

Custom Systems

Model 404 Pressure Controller Bypass

08/2024

Applications

- Large volume pressure control
- Industry (laboratory, workshop, and production)
- Research and development laboratory
- End of line testing

Special Features

- Rapidly vents large volumes
- Integrated 3-gallon tank
- Dual control ports



Model 404 - Pressure Controller Bypass

Description

The Model 404 is a pneumatically actuated pressure controller bypass. For applications where rapid pressure control of large volumes is desired. Ideally suited for use with a high speed controller such as the Model 9424 or CPC3050. When purchased separately, tuning will be required to achieve the best performance.

Functionality

The Model 404 is commonly used as part of a larger rack mounted system when controlling large volumes or for high flow applications. A pneumatically actuated relay outputs pressure proportional to the output after the pressure controller. There's an internal solenoid that vents the control line, this can be activated automatically by the paired controller or manually by pressing the button on the front of the unit. The integrated tank can manually be vented using the three way valve.

Unit Setup

The Model 404 requires a pressure controller and an external 120V supply. Dry clean compressed air or nitrogen should be fed to the supply line. Connect the control ports to the DUT. If only one control port is needed then the other should be capped.

Maintenance

The Parker filter on the rear of the unit will need to be periodically drained.

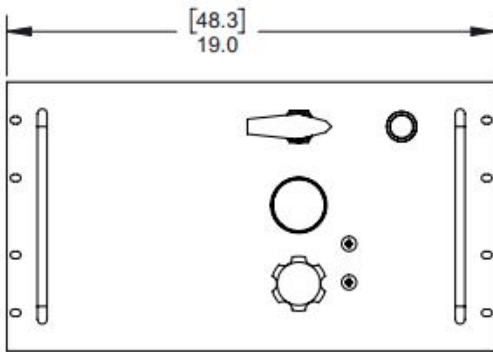
Each new unit has a 1-year warranty from the date of delivery.

Specifications

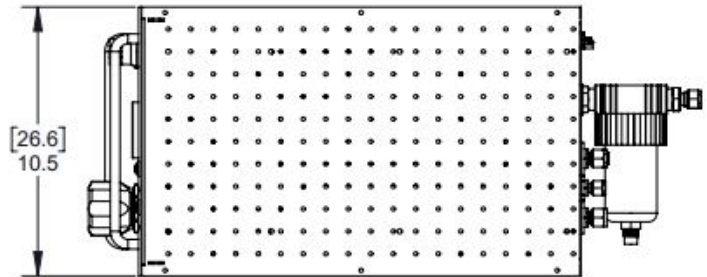
Model 404

Basic instrument - Model 404	
Ambient operating temperature	0 to 70 ° C
Power	AC 100 to 120 V, 50/60 Hz
Fittings	1/4" Tube controller port ; 3/8" supply & control ports
Permissible pressure media	Dry, clean air or nitrogen (ISO 8573-1:2010 class 5.5.4 or better)
Nominal Dimensions	L 23.8" [60.5cm] x W 19.0" [48.3cm] x H 10.5" [26.6cm]

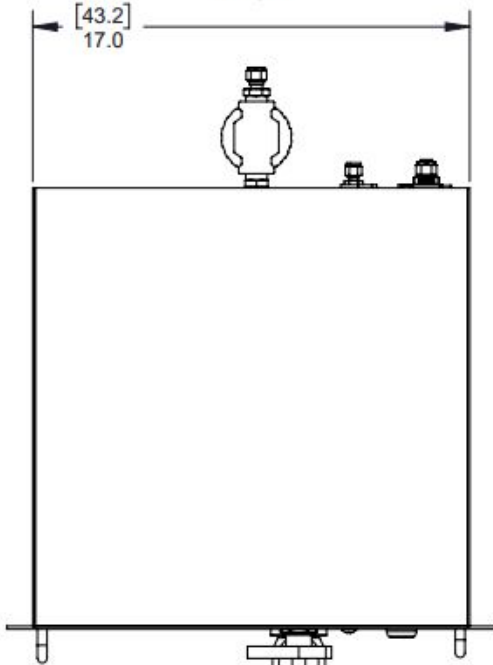
Dimensions: inches [centimeters]



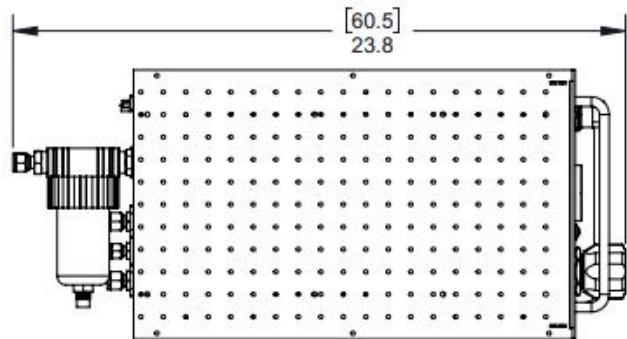
FRONT



RIGHT

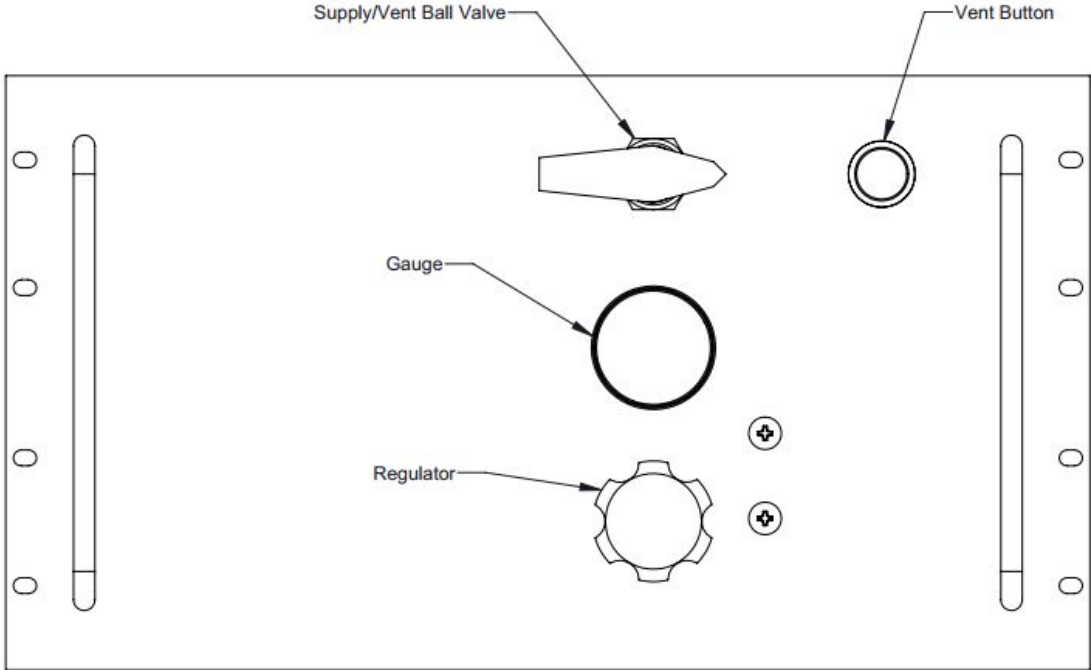


TOP

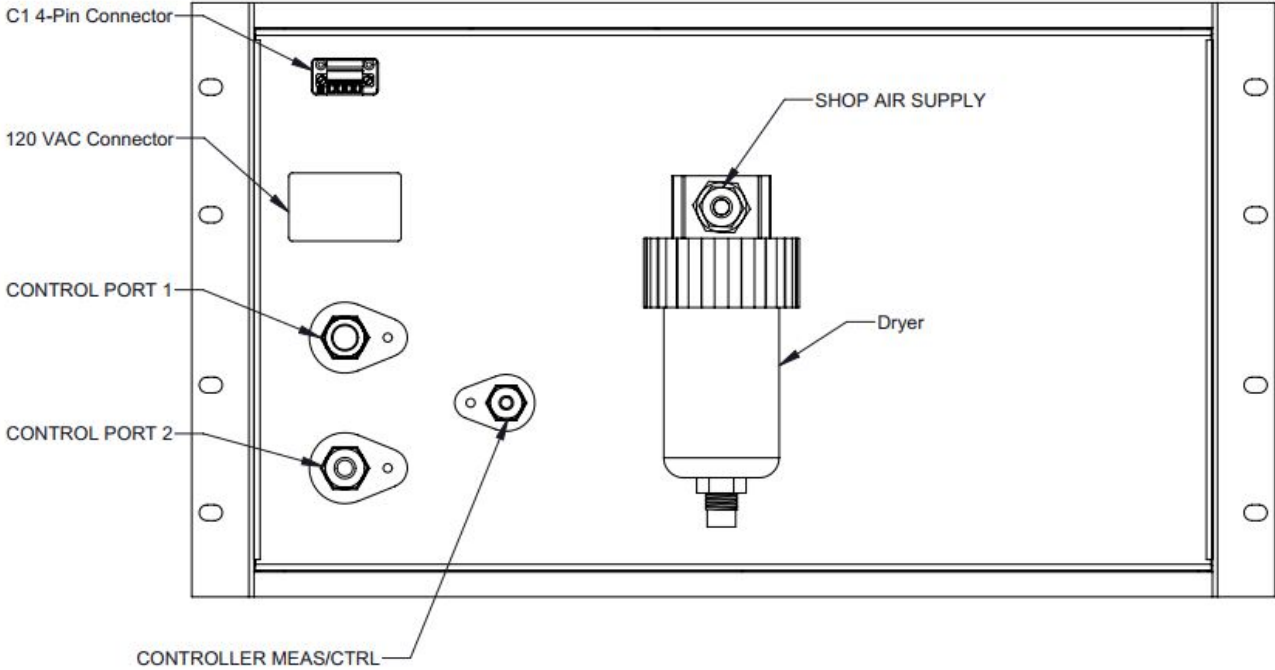


LEFT

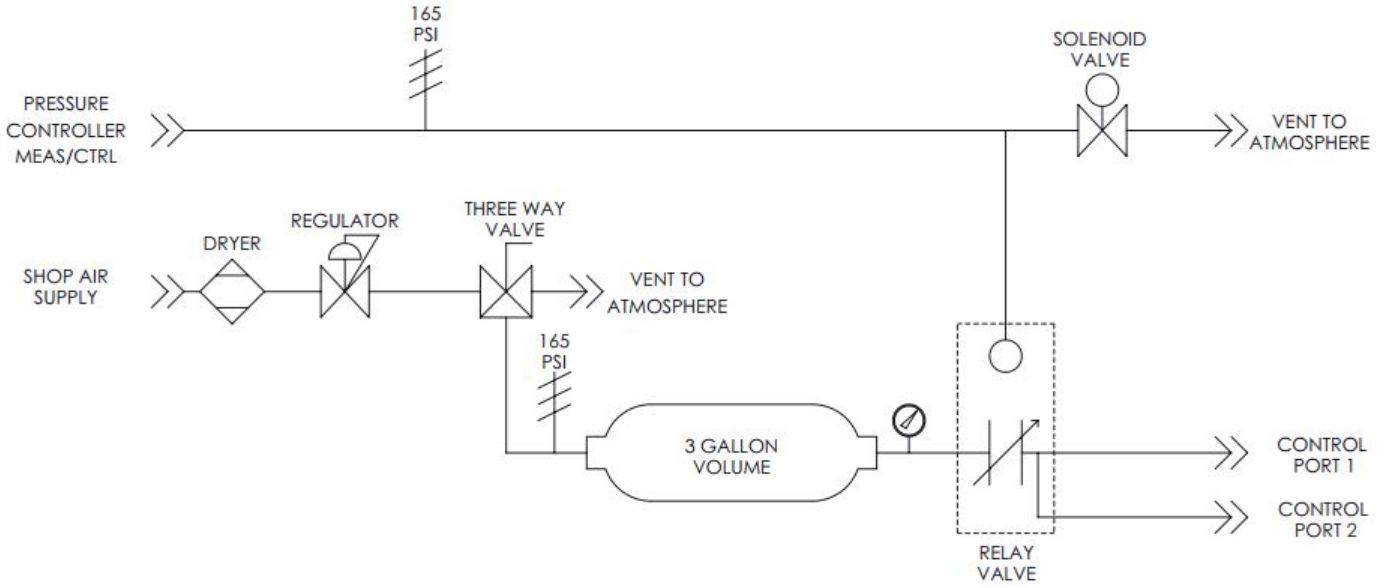
Front Panel Features



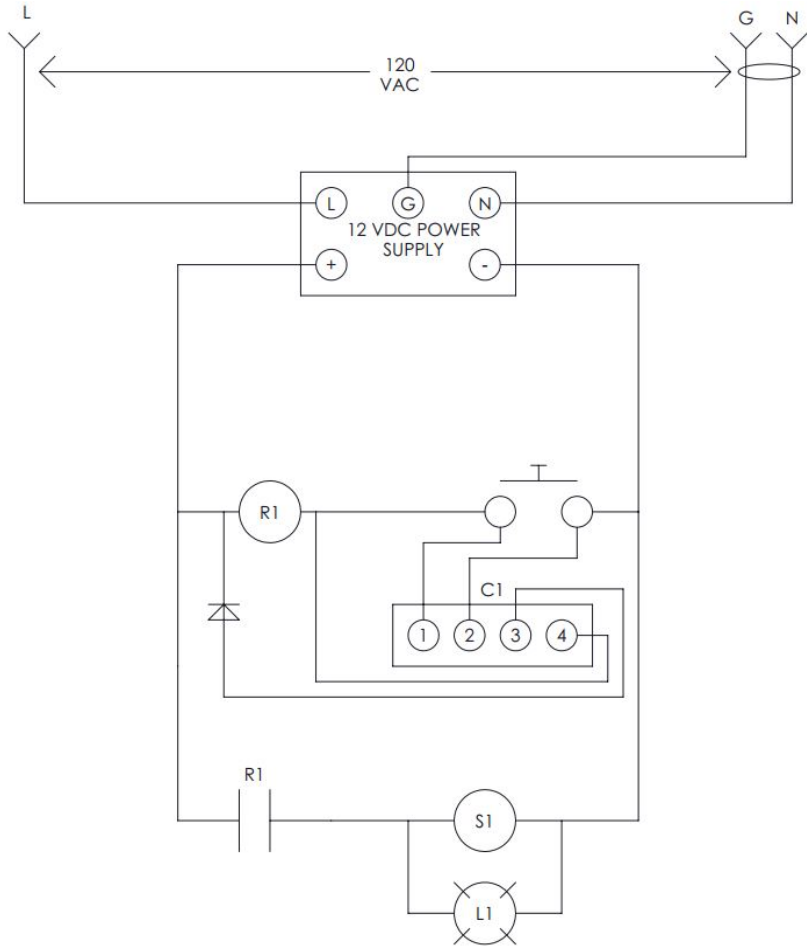
Rear Panel Features



Pneumatic Schematic



Electrical Schematic



Theory of Operation

The Model 404 is intended to operate within pressure ranges of 100 psi. When the unit is fully set up if 50 psi is applied to the control port 50 psi will exit the control lines at a high flow rate. The high flow rate is the result of the pneumatic relay being connected to an integrated 3-gallon buffer tank and having 3/8" tubing.

Internal Solenoid Valve:

There's an internal N.C. solenoid shown as "SOLENOID VALVE" in the pneumatic diagram and "S1" in the electrical schematic. This solenoid is connected directly to the pneumatic relay control line. This provides rapid responsiveness when used to control the relay.

As shown in the electrical schematic manually pressing the N.C. momentary switch will cause the solenoid to vent.

C1(I/O):

For faster/automated venting the connector C1, as shown in the electrical schematic, should be utilized. Pins 1 and 2 are intended to be used as a passive interrupt system. When there is a short between these pins the solenoid will vent. Pins 3 and 4 are intended to be used with an incoming DC signal range of 4-32 volts. A low signal will cause the solenoid to vent and a high signal will cause the solenoid to seal. Note that pin 4 is positive and pin 3 is negative. Ideally, this would be wired to a controller and tuned for maximum performance.

Tank Venting:

The primary method for venting the tank is to use the three way ball valve on the front of the unit. By turning it, the shop air supply will be cut off and the pressure from the tank will be redirected to an atmospheric vent.

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We reserve the right to make modifications to the specifications and materials.
In case of a different interpretation of the translated and the English data sheet, the English wording shall prevail.



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