Mark 25 Series

Tempilot™ Temperature Controller

The Jordan Mark 25 is a temperature controller that uses instrument air to position a control valve or air-operated regulator (such as the Jordan Mark 66) in a process line.

Features

- High rangeability — when combined with Jordan control valves, the rangeability is 50:1 or better
- Sensitive to changes in the process — responds to temperature changes as low as 0.5°F (-17,5°C)
- Standard gauges — supply and control pressure gauges are standard on all units
- Adjustable proportional band — adjustable from 2-1/2% to 24%
- Choice of action — available for direct or reverse action requirements
- Fast delivery — 36 hour shipment usually available

Specifications

- **Action:** direct or reverse
- **Adjustment dial range (standard):** 50° to 350°F (10° to 177°C)
- **Max. supply pressure at room temperature:** 25 psi (1,5 bar)
- **Max. operating pressure:** 250 psi (17 bar)
- **Temperature response:** 0.5°F (-17,5°C)
- **Mounting:** 1/2” NPT
- **Air or water connection:** 1/8” NPT
- **Drain connection (water only):** 1/4” NPT
- **Proportional Band:** 2-1/2% to 24%
- **Regulator:** standard on all units
- **Gauges:** supply and control pressure standard
- **Accessories:** thermowells, flanges and unions
- **Shipping weight:** 4 pounds (1,8 kg)

JORDANVALVE

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OPERATION

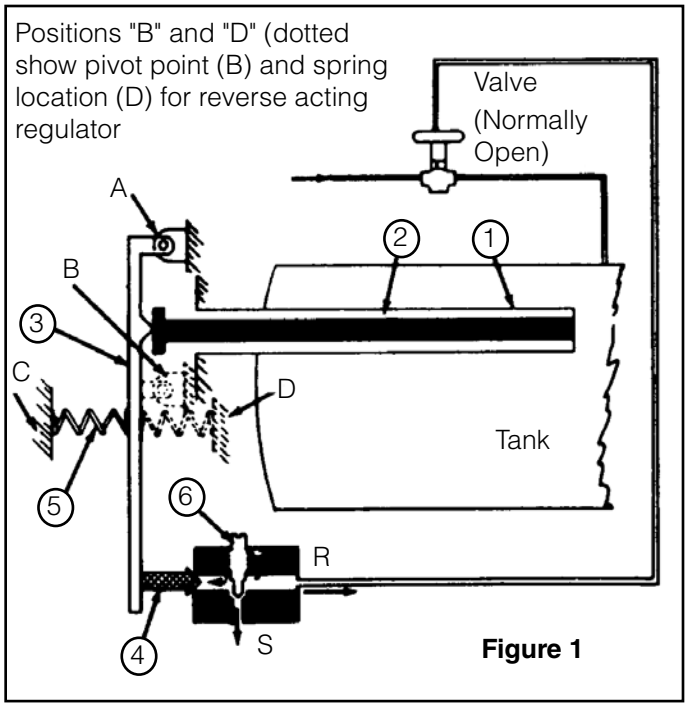


Figure 1

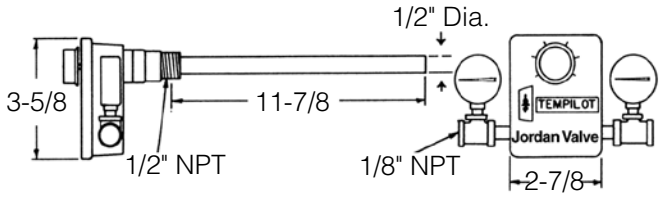
A temperature change in the medium being controlled creates a change in length of the sensitive tube (1). An increase in temperature lengthens the sensitive tube (1) and moves the Invar rod (2) away from the lever (3). The lever (3), which pivots at Point A, moves to close the exhaust valve (4) by the spring (5). This permits the supply (air or water) (S) to increase the pressure in the control line (R) and close the normally-open valve.

A decrease in temperature shortens the sensitive tube (1) and moves the Invar rod (2) against the lever (3). The lever (3) moves against the pressure spring (5) to open the exhaust valve (4). This exhausts the pressure in the control line and opens the valve.

The sensitivity adjustment screw (6) regulates the rate of flow of the supply air (or water) to the controller to a change in temperature. Turning the screw clockwise increases the sensitivity by reducing the flow and increasing the response time. Turning the screw counterclockwise decreases the sensitivity by increasing the flow and reducing the response time.

SENSITIVITY

The sensitivity of the Tempilot™ controller is adjusted by turning the restriction screw. The restriction screw is factory-set for air operation. For water operation, the restriction screw should be opened a minimum of 1/12 turn and the controller re-calibrated. The restriction screw must never be fully closed. Make adjustments slowly, allowing about two minutes after each adjustment for the controller to balance. (*Note: if sensitivity is changed, the controller must be re-calibrated*).



INSTALLATION

A clean, reliable supply of compressed air at 15 - 25 psi (1,03 - 1,72 bar) is required. For air operation, the Tempilot™ should normally be installed in the horizontal position; however, other positions may be used if the supply and control connections are parallel with the ground and calibration is checked after installation.

USING WITH THE MARK 66 AIR LOADED REGULATOR

Combining the Mark 25 Tempilot™ with Jordan Valve's Mark 66 provides an ideal package for controlling the temperature of heaters. Instrument air of 20 psig (1,38 bar) must be available to the Tempilot™. Outlet steam pressure from the Mark 66 will not exceed 20 psig (1,38 bar).

The Mark 66 valve seats are normally closed. The reverse acting Tempilot™ sends a 20 psi (1,38 bar) air signal to the top of the valve diaphragm, opening the valve seats. The downstream pressure will balance under the diaphragm and will remain nearly the same as the loading pressure from the Tempilot™ (max. 20 psig/1,38 bar). As the process approaches set temperature, the output signal from the Tempilot™ decreases, and consequently, the pressure downstream of the valve decreases. When the set temperature is reached, the Tempilot™ output signal is 0 psi and the valve seats are closed. The Mark 66 regulator performs its normal function as a pressure reducing valve by reducing the inlet pressure to 0 - 20 psig (0 - 1,38 bar) (the Tempilot™ output).

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