

P2150S-321, 1-1/2", Electronic Pressure Independent Valve

Stainless Steel Ball and Stem, Female NPT Ends



| Technical Data | |
|---|--|
| Service | chilled or hot water, up to 60% glycol max (open loop/steam not allowed) |
| Flow Characteristic | equal percentage or linear |
| Size [mm] | 1.5" [40] |
| End Fitting | NPT female ends |
| Body | forged brass, nickel plated |
| Sensor Housing | forged brass, nickel plated |
| Ball | stainless steel |
| Stem | stainless steel |
| Seat | Teflon® PTFE |
| Seat O-ring | EPDM |
| Characterized Disc | TEFZEL® or stainless steel |
| Body Pressure Rating [psi] | 360 |
| Media Temperature Range (Water) | 14°F to 250°F [-10°C to 120°C] |
| Differential Pressure Range | 5 to 50 psid, 1 to 50 psid (with flow reduction. See chart.), or 8 to 50 psid (with flow increase. See chart.) |
| Close-Off Pressure | 200 psi |
| Inlet Length to Meet Specified Measurement Accuracy | 5X nominal pipe size (NPS) |
| Ambient Humidity | <95% RH non-condensing |
| Flow Measurement Tolerance | ±2%* |
| Flow Control Tolerance | ±5% |
| Flow Measurement Repeatability | ±0.5% |
| Sensor Technology | ultrasonic with glycol and temperature compensation |
| Rangeability | 100:1 |
| Power Supply for the Flow Sensor | sensor is powered by the actuator |
| Weight | 7.3 lb [3.3 kg] |
| GPM | 32.1 |
| Leakage | 0% |

*All flow tolerances are at 68°F (20°C) & water.

Application

Water-side control of heating and cooling systems for AHUs and water coils. Equal Percentage/ Linear: heating and cooling applications.

Operation

The Electronic Pressure Independent Control Valve is a two-way valve that maintains constant flow regardless of pressure variations in the system.

Product Features

Provides constant flow regardless of pressure variations in the system. Maximizes chiller P, preventing energizing additional chillers due to low T. Simplified valve sizing and selection, no Cv calculations required.

Suitable Actuators

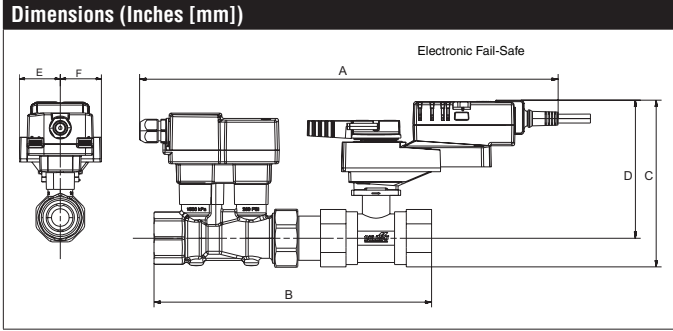
| | Non-Spring | Electronic Fail-Safe |
|------------|------------|----------------------|
| P2150S-321 | NR | AKRX |

Dimensions (Inches [mm])



| A | B | C | D | E | F |
|-----------------|-----------------|-------------|------------|------------|---|
| 16.76" [426] | 10.78" [274] | 6.65" [169] | 5.5" [140] | 1.73" [44] | |

Date created, 12/01/2017 - Subject to change. © Belimo Aircontrols (USA), Inc.



| A | B | C | D | E | F |
|--------|--------|-------------|---------|------------|---|
| 18.23" | 10.78" | 8.75" [222] | 7.63" | 1.89" [48] | |
| [463] | [274] | | [193.8] | | |

NRX24-EP-MOD











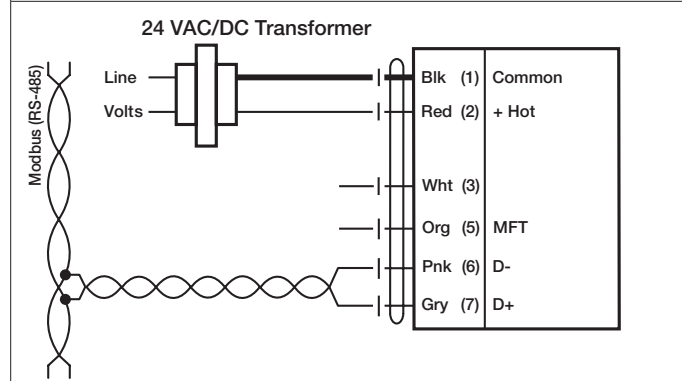
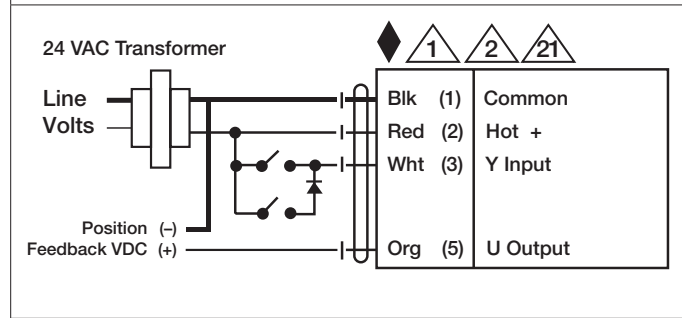
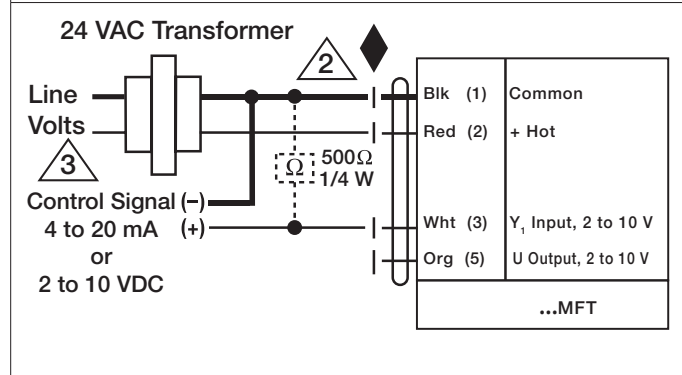
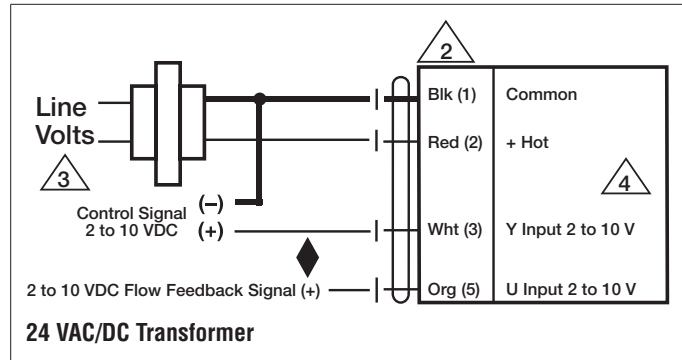
| Technical Data | |
|-------------------------------|--|
| Power Supply | 24 VAC, ±20%, 50/60 Hz, 24 VDC, ±10% |
| Power Consumption Running | 4.5 W |
| Transformer Sizing | 7 VA (class 2 power source) |
| Electrical Connection | 3ft [1m], 18 GA plenum cable with 1/2" conduit connector |
| Overload Protection | electronic throughout 0° to 90° rotation |
| Operating Range Y | 2 to 10 VDC, 4 to 20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor) |
| Input Impedance | 100 kΩ (0.1 mA), 500 Ω |
| Feedback Output U | 2 to 10 VDC |
| Angle of Rotation | 90° |
| Nominal torque | Min. 90 in-lbs [10 Nm] |
| Direction of Rotation (Motor) | reversible with pc tool |
| Position Indication | integrated into handle |
| Manual Override | external push button |
| Ambient Humidity | 5 to 95% RH non condensing (EN 60730-1) |
| Ambient Temperature Range | -22°F to 122°F [-30°C to 50°C] |
| Storage Temperature Range | -40°F to 176°F [-40°C to 80°C] |
| Housing | NEMA 2, IP54 |
| Housing Material | UL94-5VA |
| Agency Listings† | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC |
| Noise Level (Motor) | max. 35 dB (A) |
| Servicing | maintenance free |
| Quality Standard | ISO 9001 |
| Weight | 1.5 lb [0.7 kg] |
| Degree of Protection IEC/EN | IP54 |

†Rated Impulse Voltage 800V, Type of action 1.AA, Control Pollution Degree 3

Wiring Diagrams

✂️ INSTALLATION NOTES

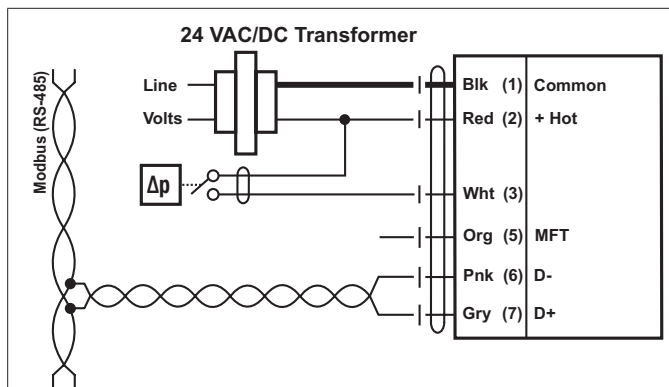
-  Provide overload protection and disconnect as required.
-  Actuators may be connected in parallel. Power consumption and input impedance must be observed.
-  Actuators may also be powered by 24 VDC.
-  Actuators are provided with color coded wires. Wire numbers are provided for reference.
-  Actuators are provided with a numbered screw terminal strip instead of a cable.
-  IN4004 or IN4007 diode required
-  Meets cULus requirements without the need of an electrical ground connection.
-  **WARNING! LIVE ELECTRICAL COMPONENTS!**
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



Modbus control for Non-Spring Return

Note:

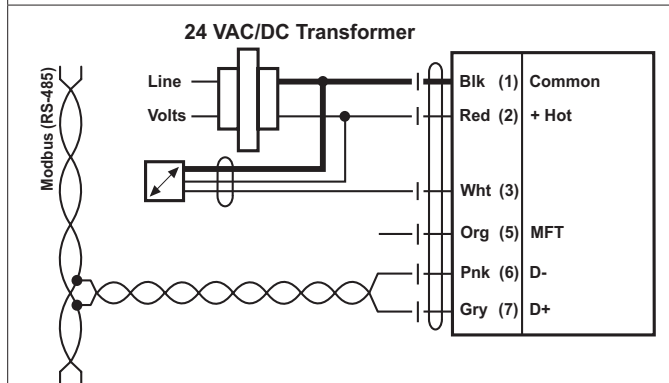
Modbus signal assignment: Power supply and communication are not galvanically isolated.
 C1 = D- = A Interconnect ground signal of the devices.
 C2 = D+ = B



Modbus control with switching contact for Non-Spring Return

Requirements for switching contact:

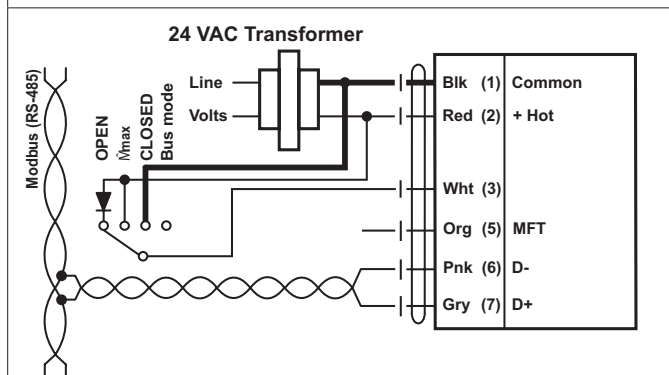
The switching contact must be able to accurately switch a current of 16 mA at 24 V.



Modbus control with active sensor for Non-Spring Return

Possible input voltage range:

0...32 V (resolution 30 mV)



Modbus control with local override (AC only, analogue override) for Non-Spring Return

Note:

If no sensor is integrated, then connection 3 (Y) is available for the protective circuit of a local override control. Options: CLOSED, Vmax, OPEN