

Pneumatic Transmitters

Compact Nullmatic™ Controllers

Introduction

Description

These pneumatic controllers accept an externally generated set-point signal, compare it to a process signal from a pneumatic transmitter, and modulate a final control element to maintain the process at the desired value. Plug-in type connections allow their quick removal from the circuit without breaking pipe connections. These instruments were designed for integral mounting in 3 x 6 indicating stations but may be used elsewhere with a surface mounting manifold.

Specifications

Reproducibility

0.6% of psig

Response Level

0.02% of span

Standard Operating Range

3-15 psig for set-point, process and output

Maximum Operating Pressure

50 psig for set-point, process and output

Supply Pressure

Normal: 20 psig

Minimum: 3 psig Above maximum output

Over-Pressure Protection

100 psig on any connection

Control Action

Reversible

Ambient Temperature Limits

-40 to 180°F (-40 to 82°C)

Detecting Section

Formed diaphragm elements

Reset Feedback (Series 502 & 503 only)

Integral sealing screw allows either internal or external reset feedback

Reset Bypass (Series 502 & 503 only)

Integral pneumatic relay provides controller-output cutoff and reset-bypass function, when actuated



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Ordering data

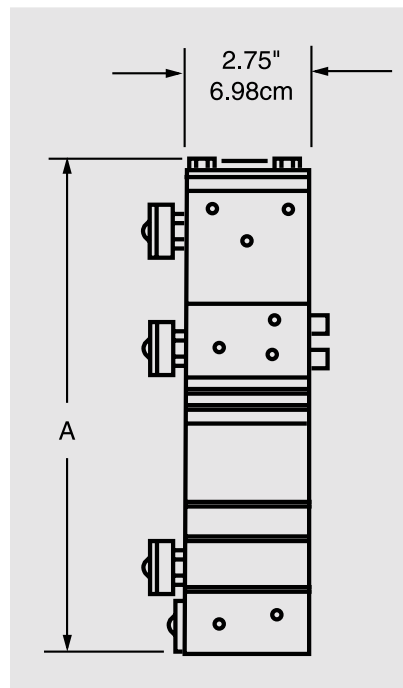
Model Selection

Controller Type	Model Number		Derivative Action	Reset, Minutes Per Repeat
	2 to 200% proportional band	5 to 500% proportional band		
Series 501¹ proportional only (P)	501	501W	Not Applicable	
Series 502 with reset-bypass control feature¹ proportional plus reset (PI)	502 502F	502W 502FW	Not Applicable	0.1 to 50 0.01 to 5
Series 503 with reset-bypass control feature^{1,2} proportional plus reset (PI)	503 503F	503W 503FW	0.05 to 20 minutes 6:1 derivative gain	0.1 to 50 0.01 to 5

Mounting Dimensions

Model No.	A
501	8-1/6
Series 502	8-3/16
Series 503	10-9/16
except:*	
503H	10-7/8
503FH	
503WH	
503FWH	

* with nominal 30:1 derivative gain, 0.05 to 20 minutes derivative action



1) Series 501, 502 and 503 have a built-in valve that cuts off the controller output during manual control. Additionally, the built-in valve in Series 502 and 503 opens a bypass around the reset needle valve to eliminate the reset time constant during manual control.

2) These models are also available with a nominal derivative gain of 30:1 (.05 to 20 min.). To specify, add H at the end of the model numbers shown (e.g., 503H, 503FWH, etc.).