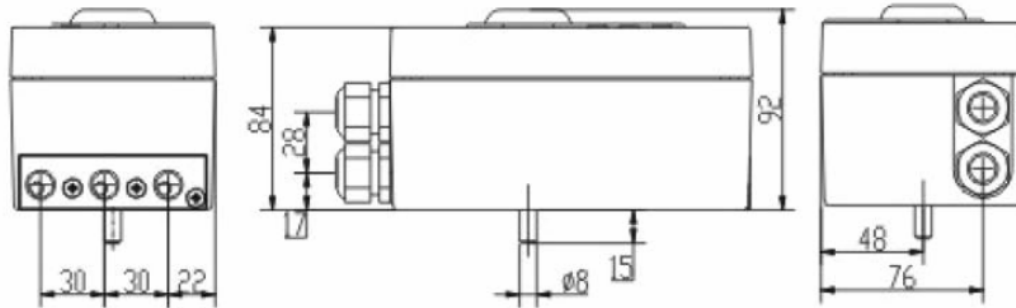
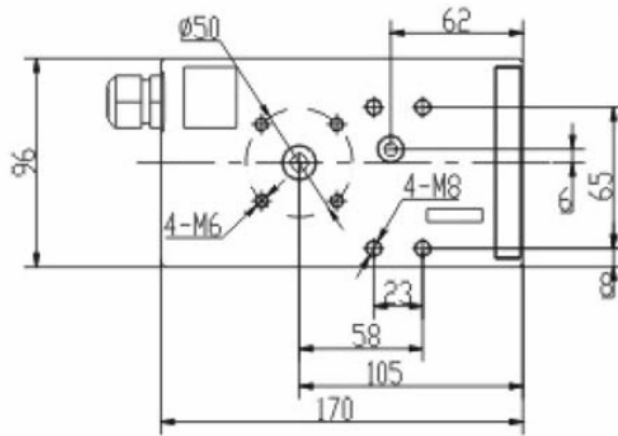
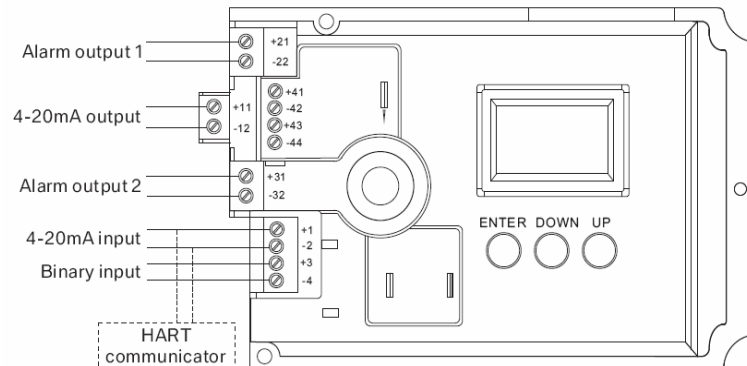


Dimensional drawings



Wiring



**MODEL NO.**

**ALP2000RDFn1**

**PRODUCT LINE**

**ALP Series Smart Valve Positioner**

**ORDERING and SPECIFICATIONS**

<b>Type of the positioner</b>	<input type="checkbox"/> Linear: 10-100mm <input checked="" type="checkbox"/> R: Rotary, 30°-120°
<b>Type of Acting</b>	<input checked="" type="checkbox"/> D: Double Acting <input type="checkbox"/> S: Single Acting
<b>Feedback (4-20mA)</b>	<input checked="" type="checkbox"/> F: Internal Position Transmitter
<b>Switches(2-SPDT)</b>	<input type="checkbox"/> M2: Internal Position Transmitter
<b>Hart protocol</b>	<input type="checkbox"/> H: Hart Module
<b>Explosion Proof</b>	<input checked="" type="checkbox"/> n: no explosion proof
	<input type="checkbox"/> i: Intrinsical safe(Ex ia II CT6)
	<input type="checkbox"/> d: Flameproof(Ex d II CT6)

**Technical Data**

Input signal	4-20mA(2 wire), minimum 3.6mA
Supply pressure	0.14Mpa-0.7MPa(1.4 Bar - 7 Bar)
Stroke	Linear: 10-100mm, Rotary: 30°-120°
Air connection	1/4BSPP, 1/4NPT
Conduit	M20-1.5, 1/2BSPP, 1/2NPT
Weather proof	IP65
Explosion proof	Exia II CT4-6, or Exd II CT6
Ambient temperature	-20°C ~ 70°C
Linearity	0.5%F.S.
Hysteresis	±1%F.S.
Repeatability	0.2%F.S.
Air consumption	<36L/H
Vibration effect	2G
Dimension	170x96x96mm
Material	Aluminum alloy with polyester powder
Weight	2.0Kg

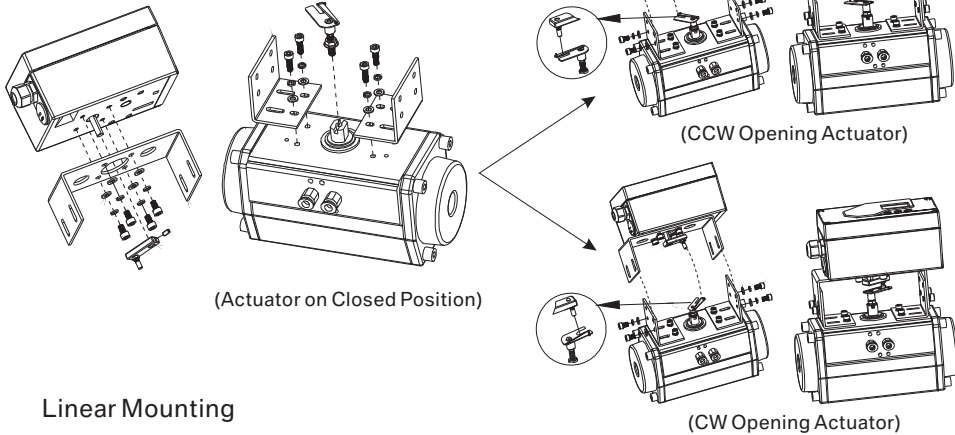


# ALP Series Smart Positioner Operation Manual

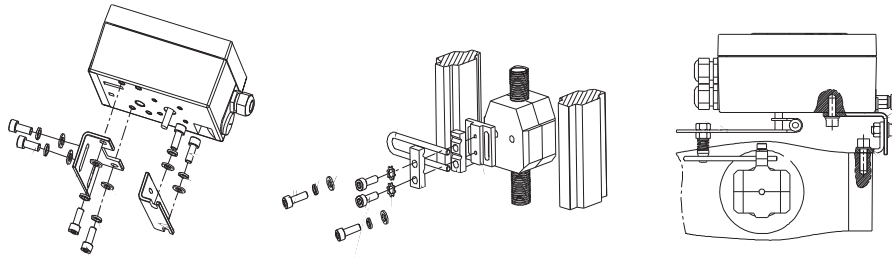
▲ It is easy to install and debugging the positioner but please read, understand and follow this operation manual step by step.

## 1 Mounting

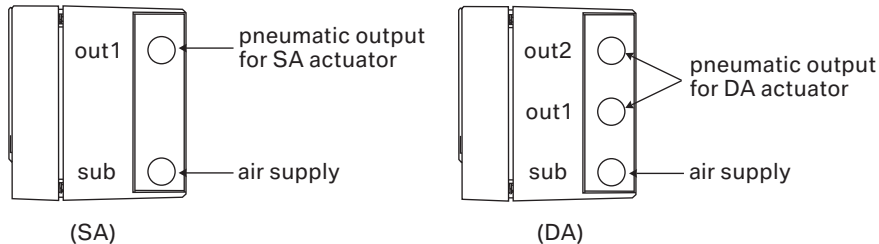
### Rotary Mounting



### Linear Mounting



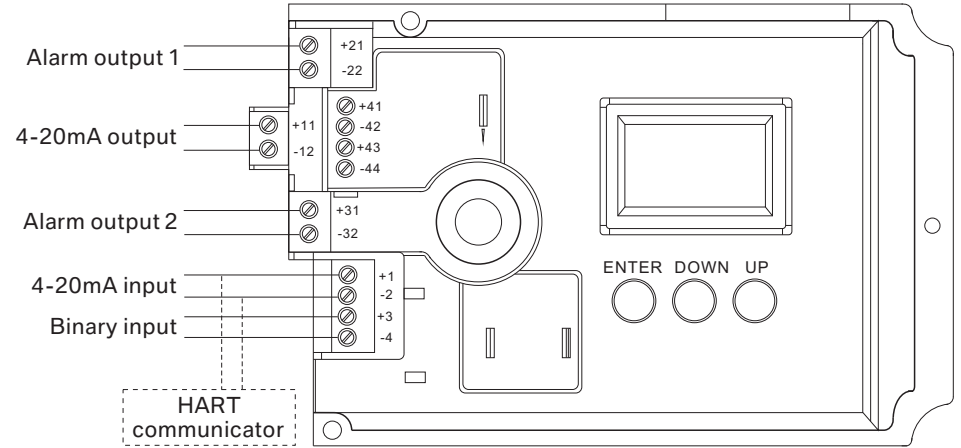
## 2 Pneumatic Connection



▲ FC:out2 to A port & out1 to B port; FO:out2 to B port & out1 to A port.

▲ Electrify firstly and than supply the pressure air.

## 3 Wiring



## 4 Interface Description

▲ After assembly and wiring, we can get into adjustment steps. It is easy to adjust ALP2000 positioner, but please read and understand the interface description firstly.

Upper line:  
working state: feedback value  
menu setting: menu parameter

Bottom line:  
working state: direction of valve,  
-----running state, input value  
menu setting: menu number and  
-----menu parameter

Working state:  
1, click the button, automatic /manual switch.  
2, press the button more than 3 sec. to go into menu setting.  
a, click the button, to choice parameter group P1/P2/P3/P4.  
b, click the button, to choice parameter/switch manu mode.  
c, press the button more than 3 sec. to exit from menu setting.

Working state under manual mode:  
press "+" button, the valve opening value will increase and press "-" in same time, the value will increase faster.  
menu setting:  
1, in choice mode, click "+" for next menu.  
2, in modify mode, click "+" for next parameter.

Working state under manual mode:  
press "-" button, the valve opening value will decrease and press "+" in same time, the value will decrease faster.  
menu setting:  
1, in choice mode, click "-" for former menu.  
2, in modify mode, click "-" for former parameter.

## 5 Checking the Mounting and Wiring?

▲ Through the operation of opening and closing of the valve, you can check the mounting and wiring correct or not. Please go in line of following steps:

1, click "A/M" button, go into manual mode.



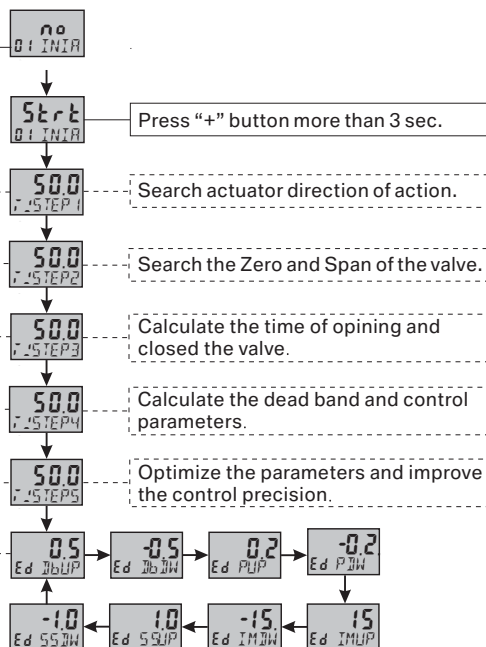
2, press "+" button, the valve will be moving and press "-" in same time, the value will be moving faster to the end.

3, press "-" button, the valve will be moving and press "+" in same time, the value will be moving faster to another end. If the operation is good, you can go into the step of self-inspection.

## 6 Self-Inspection

Self-inspection also called initialization. After positioner being installed and/or parameters setted, it must be initialized in which the positioner will automatically search the Zero and Span of the valve, optimize the parameters and improve the control precision. When initializing, the valve will automatically open and close, please pay attention to check the working conditions and take measures to ensure that the valve switch does not affect the process and personal safety. Following Chart tell you how to initialize the control valve.

1, Press "A/M", "+" and "-" buttons in same time more than 3 sec. the positioner will be started the initialization with bottom line flashed.  
2, Press "A/M" more than 3 sec. you can exit from initialization to working state.



The loop flash and running means the initialization start.

1, Bottom line show "Ed" means the initialization finished. The values in upper line are DEBA and PRED.  
2, Press "A/M" more than 3 sec. or no operation within 60 sec. you can exit from initialization to working state.

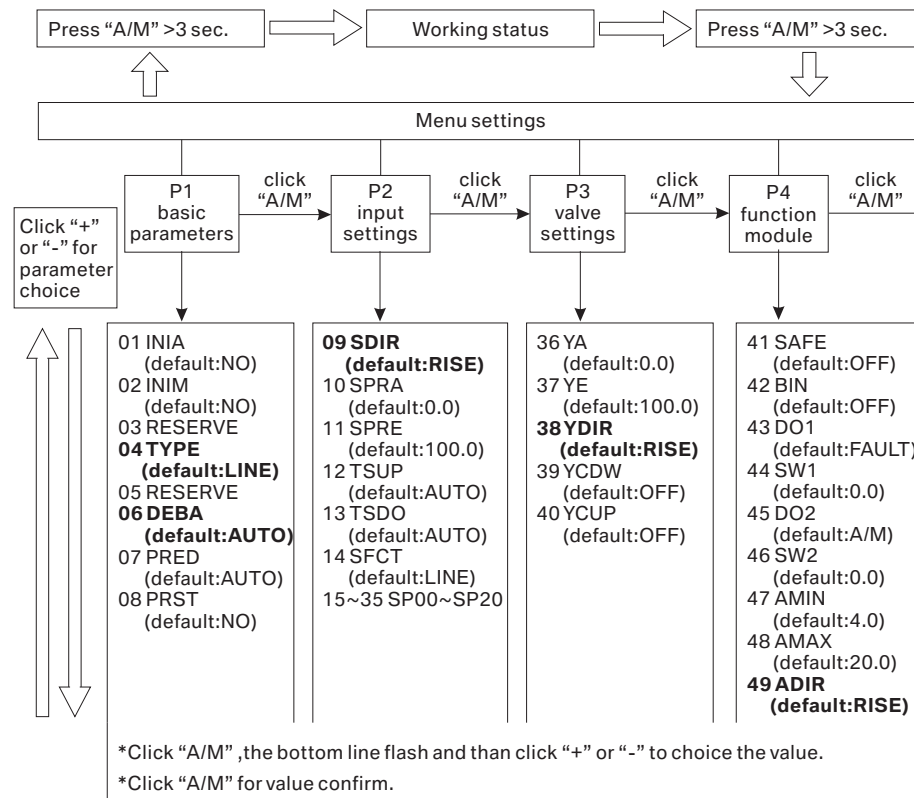
▲ If the self-inspection break in middle step, please exit and correct the position of the feedback lever according to step 1, and then self-inspection again.

▲ Note that the value of 38 YDIR will back to RISE after initialization. Need to set parameters in next step accordingly.

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## 7 Setting Parameters


▲ Ex-factory's ALP smart positioner has the default value for each parameter seeing below. If the default value meets the requirement, the positioner can be operated automatically. If not, we should set parameters according to following chart.



▲ Details of the parameter, please consult with the Parameter list.

▲ Note that the value of 38 YDIR will back to RISE after initialization. Need to re-setting accordingly.

## 8 Working Status

In this status , the valve position can be controlled by input signal according to valve characteristics, such as linear, equal % and so on.

Any questions, please feel free to contact with wilson@alpha-achem.com.

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Parameter	Display	Function	Content/Scope	Default Settings	Unit
NO. P1 (Basic Parameter)					
01	INIA	INIA	Initialize(Automatic): Not start Start	NO STRT	NO
02	INIM	INIM	Initialize(Manual): Not start Start	NO STRT	NO
03	reserve				
04	TYPE	TYPE	Type of actuator: linear actuator rotary actuator	LINE TURN	LINE
05	reserve				
06	DEBA	DEBA	Dead band	AUTO/0.1~10.0	AUTO %
07	PRED	PRED	Predict value	AUTO/0.1~10.0	AUTO %
08	PRST	PRST	Restore default value: Not start Start	NO STRT	NO
P2 (Input Settings)					
09	SDIR	SDIR	The relation between input signal and valve position	RISE/FALL	RISE
10	SPRA	SPRA	Start of split range	0.0~100.0	0.0 %
11	SPRE	SPRE	End of split range	0.0~100.0	100.0 %
12	TSUP	TSUP	Increase valve damping	AUTO 0~400	AUTO S
13	TSDO	TSDO	Decrease valve damping	AUTO 0~400	AUTO S
14	SFCT	SFCT	Valve characteristics 1,Linear 2,Equal % 3,Quick open 4,User defined	LINE 1:30 30:1 FREE	LINE
15~ 35	SP00~ SP20	~	Adjustable valve characteristics by user	0.0~100.0	%

Parameter	Display	Function	Content/Scope	Default Settings	Unit
NO. P3 (Valve Settings)					
36	YA	YA	Limited start position of valve	0.0~100.0	0.0 %
37	YE	YE	Limited end position of valve	0.0~100.0	100.0 %
38	YDIR	YDIR	The relation between feedback value on screen and valve position	RISE/FALL	RISE
39	YCDW	YCDW	Value for tight closing down	OFF/0.0~49.9	OFF %
40	YCUP	YCUP	Value for tight closing up	OFF/50.1~100.0	OFF %
P4 (Function Module)					
41	SAFE	SAFE	Safe position setting: Only "42 BIN" is "ON" safe position effective	OFF KEEP CLOSE 0.01~99.9 OPEN	OFF %
42	BIN	BIN	Digit Input functions:enable "safe position"function	ON/OFF	OFF
43	DO1	DO1	Digit output function: Fault alarm Fault Non-auto Fault Non-auto + BIN Under setting value Higher than the setting value	FAULT FNA FNAB LSET HSET	FAULT
44	SW1	SW1	Setting value	0.0~100.0	0.0 %
45	DO2	DO2	Digit output function: Auto/Manual Under setting value Higher than the setting value	A/M LSET HSET	A/M
46	SW2	SW2	Setting value	0.0~100.0	0.0 %
47	AMIN	AMIN	Min output current	4.0~20.0	4.0 mA
48	AMAX	AMAX	Max output current	4.0~20.0	20.0 mA
49	ADIR	ADIR	The relation between output signal and valve position	RISE/FALL	RISE

▲ Note that the value of 38 YDIR will back to RISE after initialization. Need to re-setting accordingly.