



aira

VALVE POSITIONER

POSITION CONTROLLING AND MONITORING OF AUTOMATED VALVES

- Suitable for use on rotary and linear applications.
- Certified for use in all hazardous areas.
- Suitable for use on analog and on/off control.
- Integrated solutions (analog input & output + sensors, bus + sensors + pilot)
- Technology leadership in automated on/off valves.



aira Euro automation pvt. ltd.

www.airaindia.com

AIRA Valve Positioner are designed and manufactured, based on "simple, efficiency and inexpensive" philosophy and technology innovation to help plants, platforms, and pipelines to improve productivity, increase safety and reduce cost.

- AEP-1000 series Valve Positioner are able to control valve stroke (any position) accurately both for linear and rotary in line of the input signal of 4-20mA or 3~15psi which are all suitable both for the double acting and spring return actuator.
- APP-1200 series Top Valve Controller can sense and controls mechanical position (on/off) of valve based on electric, ASi Digital signals and pressure air supply.

Electro-Pneumatic Valve Positioner



Pneumatic-Pneumatic Valve Positioner

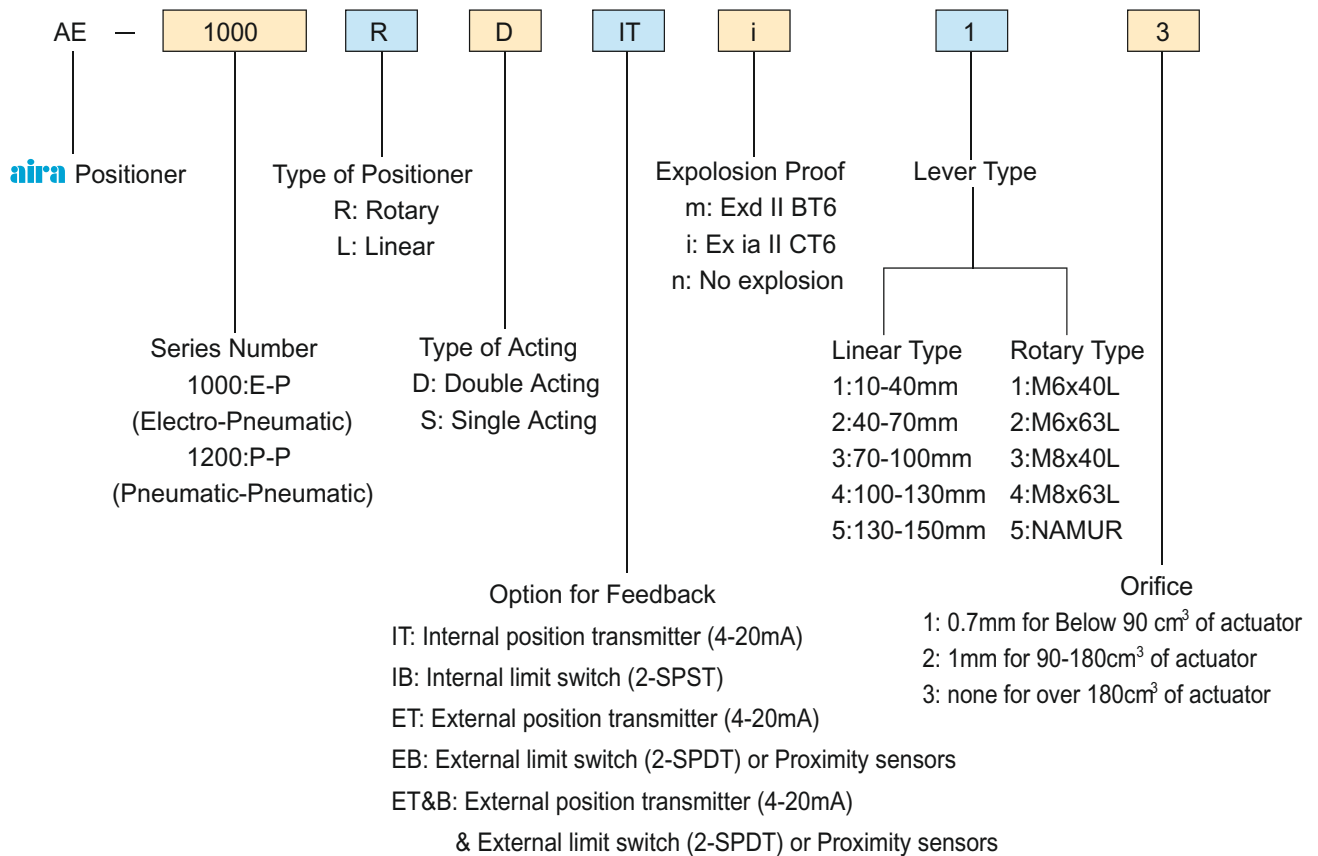


• Design and Features

Aira Manufacture AEP series mechanical valve positioners based on the design ideas of block structure and multi-port function and the advanced technology of explosion proof, which are PESO & CIMFR approved. The AEP series mechanical positioners including P-P one and E-P one are all suitable both for linear and rotary control valve. The E-P positioner controls valve stroke accurately, through pressure air, according to input signal of 4-20mA. The P-P positioner controls valve stroke accurately, through pressure air, according to input signal of 3-15psi. As for E-P positioner, the internal & external limit switches or internal & external valve position transmitter is available for choice. The valve positioners are provided with following features:

- There is no resonance to the operation of positioner in the range of 5~200Hz.
- Performing 1/2 Split Control without any other substitutes.
- Easy to adjust zero and span.
- Easy to convert from Reverse Action to Direct Action or vice versa.
- Easy to convert from Spring Return to Double Action actuator or vice versa.
- Easy Feedback Connection and meeting the standard of ISO5211 or Namur.
- Fast and accurate response.
- Low air consumption.
- Easy to protect from hunting effect by using output orifice in small size of actuator.
- Easy to install air tubing connection in any direction.

• Ordering Guide

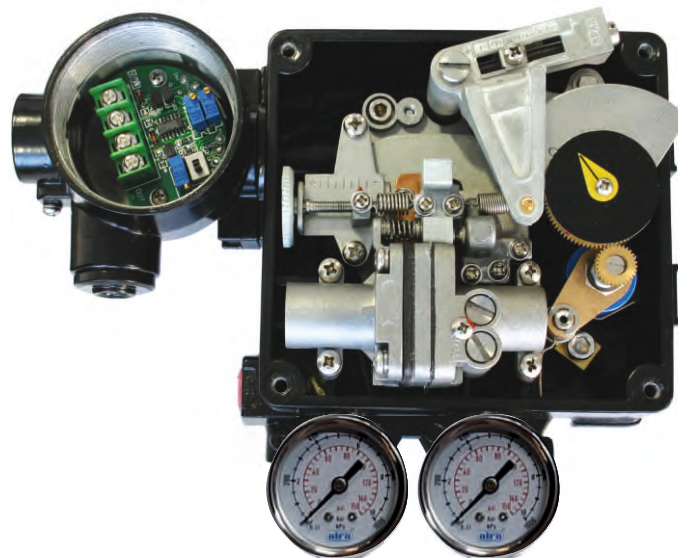


• Mechanical Positioner

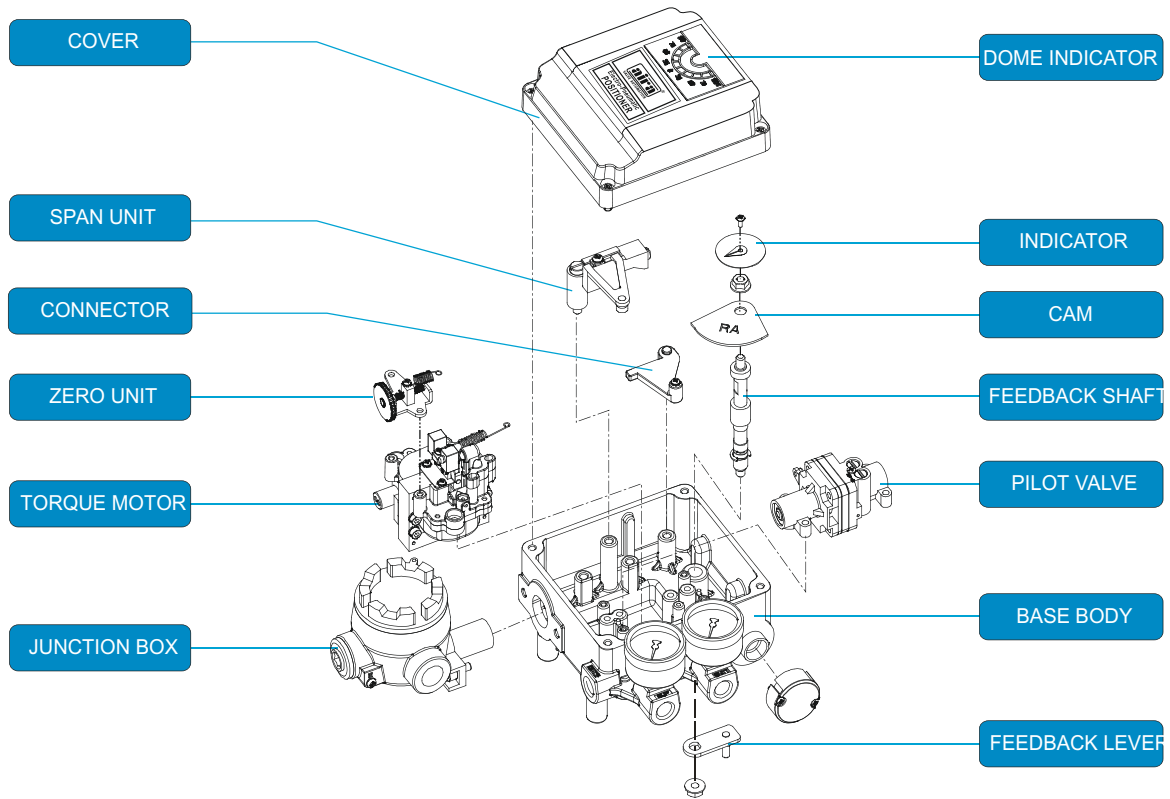
Model	AEP-1000	APP-1200
Input signal	4-20mADC(5-15mADC)	0.2~1kgf/cm ² (3~15psi)
Impedance	250±15Ω	/
Supply pressure	1.4~7kgf/cm ² (20~100psi)	1.4~7kgf/cm ² (20~100psi)
Stroke	0°-90°(R), 10-150mm(L)	0°-90°(R), 10-150mm(L)
Air connection	G(NPT)1/4	PT(NPT)1/4
Gauge connection	G(NPT)1/8	PT(NPT)1/8
Conduit	G(NPT)1/2 or M20X1.5	/
Explosion proof	Ex d IIB T6 Gb, Ex ia IIC T6 Ga, Non-Explosion	/
Protection	IP65	/
Ambient temperature	-20~70-40~70-20~120	-20~70
Linearity	±1.0%(SA) ±2.0%(DA)	±1.0%(L-SA)/ ±2.0%(L-DA)/ ±2.0%(R)
Hysteresis	±1.0%	±1.0%
Sensitivity	±0.2%(SA) ±0.5%(DA)	±0.2%(L-SA)/ ±0.5%(L-DA,R)
Air consumption	2.5LPM(Sup=1.4kgf/cm ² ,20psi)	2.5LPM(Sup=1.4kgf/cm ² ,20psi)
Flow capacity	80LPM(Sup=1.4kgf/cm ² ,20psi)	80LPM(Sup=1.4kgf/cm ² ,20psi)
Material	Aluminum Die Casting	Aluminum Die Casting
Weight	2.7kg(6lb) / 2.8kg(6.2lb)	1.7kg(3.7lb)

• Internal and External Position Transmitter (optional)

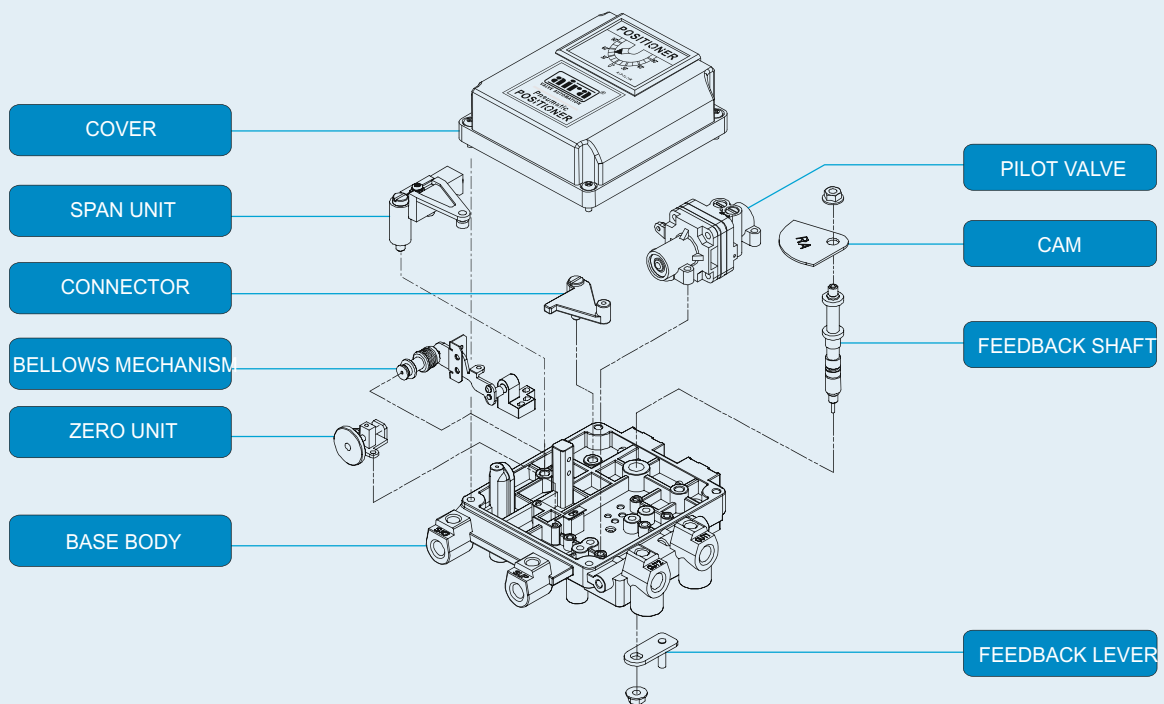
Input type	2Wire
Input Signal	0°-90°
Output Signal	4-20mADC
Load Resistance	0~600Ω
Noise Range	50mVp.p
Adjustable Range	Zero:±10%
	Span:60~110%
Linearity	±1%
Sensitivity	±0.2%
Hysteresis	0.002
Supply Voltage	15~30VDC



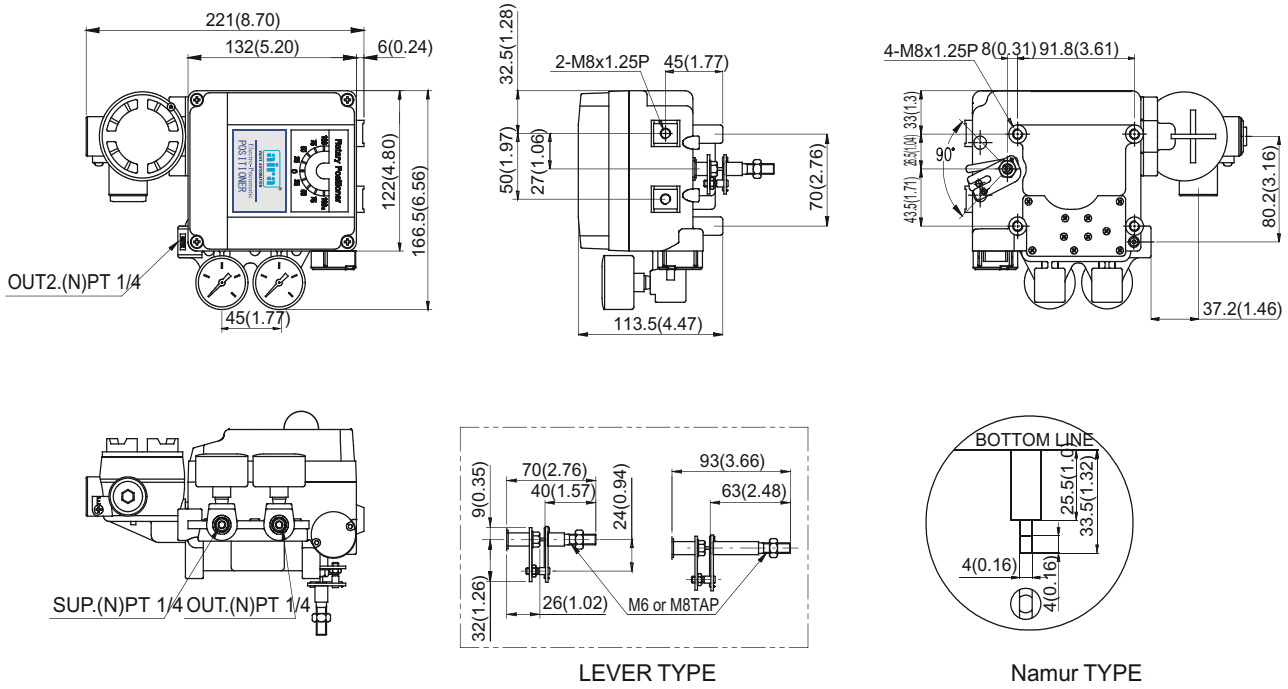
• E-P positioner



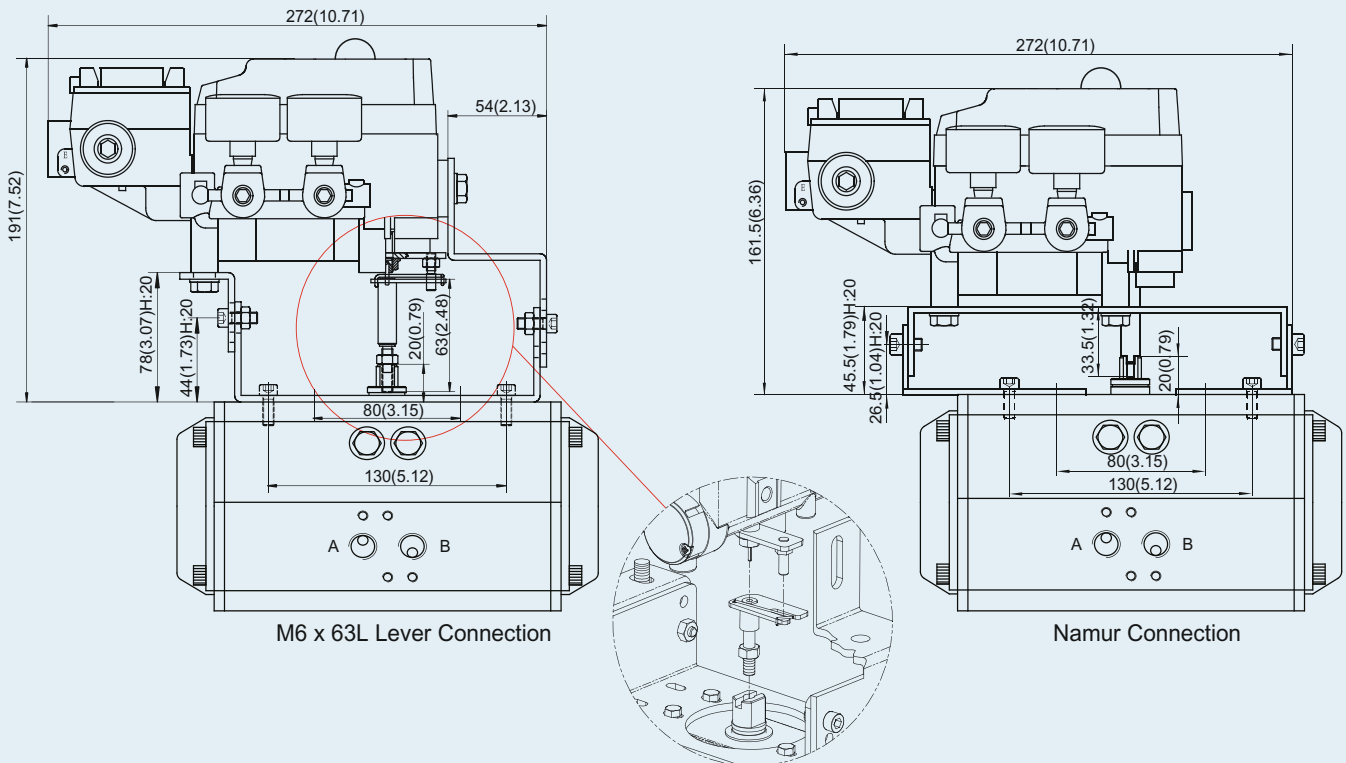
• P-P positioner



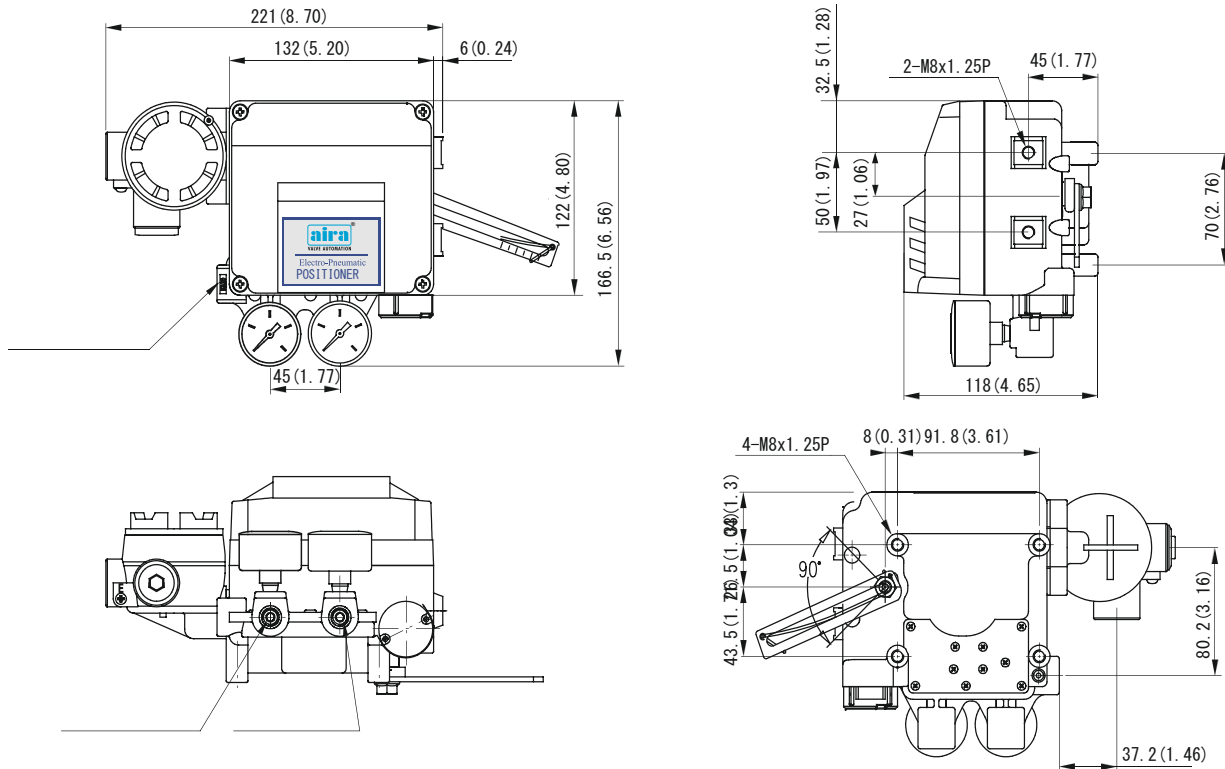
• Dimensional drawings for E-P positioner (Rotary)



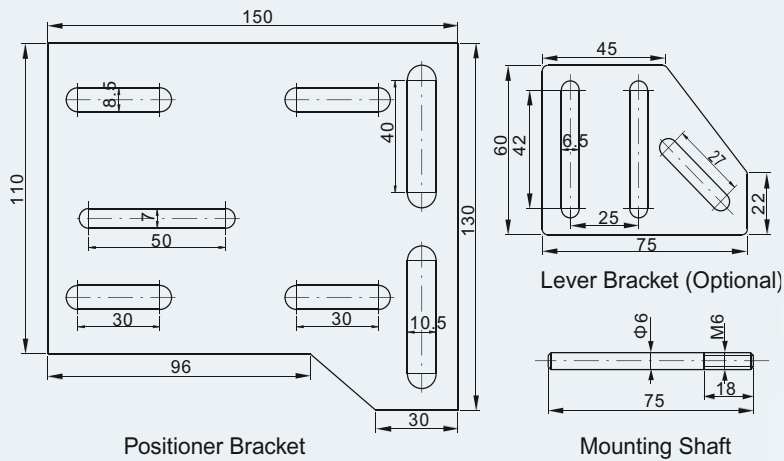
• Mounting for E-P positioner (Rotary)



• Dimensional drawings for E-P positioner (Linear)



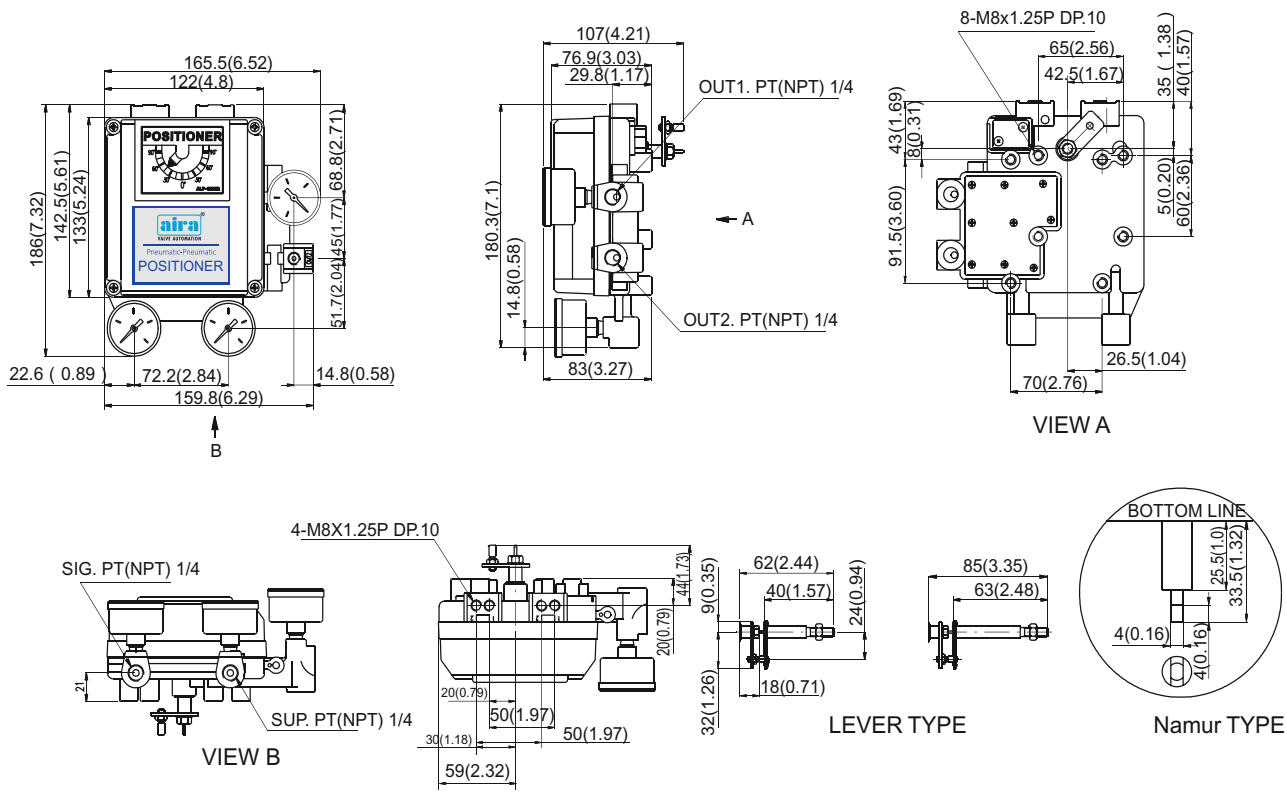
• Dimensional drawings for Bracket (Linear)



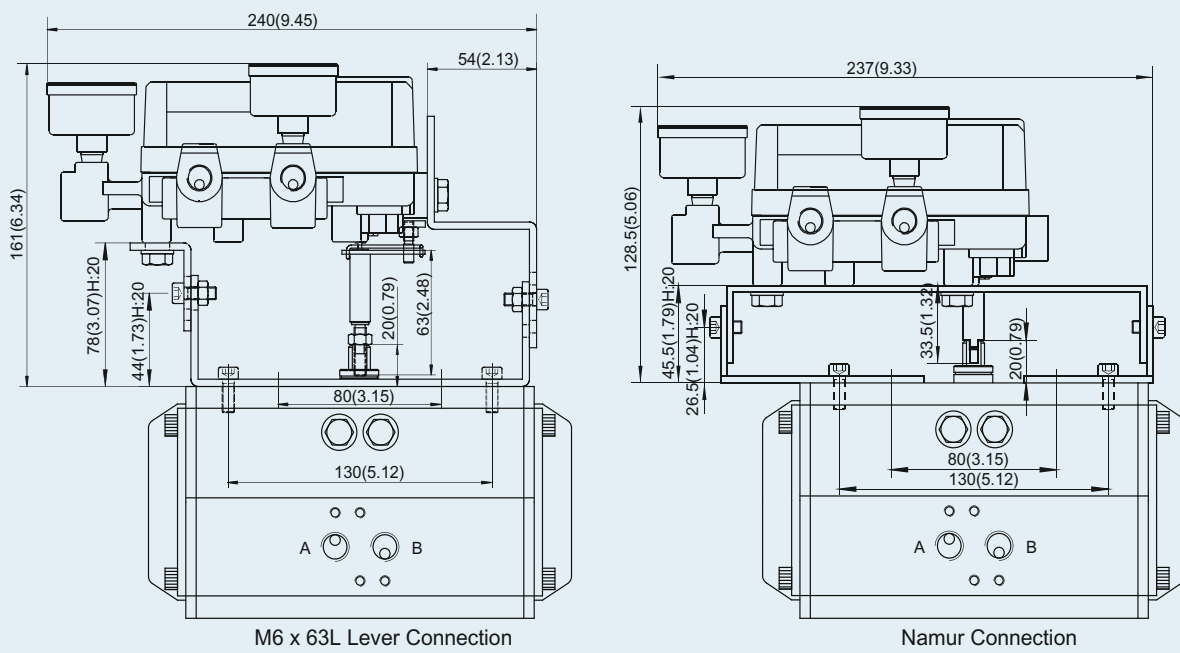
• Mounting (Linear)



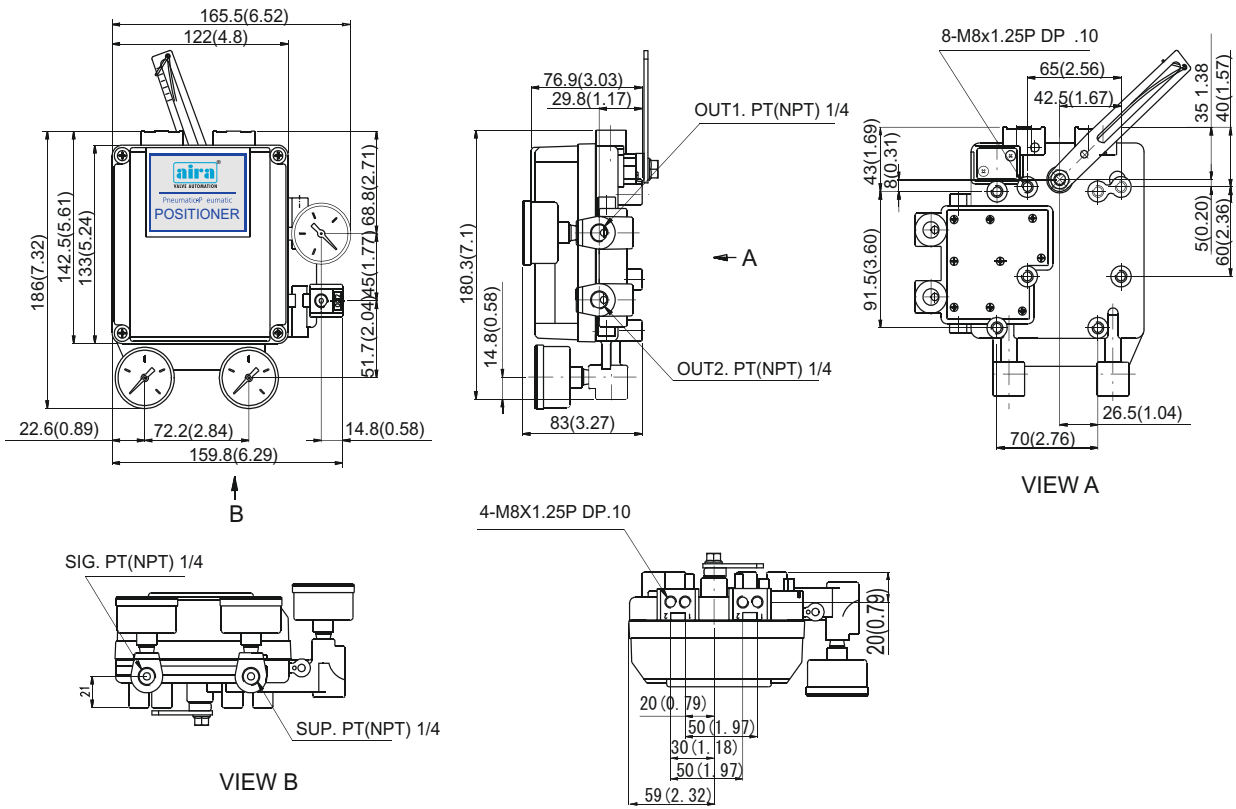
• Dimensional drawings for P-P positioner (Rotary)



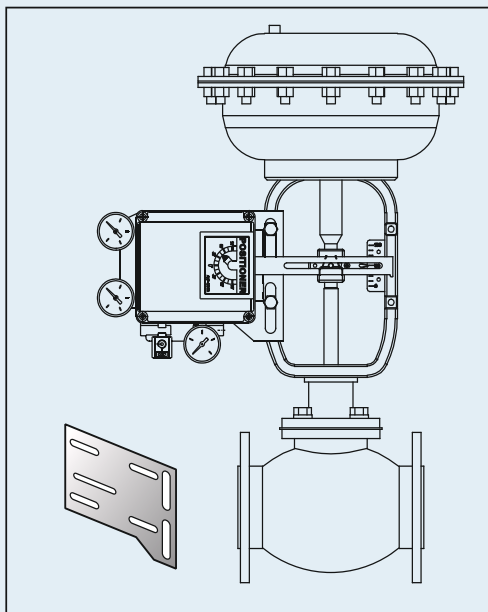
• Mounting for P-P positioner (Rotary)



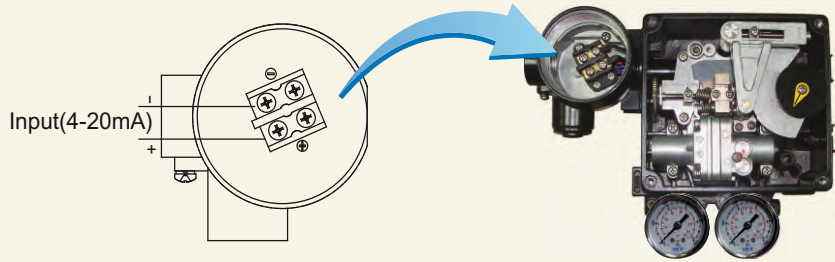
• Dimensional drawings for P-P positioner (Linear)



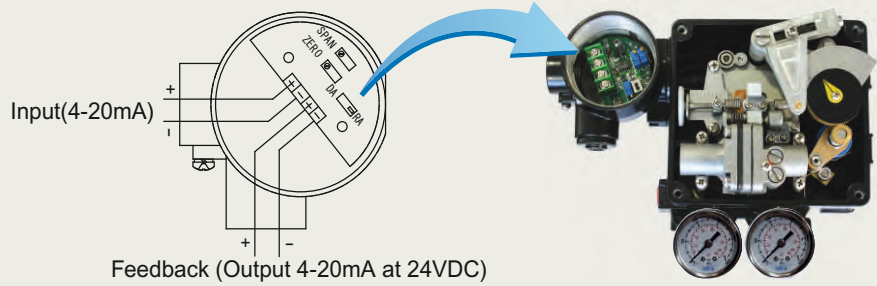
• Mounting for P-P positioner (Linear)



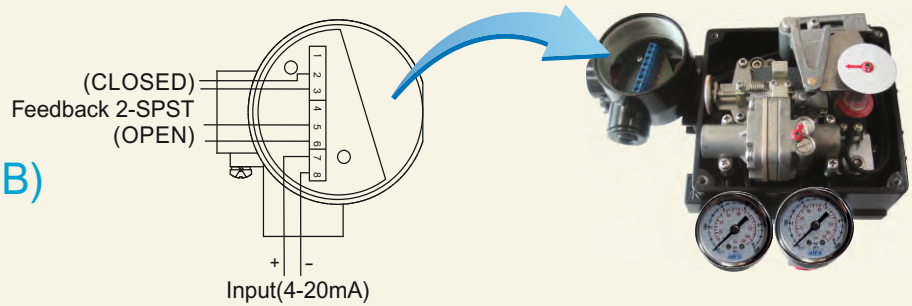
- No Internal Installation



- Internal Position Transmitter (IT)



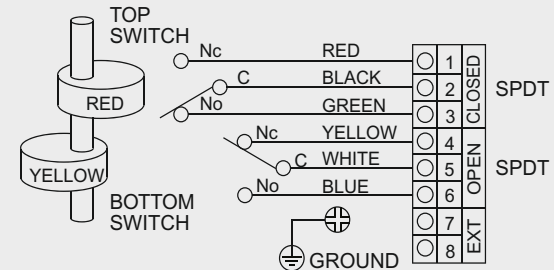
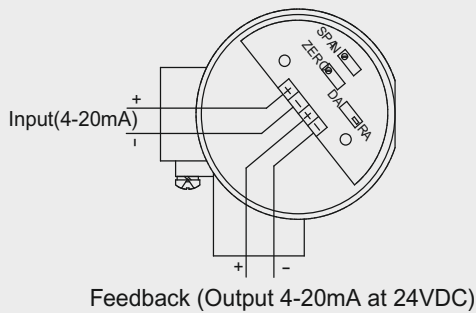
- Internal Limit Switches (IB)



- Internal Position Transmitter & External Limit Switches (IT&EB)

In Junction Box (4-20mA Input)

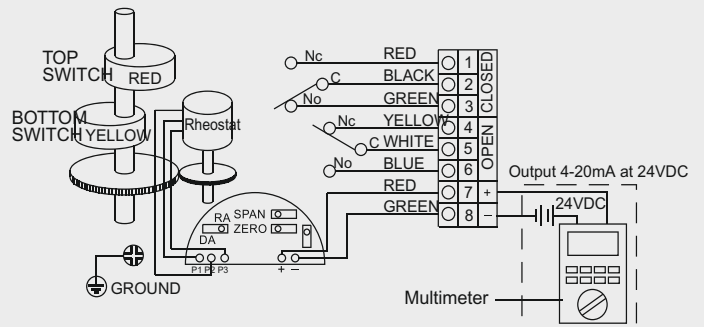
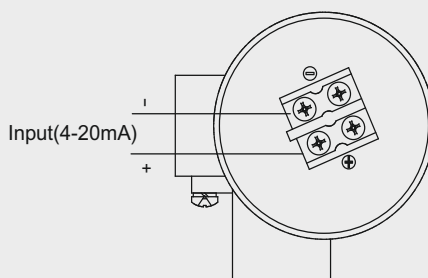
In Top Box (Output 2-SPDT)



- External Position Transmitter & External Limit Switches (ET&B)

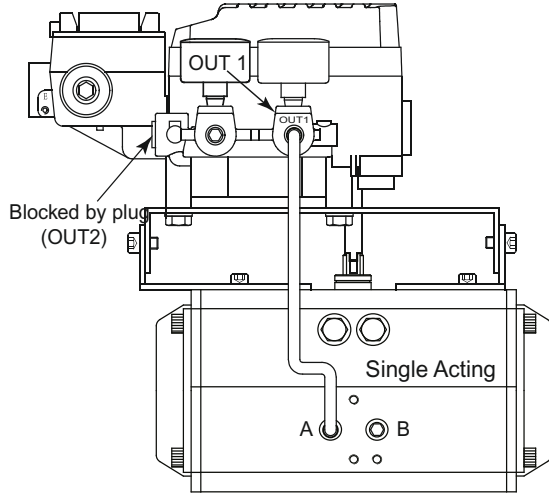
In Junction Box (4-20mA input)

In Top Box (Output 4-20mA & 2-SPDT)



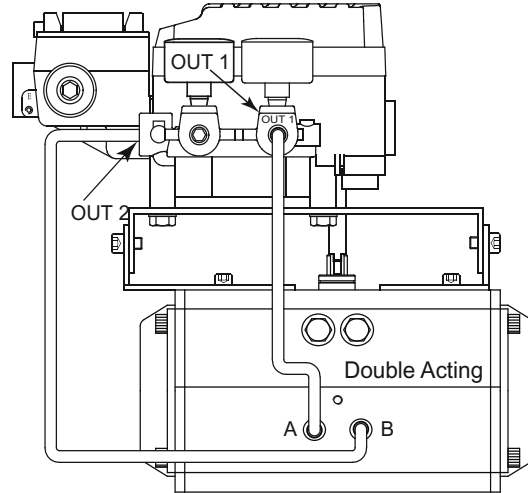
• Piping Connection with Actuator

(CCW open when the input electric current increase)



*Single acting piping connection

Blocked out2 port with plug, out1 port should be connected with A port of single acting actuator.



*Double acting piping connection

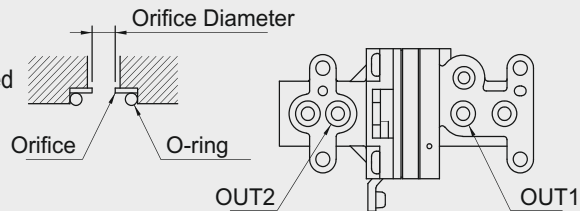
Out1 port should be connected with A port of the double acting actuator and Out2 port should be connected with B port of the double acting actuator.

• Orifice Mounting

- If the size of actuator is too small relative to the flow rate, positioner can have hunting. In order to avoid hunting, orifice can be used. There are three types of the orifice.

Air Volume of Actuator	Orifice Size	Suffix Model No.
90 cm ³ less	∅ 0.7	1
90 ~ 180 cm ³	∅ 1	2
180 cm ³ more	none	3

- Remove the o-ring from OUT1 and OUT2 port and insert appropriate orifice. After inserting orifice, place back the o-ring. Make sure there is no substance entering into port.
- If hunting persists after inserting the orifice, the actuator speed controller can be used. Please contact with www.airaindia.com



Manufacturing & Marketed by :

aira Euro automation pvt. ltd.



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IP6000 Series Intelligent Valve Positioner



aira IP 6000 intelligent valve positioner is mounted on pneumatic actuators. It's used to control air intake and exhaust of the pneumatic actuators to drive the valve position to the set point by calculating both data from 4-20mA DC signal and feedback position.

Technical Data	
Material	Aluminum
Set-point signal	4-20mA DC
Minimum working current	3.8mA
Ambient temperature	Normal version: -20°C ~ +70°C Optional version:-40°C ~ +70°C Highest explosion proof temp for T4 area is +60°C Highest explosion proof temp for T6 area is +40°C
Gas source requirement	ISO 8573-1 Class 3
Vibration resistance	0.15mm , 10Hz-60Hz , 20 cycle/axis 20m/s ² , 60Hz-500Hz , 20 cycle/axis Recommended range for control valve ≤ 20 m/s ² , no resonance peak
Supply pressure	0.14-0.7MPa
Flow	55L/min (Sup=0.14MPa)
Steady state air consumption	≤ 0.4 L/min
Basic error	≤ 0.5%
Hysteresis error	≤ 0.5%
Electrical connection	M20×1.5
Pneumactical connection	G1/4
Protection class	IP66
Weight	2kg
Explosion-proof class	Ex ia IIC T4/T6

Combinations



Normal rotary version



Remote rotary version



Separate version

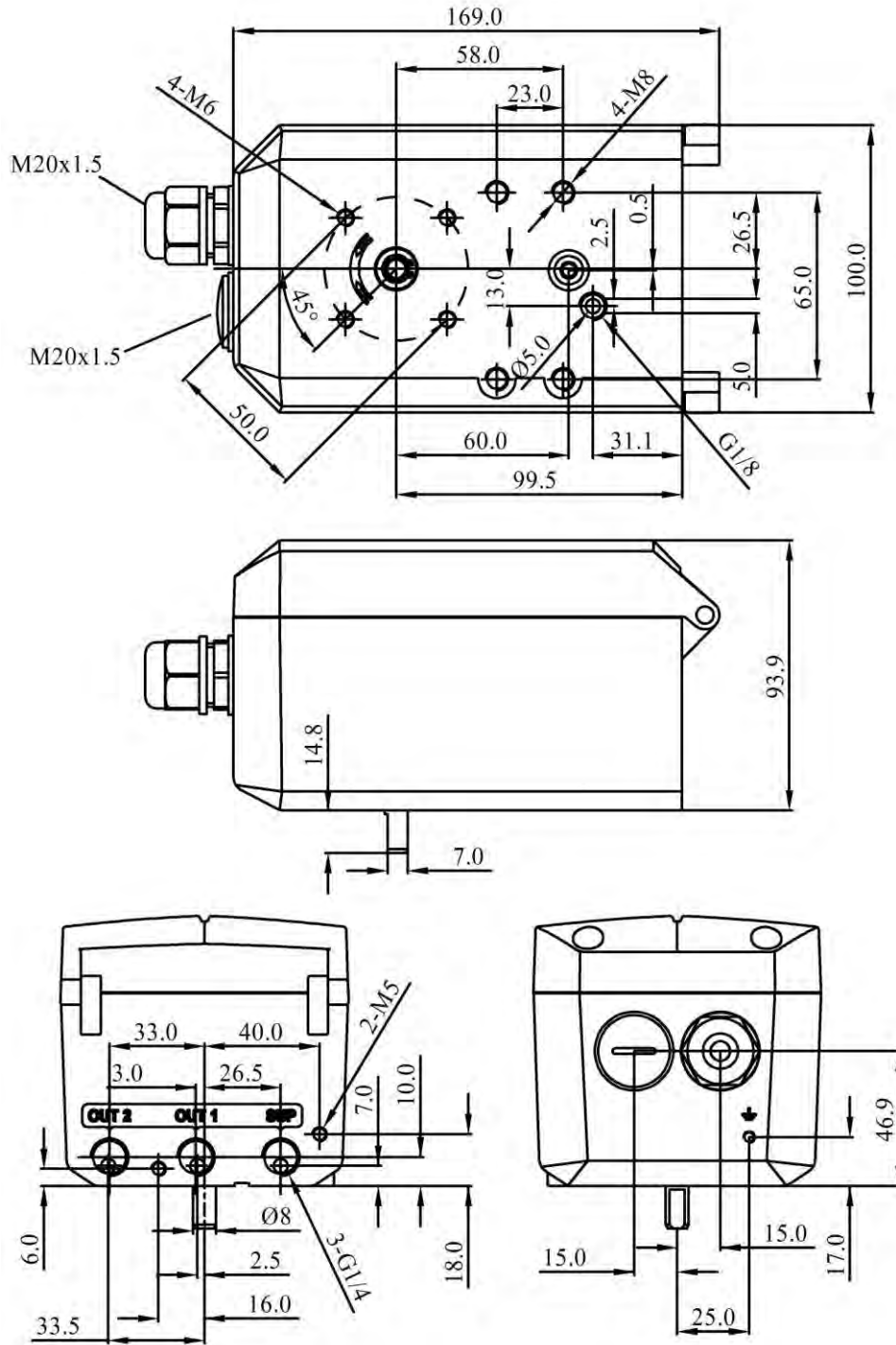


Normal linear version



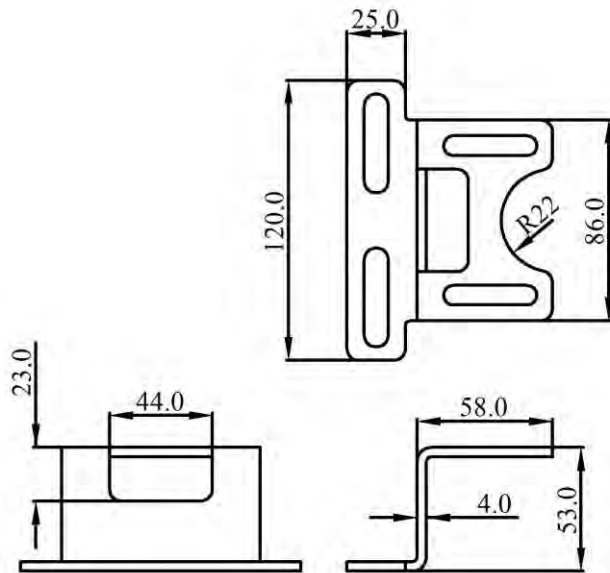
Remote linear version

Dimensions

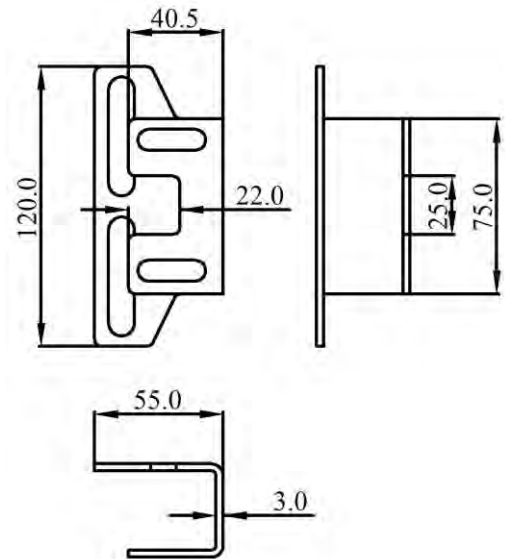


Positioner Dimensions

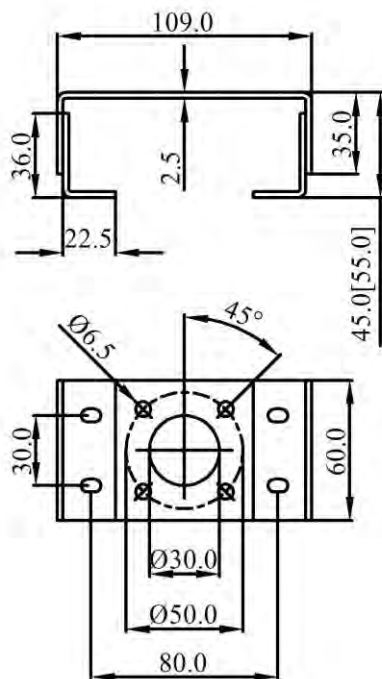
Dimensions



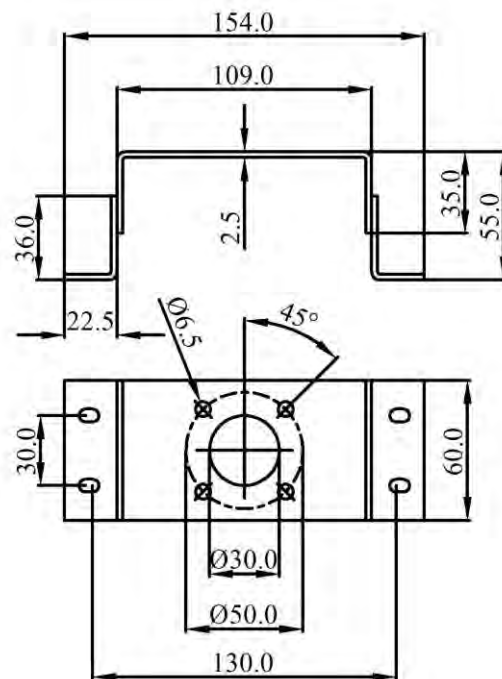
Normal linear mounting bracket



Remote linear mounting bracket

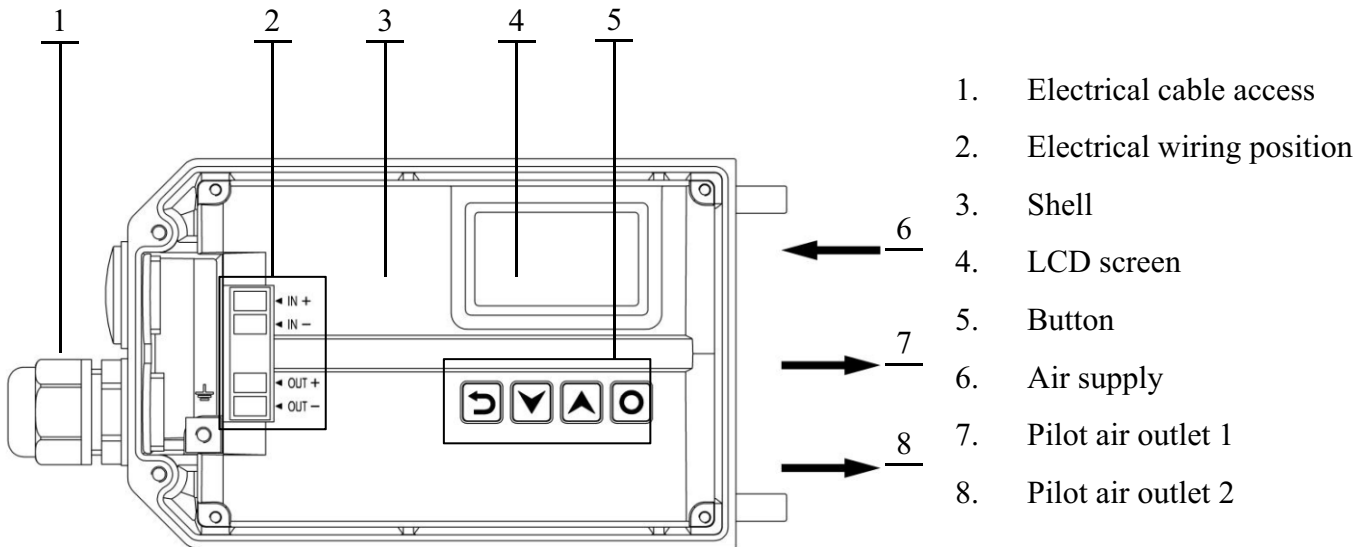


Bracket for rotary actuators(Form 1)

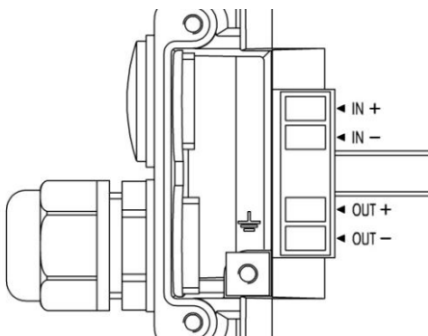


Bracket for rotary actuators(Form 2)

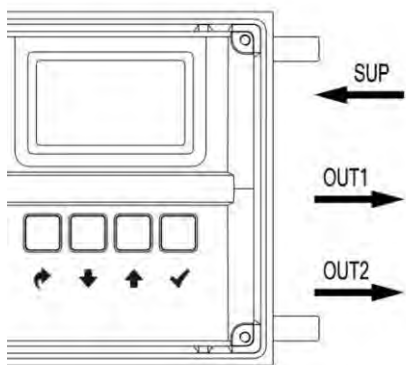
Structure



Electrical connections and pneumatic connections

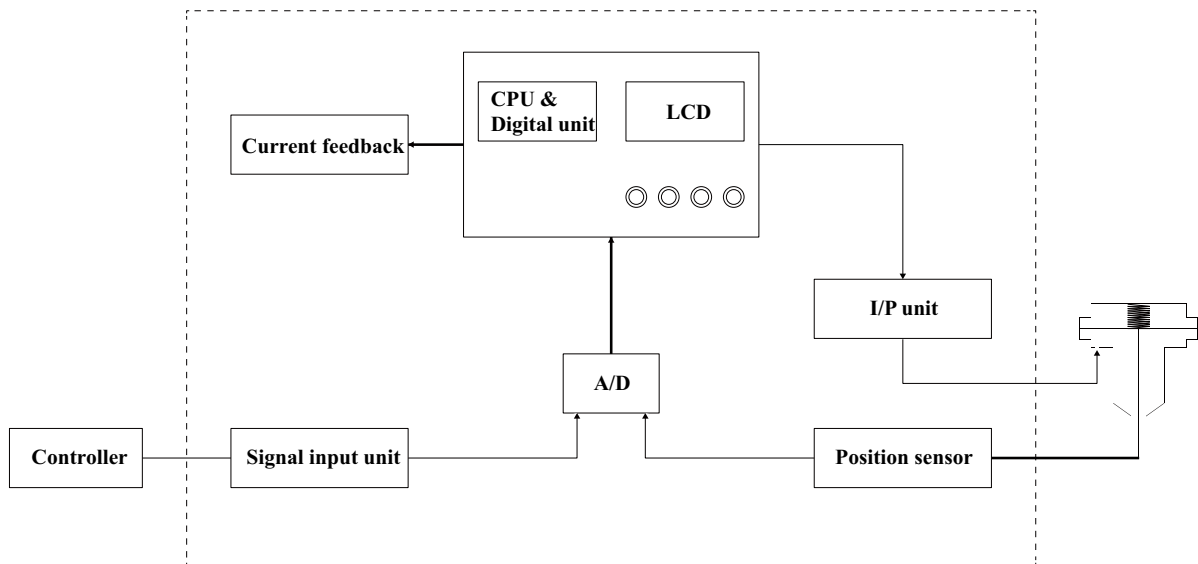


Electrical	Description
IN+	4-20 mA set-point signal +
IN-	4-20 mA set-point signal -
OUT+	Feedback signal module 18-30 V DC +
OUT-	Feedback signal module 4-20 mA output



Pneumatical	Description
SUP	Air supply enter
OUT1	Pilot air outlet 1
OUT2	Pilot air outlet 2

Principle Block Diagram



Additional Software Functions

- | Calibrating the set-point signal.
- | Setting for dead band zone
- | Sealing function for position controller.
- | Limit of the mechanical stroke range.
- | Selection of the transfer characteristic between set-point value and stroke.
- | Selection of signal direction.
- | Selection of stroke direction.
- | Factory settings.

Selection and Ordering Data

L Normal linear FL Remote linear R Normal rotary FR Remote rotary S Separate	Install type
S Single acting D Double acting	Acting mode
n No explosion i Ex ia IIC T4/T6	Explosion level
0 no 1 yes	Feedback signal
0 no 1 yes	HART
0 no 1 Linear 2 Rotary	Mounting kit & lever
0 no 1 yes	Pressure gauge
S Safe F Freeze	Power off state
N -20~70°C L -40~70°C	Ambient temperature
IP6000 - L - S - n - 0 - 0 - 0 - 0 - S - N	

Remark: Power off state option is **Safe** by default. There is neither pressure gauge nor -40~70° C ambient temperature version for the type of separate install positioners. The minimum length of the remote type cable is 5m. For other length requirements, please contact our company. The maximum length cannot exceed 20m.