

PNEUMATIC POSITIONERS

All regulating type actuators are integrally mounted with a highly sensitive pneumatic positioner that sets the piston position accurately with reference to the pneumatic input signal. The positioner is suitable for direct or reverse loading. Change of direction can be easily obtained by reversing the air supply connections and reversal of the mounting of the cam.

Positioner Models:-

KJ-Class - 1A



CLASS -2, 3, 4 & 5



The positioner includes:

- A. a balance beam
- B. a bellows applying to the balance beam a force proportional to the pneumatic input signal
- C. a positioning spring applying a variable load to balance the beam through a cam and linkage.
- D. an inter-changeable cam related to the stroke of the actuator and making possible any characteristics between actuator position and pneumatic input signal.
- E. a pilot valve producing a pneumatic control signal related to the balance of forces applied to the beam. Owing to the pilot valve, actuator position is in direct relationship to pneumatic input signal.

Four types of pilot valves, class 2,3,4 and 5 are available to select the actuator response speed. Pilot valves class 2 and 3 are for standard application while class 4 and 5 meet special requirements. The pilot valve elaborates either two signals varying in opposition for double acting actuators

Cam selection:

The positioner is supplied with one cam only. On request it can be supplied with a set of three cams (A, B, C or A ½, B ½, C ½), making possible desired relationship between pneumatic input signal and regulating device position.

Moreover cams may easily be shaped to match exactly the actuator characteristics with the control system requirements. A cam can be mounted on both sides.

Specification:

- Supply pressure -2.8 to 7 kg/cm²
- Air consumption: under normal temperature and pressure condition with 3.5 kg/cm² supply pressure.

Pilot valve	Permanent rate	Mean transient rate
Class 2	0.8 m ³ /h	6 m ³ /h
Class 3	1.8 m ³ /h	12 m ³ /h
Class 4	1.8 m ³ /h	22 m ³ /h
Class 5	3.5 m ³ /h	40 m ³ /h
Sensitivity	-	better than 0.5% of full scale
Linearity	±	1% of full scale
Repeatability	±	3% of full scale
Accuracy	±	1% of full scale
Hysterisis	±	1% of full scale

Construction

Die – cast aluminium housing, with pressed steel cover, grey epoxy finish, weather and dust proof (synthetic rubber seal)

Positioner cam characteristics	A	A1/2	B	B1/2	C	C1/2
Cam rotation*	270	135	270	135	270	135
Drive rotation*	90	45	90	45	90	45
Relation	square root		Linear		Square	

*rotation corresponding to full travel of actuator