteristics associated with such device.

2131

Two-way brass valve for fan-coils.
ON/OFF operation with actuators Series 10C, 20C and 20CI.

Part No.	Size	Weight (g)
213112	1/2" MM	200
213134	3/4" MM	200
21311	1" MM	500

2131

Three-way brass valve for fan-coils.
ON/OFF operation with actuators Series 10C, 20C and 20CI.

Part No.	Size	Weight (g)
313112	1/2" MM	200
313134	3/4" MM	250
31311	1" MM	550

2131

Three-way brass valve with 4 connections for fan-coils. ON/OFF operation with actuators Series 10C, 20C and 20CI.

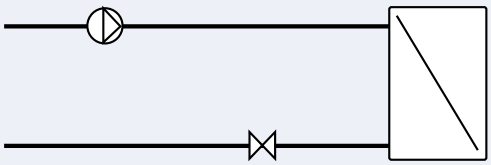
Part No.	Size	Weight (g)
413112	1/2" MM	350
413134	3/4" MM	450

2131

Soft sealed union with nut for zone valves series 2131, 3131, 4131.

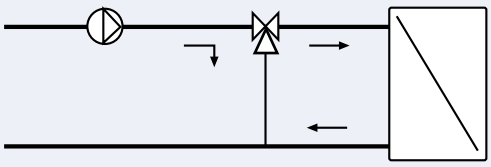
Part No.	Size	Weight (g)
8401212GAS	1/2" x 1/2"	50
8403434GAS	3/4" x 3/4"	100
84011GAS	1" x 1"	100

SHUT-OFF

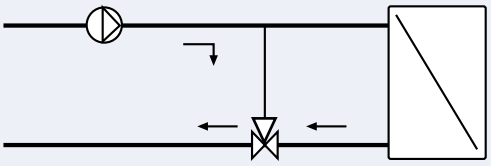


The 2-way fan-coil valves series 2131 serve for shutting off the flow of heat transfer fluid.

DIVERTING



MIXING



Thanks to the special configuration of the plug controlling the by-pass flow, the 3-way fan-coil valves series 3131 or 3 way with 4 ports series 4131, can be used equally as well as diverting or mixer valves (thus optimizing the various plumbing installation requirements).
Apart from valves series 31311 (1") which are only used for diverting service.

The fan-coil control valves **Series 3131**, **4131**, are designed and built to be used both for diverting and mixing service, provided the max. operating Dp given in the table be observed in order to avoid risk of faulty operation; except for valves **Item 31311** (1") where the recommended application is solely that of **diverting**.

The reliability of the fan-coil control valves **Series 2131**, **3131**, **4131** is guaranteed by the 100% testing on the production, which check the hydraulic seals of the valve body and its external components and that of the plug in its flow shut-off function.

INSTALLATION

Choice of fan-coil control valves depends on the type of plumbing systems as well as the required flow rate and pressure drop characteristics.

In systems with 2-way control valves it is advisable to provide by-pass valves **Series 466** to ensure a minimum recirculation of the fluid.

It is recommended not to install the valve with the actuator facing down.

The valves can be connected by using the soft-seal tailpieces **Series 840** with the range of single-piece or union fittings (3-piece).

MATERIALS OF CONSTRUCTION

Body	Brass CW617N
Rod	Brass with chemical nickel-plating
Spring	AISI 302
Plug	EPDM

SPECIFICATION

Max. pressure	16 bar
Min. fluid temperature	4 °C
Max. fluid temperature	110 °C
Liquids which can be used	Water also with glycol ≤ 30%
Plug stroke	2.5 mm
By-pass leakage	< 0,02 % Kvs
Actuator connection	Threaded ring nut M 30 x 1.5

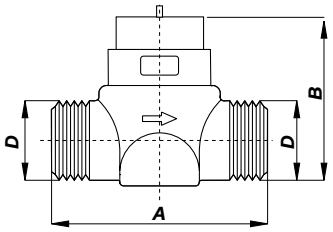
Hydraulic Characteristics

Item	Size	Kvs straight way	Kv by-pass	ΔP max Operating bar	ΔP close off with 10CNC/NA 20C bar
213112	1/2"	1.7	---	0.8	2.5
213134	3/4"	2.8	---	0.7	1.5
21311	1"	5.2	---	0.6	0.8
313112	1/2"	1.7	1.2	0.7 (Mix) 0.8 (Div)	2.5
313134	3/4"	2.5 (Mix) 2.8 (Div)	1.6	0.5 (Mix) 0.7 (Div)	1.5
31311	1"	5.2	3.3	0.6	0.8
413112	1/2"	1.7	1.2	0.7 (Mix) 0.8 (Div)	2.5
413134	3/4"	2.5 (Mix) 2.8 (Div)	1.8	0.5 (Mix) 0.7 (Div)	1.5

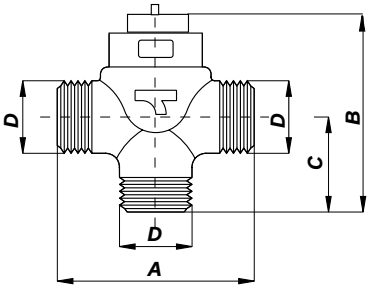
Mix: Mixing **Dev:** Diverting

Overall Dimensions (mm)

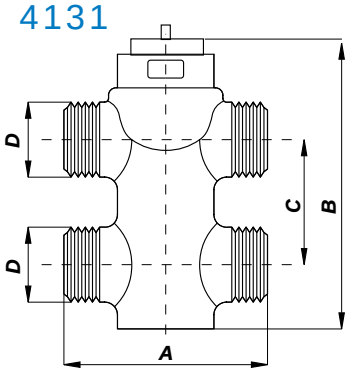
2131



3131



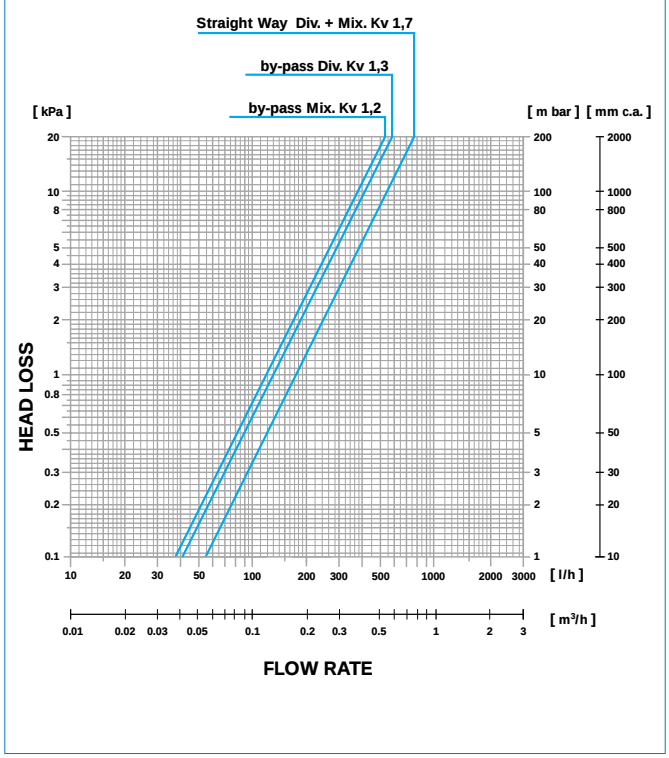
4131



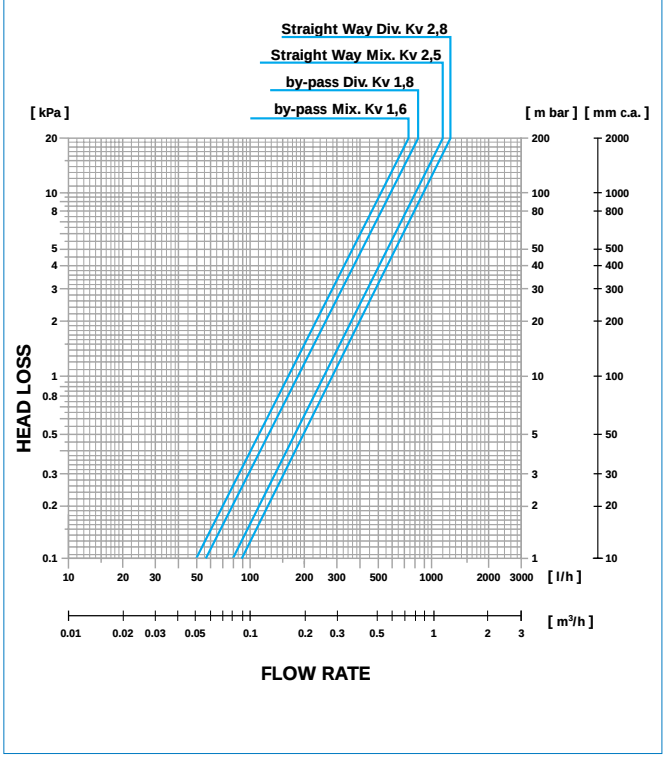
ITEM	SIZE	A	B	C
213112	1/2"	52	43	-
213134	3/4"	56	45	-
21311	1"	82	70	-
313112	1/2"	52	56	25
313134	3/4"	56	58	34
31311	1"	82	93	41
413112	1/2"	52	83	35
413134	3/4"	56	86	50

Pressure drop charts

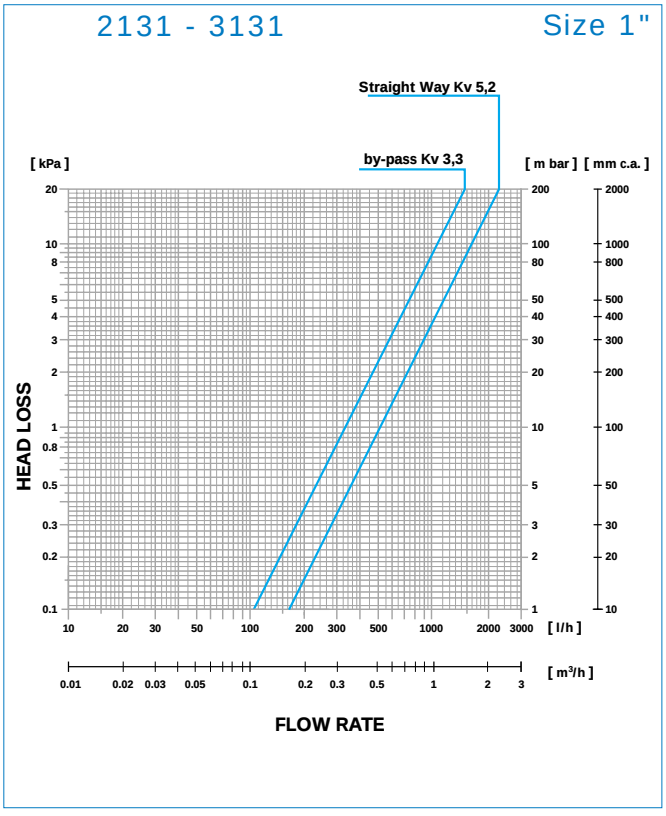
2131 - 3131 - 4131 Size 1/2"



2131 - 3131 - 4131 Size 3/4"



2131 - 3131 Size 1"



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