

# Mark 10 Series

## Pressure & Temperature Controllers

The Mark 10 Series was designed to be used with Jordan Valve's pneumatic control valves. Choose one of the Mark 10 Controllers for reliable and accurate control of pressure and temperature.

### A CONTROLLER AND CONTROL VALVE SHOULD BE USED WHEN:

- the desired pressure or temperature control point is beyond the range of self-operated or pilot-operated valves
- closer control is required than can be achieved with self-operated or piloted valves
- the process being controlled requires wide proportional band, automatic reset and/or derivative action
- the control instrument is mounted on a remote board
- cascade control is required (one controller is used to reset another)
- the pressure drop is too small for a self-operated or pilot-operated valve
- extra power is required to assure positive valve opening after prolonged shutoff
- extreme pressure reductions are necessary in a single stage



### AVAILABLE MODELS

- **Mark 10 Pressure Controller:** pneumatic controller featuring 1 - 100% proportional band and differential gap
- **Mark 11 Pressure Controller:** pneumatic controller featuring 2 - 200% proportional band plus reset



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## SPECIFICATIONS

**Mounting:** surface, flush panel, pipe supported or valve mounted

**Connections:** standard back connections are 1/4" FNPT

**Measured Indications:** black adjustable pointer on 3-1/2" precision gauge dial (6-3/4" scale length). Readily adjusted to compensate for hydrostatic heads in piping on pressure control applications.

### Ranges in Stock

0 - 30 psi (0 - 2,1 bar)

- 0 - 60 psi (0 - 4,1 bar)
- 0 - 100 psi (0 - 6,9 bar)
- 0 - 200 psi (0 - 13,8 bar)
- 0 - 600 psi (0 - 41,4 bar)

**Nozzle:** nickel silver, can be turned on turret to reverse control action, 0.018" bore

**Orifice:** Sapphire 0.008" bore with integral push-button cleaner

**Relays:** a high capacity, non-bleed type relay is furnished as standard on these controllers. Bleed rate of less than 0.1 scfm at 9 psi (0.003N/m<sup>3</sup> at 0,62 bar) at output and the capacity to deliver over 3.0 scfm (0.085N/m<sup>3</sup>) result in an exceptionally stable, fast responding controller. Relay is machined from diecast aluminum and has stainless steel inner valve parts and integral supply and output connections (1/4" FNPT). May be easily dismantled for cleaning without disturbing factory-set adjustments.

### Air Supply

- 20 psi for 3-15 psi range (1,4 bar for 0,21 - 1,03 bar range)
- 35 psi for 6 - 30 psi range (2,4 bar for 0,4 - 2,1 bar range)
- 65 psi for 12 - 60 psi range (4,5 bar for 0,8 - 4,1 bar range).

Clean, dry air should be supplied. A filter and dripwell are recommended ahead of each controller.

### Gauges

- Supply and output 30 psi for 3 - 15 psi (2,1 bar for 0,21 - 1,0 bar) valve operation
- 60 psi gauges for 6 - 30 (4,1 bar for 0,4 - 2,1)
- 100 psi gauges for 12 - 60 psi (6,9 bar for 0,8 - 4,1 bar) output

**Accuracy:** indication, 1% in middle half of scale, 1-1/2% for balance of scale

### Action

If an increase in pressure or temp. must	And the action of the valve is:	Then the action of the controller must be:	Valve fails upon loss of input signal
close valve	air to close	direct	open
close valve	air to open	reverse	closed
open valve	air to close	reverse	open
open valve	air to open	direct	closed

**Sensitivity:** less than one-tenth of full scale at 100% proportional band

**Control Point Adjustment:** by means of knob inside case. Outside adjustment is optional.

**Proportional Band Adjustment:** with screwdriver

**Reversing Control Action:** with screwdriver

**Unitized Construction:** each of the following units may be removed without disturbing other units: control chassis, complete or pre-calibrated range unit only – feedback unit only – nozzle and nozzle tubing only – complete relay unit, or supply gauge only, or nozzle feed orifice and cleaner assembly only, or relay bellows and valve stem and balls only – output gauge and tubing

### Measuring Elements

- Pressure: basic element for ranges from 0 - 15 psi to 0 - 5000 psi (0 - 1,03 bar to 0 - 345 bar) consists of pre-calibrated Bourdon tube and movement with integral dial and pointers. Easily removed for repair or range change. Phosphor bronze standard; other metals available.
- Low Pressures: from 0 - 30" water to 0 - 15 psi (0 - 75 mbar to 0 - 1,03 bar) 316SS diaphragms
- Temperature: basic element for ranges from -40°F to +1200°F (-40°C to +649°C). Consists of pre-calibrated mercury-filled element.

