HVP3 Series Intelligent Valve Overview

HVP intelligent valve positioner is an essential accessory for achieving intelligent functionality in pneumatic actuators.

The HVP3 series is a factory-use intelligent valve positioner designed for explosive environments involving flammable gases or dust, featuring completely isolated wiring module, control module, and electrical conversion unit. It forms a feedback control loop with the pneumatic actuator. In this loop, the displayed position feedback signal of the control valve serves as the controlled variable, which is compared with the given signal value in the microprocessor. The deviation between these two signals is transmitted through the output port of the main control board as pulse signals of varying lengths, controlling the pressure output from the output port of the I/P conversion unit to drive the control valve. It features quick installation and initialization, modular design, high protection capability, lightning protection, and button operation without lid opening.



II. Technical Features

- Quick installation and one-button initialization;
- Modular design for easy functional expansion;
- Lightning protection;
- Non-invasive operation;
- Input signals with overcurrent protection and reverse polarity protection;
- Communication protocols: HART 7.0/Foundation Fieldbus/ProfiBus PA
- Output characteristics can be freely selected: linear, equal percentage, quick-open, or user-set, etc.
- Strong protection capability, suitable for harsh operating environments;
- Automatically adapt to the sealing function of various specifications of actuators and valve seats;
- Low power consumption, low air consumption, and low operating costs;
- Few moving parts, excellent vibration resistance, capable of withstanding harsh environments;
- Remote configuration and monitoring via a host computer or handheld terminal.
- Travel range distribution statistics;
- Environmental temperature distribution statistics and extreme temperature display and alarm;

III. Technical Parameters and Performance

- Model: HVP3
- Input Signal: 4–20 mA DC and digital signal
- Input Impedance: 540 Ω (with HART: 600 Ω)
- Air source pressure: 0.20–0.60 MPa
- Basic error: ±0.5%, ±1.0% (standard type)
- Hysteresis: 0.5%, 1.0% (standard type)
- Dead zone: 0.1% (minimum value)
- Air consumption: 0.6 NL/min
- Stroke: 10–100 mm (angle 50–90°)
- Ambient temperature: -30–+80°C, -40–+80°C (low-temperature type)
- Functions: Self-diagnosis, configuration, stroke characteristic correction, communication, etc.
- Explosion-proof mark:

  Ex ia IIC T4…T6 Gb、Ex ia IIIC T85℃…T135℃ Db

  Ex ia IIB/IIC T4...T6 Gb, Ex ia III C T85°C...T135°C Db

  (where T4/T135°C:-40°C to +80°C; T5/T100°C: -40°C to +65°C; T6/T85°C: -40°C to +50°C)

  Ex db IIB/IIC T4…T6 Gb、 Ex tb IIIC T85℃…T135℃ Db

  Ex db IIB/IIC T4…T6 Gb,Ex tb IIIC T85℃…T135℃ Db

  (where IIB:T4/T135℃: -40°C to +80°C; T5/T100℃: -40°C to +60°C; T6/T85℃: -40°C to +45°C)

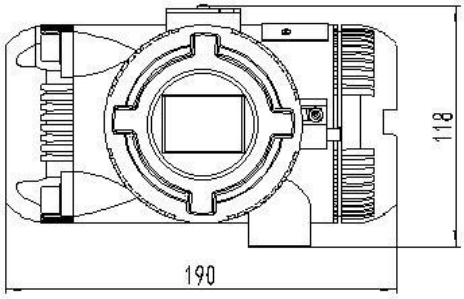
  IIC:T4/T5/T135℃/T100℃: - 40 ~ +60℃; T6/85℃: - 40 ~ +45℃）

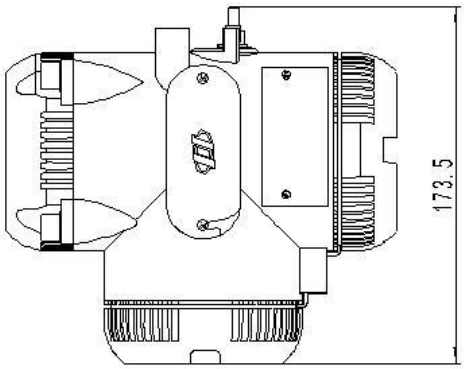
  IIC: T4/T5/T135°C/T100°C: -40°C to +60°C; T6/85°C: -40°C to +45°C)
- Functional safety (optional): SIL2
- Protection rating: IP66
- Lightning protection: Voltage peak 12.0 kV, current peak 1.0 kA
- Display: LCD
- Associated Equipment:

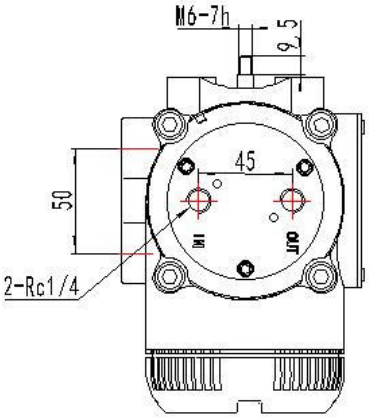
  GS8567-Ex(ia), GS8547-Ex(ia) isolated type safety barrier (suitable for 4~20mA analog signals and HART communication protocol)

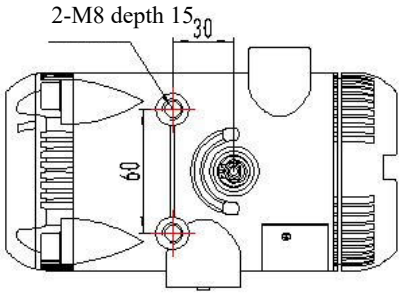
  FISCO field device (suitable for PROFIBUS-PA and FF communication protocols)
- Electrical interface: NPT 1/2, M20x1.5-7H, or user-required
- Air source interface: NPT 1/4, Rc 1/4
- Shell material: Aluminum alloy/Stainless steel
- Weight: 2.8 kg (aluminum alloy)/6 kg (stainless steel)

IV. Outline and Installation Dimensions

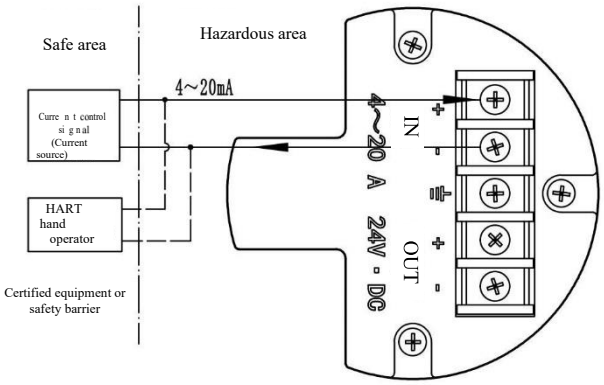




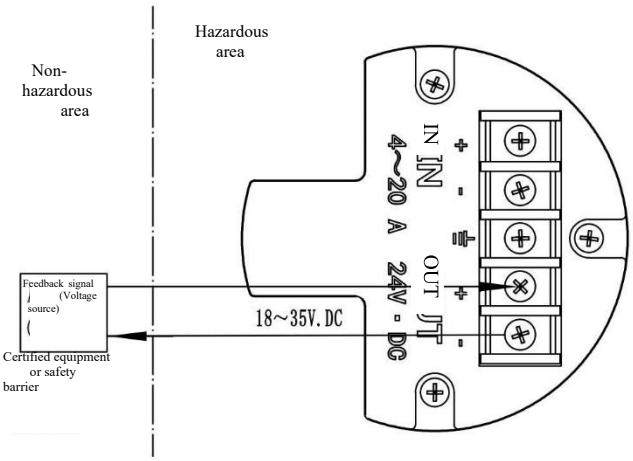




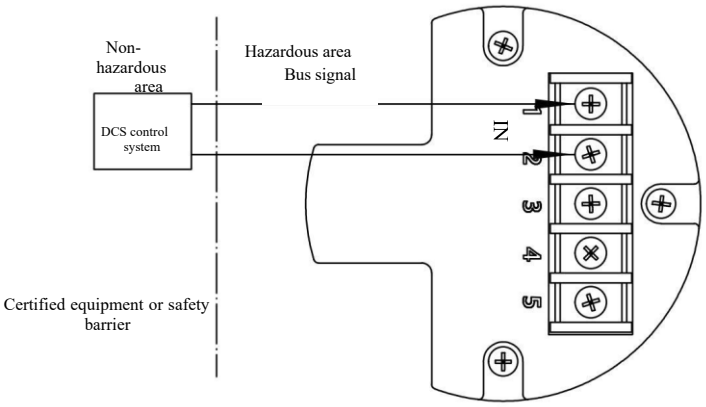
V.Electrical Connections



Control signal connection diagram



Feedback signal onnection diagram



Electrical Connection Diagram of PROFIBUS-PA Bus and FF Bus Signal

VI. Model Description

	Order No.											
Intelligent valve positioner	**HVP**											
Non-explosion-proof type Intrinsically safe explosion-proof type/intrinsically safe dust type Explosion-proof type/Dust enclosure type Combined explosion-proof type (gas + dust)		30 31 32 35										
Single-acting			S									
Linear stroke Angular travel				L R								
Nocommunicationprotocol HARTcommunicationprotocol PROFIBUS-PAbuscommunicationprotocol FFbuscommunicationprotocol					0 1 2 3							
No auxiliary module Current feedback module Lightning protection module Current feedback module, lightning protection module						0 1 4 5						
Cable interface: NPT1/2 M20x1.5-7H Special tailor-made							1 0 2					
Gas interface: NPT1/4 Rc1/4								1 0				
Operating environment temperature: -30°C to +80°C -40～+80℃									S L			
Pressure gauge joint block: NA Available (stainless steel)										0 1		
Corrosion resistance: Aluminum alloy (standard coating) Aluminum alloy (enhanced coating) Stainless steel											0 1 2	
Identification code (may be empty)												-00

Note: Products with PROFIBUS-PAbus and FF bus communication protocol do not include current feedback module or lightning protection module.