DESCRIPTION

The **Siemens/Powers 243-0010 Series Balance Retard (BR) Relay** is a pneumatic auxiliary device used to obtain special pneumatic signal outputs for use in a pneumatic control system. Standard applications include signal retarding, balancing action, and signal advancing. The relay can also be used to obtain several special control functions such as signal hesitation and pressure limiting.

FEATURES

- *Internal relief assembly*
- *Single spring adjustment*
- *Adaptable for flush panel mounting*
- *Mounted in any position*

APPLICATION

The balance retard relay can be piped and adjusted to obtain a number of different control characteristics. Typical applications where this relay can be applied include:

1. Retard relay
2. Balancing relay
3. Hesitation relay
4. Seasonal pressure limiting with dual pressure systems
5. Minimum pressure and hesitation output relay

NEW!

SIEMENS

POWERS™

243-0010 Series

SPECIFICATIONS	
Instrument Air Supply	
Normal	25 psi (172 kPa)
Maximum	30 psi (207 kPa)
Ambient Temperature Range	
Operating	40 to 120°F (4.4 to 49°C)
Storage	-20 to 120°F (-29 to 49°C)
Adjustments	Spring S1 (adjustable 0 to 25 psi
Hysteresis	Less than 0.5 psi (3.4 kPa)
Relief Valve Differential	
	Less than 1.0 psi (6.89 kPa)
Air Connections	1/8" NPT
Mounting	Integral brackets for wall or panel (Use with Panel Mounting Kit)
Dimensions	4 3/8"H x 2 1/22"W x 3"D (111.13 x 81.6 x 76.2 cm)
Weight	2 lb (0.907 Kg)
Warranty	1 year

DIMENSIONS
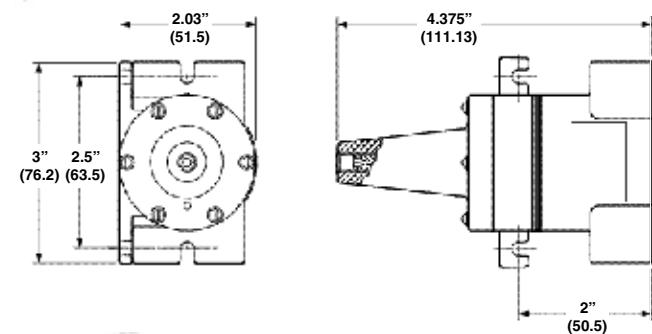
2.03" (51.5)

4.375" (111.13)

3" (76.2)   2.5" (63.5)

2" (50.5)

OPERATION

The relay output pressure at port R is dependent upon the adjustable setting of spring S1, the interaction of pneumatic signals at ports TD and TR, and on the availability of a supply source at port S. A fixed internal spring is provided to allow retarding of the output signal. The basic relay formula can be expressed as follows:

R = TD-10+ (S1 - TR)
Where (S1 - TR) cannot be less than zero.

Where:
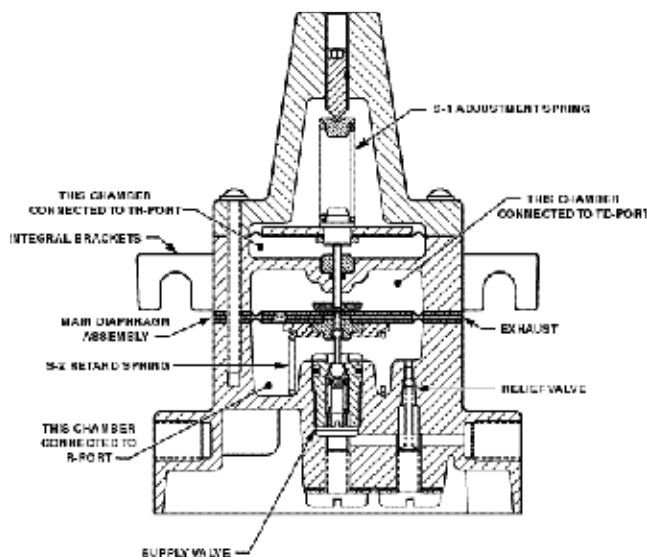|	
R	is the output pressure
TD	is a direct acting input variable
S1	is the setting of the adjustment spring
TR	is a reverse acting input variable (opposing S1)
10	is the nominal value of internal retard spring S2

Figure 1 - Balance Retard Relay

The relay output at R port depends upon the force exerted by adjustment spring S-1 and signal pressures at TD and TR ports. TR port is reverse acting and will tend to reduce pressure available from adjustment spring S1. However, if S1 is greater than force TR, this difference (S1 - TR) is transmitted by the stem to the main diaphragm below.

This transmitted force from S1, plus direct acting pressure at TD port, must exceed the value of the constant retard spring (nominal 10 psi) before any output pressure can be generated. The output pressure will always equal the total downward force on the main diaphragm assembly (S1 - TR plus TD) less the nominal value of the internal retard spring as long as an equivalent air supply is available at port S.

ORDERING INFORMATION

MODEL	DESCRIPTION
243-0010	Pneumatic balances, retard or advancing relay

NEW!

PNEUMATICS & FITTINGS

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