



Dynamic Balancing Valve Family



HERZ controllers and regulating valves help save energy

With today's emphasis on saving energy, designers are looking to cut costs to a minimum by utilising variable volume heating and cooling systems. In order for these systems to operate to maximum effect, it is critical to select control valves of the correct dimensions as well as to create zones within the installation system.

However, in practice, as controllers and balancing valves are preset to the maximum volume flow, the heating or cooling system is regulated insufficiently and thus works inefficiently – which means that energy savings are limited.

The use of Dynamic balancing valves such as automatic balancing valves and differential pressure controllers ensures that these issues are overcome and flow rates are controlled constantly, as required by modern room temperature control systems.

HERZ dynamic balancing valves work automatically without the need for auxiliary power. In addition, the settings of HERZ automatic balancing valves can be changed easily and effortlessly after installation should requirements change.

The BSRIA guide to Energy Efficient Pumping Systems BG 12 / 2011 clearly indicates that significant energy savings can be made by utilizing Pressure Independent Balancing Control Valves (PIBCV) on terminal units in Variable Volume Systems. The guide also emphasizes the importance of using Differential Pressure Control Valves (DPCV) on branches when static balancing valves are utilized on terminal units.

Thanks to the comprehensive HERZ range of controllers we will always have the perfect valve for your building application.

Herz Differential Pressure Control Valves

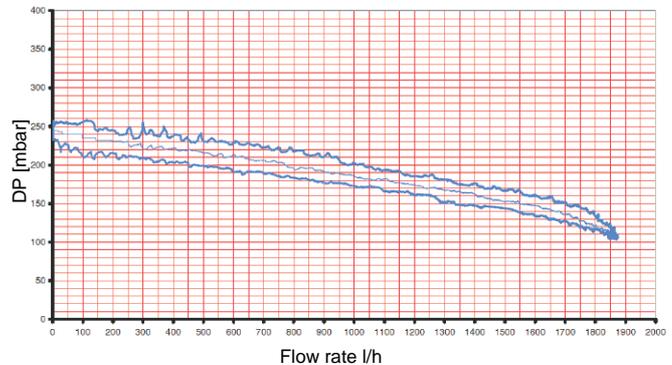
HERZ differential pressure controllers are available in sizes DN15 to DN50 and come with a set range of 5 to 30 kPa or 25 to 60 kPa. The value can be adjusted easily on the external spring cage using the HERZ pre-setting key. The valve is set with reference to the flow chart and the setting is clearly shown by the marker on the scale.



Herz Differential Pressure Controller

As is usual with HERZ differential pressure controllers, the proportional range required is extremely small, which makes the controllers unparalleled in terms of precision and speed. All of the valve types come with male thread and a comprehensive range of union connections for different types of pipe, for easy servicing and saving costs.

Hysteresis Graph 4002



Herz have also produced a differential pressure controller with a fixed DP, normally factory preset to 23 kPa, but can be preset to any value between 5 and 60 kPa. The fixed differential pressure control valve can also have a zone valve function with the addition of a two point actuator. This can be particularly useful in apartment buildings. For each flat or zone with a maximum of eight radiators a HERZ differential pressure controller with a locked preset value of eg. 10 kPa is built in. The zone valve integrated into the differential pressure controller is actuated On/Off – as needed and can be incorporated with a HERZ 7791 room temperature controller and also used in conjunction with HERZ Pre-settable thermostatic radiator valves (model TS-90-V or TS98-V) and HERZ 9230 thermostatic heads.

As all HERZ dynamic balancing valves are pressure independent, these automatic zone valves can also be used as combination valves in the riser mains of systems fed by district heating or weather-compensated secondary systems. An actuating power of 100 Nm is sufficient for the thermal drive.



Herz Differential Pressure Controller with integrated zone valve (model 4002 FIX-TS) and HERZ 7709 Thermal drive

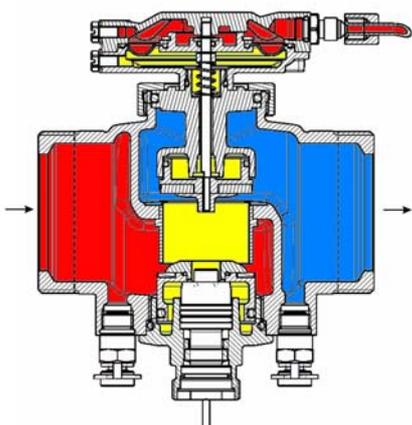
Herz Pressure Independent Balancing Valves

In modern variable volume systems typically utilising ceiling heating and cooling systems such as chilled beams and fan coil units etc. the terminal units are normally equipped with a two port control valve integrated to a BMS and a commissioning valve for each unit to balance the flow rate. A differential pressure control valve is also utilized on the branch, or for each relevant section of the pipe work, to stabilise and maintain a constant differential pressure to ensure the authority of the control valves and protect them from pressure surges. All of these valves, control valve, commissioning valve and differential pressure control valve can be replaced by one single valve, the HERZ 4006 combination valve. With its self-regulating and fully automatic flow rate control, it is wonderfully simple and ensures precise and continuous room temperature control.

**HERZ 4006
PIBCV**



The valve operates by sensing the differential pressure across the valve seat via the capillary tube. The pressure on the diaphragm moves the piston and the seat to maintain a constant differential pressure and therefore flow rate through the valve. The flow rate is set by percentage using the valve flow graphs. As the valve flow rate is pressure independent and unaffected by rising differential pressure, it has a valve authority of 100%. As the actuator modulates the flow, the valve lift changes and the valve adapts and maintains constant differential pressure and flow rate over the new settings.



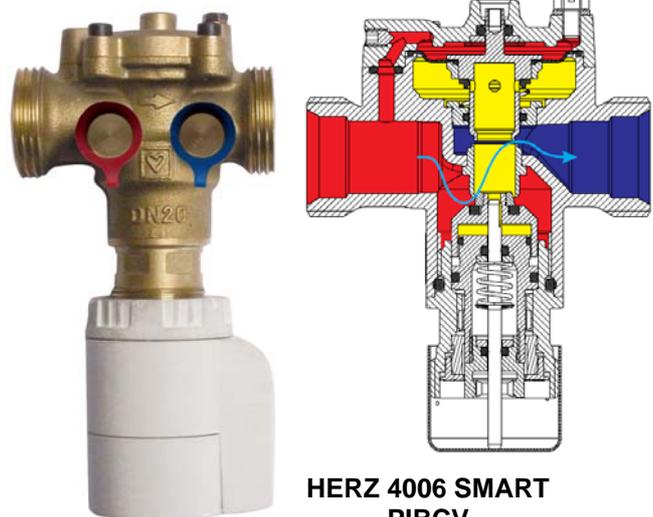
The HERZ 4006 has a very low minimum operating differential pressure of 10 kPa, which means that less energy is required to operate the valve and therefore can impact on pump sizing and result in reduced pumping costs. The valve has a compact design and is able to operate in any orientation which makes it extremely versatile. The HERZ 4006 is available in sizes from DN15 to DN50 making it suitable also for use in riser mains to help maximize energy savings being used as a combined zone valve and automatic balancing valve.

The dynamic valve range also includes the HERZ 4001 Automatic balancing valve for systems with a constant volume flow of 400 to 4,000 kg/h. The valve body and all parts that come into contact with water are made of dezincification-resistant brass.

**HERZ Automatic
Balancing Valve 4001**



The HERZ 4006 SMART valve is a pressure independent balancing control valve (PIBCV) which has been specifically designed to balance the ultra low flow rates utilized today in modern systems designed to achieve high temperature differentials between flow and return pipework. The valve is smaller again than the HERZ 4006 and has integral capillaries for the pressure transfer inside the valve. The valve range has three versions at DN15 and one at DN20 with a flow rate range of 0.0028 kg/s to 0.222 kg/s (10 – 800 kg/h).



**HERZ 4006 SMART
PIBCV**



HERZ 7217 TS-V Fixed Orifice Commissioning / Control Valve



HERZ 2117 Characterised Ball Control Valve



HERZ 4017 Fixed Orifice Commissioning Valve



HERZ 4008 Deluxe Direct Hydraulic Interface Unit



HERZ 4500 SMART Connect 4 Pre-assembled Valve Unit



HERZ 7708 / 7709 / 7790 Actuating Drives

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For questions please contact the HERZ office.