The following is the content about the 600X electric control valve, including its product introduction, typical installation schematic diagram, maintenance and troubleshooting, as well as performance characteristics:

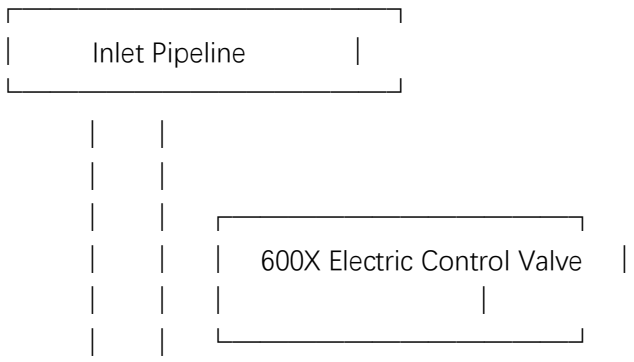
Product Introduction

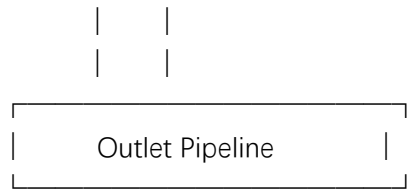
The 600X electric control valve is a valve that integrates electric drive and precise control functions. It is mainly composed of components such as the main valve, electric actuator, pilot valve, needle valve, ball valve, and pressure gauge.

- **Working Principle**: The electric actuator receives external control signals (such as current and voltage signals) to drive the opening or closing of the main valve. The pilot valve plays an auxiliary control role for the action of the main valve, and the needle valve and ball valve are used to adjust the flow rate and pressure of the pilot valve, thus achieving more precise control of the main valve. When the system pressure or other parameters change, the pilot valve will react according to the set value and control the opening degree of the main valve to maintain the stable operation of the system. For example, in a water pressure control system, when the pressure exceeds the set upper limit, the pilot valve opens, and the main valve takes corresponding action to release the pressure; when the pressure is lower than the set lower limit, the main valve closes or adjusts the opening degree to maintain the pressure.
- **Structural Features**: The main valve is usually made of high-quality metal materials, such as cast iron, cast steel, or stainless steel, which have good strength and corrosion resistance and can withstand high pressure and harsh working environments. The electric actuator is equipped with a motor, a reduction mechanism, and a control circuit, etc., enabling remote control and automated operation of the valve. It has high control precision and a fast response speed, and can accurately adjust the opening degree of the valve according to the control instructions.
- **Scope of Application**: It is widely used in fields such as urban water supply and drainage systems, industrial pipelines, fire protection systems, and HVAC systems. It can be used to control the flow rate, pressure, and flow direction of various media such as water, oil, and gas, meeting the control requirements under different working conditions.

Typical Installation Schematic Diagram

plaintext





<-- Pay attention to the arrow direction of the valve body and install it according to the water flow direction -->

(Install a Y-type strainer near the control valve on the inlet pipeline, install gate valves on the inlet and outlet pipelines respectively. The electric actuator is fixed to the main body of the control valve through connecting components, and the electric actuator is connected to the control cable and power cable.)

Installation Key Points:

- Ensure that the valve is installed on a horizontal or vertical pipeline, and the inlet and outlet directions of the valve are consistent with the flow direction of the medium. There are usually clear flow direction markings on the valve body.
- The installation position of the electric actuator should be convenient for operation, debugging, and maintenance, and avoid installing it in environments with high temperatures, humidity, or corrosive gases.
- The connecting components between the electric actuator and the main valve should be firm and reliable to ensure that the driving force of the actuator can be effectively transmitted to the main valve.
- Connect the control cable and power cable of the electric actuator correctly, make the wiring according to the electrical wiring diagram, and take good grounding protection measures to ensure safe operation.

Maintenance and Troubleshooting

- **Maintenance**
  - **Regular Inspection**: Regularly check the sealing performance of the valve to see if there is any leakage; check the operation status of the electric actuator, including the running sound of the motor, the lubrication condition of the reduction mechanism, and whether the connection of the control circuit is loose. At the same time, check the working status of the pilot valve, needle valve, and ball valve to ensure their normal operation.
  - **Cleaning and Maintenance**: Keep the surface of the valve and the electric actuator clean, and promptly clean the dust, oil stains, and debris on the surface. Regularly clean the Y-type strainer to prevent impurities from entering the valve and affecting its normal operation.
  - **Lubrication Treatment**: Regularly lubricate the moving parts of the valve (such as the valve stem and transmission mechanism) and the reduction mechanism of the electric actuator, etc. Use appropriate lubricants to reduce

the friction between the components and extend the service life.
    - **Electrical Inspection**: Regularly check the electrical system of the electric actuator, including whether the power supply voltage is normal, whether the control cable is damaged, and whether the control module is working properly. If there is any abnormality, repair or replace the relevant components in a timely manner.
- **Troubleshooting**
    - **Valve Leakage**: It may be caused by aging or damage of the sealing parts, or the presence of impurities and scratches on the sealing surface. Check the status of the sealing parts. If they are aged or damaged, replace them in a timely manner; clean the impurities on the sealing surface and repair or grind the scratches on the sealing surface. At the same time, check whether the connection parts of the valve are loose. If so, tighten the connecting bolts.
    - **The Electric Actuator Does Not Operate**: First, check whether the power supply is normal, including whether the power supply voltage meets the requirements and whether the power cord is firmly connected. If the power supply is normal, check whether the control cable is damaged or short-circuited, and whether the control module sends the correct control signal. If the motor does not run, it may be due to a motor failure or a stuck reduction mechanism. It is necessary to further check the motor and the reduction mechanism and repair or replace the damaged components.
    - **Inaccurate Valve Opening Control**: It may be that the set value of the pilot valve is inaccurate or the opening adjustment of the needle valve and ball valve is improper. Readjust the set value of the pilot valve, check the opening of the needle valve and ball valve, and make fine adjustments according to the actual needs. At the same time, check the control precision of the electric actuator and calibrate it if necessary.

Performance Characteristics

- **Precise Control**: The electric actuator, in cooperation with components such as the pilot valve, can achieve precise control of the valve opening. It can accurately adjust the flow rate, pressure, and flow direction of the medium according to the needs of the system, with high control precision to meet the requirements of various complex working conditions.
- **Remote and Automated Operation**: By connecting the control cable and power supply, remote control and automated operation of the valve can be realized, which is convenient for centralized management and monitoring. It can be integrated with the automated control system to achieve functions such as remotely opening and closing the valve and adjusting the valve opening, improving work efficiency and reducing errors and labor intensity in manual operation.
- **Fast Response Speed**: The electric actuator has a fast response speed and can quickly respond to control signals, opening or closing the valve rapidly and adjusting the operation status of the system in a timely manner.
- **High Reliability**: Using high-quality materials and advanced manufacturing processes, the valve and the electric actuator have a solid and durable structure, with

high reliability and stability. At the same time, the electric actuator is equipped with functions such as overload protection and short-circuit protection, which can effectively protect the safe operation of the equipment.

- **Multifunctionality**: According to different application scenarios and requirements, different control modes can be set, such as the flow control mode and pressure control mode, etc., to achieve multiple functions, with strong versatility and adaptability.