DESIGN * ENGINEERING * MANUFACTURING * SALES * PRESSURE * FLOW * FORCE * TENSION * POSITION * TORQUE * VACUUM

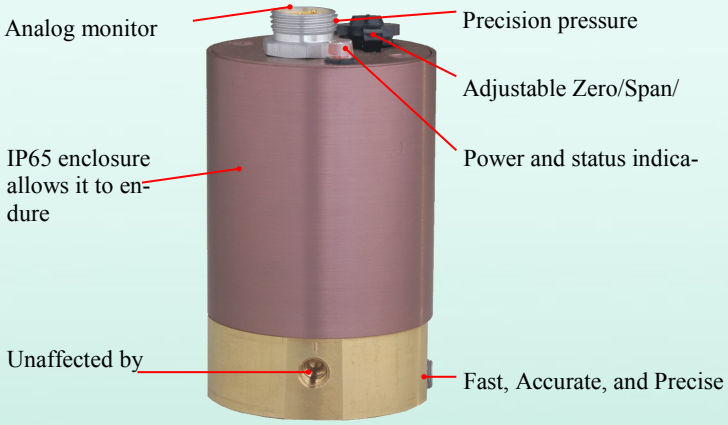
PROPORTION-AIR

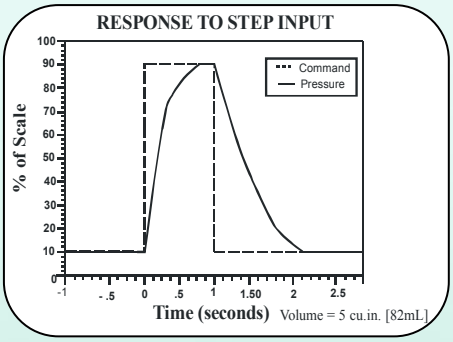
THE FUTURE OF CONTROL™

GP1/GP2

* Precision Pressure Control Vacuum to 1000 PSI Without the Need for a Ratio Amplifier
* Non-Air Consuming in Steady State
* Closed Loop Proportional Pressure Controls
* Fast, Accurate, and Precise High Pressure Control of Media
* Mounts in Any Position

Let's Talk 317-335-2602 P.O. Box 218, McCordsville, Indiana 46055 www.proportionair.com

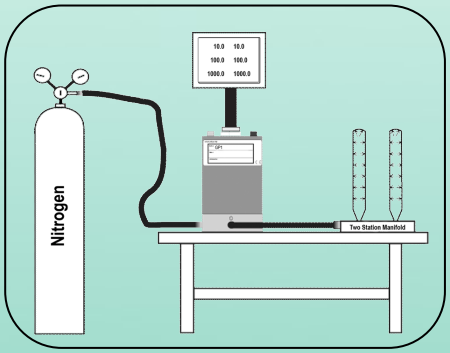


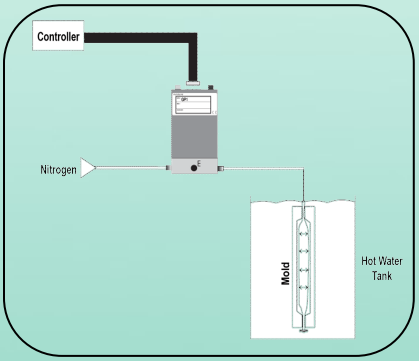


Times for GP to fill/exhaust a closed chamber. Step command signal is superimposed over pressure trace. Time is determined by difference between command signal and pressure achieved.

GP 1/2 TYPICAL APPLICATIONS

In this application a GP-Series high pressure control valve is being used to control the pressure in a catheter burst test. Test results are being provided to the controller via the GP analog monitor feedback signal.





In this application a Proportion -Air GP high pressure device is being used to control the amount of pressure being applied to shape a catheter in a mold. The GP controls pressure up to 1000psi with 0.25% accuracy.

GP 1/2 FUNCTIONAL DESCRIPTION

The GP series control valve is an electronic pressure regulator designed to precisely control the pressure of gaseous media proportional to an electronic signal in pressure ranges up to 1000 PSI.

The GP1 operates using two normally closed solenoid valves, a pressure sensor, and a control circuit. One valve is actuated to allow unregulated supply media into the system. The second valve is actuated to allow working media to vent to atmosphere. An electronic circuit compares the pressure sensor feedback to the user supplied electronic command signal and actuates the appropriate valve until the two signals match.

The GP2 is similar to the GP1 but uses a double loop control scheme. In addition to the internal pressure transducer, the GP2 also receives a 0-10Vdc feedback signal from an external sensing device. The external signal functions as the primary feedback and is compared to the command signal. A difference between the two comparisons causes one of the two solenoid valves to open allowing flow in or out of the system.

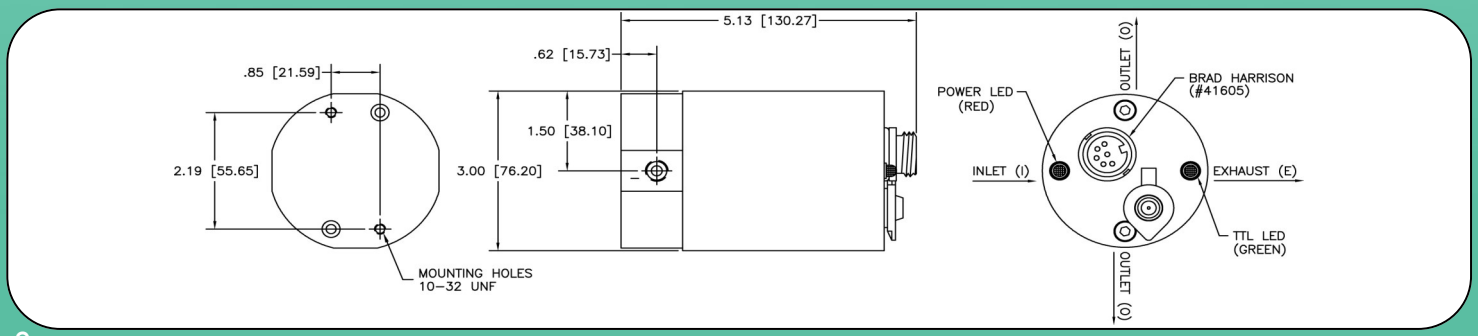
A Proportion Air DSY or DSTY will work as a second loop feedback to the GP2 (See ordering information).

The GP series can be teamed with a variety of one-to-one ratio high pressure volume boosters for even greater flow. When using a volume booster, the GP2 can be used to achieve accuracy similar to the GP1 alone with higher flow capacity.

GP series product comes with a monitor output signal. This output is an electrical signal originating from the internal sensor used in the control circuit of the GP1 valve. On GP2 units this signal originates from the external transducer. This allows the system parameters to be monitored and provides a signal for data acquisition needs. The output of this signal can be configured to either 0-10Vdc or 4-20mA.

The GP series has several other beneficial features. An on board split power supply allows true zero for command and monitor even though the GP is powered by a conventional single ended power supply. The GP utilizes advanced on board power management hardware to minimize current draw and heat build up. The GP also features status indication LED's for power and TTL. The TTL signal is a conditional on/off signal to use for diagnostic purposes. This signal is Low when the pressure is within 1% of desired setting.

GP DIMENSIONS inches [mm]



GENERAL SPECIFICATIONS & PERFORMANCE CHARACTERISTICS

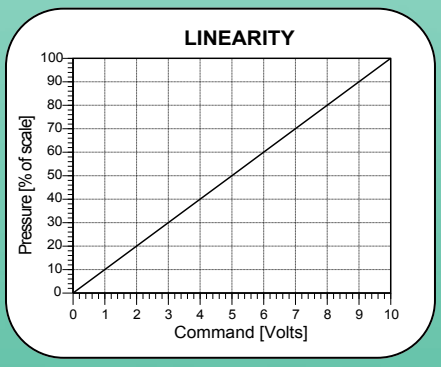
ELECTRICAL	MINIMUM	TYPICAL	MAXIMUM
Supply Voltage	15VDC	-	24VDC
Supply Current	100mADC	-	950mADC
Command Signal			
Voltage (differential)	0VDC	-	10VDC
Current (differential)	4mADC	-	20mADC
Analog Monitor Output			
Voltage	0VDC	-	10VDC
Current (Sourcing)	4mADC	-	20mADC
TTL			
Satisfied	-	0VDC	-
Not-Satisfied	-	5VDC	-
2nd Loop Input	0VDC	-	10VDC

PNEUMATIC	MINIMUM	TYPICAL	MAXIMUM
Inlet Pressure	Vacuum	110% of full scale calibration	1100 psig (75.84 bar)*
Pressure Range (1) (2)	Vacuum	-	1000 psig (68.95 bar)
Flow Rate	0	-	10 SCFM (17 m³/hr)
Filtration Required	40 micron	20 micron (supplied with unit)	-
Accuracy (Pressure)	±0.1%F.S.	±0.25%F.S.	±0.5%F.S.
Accuracy (Monitor)	-	±0.3%F.S.	±0.5%F.S.
Hysteresis (3)	0%F.S.	±0.2%F.S.	±0.5%F.S.
Port Size (all)	-	1/8 inch NPT Female (1/8 inch BSPP Optional)	-
Critical Volume (4)	-	3 in³	-

PHYSICAL	MINIMUM	TYPICAL	MAXIMUM
Operating Temperature	32ºF (0ºC)	-	158ºF (70ºC)
Environment Protection (5)	-	-	NEMA 4 (IP65)
Weight	-	Brass 3.75 LBS (1.75 KG)	-
	-	S.S. 3.73 LBS (1.73 KG)	-
Electrical Connector		6 pin molded 16 gauge wire	

* For valves with orifice size 1 & 2. Max inlet for orifice size 3 is 550psig.
(1) Pressure ranges are customer specified.
(2) Pressure range may be ordered as PSIG or PSIA.
(3) User adjustable
(4) The minimum downstream closed volume is determined by the pressure range, orifice size, hysteresis window, plumbing, as well as other factors. Consult factory for small volume applications.
(5) CE approval pending.

This chart shows linear characteristics of GP products when given a ramp signal from 0-10 volts. Characteristics would be similar for 4-20mA units



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ONE PRODUCT THOUSANDS OF WAYS

Proportion-Air products are warranted to the original purchaser only against defects in material or workmanship for one (1) year from the date of manufacture. The extent of Proportion-Air's liability under this warranty is limited to repair or replacement of the defective unit at Proportion-Air's option. Proportion-Air shall have no liability under this warranty where improper installation or filtration occurred.

All specifications are subject to change without notice. **THIS WARRANTY IS GIVEN IN LIEU OF, AND BUYER HEREBY EXPRESSLY WAIVES, WARRANTIES OR LIABILITIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY OBLIGATION OF PROPORTION-AIR WITH REGARD TO CONSEQUENTIAL DAMAGES, WARRANTIES OF MERCHANTABILITY, DESCRIPTION, AND FITNESS FOR A PARTICULAR PURPOSE.**

WARNING: Installation and use of this product should be under the supervision and control of properly qualified personnel in order to avoid the risk of injury or death.

Example Part Number :	GP	2	B	N	E	E	Z		P	500	PS	G	1	O2	TF
YOUR PART NUMBER :	GP														
Section ——>	1	2	3	4	5	6	7	8	9	10	11	12	13		

1 Type

1	Single Loop
2	Double Loop *(external feedback, Option 3D)*

2 Manifold Material

B	Brass *(Standard)*
S	303 Stainless Steel

3 Thread Type

N	NPT *(Standard)*
P	BSPP

4 Input Signal Range

E	0 to 10 Vdc	0 to 5 Vdc	K
I	4 to 20 mADC	1 to 5 Vdc	V

5 Monitor Signal Range

X	No Monitor	0 to 5 Vdc	K
E	0 to 10 Vdc	1 to 5 Vdc	V
S	4 to 20 mADC *(Sourcing)*		

6 Zero Offset

N	0% Pressure Starts Below Atmosphere
P	0% Pressure Starts Above Atmosphere
Z	0% Pressure Starts at Zero *(Typical)*

7 Zero Offset Pressure

14.7	**This is an example.** Your number will be the bottom of your desired pressure range. Most often your number will be '0'.

GP

8 Full Scale Pressure Type

N	100% Pressure Ends Below Atmosphere
P	100% Pressure Ends Above Atmosphere
Z	100% Pressure Ends at Zero

9 Full Scale Pressure

650	**This is an example.** Your number will be the top of your desired pressure range.

10 Pressure Unit

PS	PSI	Inches Hg	IH
MB	Millibars	Inches H2O	IW
BR	Bar	Mm H2O	MW
KP	Kilopascal	Kilograms cm²	KG
MP	Megapascal	Torr	TR
MH	mm Hg	Centimeters H2O	CW

11 Pressure Unit of Measure

A	Absolute Pressure
G	Gage Pressure

12 Valve Type

1	0.012"
2	1/32"
3	3/64"

Please Consult Factory for Valve Sizing Assistance

13 Popular Options

TF	Test & Calibrate Unit Under Flow
O2	Oxygen Cleaned
O3	Oxygen Cleaned for Non-Oxygen Use
HR	Use High Resolution PCB *(Valve Type '1' Only)*

Please call if you need assistance with your application