SIEMENS/POWERS MULTI-PURPOSE RELAY

243-0009 SERIES

NEW!

SIEMENS

POWERS™

DESCRIPTION

The **Siemens/Powers 243-0009 Series Multi-Purpose Relay** is a pneumatic auxiliary device designed to provide a variety of pneumatic control functions for the typical control system. Applications include direct and reverse acting amplifying, signal advancing, minimum pressure relay, and lower pressure transfer.

The relay operated on a force balance principal and is provided with a Powers two-valve design to assure stability and prevent unnecessary air consumption. Internal relief assembly prevents signal lock-up and assures fail-safe operation.

FEATURES

- ***Integral brackets***
- ***Single spring adjustment***
- ***Adaptable for flush panel mounting***

APPLICATION

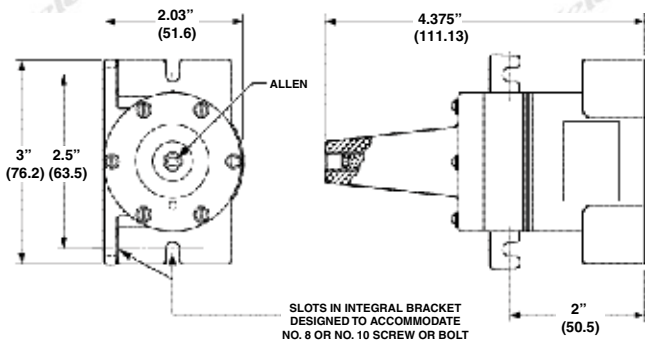
The multi-purpose relay is factory calibrated with a 15 psi spring adjustment for reverse acting service. However, the multi-purpose relay provides a number of specific control actions which are frequently utilized in control systems. Some of the typical applications where this relay can be applied are as follows. Additional applications can be obtained depending upon how it is piped and applied with other devices in a single system.

243-0009 Series

SPECIFICATIONS

Instrument Air Supply	
Normal	0-25 psi (0 to 172 kPa)
Maximum	30 psi (207 kPa)
Temperature	
Ambient	40 to 120°F (4.4 to 49°C)
Storage	-20 to 120°F (-29 to 49°C)
Adjustments	Spring S1 0 to 25 psi (0 to 172 kPa)
Hysteresis	Within 0.25 psi (1.7 kPa)
Relief Valve Differential	Within 1.0 psi (6.89 kPa)
Accessories	
Panel Mounting	For flush mounting, with adjustable knob dial plate and mounting bracket
Surface Bracket	For exposed surface mouting (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)

DIMENSIONS



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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 the availability of a supply source at port S. The basic relay formula can be expressed as follows:

R = (TD + (S1 - TR) = <S
NOTE: (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)

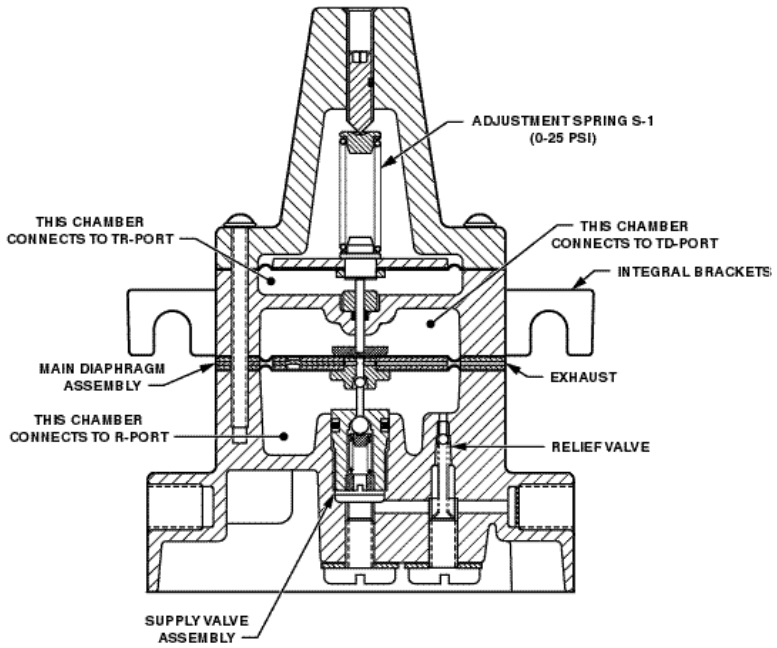

Figure 1.

The return line pressure R depends on the force exerted by adjustment spring S_1 and air pressures at TD and TR. TR pressure is exerted against the bottom of the upper diaphragm, opposing S_1. However, if S_1 is greater than force TR, this difference (S_1 minus TR) is transmitted by the stem to the main diaphragm below. The other force acting downward on the main diaphragm is caused by the air pressure at TD. These downward forces are balanced by air pressure R pushing up on the main diaphragm. Spring force S_1 is adjustable up to an equivalent pressure of 25 psi.

ORDERING INFORMATION

MODEL	DESCRIPTION
243-0009	Pneumatic multi-purpose relay