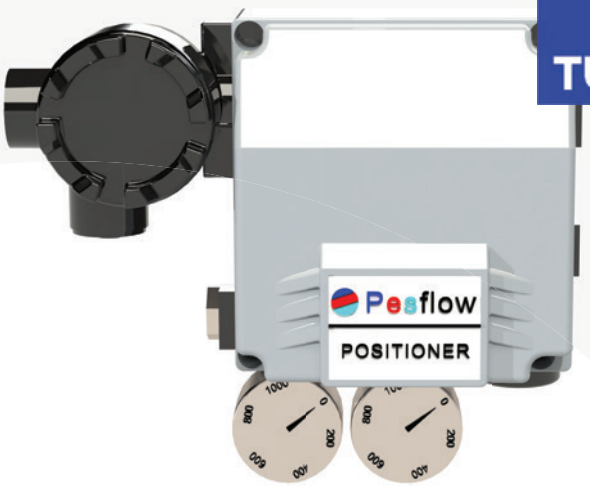
Pesflow
ONE STOP INDUSTRIAL VALVE SOLUTIONS

TÜVINDIA



Electro-Pneumatic Positioner

Pesflow's Electro-Pneumatic Positioner (4-20 mA, linear and rotary type) are advanced control devices which provide unparalleled stability in difficult environment.

DESCRIPTION

Pesflow's AEP-1000-R/L series Electro-pneumatic are used as final controlling element for operation of pneumatic Rotary/linear valve actuators in correspondence with an input Signal of 4-20mA DC or split ranges.

The Positioners are based on a force balance design for control application that requires a high degree of reliability and repeatability at an economical cost.

The Positioners can handle the supply pressure up to 100 psig for higher pressure industrial pneumatic and process control system requirements.

PRINCIPLE OF OPERATION

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FIELD REVERSIBLE

To change form direct acting to reverse acting simply reverse the cam and fix it on cam shaft and make sure of the signal SPAN which is printed on the cam and recalibrate for Actuator fully open or close position incase of Pneumatic to Pneumatic. For Electro-Pneumatic change current signal input leads form positive to negative and change current signal form 4-20 to 20-4 over and above cam reverse and recalibrate the Positioner.

FEATURES

- Designed as block build structure for maintenance and repair
- Precise calibration with simple SPAN and ZERO adjustments
- Simple conversion to Direct Acting or Reverse Acting
- Split range control available by simple adjustments without changing parts
- Simple structure for feedback connection
- Corrosion-resistant alluminium die cast body
- Sensitive response for high performance
- Vibration resistant design
- Stainless Steel Gauge Standard
- A restricted pilot valve orifice kit for small actuators included
- Optional built-in limit switched or 4-20 mA position transmitter for feedback
- Optional directly-mountable positioner
- Proved the reliability through over 5,00,000 times of repeat test & Vibration test.

MOUNTING

Pesflow's AEP-1000-R/L series positioners may be mounted on Linear Actuator/Rotary Actuator as per installation and operational manual.

ACCESSORIES

- Position Transmitter (4-20mA DC.)
- Two limit Switches.
- Valve, Valve-Actuators
- Damper and Louver Actuators
- Air-Cylinders
- Relays
- Clutches
- Web Tensioners and Brakes

INTEGRATED CHARACTERISTICS

- Suitable for Rotary / Linear Actuators.
- Low Air consumption.
- No resonance at 5-200Hz.
- Prevents hunting by using Orifice for small size actuator.
- Simple Conversing to Direct Acting or reverse Acting.
- Precise Calibration with simple SPAN and Zero Adjustments.
- Suitable for Single/Double acting Actuators.
- Can control 1/2 split range with simple operation without replacing any parts.
- Extremely Vibration Resistance Desing.
- Easy Maintenance.
- Corrosion-Resistance Aluminium Diecast Body.

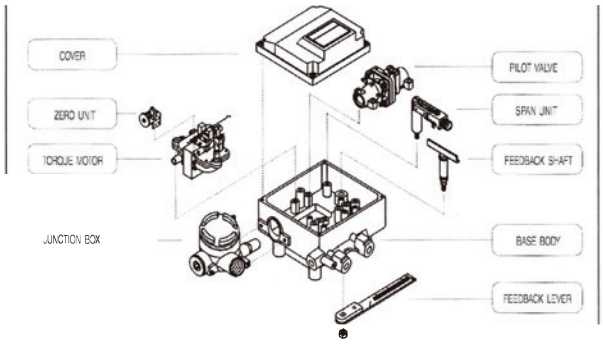
APPLICATION

Pesflow's AEP - 1000 R/E Positioners converts pneumatic/electrical signal to a pneumatic output which can be used to operate the following:

Petrochemical Processing Systems, Energy Management, HVAC Systems, Textile Processing Systems. Phamaceutical Processing System, Paper & Pulp Handling Controls.

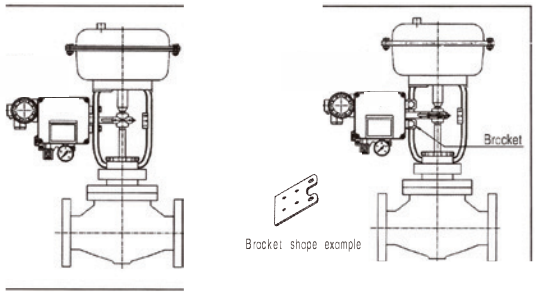
The electro-pneumatic positioner is used for linear operation of pneumatic linear valve actuators by means of electrical controller or control systems with an analog output signal of 4 to 20 mA or split ranges.

1. STRUCTURE



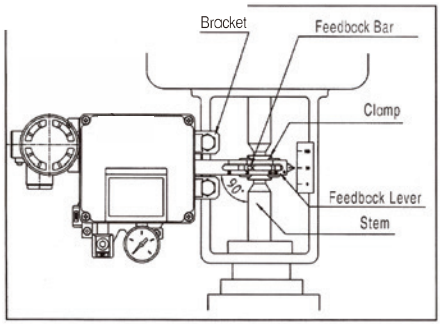
2. INSTALLATION

2-1. Example of attaching to actuator



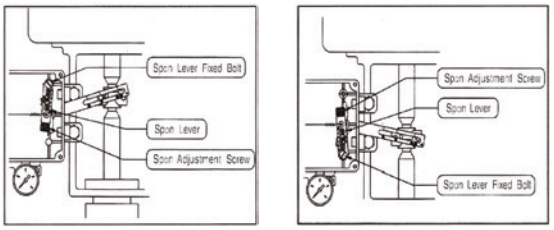
ex1) case of directly attaching to diaphragm valve ex2) case of using a bracket

2-2. Connection with feedback Lever



1. Attach to the position that the valve stem and lever form the right angle when the input signal is 50%.
2. Attach to the position that the runout angle is within the range of 10°～ 30°

2-3 Direct Action & Reverse Action

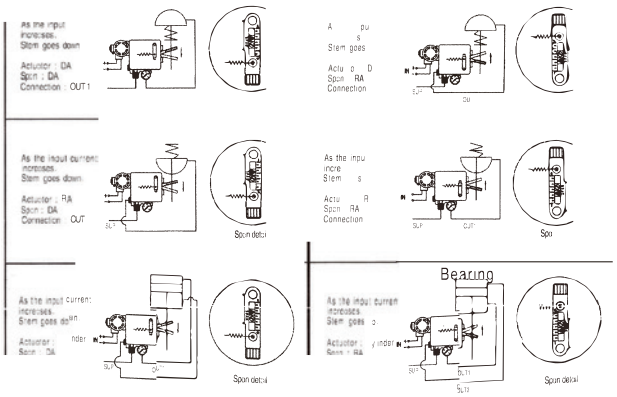


〈Direct Action〉 〈Reverse Action〉

3. AIR PIPING CONNECTION

(Linear Type)

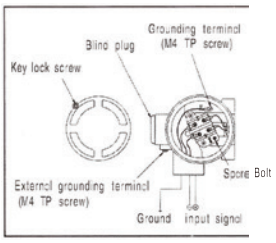
DA Action RA Action



1. Fully purge the pipe from foreign matter
2. Use a clean supply air fully removed humidity and dust.
3. Use filter regulator to keep supply air pressure constantly
4. When using the double acting type as the single acting type, blind either OUT1 or OUT2 and also remove the pressure gauge to close its connection.

4. ELECTRICAL WIRING

1. Connect the (+) and (-) output terminals from the regulator with the (+) and (-) input terminals, respectively, of the positioner Junction box
2. For Explosion Proof, both pressure tight conduit thread connection type and pressure tight packing type ate available.
   ① Use Cable Gland in pressure tight packing type (Cable O.D.= 9.0～ 11).
   ② Use PF ½ (G½) standard for conduit thread connection type
3. Close Junction box cover and lock Key lock screw
4. There is a SPare Bolt in terminal board.



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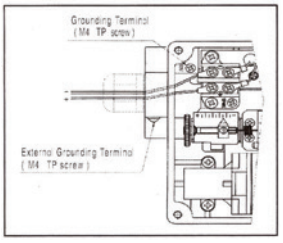


Exia IIC T6

5. ADJUSTMENT

1. Check the following prior to starting the adjustment.
   Check that the pipeline is correctly connected with the pressure supply port and OUT1 and OUT2 port
2. Check that the wires are correctly connected with the (+), (-) and grounding terminals.
3. Check that the actuator and positioner are sturdily connected
4. Check for locking of the auto/manual changeover screw of pilot valve (fully tightened in the clockwise direction)
5. Check that the span adjusting lever of internal feedback lever is attached to the correct (Direct or Reverse) position
6. Check for correct use of the cam face (Direct or Reverse) and that flange nut is firmly locked

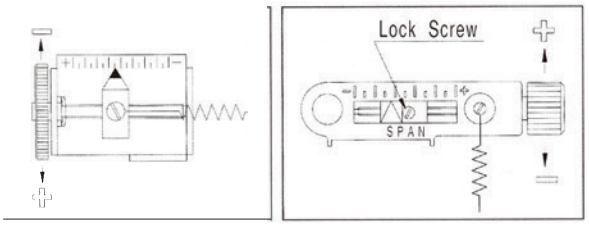
5-1 Zero Adjustment

1. Set an signal to the Stroke starting signal(4mA) then turn the Zero Adjuster clockwise or counterclockwise.
2. In case of Spring Actuator, check if it is set to standard pressure in Zero Point. If not, repeat''''' Zero adjustment.

5-2 Span Adjustment

1. Adjust Range Adjustment so that an Actuator stops at 0% position of the Stroke by the 0% applied input signal and 100% position for 100% input signal respectively
2. Check Zero Point and repeat Zero Span Adjustment
   1/2 Split Range can be used by Zero and Span Adjustment
3. After Setting, tighten up Lock Screw of Span adiustment

〈Zero Adjustment〉 〈Span Adjustment〉

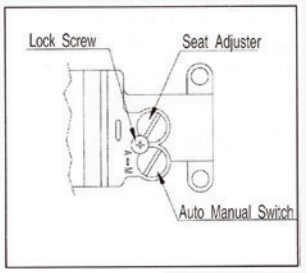


5-3 Auto/Manual Switch

1. This is a Switch for changing Auto and Manual
   Shipped products is set for Auto. To use Manual operation, turns A/M Switch counterclockwise
2. In manual operation, the pressure of regulator connects to Actuator
3. After using, return switch to "A'
   Not available for Single Acting-OUT2 and Double Acting

5-4 Seat Adjuster

1. No need to adjust at the field because Seat Adjuster is to be adjusted before shipment for balanced pressure point of output pressure.
   Seat Adjuster is always used for Double-acting
2. If need to change balanced pressure point of output pressure, use Seat Adjuster
3. If the sensitivity is poor because of the actuator type of load condition, turn the seat adjuster screw clockwise. If hunting occurs, turn the seat adjuster screw counterclockwise (The amount of turning varies by actuators



Do not loosen the stopper screw at this time since it is set to avoid the screw coming off)

4. If hunting occurs due to an actuator of small capacity, refer to a description in chapter 6. OPTION

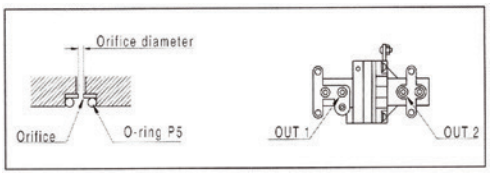
6. OPTION

6-1 Pilot valve with output orifice

1. Hunting may occur when the positioner is attached to a small capacity actuator, In such case, use a pilot valve having a output orifice for OUT1 and OUT2. The output orifice is removable.
2. Output orifice types

Volume of actuator	Output orifice diameter	Ordering NO
below 90㎤	O 0.7	1
90 ~ 180㎤	O 1.0	2
over 180㎤	None	3

3. After pulling out the O-ring from OUT1 and OUT2 port. push proper orifice and then mount the O-ring to OUT1 and OUT2 again When mounting the output orifice, pay attention not to let dust and others enter the port hole
4. If the hunting dose not stop even after mounting the output orifice. please contact us



7. WARNING

1. Do not apply large vibration or impact to the positioner. It causes trouble. The positioner must be handled very carefully during transportation and operation
2. If the positioner is used under temperature outside of the specification. the sealing materials deteriorate quickly and also the positioner may not operate normally.
3. Use clean supply air fully removed humidity and dust.
4. If you leave the positioner at the operation site for a long time without using it. put the cover on it so that the rain water does not enter the positioner. If the atmosphere is of high temperature or high humidity. take measures to avoid condensation inside The condensation control measures must be taken through it for export shipment