OVERVIEW .................................................................................................................. 1
MODEL REPRESENTATION .................................................................................. 1
PRODUCT FEATURES .......................................................................................... 1
MAIN TECHNICAL PARAMETERS ....................................................................... 2
OPERATING MODES .............................................................................................. 2
SYSTEM FUNCTION, THE PARAMETER SETTINGS ........................................... 3
INTERNAL WIRING SYSTEM ................................................................................. 5
CONTROL AND CONNECTION .......................................................................... 13
COMMON FAULTS AND ELIMINATION METHOD ........................................... 15
Products complete .............................................................................................. 15
Transportation and storage, the installation .................................................. 15
PT Multi Turn Electric Actuator
Installation and Operation Instructions

1 Overview
It is "non-invasive" intelligent control, humanized design, using the advanced DSP system, Chinese LCD display, infrared remote control, self diagnosis of fault alarm. Shell with overall flame-proof type, magnetic button switch, combined with a number of independent research and development of independent innovation of technology, has complete advanced function, the stability of the reliable and cost-effective advantages, mode is simple, convenient installation, easy setting, long-life, suitable for electric actuator with vendors.

2 Model representation

3 Product features
> Chinese menu, easy to understand;
> Non-invasive infrared remote control setting;
> Adopt intelligent integrated control;
> Phase sequence automatic recognition and phase change;
> The function of the torque protection and interface display in the trip;
> The various states and information that the system prompts the executor to work;
> Using the non-contact hall effect pulse counting encoding system, high precision and durable use;
> Overload, lack of phase, overheating, abnormal power supply, automatic motor speed system diagnosis, prompt and protection;
> AC contactor output control;
> Input signal: 4-20ma;
> Output: 4-20ma;
> Modbus RTU (optional);
> Maximum output power of the 11 kw;
> With open valves, valve interlocking, two line control emergency stop (ESD), and other powerful remote control;
> AC contactor output control;

4 Key technical parameter
> Input signal: (1) analog signal: 4-20ma, clearance: 0.9;
> 250VAC5A, 30DC5A, (2) control of the switch on the contact point, and output contact capacity: 250VAC5A, 30DC5A;
> Alternative fieldbus control technology, power supply: single-phase 110V / 220V, three-phase 380V / 440V, 50/60hz;
> Valve bit feedback: 4-20ma
> Load capacity, 750 euros;
> Basic error: 1%, adjustable dead zones: 0.1 9.9%, the default setting is 0.5%;
> The use of environmental conditions: temperature < 95%, relative elevation < 200m, no corrosive gas in the air medium surrounding air;

5 Operating mode
5.1 the electric operation, at the bottom of the display window of actuator control room has two knobs, black for choosing knob, it has three operating position, distance, stop, in line. Red is the operation knob, which operates in two directions, turning off the valve clockwise and turning the valve in counterclockwise rotation.
5.1.1 Inciting operation, actuator operation mode is set to move, the rotary actuator operating knob, hold still didn't stop running to limit target;
5.1.2 the scene to keep operating, actuator operation mode is set to stay, the rotary actuator operating knob, actuators will run limit target to stop running, will choose the knob screw to the stop position, act
5.1.3 Field stop, when choosing a knob in stop position, actuators will ban all electric operation (except for ESD beyond stop)
5.2 remote control, will choose the knob in the remote place, the actuators are only receive standard control signal, open, close, stop
5.3 remote control
   Key down to display the next feature or display menu;
   Key Display previous function up
   Key The key returns the first level display state;
   Key Display next function across
   Key Enter displayed value or option setting
   Key Increase/change displayed function's value or option setting
   Key Decrease/change displayed function's value or option setting
   Key Stop actuator
   Key Close the valve key
   Key Open the valve key
6.1 System function, Parameter Settings

6.1.1 The display valve position indicator and the composition of the display unit.

1. The green light, the valve position indicates the full position;
2. Yellow lamp, position in the position of valve position,
3. Red light, valve position indicating full open position.
4. The infrared remote indicator lamp
5. Infrared remote receiver,
6. Valve position display area;
7. Status display area

After turning on the power supply, LCD backlight and tips welcome to use the light is bright, displayed after 5 seconds, valve position display area can see current position of the valve, the corresponding indicator light will be lighted, status display area shows the current actuator actual working condition.

6.1.2 Normal running status indicator

- The knob stops and stops
- Knob position, close the valve position and the current valve position is 20%
- Knob position, open the valve position and the current valve position is 60%

6.1.3 Alarm status indication

- Closing valve 7 seconds alarm
- Open valve 7 seconds alarm

In the off valve operation control system valve position signal is broken (7 seconds not detected) caused by the valve position signal loss, the alarm display, electric operation is prohibited, when the actuator reverse operation re-detection to the effective signal, the alarm is released.

In the open valve operation control valve position signal is broken (7 seconds not detected) caused by the valve position signal loss, the alarm display, electric reverse operation re-detection to the effective signal, the alarm is released.
Torque alarm: When the actuator is running, if torque value exceeds the maximum torque setting in the running direction, the torque trip protection is carried out. In this direction, the electric operation is prohibited and the actuator is in the opposite direction. Operation. Eliminate Alarm Indication: If you need to change the torque setting, you can enter the menu to make changes, and the torque protection is automatically released.

System internal wiring

7.1 Internal terminal diagram

Electric actuator alarm

Electric actuator alarm: the actuator detected a fault, the alarm can be used to enter the parameters of the remote control to see the query (see parameter view), the emergence of the alarm investigation, the implementation of the normal detection. Alarm cancellation actuator alarm is full, Power supply is missing. Motor overheating. System internal power failure

7.1 System Tip

The motor line is reversed

The motor line is reversed; refers to the motor running direction and valve position is inconsistent, the motor line can be any two-phase change can be divided by the fault, this situation, please turn the hand wheel to see if the valve with the valve.

Control system alarm

Emergency alarm ESD

Emergency alarm ESD: the implementation of the agency will be preset according to the preservation, full open, fully closed positioning control operation, the emergency signal signal to eliminate when the elimination

Remote break signal alarm

Remote break signal alarm: when the remote input control signal is lost, the display remote disconnect actuator will be based on pre-set to maintain, full open, all-optical positioning control operation, once the signal reply to disconnection display to eliminate.
7.1 Function parameter setting

7.2.1 Operation diagram: The primary menu

Place the red knob to LOCAL

Press the down key

Press the confirmation key to enter

User password (ID)

Press the down key

Right-click to enter Level2 menu

Press Down to Enter Level1 menu

Press Down to Enter Level1 menu

Alternative function

Alternative function

Alternative function

IC: Torque value when valve is closed

tO: Torque value when valve is open

Closing limit setting: Move valve manually to the closed position. Allow for overrun by winding actuator output open by 1/2 to 1 turn.

Press the confirmation key to save

PRESS THE KEY
PRESS KEY EXIT

Opening limit setting: Move valve manually to the open position. Allow for overrun by winding actuator output closed by 1/2 to 1 turn.

Press the confirmation key to save

PRESS THE KEY
PRESS KEY EXIT
7.2.2 Operation diagram, menu two

7.2.3 Level 2 menu

Code Function (as displayed)

CL: Closed Limit
CP: Open Limit
TC: Torque Trip Close
TG: Torque Trip open
TT: Torque Trip
O1: NO such function
O2: NO such function
O3: NO such function
O4: NO such function
L1: NO such function
L2: NO such function
L3: NO such function
L4: NO such function
T1: Torque Trip Mid
T2: Torque Trip Low
T3: Torque Trip High
T4: Torque Trip Trip
A1: Actuator Alarm
A2: Actuator Alarm
A3: Actuator Alarm
A4: Actuator Alarm
SL: Start Selected
LT: Local selected
LE: Local selected
PA: Phase present
PD: Phase missing
P0: Phase present
P1: Phase missing
P2: Phase missing
P3: Phase missing

Indication contacts [1], [2], [3], and [4] may each be set to trip for any one of the following functions:
7.2.4 Level2 menu

- Press the down key to enter the Subordinate menu.
- With [H4] displayed, the CPT operates with 0~20mA, if 4~20mA is required, use the + or - key to change to [L0].
- Proportional control options: press Down to Enter the Subordinate menu. See Table 1.

Note: All menus using the + or - key display the required option. Press the confirmation key to save.

Note 1: All positioning commands are subject to a deadband tolerance. The deadband sets the expected positioning accuracy of the actuator and is dependent on various factors including actuator output speed, number of turns and valve torque.

Note 2: MIT sets the minimum time between successive positioning commands being accepted. It is used in situations to reduce the number of starts per hour and to smooth out fluctuations if continuous positioning is implemented.

Table 1

- Deadband Adjustment: Note 1
- Motion Inhibit Time: Note 2
- Time Adjustment: Note 2
- FailSafe Action: Note 3

Note 3: Use the + or - key to display the required setting: [L0] Go to Low SP or [H4] Go to High SP.

Note 4: The actuator output lower limit full signal value, if the standard and the lower limit of the standard full signal error, you can press the + key to adjust the value, press the - key to confirm, press the - key to return.
3 Actuator control and wiring

8.1 Actuator terminal wiring definition
Intelligent actuator terminal definition: Intelligent electric actuator wiring is consistent with the function of the implementing agency, the customer according to the requirements of the automatic control system with the characteristics of the implementing agencies to connect, the implementing agencies have the function of the corresponding terminals are as follows:

1. 380V power supply
2. ESD Emergency Protection Signal
3. The analog quantity controls the input +
4. The analog quantity controls the input -
5. Power cord
6. Internal 24V DC power supply -
7. Fully Closed NC
8. Fully Open NC
9. Status indication 1: Integrated fault
10. Status indication 2: Over Torque
11. Remote shutdown valve
12. Remote maintenance
13. Remote opening valve
14. Remote close,Remote stop
15. 24VDC Common port-Vc
16. Analog contro: ON/OFF
17. Remote high voltage power supply(-)
18. Remote state relay
19. The remote:NO
20. The remote:NC
21. Valve position feedback current +
22. Valve position feedback current -
23. Modbus RTU(A-)
24. Modbus RTU(B+)
Common faults and troubleshooting methods

<table>
<thead>
<tr>
<th>Symptom (alarm display)</th>
<th>Failure analysis</th>
<th>To deal with opinions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity is not working</td>
<td>No display. The detection shows whether the alarm message selection knob is placed in the stop bit.</td>
<td>Check the external power supply for the alarm information to select the selection button placed in the field or remote state</td>
</tr>
<tr>
<td>On / off valve 7 seconds alarm</td>
<td>Operation of the actuator detects that the valve position has not changed abnormally.</td>
<td>Manual rotation Check valve position sensor rotation is normal</td>
</tr>
<tr>
<td>Turn on / off torque</td>
<td>Actuator start or run the process; detects that the current torque exceeds the specified value.</td>
<td>Manual rotation of the valve is stuck; torque protection value is set too small, the implementing agency selection is not correct</td>
</tr>
<tr>
<td>Remote disconnection</td>
<td>The remote input signal is not normal.</td>
<td>In the parameter view to see whether the input signal is normal</td>
</tr>
<tr>
<td>Actuator alarm</td>
<td>Motor overheat power input missing phase system internal fault</td>
<td>In the parameter view to see whether the input signal is normal</td>
</tr>
<tr>
<td>The motor phase is reversed</td>
<td>The motor is running in the same direction as the valve position</td>
<td>Manually turn the hand wheel check, run the way is normal</td>
</tr>
</tbody>
</table>

Complete set of products

Product manual 1; 2 Product inspection report 1; 3 Valve position sensor 1 set; 4. Battery 1 set; 5. Remote control 3 sets / only

Transportation and storage, installation

As the intelligent module is precision products in the transport pay attention to light, light release, Squeeze, strong collision, in order to avoid the impact, pressure. Drop damage to the quality of the product should be stored in a non-corrosive gas and dry and ventilated environment, the battery can not be stored for a long time, the battery is valid for 3 years.

The module wiring should be in good contact with the actuator as a whole

15

16