

**HAYS FLUID CONTROLS**

**OVERVIEW AND CAPABILITIES**





## Over 140 years of expertise in flow control

The story of Hays Fluid Controls starts in 1869, when the Hays Manufacturing Company in Erie, Pennsylvania began manufacturing brass valves for oil, water and beer.

Over the years, the location of the company and the product emphasis changed. The company is now headquartered in Dallas, North Carolina (a suburb of Charlotte), and has shifted its emphasis to control valves for water used in heating, cooling and refrigeration applications.

### From aircraft carriers to HVAC in commercial buildings



The Mesurflo® line of products evolved from a request by the United States Navy, who required flow control valves for submarines and surface ships that were quiet, accurate and reliable. Building on the design and manufacturing program developed for the Navy, Hays began manufacturing the Mesurflo® valve line specifically for HVAC control in 1994.



Today, tens of thousands of high profile buildings in North America and throughout the world use Hays Fluid Controls valves to enhance the operation of their HVAC systems, and the company is considered an elite leader in the flow control industry.

Hays Fluid Controls is part of Romac Industries, which is based in Bothell, Washington.

# EXPERIENCE AND EXPERTISE MEAN RELIABLE FLOW CONTROL

## EXPERIENCE MATTERS...

When it comes to controlling water flow in today's complex buildings, Hays brings decades of experience to a project which can mean the difference between a smoothly operating HVAC system and one that causes years of headaches and problems. During every step of building design and construction, customers receive the benefits of Hays expertise.



## ENGINEERING EXPERTISE MATTERS...

Every great product is the result of a great design and hard work. The Mesurflo® design is simple on the surface, but each and every component is carefully designed, manufactured and tested to provide reliable performance for years. That's why the Mesurflo® diaphragm and orifice assembly has a warranty of free replacement for the life of the HVAC equipment it controls\*.



## CUSTOMER SUPPORT MATTERS...

Hays valves are backed by a support team that is second to none

in the industry. Engineering and quality assurance during the manufacturing process ensure our customers receive the best, most reliable products possible. After installation, customers enjoy the benefits of full access to factory and field support. Since Mesurflo® valves are designed and made at our own factory, customers are assured that they are being supported by someone with knowledge and expertise in the product.

\* See Hays Fluid Controls catalog for detailed warranty



The great majority of Hays valves are made in the U.S.A. and almost all products in the Mesurflo® line conform to the Buy America Act. In the unlikely event of a product quality issue, Hays does not have to seek support or replacement parts from a supplier on the other side of the world – the support and expertise needed is right in the Hays Fluid Controls factory.





# AUTOMATIC BALANCING VALVES: SMALL INVESTMENT, HUGE PAYOFF

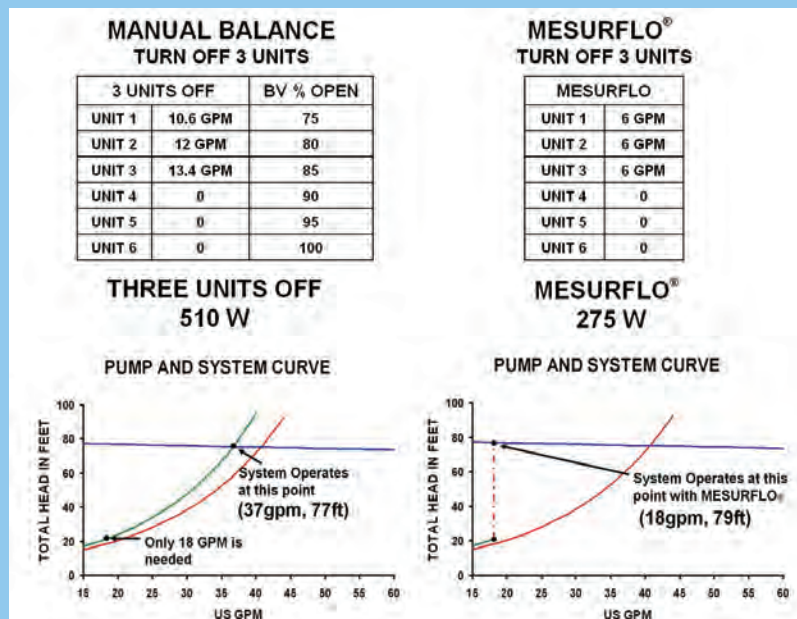
## LONGER HVAC EQUIPMENT LIFE

Overflow conditions in HVAC pumping systems can greatly shorten equipment life. A small increase in water flow results in a greatly magnified impact on wear and tear of water coils. With proper flow control, coil life is maximized, deferring thousands of dollars in repair costs.

## SIGNIFICANT ENERGY SAVINGS

Automatic balancing valves are one of the most cost effective energy saving choices for commercial buildings. A small added investment per heat pump, fan coil or VAV box, ensures reliable energy savings for the life of the HVAC equipment.

### Energy savings with Mesurflo®



The example to the left compares a manually balanced system with six fan coils to the same system controlled by Mesurflo® valves.

A manually balanced system does not react to changes in water pressure, resulting in overflows and greater pump energy usage as units cycle on and off. Mesurflo® automatically responds to increases in pressure, matching flow to the design amount for each unit and saving pumping energy.

In a large system over time, energy savings can be significant. Mesurflo® is also an ideal complement to systems with Variable Frequency Drives (VFDs) to maximize energy savings.

## GREATER COMFORT NOW AND IN THE FUTURE

By controlling flow and eliminating overflow conditions, Mesurflo® ensures cooling and heating water is available to all units that need it, when they need it, assuring occupant comfort. Mesurflo® also adapts to changes in the building, whether it is changes in usage, additional terminal HVAC units installed in the system, or any other factors. That means the energy savings and comfort benefits of Mesurflo® will continue for years to come.



## HOW MESURFLO® VALVES WORK

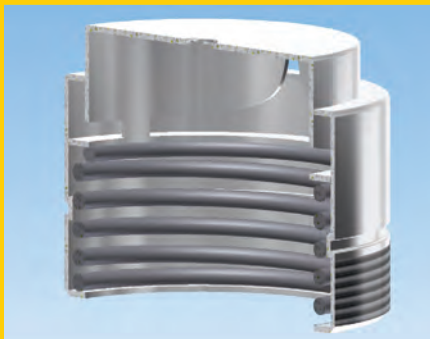
Mesurflo® controls flow to the selected GPM regardless of pressure changes in the hydronic system. It maintains constant flow to an accuracy of +/-10% in a range as low as 2-80 PSID depending upon the model number and flow rate.



There are two components to the Mesurflo® valve: (1) A specially blended rubber diaphragm (the black disc shown in the diagram), and (2) An orifice made of high polyphenol sulfone molded to exact specifications for a given flow rate.

Under normal pressure the Mesurflo® valve acts as an open orifice. The rubber diaphragm responds to pressure changes to provide constant flow. In conjunction with modulating control valves, the modulating control has authority.

Increased pressure forces the diaphragm to push against the orifice, which results in limited flow. The greater the pressure, the more the diaphragm closes the orifice space available. This is why the Mesurflo® adapts to pressure increases. The Mesurflo® performs similarly for decreasing pressure.



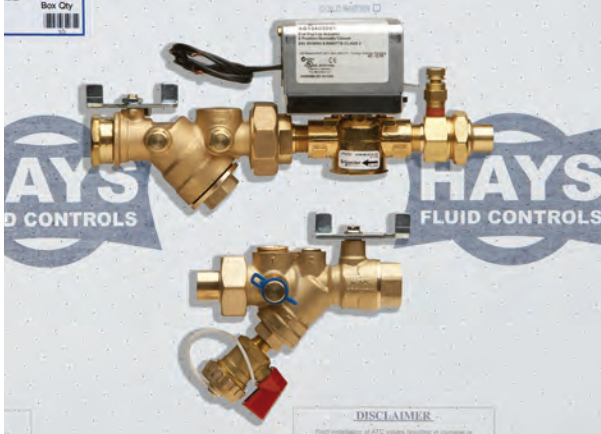
### Mesurflo® Advantages Define the Gold Standard for Flow Control

Because of its unique design, Mesurflo® is considered the “gold standard” in flow control. Here are some of the benefits of Mesurflo® versus the competition’s spring type flow control:

- Mesurflo® has a non-clogging design - natural self-flushing design prevents build-up of particulates and minimizes the chance of clogging
- Wide differential pressure range - Mesurflo® controls at the design GPM as low as 2 PSID up to 80 PSID. Competitor’s spring flow controls as shown in figure 1, require users to select from narrow PSID ranges, which complicates ordering and installation.
- Accurate to +/-10% over the entire PSID range - This level of accuracy provides for 99.8% heat transfer.
- Quiet - The Mesurflo® design dampens oscillation, vibration and feedback in the water system. Plunger/spring valves actually introduce feedback into the system, which can result in noticeable noise levels that disturb occupants.



## Hays Fluid Controls Mesurflo® Product Line

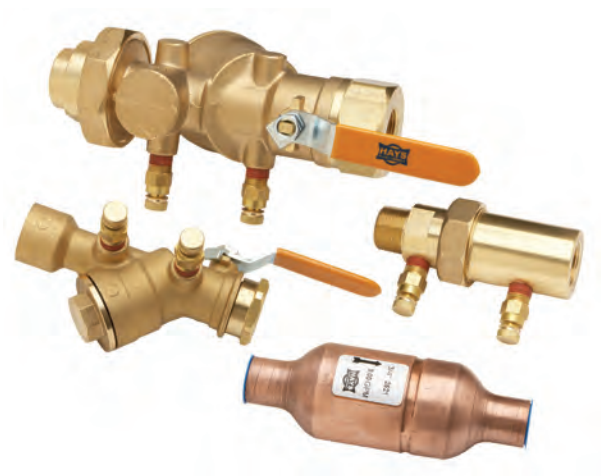


### CUSTOM PIPING PACKAGES

- Includes all major components needed for connection of supply and return side.
- Saves time and money on installation of fan coils, VAV boxes, unit vents and other terminal HVAC equipment.
- All connections are leak tested in factory.
- Parts shrink wrapped on board and labeled by unit and area at no added cost.
- Optional temperature control valve can be purchased from Hays or Hays will mount customer-supplied control valve.
- Hard pipe (shown) or flex hose available.

### HOSE KIT PACKAGES

- Includes all major components needed for connection of supply and return side on water source heat pumps.
- Several hose lengths and valve sizes are available.
- All factory connections are leak tested in factory.
- Hose kits are tagged with unit and location at no added cost.



### AUTOMATIC FLOW CONTROL VALVES

- Size ranges from 1/2" and greater.
- Flow rates from 0.5 GPM to 36,000 GPM.
- All Hays automatic flow control valves feature Mesurflo® technology.
- Wide variety of designs to match the system design and application.
- Suitable for new installations or renovations.

## ACTUATOR VALVES, ACCESSORY PRODUCTS AND CUSTOM-FABRICATED PACKAGES

- Actuated temperature control valves for use on terminal HVAC equipment
- Wide choice of actuated valves available, with spring return and other options.
- Full line of accessory items include strainers, drain valves, PT test plugs and many others.
- Custom-fabricated packages available for larger installations.



## MANUAL FLOW CONTROL VALVES

- Full line of manual flow control valves
- Sizes range from 1/2" and up to 12".

## PRESSURE INDEPENDENT CONTROL VALVES (PICV)

- Combines proven Mesurflo® technology with a characterized disk and modulating control valve to provide maximum control.
- Valve assembly has no moving parts, providing the most reliable PICV design available today.
- Equal or better control and more reliability than competitive valves.
- Available in 1/2" or 3/4" size make it the ideal control solution for VAV, fan coil and unit vent applications.





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