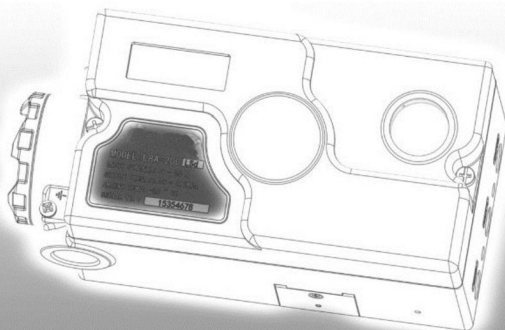


E/P POSITIONER

USER MANUAL



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2 Input	S Single Action	L With LCD display PL With LCD display、with signal feedback of 4~20mA
	D Double Action	
3 structure	i Intrinsic Safety	5 Option
	m Flameproof	
	n Non-flameproof	T With gas flow board

Technical Parameters

Item	L8A-100L		L8A-100R	
	Single Action	Double Action	Single Action	Double Action
Input Signal	4~20mA DC (Type without display or feedback)			
Resistance	250±15Ω (Type without display or feedback)			
Supply Pressure	1.4~7.0kgf/cm ² (20~100 psi)			
Stroke	10~150mm		0~90°	
Air Connection Size	PT(NPT) 1/4			
Pressure Gauge Connection Size	PT(NPT) 1/8			
Power Interface Size	PF 1/2 (G 1/2)			
Explosive-proof Grade	NEPSI : ExiaIICT6 Ex dII BT6			
Protection Grade	IP66			
Ambient Temperature	Operating Temperature	Standard Type: -20~70°C High-temperature Type : -20~120°C		
	Flameproof Temperature	-20~60°C		
Linearity	±1.0% F.S			
Hysteresis	1.0% F.S			
Sensitivity	±0.2% F.S	±0.5%F.S	±0.2% F.S	±0.5% F.S
Repeatability	±0.5% F.S			
Air Consumption	3LPM (Sup=1.4kgf/cm ² ,20psi)			

Flow	80LPM (Sup=1.4kgf/cm ² ,20psi)	
Material	Die-casting aluminum	
Weight	2.1kg	2.1kg
Type with display/feedback		
Input Signal	4~20 mA DC (Two-wire System)	
Input Load Voltage	MAX 15v	
Feedback Signal	4~20 mA DC (Two-wire System)	
Feedback Signal Power	DC 24v ±15%	

Installation

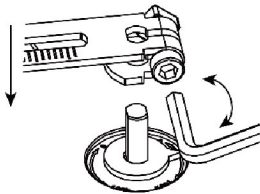
Mechanical Connection

Precautions

Notes	Before the installation, you should cut off the input signal and the air supply of the valves, actuators and other accessories.
	If the regulator is installed in the pipeline, measures should be taken to isolate the regulator from the pipeline.

Feedback Rod Installation

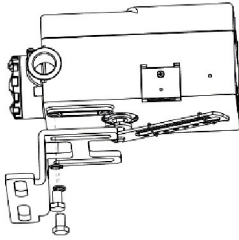
Assemble the positioner ontology and the feedback rod.



1. Put the feedback rod around the bottom shaft of the positioner. Pay attention to the direction of the shaft.
2. Screw and fasten the screw with a hex wrench of 5mm.

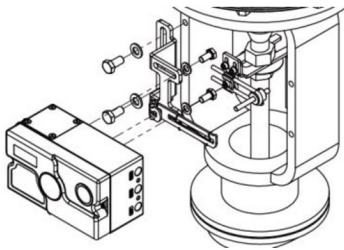
Install on Linear Motion Actuators

Install the linear motion mounting plate onto the positioner ontology.



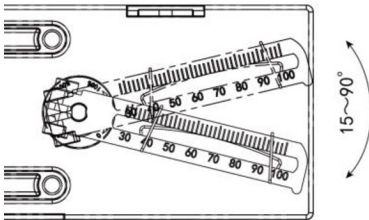
1. Install the mounting plate onto the ontology with two M8 screws. Don't tighten the screws temporarily.

Install on Linear Motion Actuators



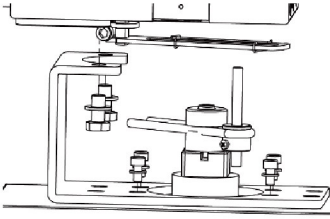
2. Choose the appropriate screw according to the mounting hole size on the actuator and install the positioner to the actuator.
3. Don't tighten the mounting screws temporarily.

Identify the Optimum Installation Position of the Positioner on the Actuator

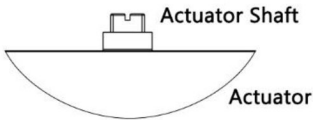


4. Install another pressure reducer on the actuator. Manually adjust the output pressure of the pressure reducer and observe the swing of the feedback rod to make sure that the swing is in the range of 15~90 degrees.
5. Adjust the output pressure of the pressure reducer to make the actuator open to about 50%. Adjust vertical position of the mounting plate to make the feedback rod in the horizontal position horizontal position.
6. Tighten retaining screws to firmly install the mounting plate onto the actuator.
7. Horizontally move the positioner to align the gag lever post of the feedback rod to the scale on the feedback.
8. Tighten retaining screws to finish installation.

Install on Rotary Motion Actuators



1. Fix the angular motion mounting plate onto the actuator with four M5 screws and tighten the screws.
2. Fix the angular motion gag lever post onto the actuator and adjust the gag lever post to the right height.
3. Fix the positioner on which the feedback rod was installed onto the angular motion mounting plate with two M8 screws, and meanwhile insert the gag lever post of the feedback rod into the middle groove of the feedback rod.
4. Carefully observe the gag lever post to make it reliably slide in the feedback rod groove without touching the bottom of the positioner or the valve accessories.
5. Tighten all the mounting screws.



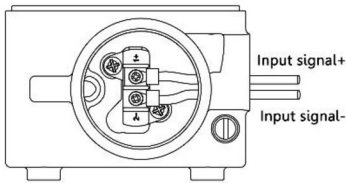
1. The condition that the actuator shaft raises too high or too low may cause the results that the gag lever post cannot touch the feedback rod.
2. In this case, please amend it yourself or add custom when you order it.

Electrical Connection

Precautions

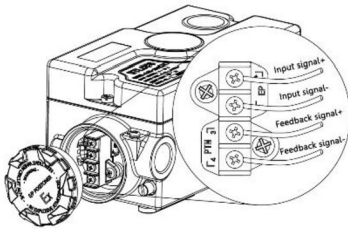
Notes	The rated working voltage of the positioner is 24v, with the maximum working voltage of 26 v. Working under the voltage above the rated voltage for a long time may cause unpredictable results.
	When the positioner has no signals, the state of the feedback is uncertain. Do not use the feedback signal as a key chain one.

Input Signal Connection



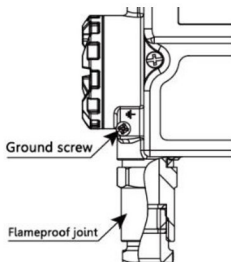
1. Connect terminal "1 +" to the output signal positive of PLC (DCS) 4~20mA and connect terminal "2-" to the output signal negative.
2. The use of cables of 0.5~1.5mm² is suitable.

Feedback Signal Connection



1. Connect terminal "1 +" to the output signal positive of PLC (DCS) 4~20mA and connect terminal "2-" to the output signal negative.
2. Connect terminal "3" to the circuit positive of the feedback signal and connect terminal "4" to the circuit negative of the feedback signal.
3. The use of cables of 0.5~1.5mm² is suitable.

Electrical Connection of Flameproof Position

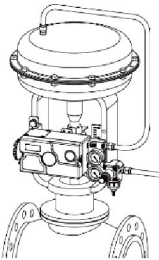


1. Electric valve positioner input signals of flameproof type should connect to the security gate externally.
2. Signal cables should be introduced with flameproof joint.
3. It should be reliably grounding through the grounding screw.

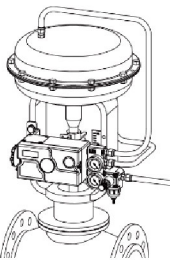
Piping

Notes	Ensure good connection of pipelines before turning on the compressed air supply in order to avoid accidents.
	The regulator may act after the compressed air supply is turned on. Ensure the security of the site and pipe lines before you turn on the air supply.
	You need to use the compressed air supply after drying, degreasing and dust removal.

Linear Motion Actuator Piping Connection

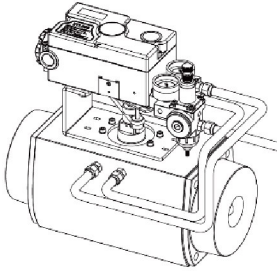


1. When installing on the single-action actuator, you should use "OUT1" joint to connect the actuator, while "OUT2" should be plugged by a plug.
2. Use "SUP" joint to connect the air input. The factory air supply needs to be filtered in the air pressure reducer before it is connected to the positioner.
3. Adjust the input pressure of the pressure reducer to nominal pressure of the actuator, + 0.05 MPa.



1. When installing on the double-action actuators, you should use "OUT1" and "OUT2" joint to connect the two input ports of the actuators respectively.
2. Use "SUP" joint to connect the air input. The factory air supply needs to be filtered in the air pressure reducer before it is connected to the positioner.
3. Adjust the input pressure of the pressure reducer to nominal pressure of the actuator.

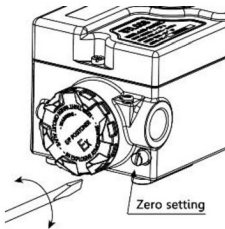
Rotary Motion Actuator Piping Connection



1. When installing on the single-action actuator, you should use "OUT1" joint to connect the actuator, while "OUT2" should be plugged by a plug.
2. When installing on the double-action actuators, you should use "OUT1" and "OUT2" joint to connect the two input ports of the actuators respectively.
3. Use "SUP" joint to connect the air input. The factory air supply needs to be filtered in the air pressure reducer before it is connected to the positioner.
4. Adjust the input pressure of the pressure reducer to nominal pressure of the actuator. (For the single-action actuator, the nominal pressure is +0.05MPa)

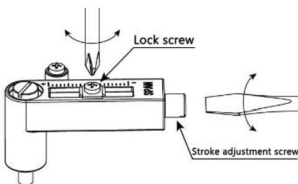
Debugging

Zero Setting



1. Lightly rotate the zero screw to perform zero setting with a straight screwdriver.
2. Cooperate with stroke adjustment in order to finish the debugging of the positioner.

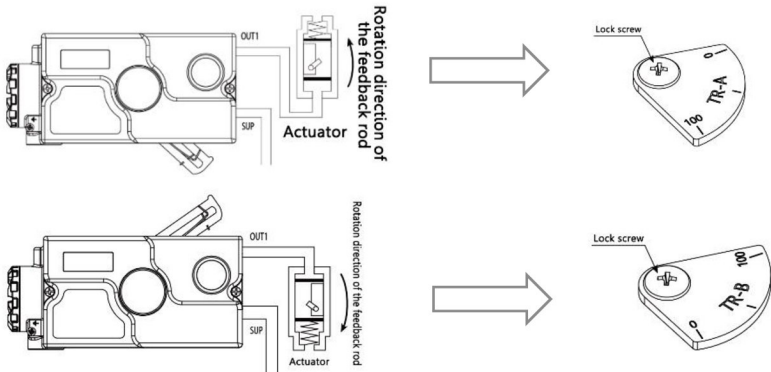
Stroke Adjustment



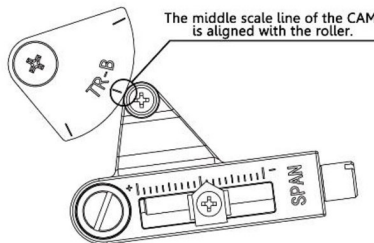
1. Loosen the lock screw with a phillips screwdriver. Then rotate the stroke adjustment screw with a straight screwdriver to change the stroke of the positioner.
2. Fasten the lock screw after the adjustment.
3. In the case of a given signal of 0% (100%), observe whether the valve reaches specified stroke.
4. Adjust the stroke and the zero position repeatedly to finish positioner calibration.

Identify the CAM Surface According To the Actuator Action Way

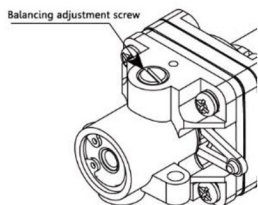
After the positioner is installed onto the actuator, in the case of outputting through the positioner output port "OUT1", you can determine to use CAM "TR" or "TR - B" surface according to the rotation direction of the positioner feedback rod. In the case of double-action actuators, you can also identify the cam surface according to the rotation direction of the positioner feedback rod when the positioner output through "OUT1".



If you need to turn over the CAM, you only need to loosen the lock screw, turn over the CAM, install it to the shaft, and then tighten the lock screw. After the reinstallation of the CAM, when the opening of the actuator is around 50%, the middle scale line of the CAM should be aligned with the roller.

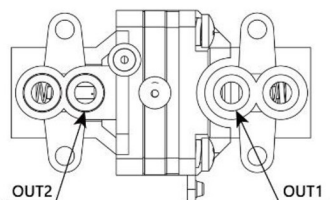


Balancing Adjustment



1. Balancing adjustment screws can adjust the balancing relations between the output pressures of the two output ports and optimize the actuator movements.
2. It has been adjusted to the optimum position during the delivery. Please don't literally change it.

Orifice Adjustment



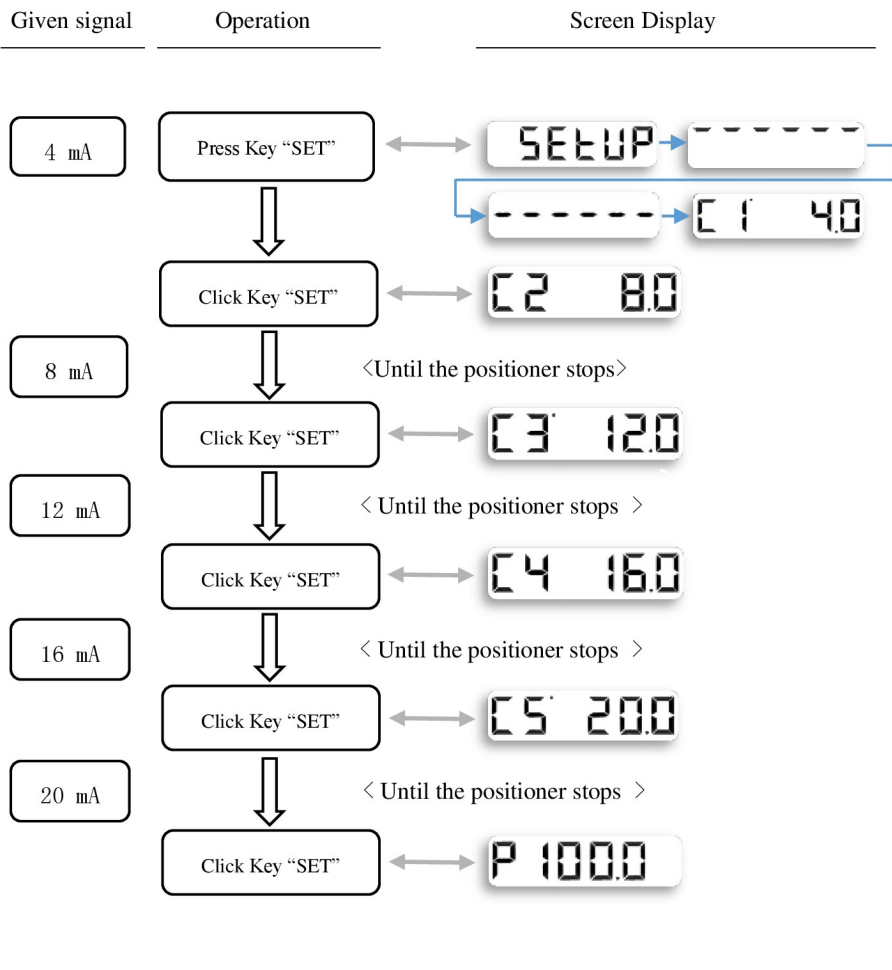
Specification of flow regulator
piece: 0.5mm, 1mm

1. Additionally install flow regulator pieces in the bottom output port of the pneumatic amplifier, which can avoid the oscillation phenomenon of the positioner on the actuators of small volume.
2. You can tell us whether the flow regulator pieces are additionally needed. There is none by default.

Feedback Signal Adjustment

First connect the feedback signal circuit, and adjust the positioner. Pay attention that the marks on the potentiometer gear should be aligned when the opening of the positioner is about 50%.

Then adjust feedback signals according to the steps below.



If it is a counteraction actuator, adjust according to the opposite order of the given signals.

If LCD displays **Error**, it indicates failure of the calibration. You need to repeat the above steps and perform the calibration again

Product Maintenance and Inspection

1. Regularly check the output pressure of the air filtration pressure reducer in front of the valve positioner. Don't increase or decrease output pressure of the pressure reducer casually.

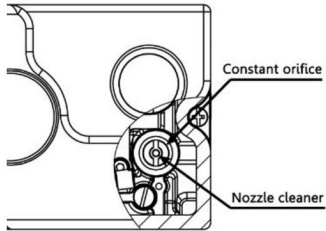
2. Drain the air filtration pressure reducer regularly to prevent moisture in the pressure reducer entering the positioner, which may lead to positioner faults.

3. During normal use, please cover the positioner shell to prevent moisture, dust and other impurities entering the positioner internal part, which may cause faults.

Trouble Shooting

Given signals don't act	Check the air supply Check the signal connection
Have action, but not fully open (closed)	Check the air pressure.
Can only be in position of fully open or closed	Dredge constant orifice
Positioner oscillation	Check whether the connection accessories are loose Check whether there is any leakage on the output port The actuator capacity is too small
No feedback signals	Check the feedback signal connection Check the feedback signal circuit of 24 v power supply
LCD screen displays Error	Check whether there is any loose phenomenon on feedback rod Check whether there is any loose phenomenon on the potentiometer gear Potentiometer and the gear are not aligned or damaged
Unable to perform linear adjustment	CAM is installed backwards or output ports are connected backwards (double-action).

Dredge constant orifice



1. Press the nozzle cleaner down several times with a screwdriver, which can dredge the constant orifice.
2. When necessary, screw out the "constant orifice" component counterclockwise and screw it back after the obstruction is fully cleaned. Pay attention that seal O-rings aren't lost when screwing back.