

DIFFERENTIAL PRESSURE VALVE



Use

The Giacomini differential pressure valve R147N can be used on various types of hydrothermal installations (radiators, fan coils, radiant systems) in which the presence of thermostatic actuators (or thermoelectric), or motorized zone valves, can lead to situations of simultaneous closure of all the circuits. Under these conditions, the absence of a specific differential pressure valve and/or the absence of a specific control for the pump automatic switch off, can cause annoying noises in the system and may even lead to damage of the pump itself. In fact, in the phase in which the actuators are to close the respective circuits (or zones), a progressive decrease in the flow rate occurs, with a consequent increase in pressure downstream of the pump.

By calibrating the Giacomini differential pressure valve R147N appropriately, the system pressure can be maintained at a constant level even when the actually required flow rate changes.

Characteristics

The special attention devoted during development stage of this product has allowed us to design a valve with a broad regulating range that can be installed on systems of various potentials.

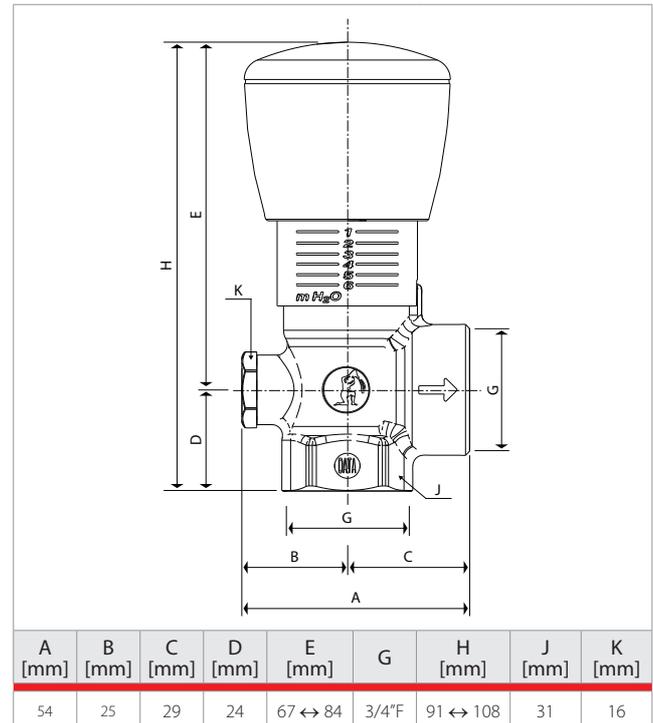
The presence of an supplementary connection of 1/4" allows the possible application of a manual air vent valve (sold separately), which can periodically bleed any gas, which may be accumulating in the valve and could alter the operation. It is appropriate to use the Giacomini differential pressure valve R147N to discharge the flow rates of up to 1000 l/h (which with ordinary pumps may still correspond to the prevalences order of 5-6 water gauge meters).

In case higher flow rates are required, it is recommended to install more R147N valves connected in parallel.

Technical Data

- Max. temperature range: 120 °C
- Max. operating pressure: 1000 kPa (PN 10 bar)
- Max. differential pressure: 60 kPa (6 water gauge meters)
- Female threaded 3/4"
- Forged brass body UNI EN 12165 CW617N hot-pressed
- Seals in EPDM
- Stainless steel spring AISI 302
- ABS adjusting handle

Dimensions



Installation



The Giacomini differential pressure valve R147N must be always installed downstream of the pump in between the supply and return pipes, the same versatility allows installation in both horizontal and vertical position respecting the flow direction marked (permanently) on the body itself of the valve.



The Giacomini differential pressure valve R147N can be installed as an independent component both in the boiler room as well as in the distribution substations (manifold cabinets) and as a subcomponent for preassembled boiler groups Giacomini Series R586 or distribution manifolds R557 for radiant heating system.

Setting

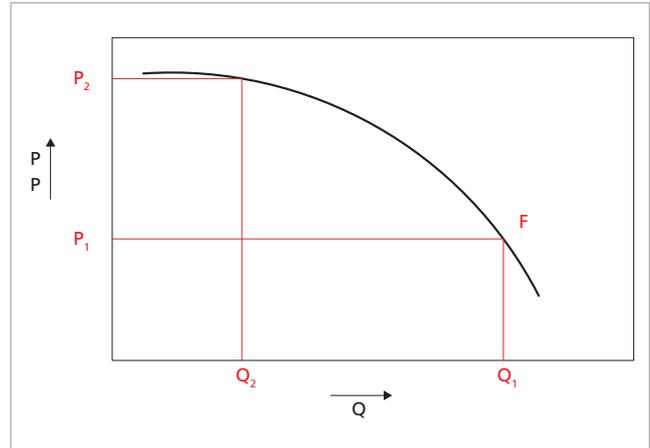
The calibration operation can be performed in a very simple way by turning the handle. The presence of a graduated scale (1 to 6 meters of water gauge) allows the calibration to the desired value. The determination of the correct calibration position of the valve calibration can be done in two ways: one practical and the other theoretical.



The practical method is brisk but not less effective. It consists of, in the case of boiler room manifolds, reducing the flow rate of the installation by using a ball valve in the middle, positioned downstream of the R147N connection part, closing it for about 80% and gradually opening up to cause the differential valve opening (this is noticeable by listening to the noise in the piping or feeling the heat of the drain pipe). After the calibration is done, it is possible to re-open the ball valve restoring the operation of the system.



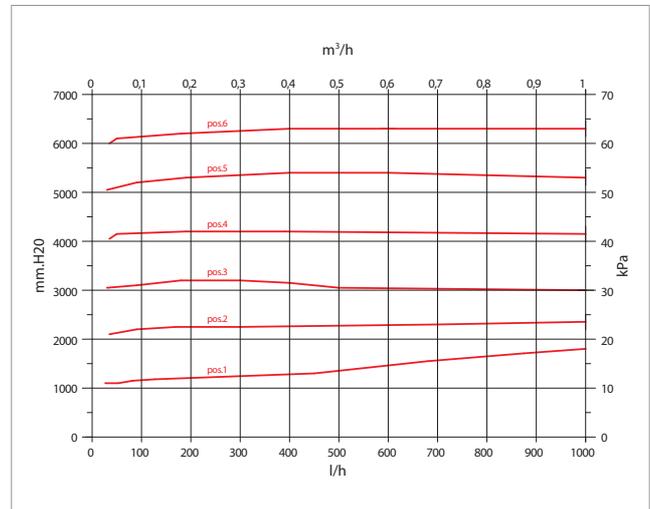
The theoretical method is based on two characteristics of the system. The total flow (Q_1) and pressure drop, through which we proceeded to the choice of the circulation pump. Through the characteristic curve of operation of the circulation pump is identified the prevalence value (P_2) corresponding to a flow (Q_2), equal to $15 \pm 20\%$ of design flow rate. The determined prevalence (P_2) corresponds to the intervention pressure of the differential pressure valve which should therefore be calibrated.



LEGEND

- Q_1 = Flow rate of the pump during normal operation
- P_1 = Pressure of the pump during normal operation
- F = System operation point
- Q_2 = Flow rate equal to $15 \pm 20\%$ of Q_1
- P_2 = Opening pressure of the differential pressure valve

The diagram reported here represents the trend of the differential pressure (expressed in water gauge meters or in kPa) depending on the by-passed flow rate (expressed in l/h in m^3/h) for each of the setting positions.



Additional information

For additional information please check the Giacomini website at the following address: www.giacomini.com

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