



Differential Pressure Controller

General

The P74JA Series differential pressure controller is commonly used on water systems to control a pressure differential between supply and return lines. The controller's SPDT floating action contacts position a modulating valve operated by a motor-driven actuator. In a typical application the valve is located in a bypass line around the system pump. When the system pressure differential increases above the controller's set point, the valve opens further. More water is diverted through the bypass valve, resulting in a reduction in system pressure differential. A reduction in the pressure differential causes the valve to begin closing and results in an increase in system pressure differential.

Features

- Single-pole, double throw, totally enclosed non-snap acting switch
- 1/4" Flared tube pressure connection on the sensing element permits easy field installation
- Direct reading scale for quick setpoint determination
- Pressure differential setting can be easily adjusted without removing the cover

Mounting

Mount the controller in any position to a flat surface or panel board. Use screws or bolts through the holes in the back of the case. The controller should be mounted in such a way that the connections on the bellows are above the liquid level of the equipment on which it is used. This reduces the possibility of accumulating foreign matter inside the bellows.



Material

Case:	1.6 mm cold rolled steel
Cover:	0.6 mm cold rolled steel
Finish	Grey baked enamel

Specifications

Range:	55...414 kPa (8 to 60 PSI)
Operating Pressure Differential:	14 kPa (2 PSI), fixed
Maximum Bellows Overrun Pressure:	1241 kPa (180 PSIG)
Maximum Allowable Differential in Pressure Between Bellows:	830 kPa (120 PSI)
Electrical Ratings:	1 Ampere, 24 V, 50/60 Hz
Switch Action:	SPDT, totally enclosed non-snap acting (floating) switch
Ambient Operating Temperature:	-1...60 °C
Mounting:	Mounts to flat surface
Wire Terminals:	Color coded screw type terminal
Agency Approval:	CE Mark Compliant
Shipping Weight:	1.1 kg (2.4 lb)
Dimensions:	166x101x52 mm

Operation

the P74JA Series differential pressure controller incorporates two highly sensitive pressure elements which directly oppose each other. A change in pressure at either element causes appropriate positioning of the switching mechanism which is then used to control supplementary equipment such as motor actuated valves. The switch mechanism provide SPDT non-snap (floating) action; as such, the movable contact (common) is made to either of the two fixed contacts or positioned between the two (no contact made).

CAUTION: This controller should not be used to control relays or starters as short cycling or chattering will occur.

General Instructions

- Make sure the controller is not installed on equipment which would require the controller to handle a load in excess of its electrical ratings. For maximum electrical ratings and switch action of the control, see the label on the inside of the controller cover.
- Purge all tubing and lines before connecting the pressure controller.
- Avoid sharp bends or kinks in capillary tubing.
- Coil and secure excess capillary length to avoid vibration. Allow some slack in capillary to avoid “violin string” vibration which can cause tubing to break. Do not allow tubing to rub against surrounding surfaces or objects where friction can damage capillary.

Wiring

Make all wiring connections using copper conductors only and in accordance with local regulations and the National Electrical Codes.

Use 1 mm² or larger wire for all connection to the motor actuator. 2.5 mm² wire should be used on runs over 150 meter long. All splices are to be made in junction boxes utilizing approved solderless connectors or by soldering and then taping the connections.

On increase in pressure differential floating switch contacts common (R) and yellow (Y) make.

On decrease in pressure differential floating switch contacts common (R) and blue (B) make.

