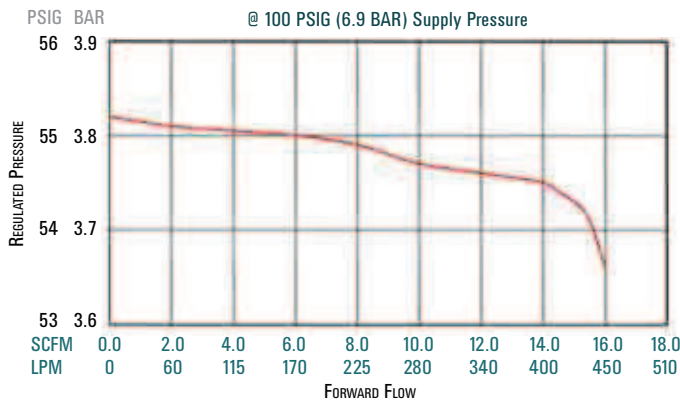


# Relays - Volume Boosters

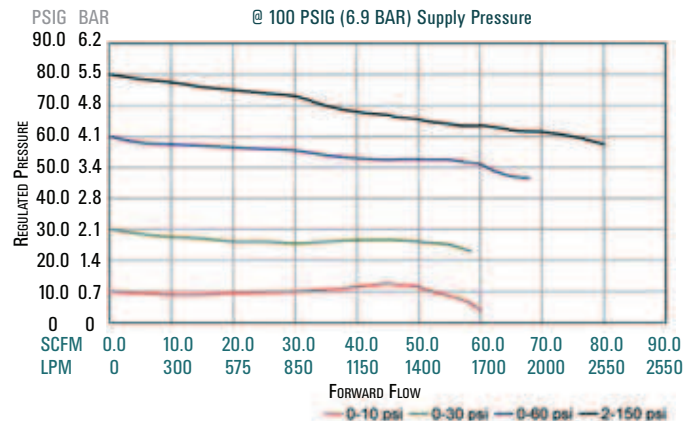
## Comparison Chart

	Type 20	Type 20 HR	Type 20 EX HR
Maximum Supply Pressure	150 PSIG (10.3 BAR)	150 PSIG (10.3 BAR)	150 PSIG (10.3 BAR)
Sensitivity	1/8" H <sub>2</sub> O (3.2mm)	1/8" H <sub>2</sub> O (3.2mm)	1/8" H <sub>2</sub> O (3.2mm)
Supply Pressure Sensitivity	0.005 PSIG (0.35 mBAR) per 25 PSIG (1.7 BAR) change in supply pressure	0.005 PSIG (0.35 mBAR) per 25 PSIG (1.7 BAR) change in supply pressure	0.005 PSIG (0.35 mBAR) per 25 PSIG (1.7 BAR) change in supply pressure
Flow Capacity	14 SCFM (400 LPM) @ 20 PSIG (1.4 BAR) signal and 100 PSIG (6.9 BAR) supply	14 SCFM (400 LPM) @ 20 psig (1.4 BAR) signal and 100 PSIG (6.9 BAR) supply	14 SCFM (400 LPM) @ 20 PSIG (1.4 BAR) signal and 100 PSIG (6.9 BAR) supply
Exhaust Capacity	2 SCFM (55 LPM) @ 5 PSIG (0.35 BAR) above a 20 PSIG (1.4 BAR) setpoint	10 SCFM (285 LPM) @ 5 PSIG (0.35 BAR) above a 20 PSIG (1.4 BAR) setpoint	15 SCFM (425 LPM) @ 5 PSIG (0.35 BAR) above a 20 PSIG (1.4 BAR) setpoint
Temperature Limits	-20 to 160 °F (-29 to 71 °C)	-20 to 160 °F (-29 to 71 °C)	-20 to 160 °F (-29 to 71 °C)
Air Consumption	8 SCFH (4 LPM)	8 SCFH (4 LPM)	8 SCFH (4 LPM)
Port Size	1/8", 1/4", 3/8" NPT, BSPP, BSPT	1/8", 1/4", 3/8" NPT, BSPP, BSPT	1/8", 1/4", 3/8" NPT, BSPP, BSPT
Output Pressure Range	2-120 PSIG (0.1 - 8.3 BAR)	2-120 PSIG (0.1 - 8.3 BAR)	2-120 PSIG (0.1 - 8.3 BAR)
Maximum Signal	120 PSIG (8.3 BAR)	120 PSIG (8.3 BAR)	120 PSIG (8.3 BAR)
Weight	1.4 lb. (0.6 kg.)	1.4 lb. (0.6 kg.)	1.4 lb. (0.6 kg.)
Ratio of Accuracy for a 12 PSIG span	<0.5%	<0.5%	<0.5%

**Type 20, 20HR and 20 EXHR Flow Curve - 1/8"**



**Type 72 and Type 72 HR Flow Curves - 1/4"**



# Type 20

## Precision Air Relays

### Features

- Extreme accuracy
- Positive and negative bias capability
- Small size
- Rugged and stable

### Description

The Type 20 Air Relay is a compact, two-stage, pilot operated 1:1 relay with positive and negative bias adjustment capability. It accepts a signal pressure and combined with the bias adjustment, maintains a resulting output pressure with an accuracy and reliability unmatched by any other pressure relay in its price range.

### Models

#### Type 20

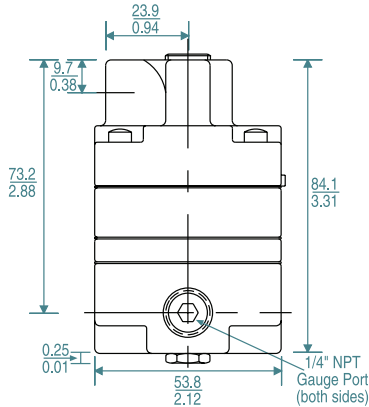
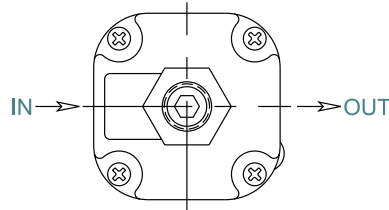
The basic relay is offered with a choice of three port sizes.

#### Type 20HR and Type 20EXHR

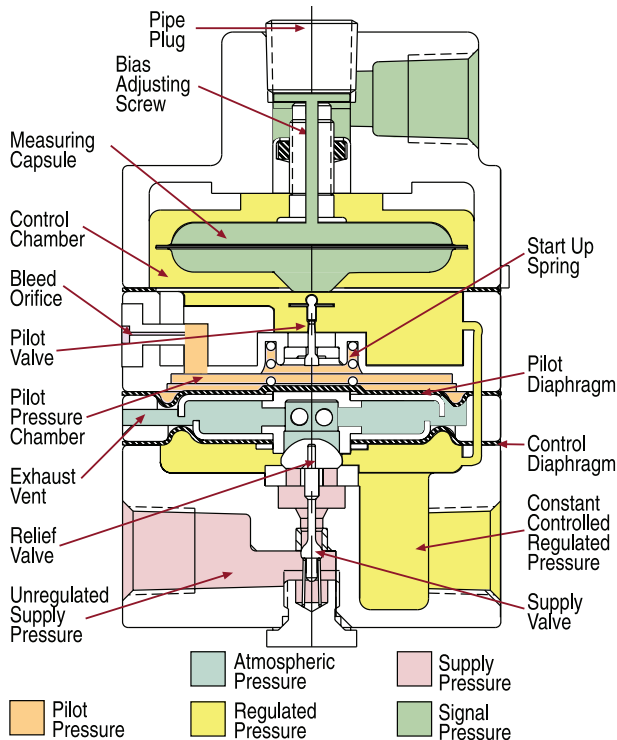
High Relief Relays - These relays provide extra fast "blowdown" for very rapid release of output pressure. The extra relief feature makes this relay suitable for cylinder return stroke actuation, air hoists, and similar applications requiring fast exhaust.

### Applications

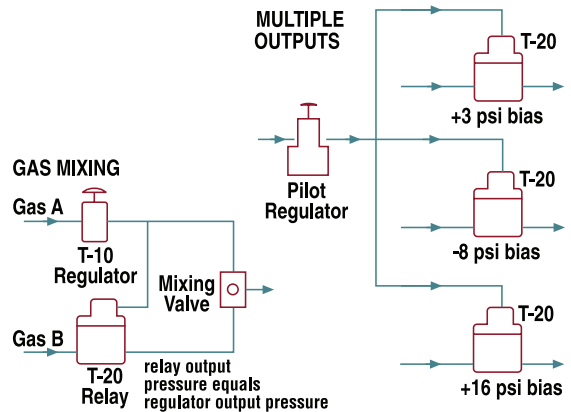
- Gate Actuators
- Air Hoists
- Disc and Shoe Brakes
- Remote Positioning Devices
- Valve Rotors
- Control Valves
- Tensioning Systems
- Web Tracking Systems



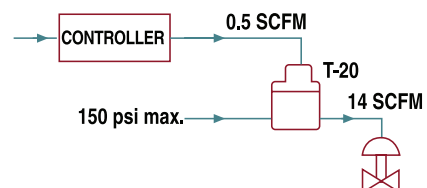
**Type 20**  
Precision Air Relay



### Type 20 Application Diagrams



### VOLUME BOOSTING AND REMOTE LOADING



Volume Booster Ordering Information					
	Ratio	Port Size (NPT)	Set Point Range		Part Number
			BAR	PSIG	
Type 20 Precision Relay	1:1	1/8	0.1-8.3	2-120	961-004-000
		1/4	0.1-8.3	2-120	961-005-000
		3/8	0.1-8.3	2-120	961-006-000
Type 20HR Precision Relay High Relief Capacity	1:1	1/8	0.1-8.3	2-120	961-001-000
		1/4	0.1-8.3	2-120	961-002-000
		3/8	0.1-8.3	2-120	961-003-000
Type 20 EXHR	1:1	1/8	0.1-8.3	2-120	961-009-000
		1/4	0.1-8.3	2-120	961-010-000
		3/8	0.1-8.3	2-120	961-011-000
Type 72 Positive Bias Booster Relay	1:1	3/8	0-0.7	0-10	961-062-000
		3/8	0-2.1	0-30	961-063-000
		3/8	0.07-4.1	1-60	961-064-000
		3/8	0.1-10.3	2-150	961-065-000
		1/4	0-0.7	0-10	961-052-000
		1/4	0-2.1	0-30	961-053-000
		1/4	0.07-4.1	1-60	961-054-000
		1/4	0.1-10.3	2-150	961-055-000
Type 72 HR High Relief Positive Bias Booster Relay	1:1	3/8	0-0.7	0-10	961-182-000
		3/8	0-2.1	0-30	961-183-000
		3/8	0.07-4.1	1-60	961-184-000
		3/8	0.1-10.3	2-150	961-185-000
		1/4	0-0.7	0-10	961-178-000
		1/4	0-2.1	0-30	961-179-000
		1/4	0.07-4.1	1-60	961-180-000
		1/4	0.1-10.3	2-150	961-181-000
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
Type 75 Precision Relay Fixed Negative Bias (4 PSI)	1:1	3/8	0-10.3	0-150	961-069-000
	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
Type 75HR Precision Relay	1:1	3/8	0-10.3	0-150	961-097-000
	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	1/4	0-10.3	0-150	961-146-000
	1:2	3/8	0-10.3	0-150	961-147-000
	1:2	1/4	0-10.3	0-150	961-148-000
Type 75HR Precision Relay Fixed Negative Bias (4 PSI)	1:2	3/8	0-10.3	0-150	961-149-000
	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 79 High Flow Capacity	1:1	3/8	0-13.8	0-200	961-156-000
		1/2	0-13.8	0-200	961-157-000
		3/4	0-13.8	0-200	961-158-000
		1	0-13.8	0-200	961-159-000
Type 79 HR High Relief High Flow Capacity	1:1	3/8	0-13.8	0-200	962-378-000
		1/2	0-13.8	0-200	962-378-100
		3/4	0-13.8	0-200	962-378-200
		1	0-13.8	0-200	962-378-300

### Type 20 Option Ordering Matrix

Replace last three digits of part number with digits from table below.

Option	8
8 Pressure Gauge	008

### Type 72 Option Ordering Matrix

Replace last three digits of part number with digits from table below.

Option	3	5	7	8	9
3 Square Head	003	053	073	083	
5 Epoxy Finish		005	075	085	095
7 Mounting Bracket			007	087	097
8 Pressure Gauge				008	098
9 Tamper-Resistant Cover					009

### Type 75 Option Ordering Matrix

Replace last three digits of part number with digits from table below.

Option	5	7	8
5 Epoxy Finish	005	075	085
7 Mounting Bracket		007	087
8 Pressure Gauge			008

### Type 79 Option Ordering Matrix

Replace last three digits of part number with digits from table below.

Option	1	2	5	6	7
1 Low Bleed	001		051	061	071
2 Non-Relieving		002	052	062	072
5 Epoxy Finish			005	065	075
6 Tapped Vent				006	076
7 Tapped Supply Port					007

### Relay Options and Accessories

#### Pressure Gauge

Dual scale (English and Metric) 2 inch (50.8 mm) gauges are available

**Epoxy Finish** - Gray epoxy coating for greater corrosion resistance.

#### Mounting Bracket

Zinc-plated steel bracket for side mounting.  
(For Type 79 order part number 607-293-000)

#### Tamper Resistant Cover

A cover placed over the adjusting screw to prevent ordinary hand adjustments.

#### Low Bleed

Reduces steady-state air consumption by approximately 50%.

#### Non-Relieving

Used in applications where it is desirable to relieve pressure downstream of the relay. Non-relieving relays should not be used for low or no flow applications.

#### Tapped Vent (Exhaust)

1/4 NPT tapped port to allow for installation of plumbing to capture exhaust air.

#### Tapped Supply Gauge Port

1/4 NPT tapped port is offered as a pressure tap for monitoring the inlet or upstream pressure supplied to the regulator. (Type 79 only)

#### BSPP or BSPT

British Standard Threads can be ordered by adding either "BSPT" or "BSPP" to the end of the part number.