CONOFLOW RATIO OR FLOW BOOSTING RELAY

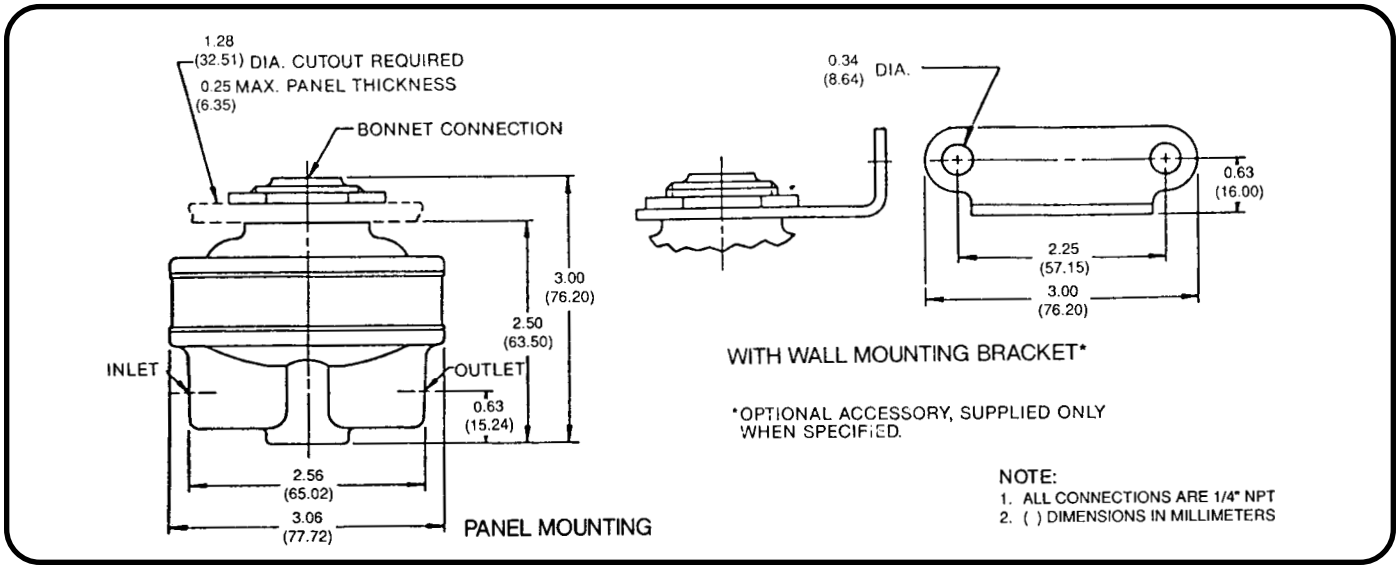
GH22 Series

The Conoflow GH22 Series Relay is used to boost, amplify or reduce the pneumatic signal of a controller or similar instrument in a predetermined ratio. Using an independent supply pressure for greater flow volume, the unit relays an instrument signal to a final control element such as a valve actuator.

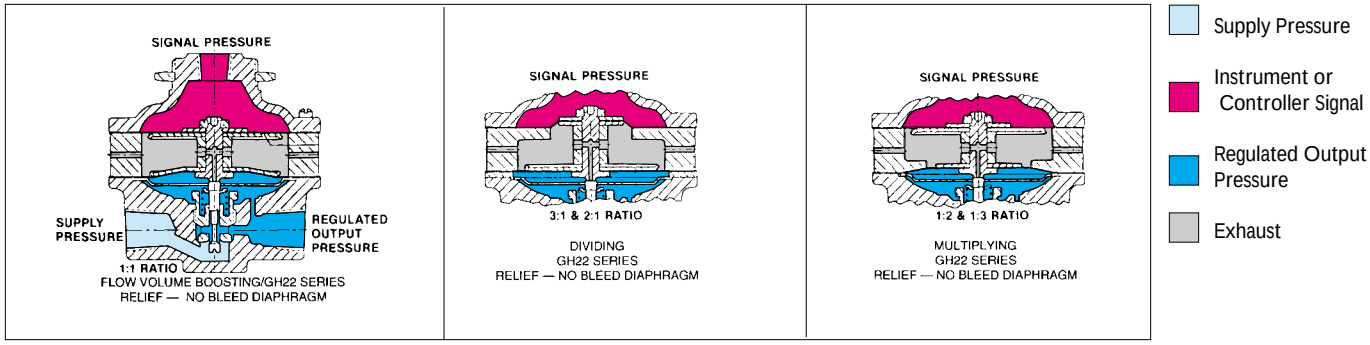
The GH22 is supplied in a brass/aluminum combination and has a maximum supply pressure rating of 200 PSI (1379 kPa). Buna "N" diaphragms are standard. Connections are 1/4" NPT. Maximum signal pressures are 150 PSI (1034 kPa) (ratio 3:1, 2:1, 1:1), 75 PSI (517 kPa) (ratio 1:2) and 50 PSI (345 kPa) for ratio 1:3.

A large selection of ratios, 1:1 (flow boosting), 1:2 and 1:3 (multiplying) and a 2:1 and 3:1 (dividing), meets a wide range of application requirements.

These units are backed by Conoflow's years of experience as a leading manufacturer of precision built instruments.



For Certified Dimensional Drawing, Refer to A17-12 (GH22)



Flow Volume Boosting/GH22 Series Relief - No Bleed Diaphragm

Dividing/GH22 Series Relief - No Bleed Diaphragm

Multiplying/GH22 Series Relief - No Bleed Diaphragm

PRINCIPLE OF OPERATION

The Conoflow Model GH22XT Ratio Relay provides an output pressure proportional to the signal pressure applied to the bonnet connection. The ratio of signal pressure to output pressure is determined by he ratio of effective areas of the top and bottom diaphragms. In the 1:1 ratio model the effective areas of the two diaphragms are equal. Therefore, in equilibrium, the output pressure is equal to the signal pressure. If the signal pressure is increased above the output pressure, there is a net downward force on the diaphragm assembly causing the nozzle to open. Supply pressure flows through the nozzle to the output port until the output pressure equals the signal pressure. The nozzle remains in a position to supply the required flow while maintaining the output pressure equal to the signal pressure. If the signal pressure drops below the output pressure, there is a net upward force on the diaphragm assembly which causes the diaphragm seat to lift off of the nozzle plug. This allows the excess pressure to vent to atmosphere until equilibrium is again established.

In the 3:1 and 2:1 ratio models the effective area of the top diaphragm is proportionally less than the effective area of the bottom diaphragm. Since force is equal to pressure times area, less output is required to balance the force resulting from a given signal pressure. For example, in the 2:1 ratio model, a signal pressure of 2 PSI (14 kPa) would result in an output pressure of only 1 PSI (7 kPa) since the effective area of the bottom diaphragm is twice that of the top diaphragm.

In the 1:3 and 1:2 ratio models, the effective area of the top diaphragm is proportionally larger than the area of the bottom diaphragm which results in an output pressure proportionately higher than the signal pressure.

SPECIFICATIONS

OPERATING CHARACTERISTICS

Maximum Supply Pressure: 200 PSI (1379 kPa)

Maximum Signal Pressure-Ratio (Signal Output)

3:1	150 PSI	(1034 kPa)
2:1	150 PSI	(1034 kPa)
1:1	150 PSI	(1034 kPa)
1:2	75 PSI	(517 kPa)
1:3	50 PSI	(345 kPa)

Connections: 1/4" NPT

Flow Capacity (See graph): 16 SCFM (0.453 m^3/min) w/100 PSI (690 kPa) Supply

Sensitivity: 0.05 PSI (0.345 kPa)

Accuracy: 5% (All Ratios)

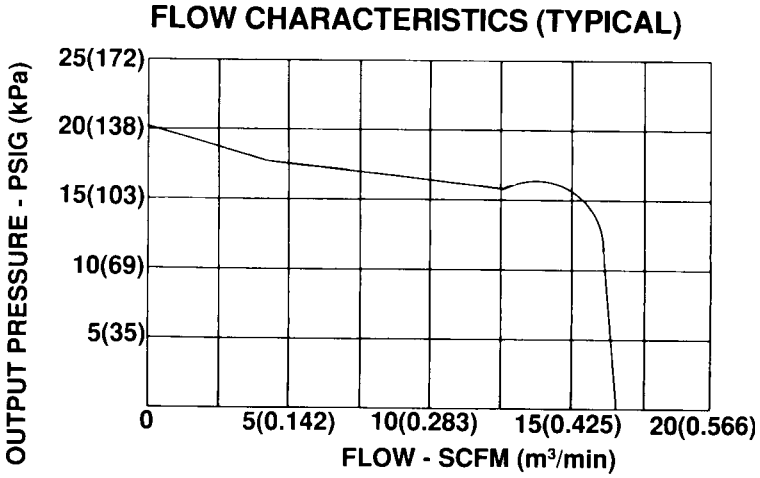
Supply Pressure Effect: 0.5 PSI (3.45 kPa) for 25 PSI (172 kPa) Change in Supply Pressure

Ambient Temperature Range: -20°F to +150°F (-29°C to +66°C) (w/Buna "N" Diaphragm)

Approximate Shipping Weight: 1-3/4 lbs. (45 Kg)

MATERIALS OF CONSTRUCTION

Body: Brass
Bonnet: Aluminum
Diaphragm Assembly: Buna "N"
Nozzle Assembly: Brass Body/Stainless Steel Valve Plug



CONTROL ENGINEERING DATA

Control Engineering Data is intended to provide a single source from which one can determine, in detail, the full scope of the product line. In addition to materials of construction and diaphragm selection, it also provides all necessary data, regarding adjustment options and range selections. Control Engineering Data also provides a means of communicating, by way of a code number, which is fully descriptive of the product selection.

NOTE: 1. Catalog numbers as received must contain twelve (12) characters.

		For Dimensional Data, Refer to Drawing:
1-4 Models	GH22 = Regulator - Ratio/Booster	A17-12
	GH42 = Regulator - Ratio/Booster (Soft Seat)	A17-12
5 Operational Feature	X = Absence of Specification	
6 Bonnet Option	T = Threaded Bonnet	
7 Future Option	X = Absence of Specification	
8 Diaphragm Selections	The catalog number(s) listed under each diaphragm option is the standard diaphragm used in that regulator. These options apply to all output ranges of that unit. For non-standard diaphragm price adders, refer to price list CP-5000. E = Buna "N" (w/Relief, No Bleed) GH22XTXEXXX_ M = Buna "N" (No Bleed, No Relief)	
9 Seat Selections	A = Buna "N" B = Neoprene C = Viton D = Low Leak Nozzle w/Metal Seat GH22 - 20CC Air/Min. F = Low Leak Nozzle w/Metal Seat GH22 - Less than 15CC Air/Min. N = Nordel X = Standard - Unless option code is specified NOTES: 1. All GH40 Models are standardly supplied with Buna "N" Soft Seats. If option B or C is required, specify accordingly. GH20 with soft seats are supplied as GH40. 2. For list price adder, refer to price list CP-5000.	
10 Material Options	X = Absence of Specification	
11 Cleaning Options	A = Cleaned for Oxygen Service X = Standard - Unless option code is specified.	
12 Range Selections	R = 3:1 S = 2:1 T = 1:1 W = 1:2 Y = 1:3	