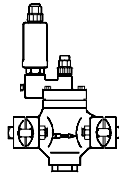


REGULATOR VARIATIONS

HA4A STANDARD REGULATOR

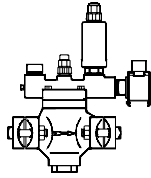
This most common pressure regulator modulates to control evaporator pressure, condensing pressure, pressure in a vessel, or pressure in a portion of a system. It is frequently called an evaporator pressure regulator (EPR) or back pressure regulator. Opens on rising inlet pressure. See page 10. Shown with M3W pilot.



HA4A

HA4AS REGULATOR WITH ELECTRIC SHUT-OFF

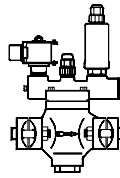
This control is commonly used for temperature control or defrost. Regulates at the set-for pressure when energized. When de-energized, the valve closes tight regardless of the pressure setting. See page 11.



HA4AS

HA4AB REGULATOR WITH ELECTRIC WIDE OPENING

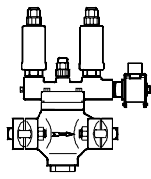
Commonly regulates for defrost or temperature, but opens wide for maximum cooling. Regulating at the set-for pressure when de-energized; regulator opens when energized. See page 11.



HA4AB

HA4AD DUAL PRESSURE REGULATOR

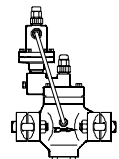
Regulates (evaporator) pressure at a setting when energized, and at a higher setting for defrost, temperature control, or pressure relief when de-energized. See page 11.



HA4AD

HA4AL DIFFERENTIAL PRESSURE REGULATOR

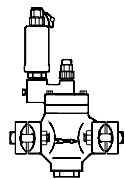
Commonly used as liquid pump relief, condenser-receiver pressure difference control, discharge pressure boosting for defrosting or heat recovery, and other similar applications. This control modulates to maintain the set-for difference between inlet and outlet pressure. See page 10.



HA4AL

HA4AK RESEATING RELIEF REGULATOR

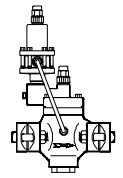
Used for defrost, high-to-low side relief, or nonatmosphere relief to other parts of the system. This control opens when system upstream pressure is above the tagged and sealed set point pressure, and repeatedly reseats after operation. See page 10.



HA4AK

HA4AO OUTLET PRESSURE REGULATOR

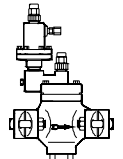
Controls outlet pressure by opening as downstream pressure falls below the set point. Used for hot gas to provide artificial refrigeration loading, for condenser and receiver pressure control by means of gas bypass, limiting hot gas pressure supply in defrosting evaporator in conjunction with liquid drain traps, or for compressor suction pressure limitation. Can be combined with electric shut-off, temperature-operated, dual, or wide-opening features. See page 11.



HA4AO

HA4AP PNEUMATICALLY COMPENSATED REGULATOR

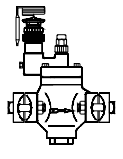
Commonly used for precise air or liquid temperature control via pneumatic controller. An air, vapor, or liquid pressure signal to the control module bonnet increases inlet pressure from the set-for pressure value at a 1:1 ratio. See page 12.



HA4AP

HA4AT TEMPERATURE OPERATED REGULATOR

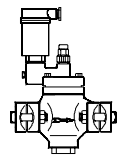
The vapor pressure capillary tubing and bulb system modulates the regulator open as temperature increases to control air or liquid temperature. See page 12.



HA4AT

HA4AJ ELECTRONICALLY CONTROLLED REGULATOR

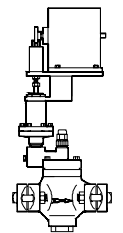
Electronic pilot and controller provides very precise temperature control of various cooled media under fluctuating load conditions. See page 12.



HA4AJ

HA4AM ELECTRIC MOTOR COMPENSATED REGULATOR

Commonly used for precise room temperature control or liquid chiller control. The controlling motor changes regulator pressure setting in accordance with a temperature controller. See page 13.



HA4AM

NOTE: Many other control functions can be achieved by combining the control modules in different arrangements. For example: a dual regulator with electronic pilot and secondary relief pilot; i.e. HA4ADJ.