Maxonic

MVP SMART VALVE POSITIONER

↘ MVP3500 Quick Start Guide

THESE INSTRUCTIONS PROVIDE THE CUSTOMER/OPERATOR WITH IMPORTANT PROJECT-SPECIFIC REFERENCE INFORMATION IN ADDITIONTO THE CUSTOMER/ OPERATOR'S NORMAL OPERATION AND MAINTENANCE PROCEDURES.

THESE INSTRUCTIONS ASSUME THAT OPERATORS ALREADY HAVE AGENERAL UNDERSTANDING OF THE REQUIREMENTS FOR SAFE OPERATION OF MECHANICAL AND ELECTRICAL EQUIPMENT IN POTENTIALLY HAZARDOUS ENVIRONMENTS. THEREFORE, THESE INSTRUCTIONS SHOULD BEINTERPRETED AND APPLIED IN CONJUNCTION WITH THE SAFETY RULESAND REGULATIONS APPLICABLE AT THE SITE AND THE PARTICULARREQUIREMENTS FOR OPERATION OF OTHER EQUIPMENT AT THE SITE.

THESE INSTRUCTIONS DO NOT PURPORT TO COVER ALL DETAILS ORVARIATIONS IN EQUIPMENT NOR TO PROVIDE FOR EVERY POSSIBLE CONTINGENCY TO BE MET IN CONNECTION WITH INSTALLATION, OPERATIONOR MAINTENANCE. SHOULD FURTHER INFORMATION BE DESIRED OR SHOULD PARTICULAR PROBLEMS ARISE WHICH ARE NOT COVERED SUFFICIENTLY FOR THE CUSTOMER/OPERATOR'S PURPOSES THE MATTER SHOULD BE REFERRED TO MAXONIC.

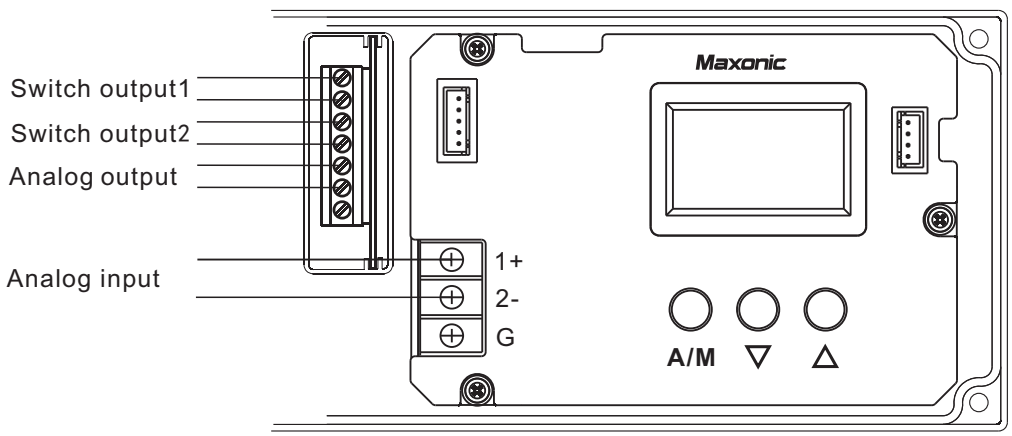
THESE INSTRUCTIONS ARE FURNISHED TO THE CUSTOMER/OPERATORSOLELY TO ASSIST IN THE INSTALLATION, TESTING, OPERATION, AND/OR MAINTENANCE OF THE EQUIPMENT DESCRIBED. THIS DOCUMENT SHALL NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN APPROVAL OF MAXONIC.

Introduction

MVP smart valve positioner is a user friendly digital valve positioner for pneumatic control valves. Utilizing advanced control and diagnosticalgorithms, along with field-proven non contact position sensing technology, the MVP delivers accurate, responsive and reliable posioning performance.

Electrical connection

Terminal name	Signal name	Function
1+	Current input signal(+)	Apply analog current command 4-20mA to this terminal to supply power and sinal to the positioner
2-	Current input signal(-)	
11+	Analog output signal(+)	4-20mA Analog Output signal indicating the position of the current valve
12-	Analog output signal(-)	
21+	Switch output signal1(+)	Alarm output 1: When the valve operates to the set alarm position, Output switch signals that comply with the NUMAR standard.
22-	Switch output signal1(-)	
31+	Switch output signal2(+)	Alarm output 2: When the valve operates to the set alarm position, Output switch signals that comply with the NUMAR standard.
32-	Switch output signal2(-)	

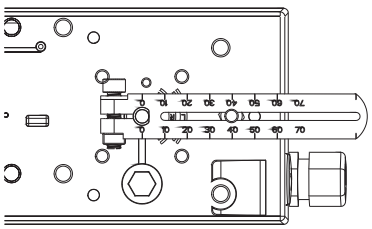


Mounting

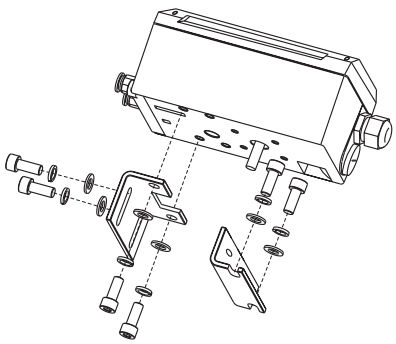
Determine the location for installing the locator based on the process system design specifications and the performance characteristics of the specific model released by MAXONIC.

Mounting Procedure of MVP on Reciprocating Control Valves

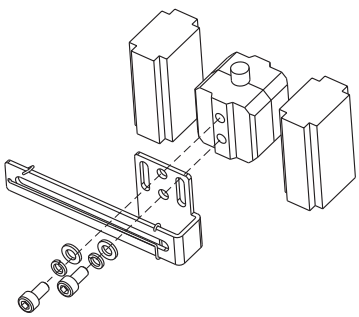
1. MVP positioner is mounted on a linear actuator with standard feedback lever. The recommended feedback angle is from 40° to 60°on a linear actuator.



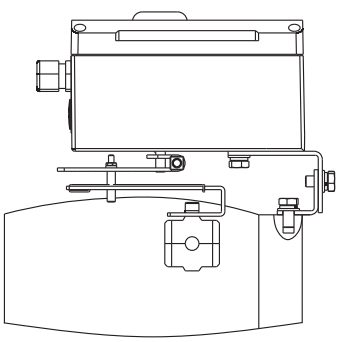
2. Fix the positioner bracket to the positioner.



3. Fix the feedback bracket to the actuator.

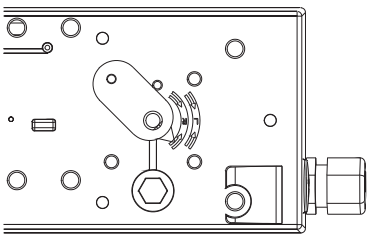


4. Fix the positioner to the actuator.

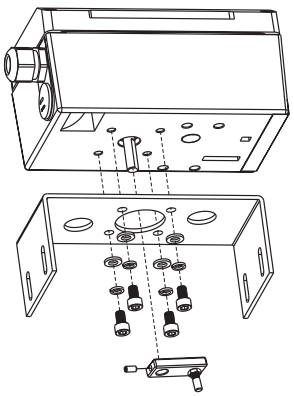


Mounting Procedure of MVP on Rotary Control Valves

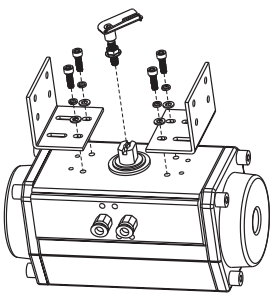
1. MVP positioner is mounted on a rotary actuator with standard feedback lever.



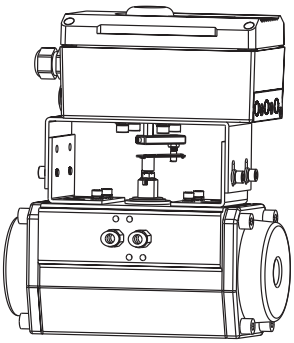
2. Fix the positioner bracket to the positioner.



3. Fix the feedback bracket to the actuator.



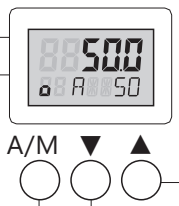
4. Fix the positioner to the actuator.



Operation interface

The 1st line shows
Normal operation:Valve position feedback value
User Menu:Parameter values

The 2nd line shows
Normal opration:From left to righyt shows "Direction of the valve-action","The state of running", and "The setpoint"
User menu Settings:from left to right shows "Parameter"and "The parameter name"

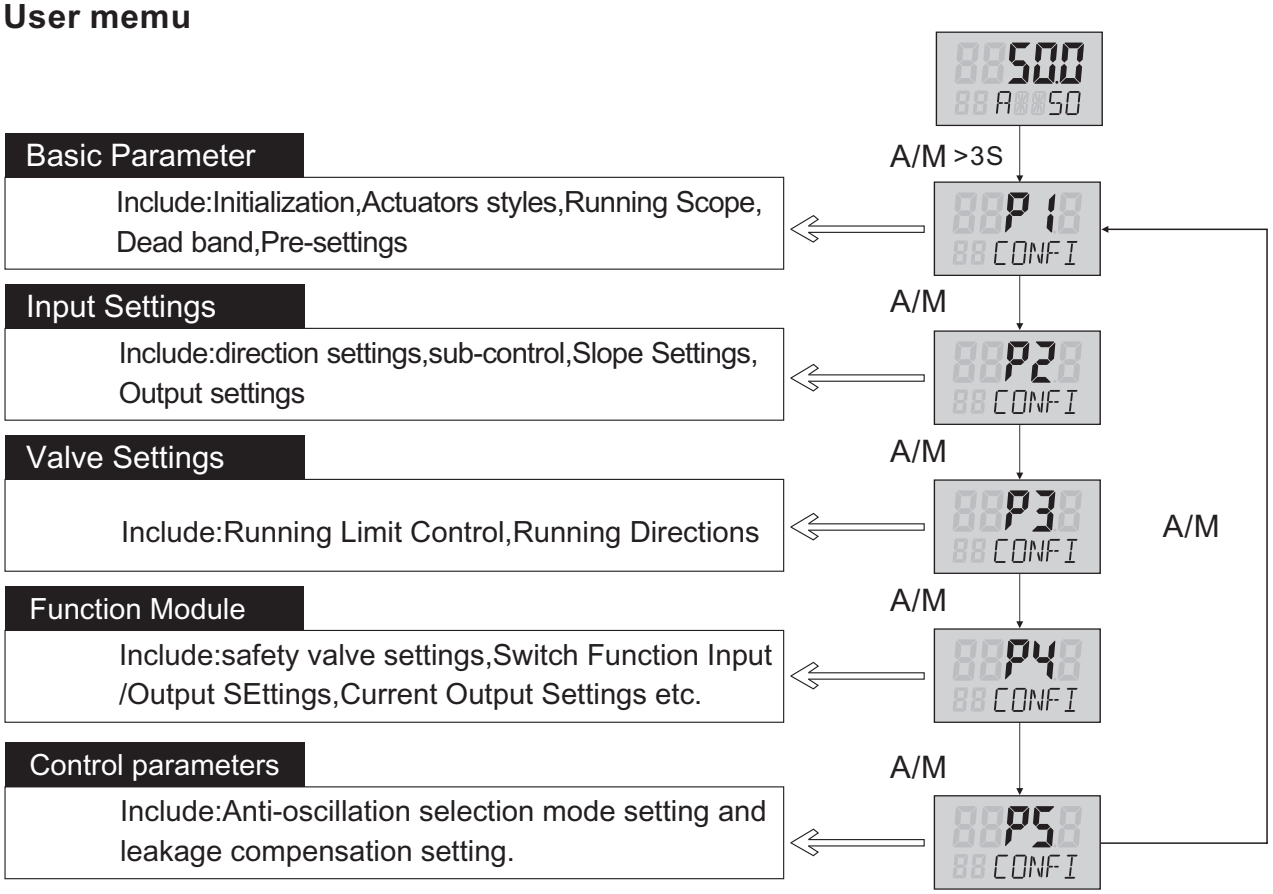


▲ Button
Normal opration:
1.Manual control,press the button,vale position increase;
2.Press the button, at the same time hold down ▼vale position increase fast.
User menu:
1.Parameter selection status,Select the next parameter
2.Parameter modify status,Increase the parameter value or make a positive selection

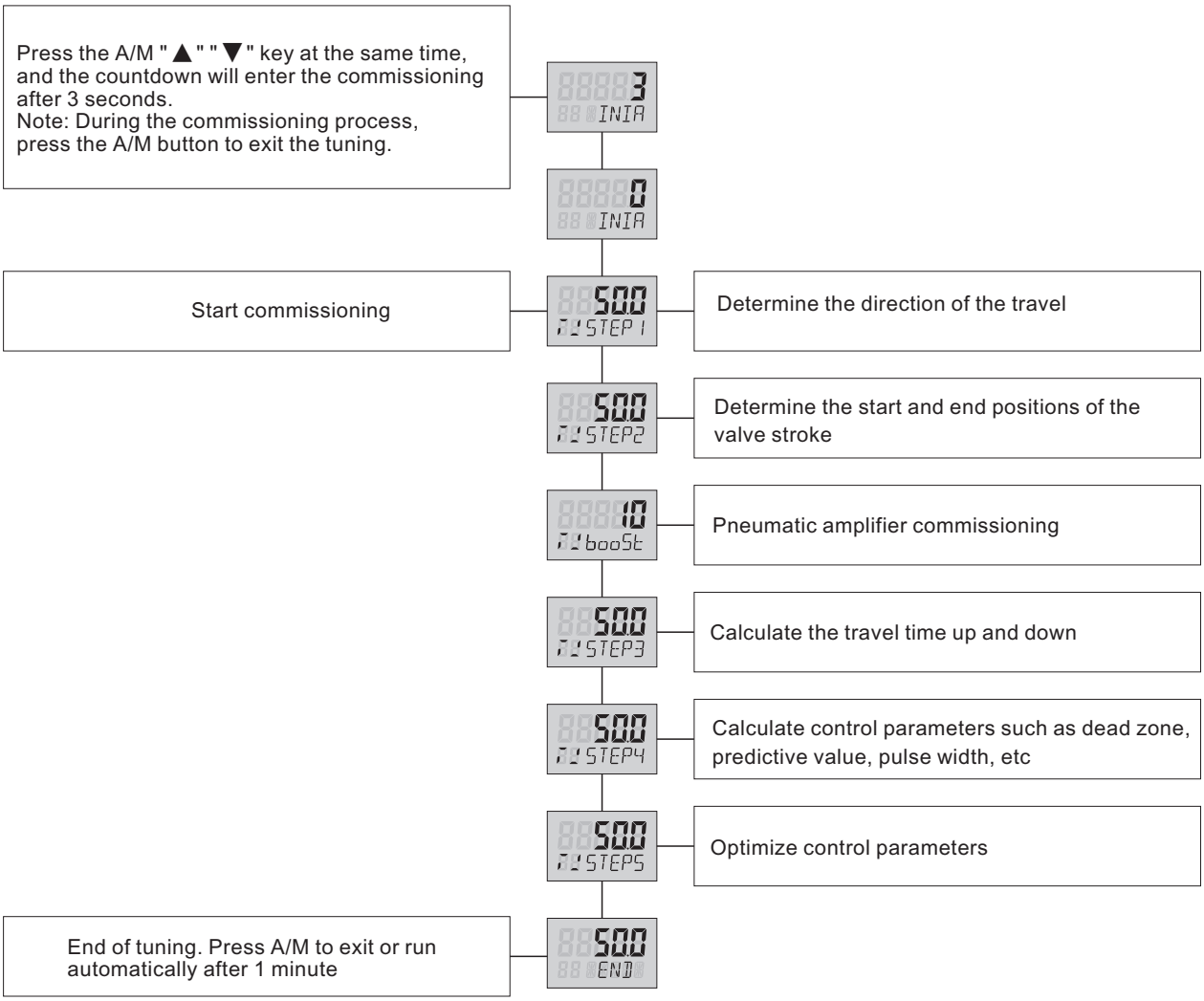
A/M Button
Normal opration:
1.Press button A/M, sub mode switch between auto control mode, manual control mode, Position sensor angle check mode.
2.Press the button for at least 3 seconds to go into Configuration mode
User menu:
1.Press the button,Select Menu P1/P2/P3/P4
2.Press the button,Parameter selection/ modification status switching
3.Press the button for 3 seconds,Exit the user menu

▼ Button
Normal opration:
1.Manual control,press the button,vale position increase;
2.Press the button,at the same time hold down ▲vale position increase fast.
User menu:
1.Parameter selection status,Select the front parameter
2.Parameter modify status,Decrease the parameter value or make a reverse selection

User memu



Commissioning



Troubleshooting

The MVP3800 performs internal self-diagnostics and hardware checks. When the local display indicates that there are error messages, then use the following sections to support troubleshooting.

Control Status Diagnostics

Display code	Cause	Recommended Actions
bVER	> 30 seconds valve still not actuated properly	Cleaning valve; Check the valve connected.

Measure Status Diagnostics

Display code	Cause	Recommended Actions	
SIGL	Set current < 3.6mA	Increase input current ≥3.8mA	
SIGH	Set current > 21mA	Reduce input current ≤20.5mA	
FbL	Feedback < -10%	Adjust the feedback connection	Feedback ≥-1%
FbH	Feedback > 110%		Feedback ≤103%
FbADN	Feedback angle < -85°		Feedback angle≥-82.5°
FbAUP	Feedback angle > 85°		Feedback angle≤82.5°
TEL	Working environment temperature < 45℃	Check and adjust the ambient temperature	
TEH	Working environment temperature > 85℃		

System Status Diagnostics

Display code	Cause	Recommended Actions
EPER	Control timeout (Valve jam)	Reset parameters or factory reset
ADER	ADC sampling overflow	Check and debug the motherboard

Commissioning Status Diagnostics

Display code	Cause	Recommended Actions
RERR	Commissioning timeout	1. Check the air supply pressure; 2. In manual control mode, check whether the valvecan be moved up and down; 3. Check if the pneumatic output have gas.
DOWN	Zero point of position sensor too low , < -85°	Adjust the feedback connection
UP	Span point of position sensor too low , > 85°	
UPDW	The feedback range < 10%	
SET	0° < Feedback angle < 85° or -85° < Feedback angle < 0°	

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