

T75 Air Relays

Features

The Type 75 relay uses signal pressure to accurately control output pressure over a wide range of flow and supply pressure variation.

Under varying flow conditions output pressure is maintained by use of an aspirator tube, which adjusts the air supply valve opening in accordance with the flow velocity. A balanced supply valve, utilizing a rolling diaphragm, makes the relay virtually immune to changes in supply pressure. Maintenance is simple due to the unit construction, and the relay can be serviced without removing it from the line. Signal to output pressure ratios of 1:1, 1:2, 1:4 and 1:6 are available. Maximum output is 150 PSIG (10.3 BAR).

Applications

- Volume Boosting
- Gas Flow Control
- Valve Motor Loading
- Temperature Range -40°F to +200°F

Models

Type 75

The basic relay offers excellent precision along with high forward flow rates.

Type 75 High Relief Relays

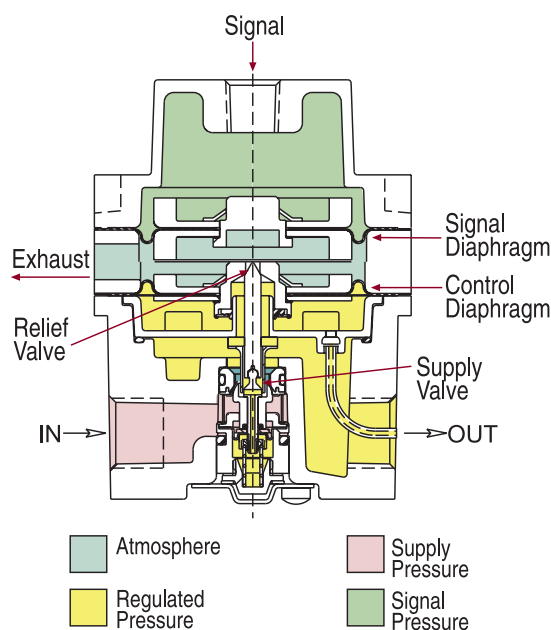
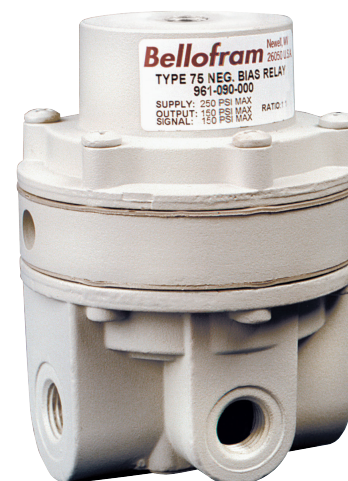
These relays provide extra fast “blow-down” for very rapid release of output pressure. The extra relief feature makes this relay suitable for cylinder return stroke actuation, air hoists, and similar applications requiring fast exhaust.

To calculate negative bias relay output:

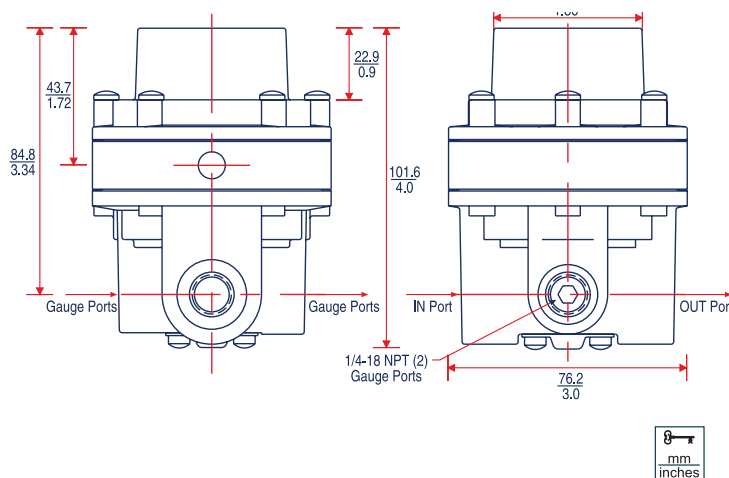
Relay output = (signal pressure) - 4 PSI bias x (relay ratio factor) where the relay ratio factor is defined as follows:

Relay Ratio Factor

1:1	1
1:2	2
1:4	4
1:6	6



Type 75 Dimensional Drawing



P79 High Flow Air Relays

The P79 1:1 Ratio High Flow Precision Air Relay brings additional precision and control to the BelGAS line of precision control products.

The P79 relay is designed for applications where a precise control of flow is needed. This regulator offers low droop, high accuracy and fine adjustment sensitivity. The use of a rolling diaphragm provides greater sensitivity and improved accuracy. The balanced pintle minimizes output pressure changes caused by fluctuations in supply pressure.

A version of the P79 for valve control applications is available. The P79 utilizes soft exhaust seats to minimize air consumption, increased deadband to ignore valve oscillations, and an integral bypass valve that can be 'tuned' for optimum valve response.



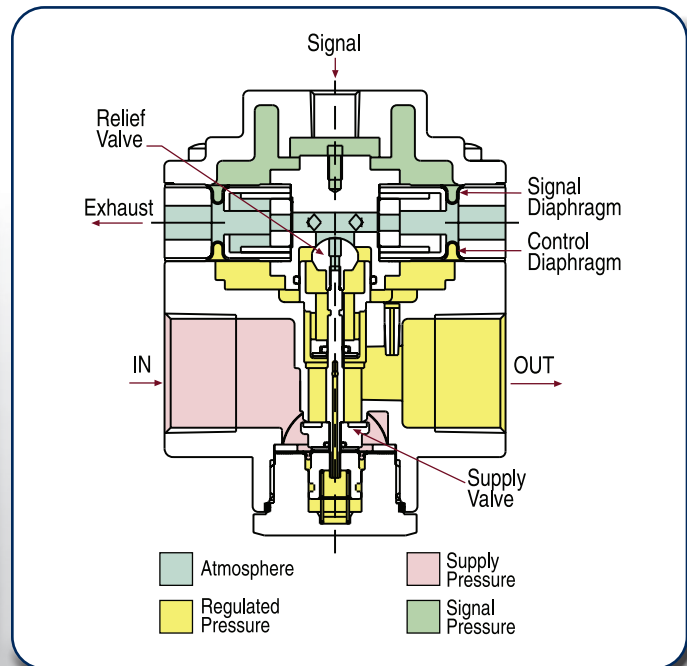
Applications

- Gas Flow Control
- Volume Boosting
- Valve Motor Loading
- Temperature Range -40°F to +200°F

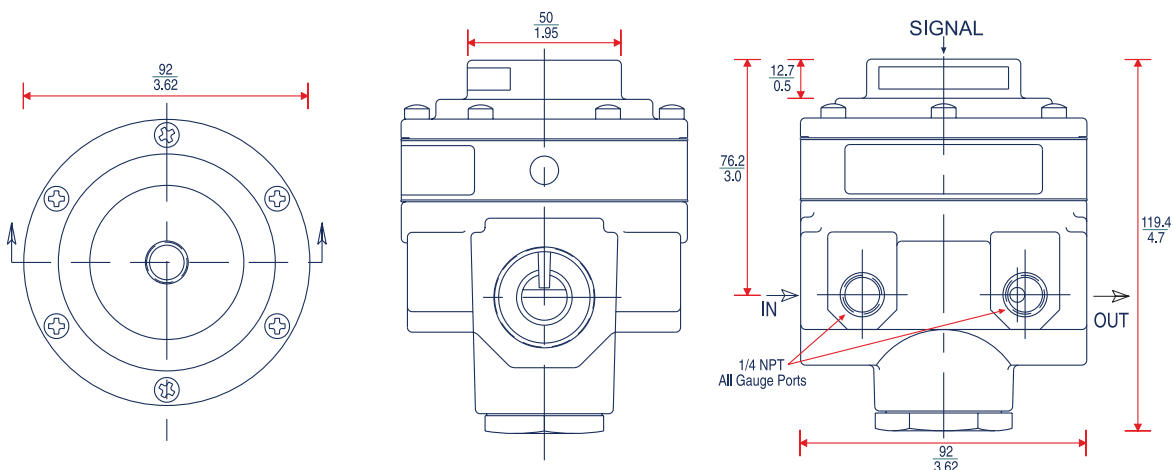
Standard P79 - Integral bypass valve no bleed, relieving diaphragm.

Metal Seat P79 - Relieving unit with bleed, no bypass valve - better sensitivity.

P79HR - same as Metal Seat P79 but with 25% more exhaust capacity.

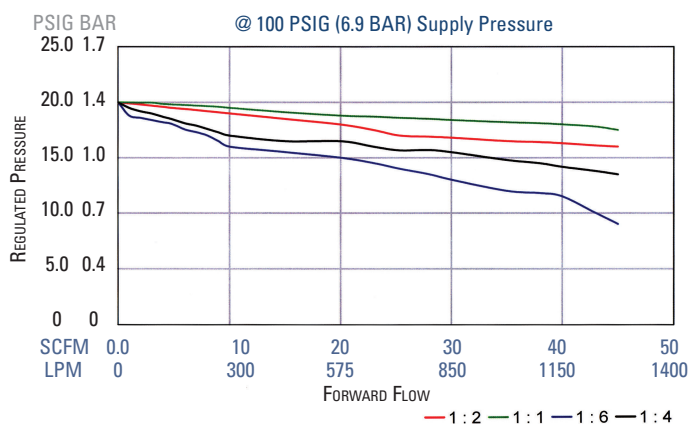


Type 75 Dimensional Drawing

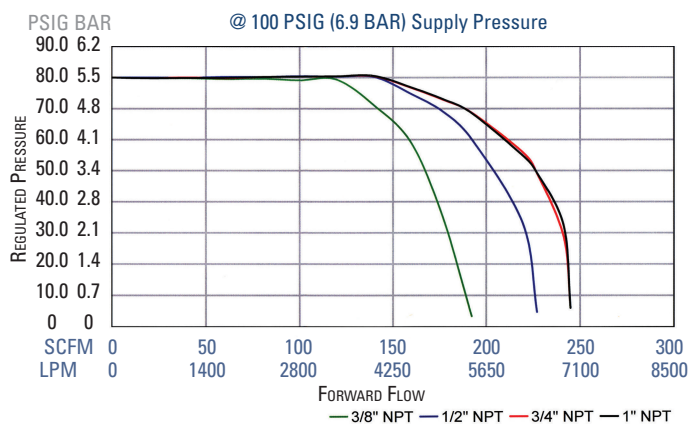


	Type 75	Type 75 HR	P79 (Metal Seat)	Type Standard P79 (w/Bypass Valve)
Maximum Supply Pressure	250 PSIG (17.2 BAR)	250 PSIG (17.2 BAR)	400 PSIG (27.6 BAR)	400 PSIG (27.6 BAR)
Sensitivity	1/4" H ₂ O (6.4mm)	1/4" H ₂ O (6.4mm)	1" H ₂ O (25mm)	Dead Band <0.4 PSIG
Supply Pressure Sensitivity	< 0.6 PSIG (0.04 BAR) per 50 PSIG (6.9 BAR) change in supply pressure	< 0.6 PSIG (0.04 BAR) per 50 PSIG (3.5 BAR) change in supply pressure	<0.35 PSIG (0.02 BAR) per 100 PSIG (3.5 BAR) change in supply pressure	<0.50 PSIG (0.02 BAR) per 100 PSIG (3.5 BAR) change in supply pressure
Flow Capacity	40 SCFM (1150 LPM) @ 20 PSIG (1.4 BAR) signal and 100 PSIG (6.9 BAR) supply	40 SCFM (1150 LPM) @ 20 PSIG (1.4 BAR) signal and 100 PSIG (6.9 BAR) supply	>125 SCFM (3500 LPM) @ 20 PSIG (1.4 BAR) signal and 100 PSIG (6.9 BAR) supply	>125 SCFM (3500 LPM) @ 20 PSIG (1.4 BAR) signal and 100 PSIG (6.9 BAR) supply
Exhaust Capacity	6 SCFM (170 LPM) @ 10 PSIG (0.69 BAR) above a 20 PSIG (1.4 BAR) setpoint	15 SCFM (425 LPM) @ 10 PSIG (0.69 BAR) above a 20 PSIG (1.4 BAR) setpoint	31 SCFM (875 LPM) @ 5 PSIG (0.35 BAR) above a 20 PSIG (1.4 BAR) setpoint	31 SCFM (3500 LPM) @ 5 PSIG (0.35 BAR) above a 20 PSIG (1.4 BAR) setpoint
Temperature Limits	-40 to 200°F (-40 to 93°C)	-40 to 200°F (-40 to 93°C)	-40 to 200°F (-40 to 93°C)	-40 to 200°F (-40 to 93°C)
Air Consumption	<12 SCFH (5.7 LPM)	<12 SCFH (5.7 LPM)	<12 SCFH (5.7 LPM)	<1 SCFH (5.7 LPM)
Port Size	1/4", 3/8" NPT, BSPP, BSPT	1/4", 3/8", 1/2" NPT, BSPP, BSPT	3/8", 1/2", 3/4", 1" NPT, BSPP, BSPT	3/8", 1/2", 3/4", 1" NPT, BSPP, BSPT
Output Pressure Range	0-150 PSIG (0-10.3 BAR)	0-150 PSIG (0-10.3 BAR)	0-200 PSIG (0-13.8 BAR)	0-200 PSIG (0-13.8 BAR)
Maximum Signal	150 PSIG (10.3 BAR) for 1:1 ratio	150 PSIG (10.3 BAR) for 1:1 ratio	200 PSIG (13.8 BAR)	200 PSIG (13.8 BAR)
Weight	1.3 lb. (0.6 kg.)	1.3 lb. (0.6 kg.)	4.5 lb. (2.0 kg.)	4.5 lb. (2.0 kg.)
Ratio of Accuracy for a 12 psig span	< 2% (1:1)	< 2% (1:1)	<1.5%	<1.5%

Type 75: Regulated Pressure VS. Flow



P79 and P79 HR: Regulated Pressure VS. Flow



Volume Booster Ordering Information

	Ra- tio	Port Size (NPT)	Set Point Range		Part Number
			BAR	PSIG	
Type 75 Precision Relay	1:1	1/4	0-10.3	0-150	961-058-000
	1:1	3/8	0-10.3	0-150	961-066-000
	1:2	1/4	0-10.3	0-150	961-059-000
	1:2	3/8	0-10.3	0-150	961-067-000
	1:4	1/4	0-10.3	0-150	961-060-000
	1:4	3/8	0-10.3	0-150	961-068-000
	1:6	1/4	0-10.3	0-150	961-045-000
	1:6	3/8	0-10.3	0-150	961-069-000
Type 75 Precision Relay Fixed Negative Bias (4 PSI)	1:1	1/4	0-10.3	0-150	961-090-000
	1:1	3/8	0-10.3	0-150	961-091-000
	1:2	1/4	0-10.3	0-150	961-092-000
	1:2	3/8	0-10.3	0-150	961-093-000
	1:4	1/4	0-10.3	0-150	961-094-000
	1:4	3/8	0-10.3	0-150	961-095-000
	1:6	1/4	0-10.3	0-150	961-096-000
	1:6	3/8	0-10.3	0-150	961-097-000
Type 75HR Precision Relay	1:1	1/4	0-10.3	0-150	961-144-000
	1:1	3/8	0-10.3	0-150	961-145-000
	1:1	1/2	0-10.3	0-150	961-146-000
	1:2	1/4	0-10.3	0-150	961-147-000
	1:2	3/8	0-10.3	0-150	961-148-000
	1:2	1/2	0-10.3	0-150	961-149-000
Type 75HR Precision Relay Fixed Negative Bias (4 PSI)	1:1	1/4	0-10.3	0-150	961-150-000
	1:1	3/8	0-10.3	0-150	961-151-000
	1:1	1/2	0-10.3	0-150	961-152-000
	1:2	1/4	0-10.3	0-150	961-153-000
	1:2	3/8	0-10.3	0-150	961-154-000
	1:2	1/2	0-10.3	0-150	961-155-000

Type 75 Option Ordering Matrix

Replace last three digits of part number with digits from table below.			
Option		5	7
5	Epoxy Finish	005	075
7	Mounting Bracket		007

P79 Ordering Matrix

P079		0	0				
	↑	↑	↑	↑	↑	↑	Body Size
	03						3/8"
	04						1/2"
	06						3/4"
	08						1"
	0						
							Special Construction
		0					None
		2					Tapped Supply Gage Port
			0				
							Configuration
				0			Standard*
				1			Non relief (P79)
				2			No Bypass (P79)
				3			High Relief (P79HR)
							Versions
					0		Standard
					B		w/ Bracket
							* A standard configuration P79V, has a bypass valve, soft seat exhaust, epoxy finish and Tapped Vent Ports.

BelGAS

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