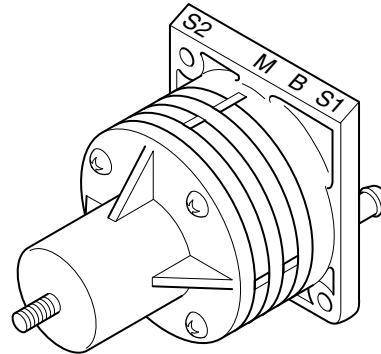


## Pneumatic 2:1 Ratio Amplifying Relay

The amplifying relay is a proportional device designed for use in pneumatic control systems where the application requires the amplification of a proportional signal from a controlling device. The relay's branch line pressure output increases as a 2:1 ratio to the input signal pressure (up to main air pressure) and amplifies the volume of air available to the final control device, thereby minimizing system lag.



**Features:**

- 2:1 signal amplifying relay, with adjustable bias. Output changes are equal to input changes multiplied by two.
- Ideal for applications such as:
  - Operating two actuators that have the same spring range in sequence (using two 2378-501s and their bias adjustments).
  - Narrowing the throttling range of any pneumatic controller (or portion of an operating sequence) by a factor of two.
  - Factory set for 10 psig (69 kPa) branch pressure at 5 psig (34.5 kPa) input pressure at port S1.
- All ports clearly labeled. Ports align with 22-120 socket terminals.
- Mounts on 22-120 socket or 22-150 mounting bracket.

Model Chart			
Model No.	Replaces Model No.	Port Connections	
		Port	Connected to
2378-501 <sup>a</sup>	R539	M	Main air
		B	Branch output
		S <sub>1</sub>	Input signal

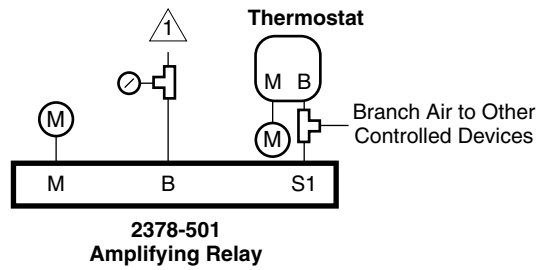
<sup>a</sup> Includes plastic mounting strap and adhesive backed mounting plate.


Specifications	
<b>Action</b>	Proportional output at 2:1 ratio.
<b>Construction</b>	Glass-filled nylon.
<b>Maximum ambient temperature</b>	140°F (60°C).
<b>Supply air pressure</b>	Clean, dry, oil free air required (refer to EN-123).
<b>Nominal</b>	20 psig (138 kPa).
<b>Maximum</b>	30 psig (207 kPa).
<b>Connections</b>	Barbed fittings for 1/4 in. O.D. polyethylene tubing.
<b>Air consumption</b>	28.8 scim (7.9 mL/s).
<b>Air flow capacity</b>	230.4 scim (62.9 mL/s).
<b>Adjustments</b>	Bias can be manually adjusted from +5 to -13 psig by means of TOOL-082 (5/64 in. hexhead wrench).
<b>Mounting</b>	Designed for use on 22-120 socket. This device can also be mounted by using the optional 22-150 mounting bracket.
<b>Dimensions</b>	2-1/16 H x 1-7/8 W x 2-33/64 D in. (52 x 48 x 64 mm).

## Accessories

Part Number	Replaces Model	Description
22-150	K502	Mounting bracket.
TOOL-082	—	5/64 in. hexhead wrench.
22-120	—	Socket.
MCS-S-P	—	Socket kit.

## Typical Applications



-  Branch (output) air to portion of control system requiring pressure changes at twice the rate of thermostat output pressure change.

**Figure 1 Typical Application.**