ISO Registered Company

TECHNICAL BULLETIN

5200P-TB
02-20

MODEL 5200P

INSTRUMENT AIR FILTER REGULATOR

MODEL 5200P

OVERVIEW

The Model 5200P Instrument Air Filter Regulator is designed to provide clean, accurate air pressure to instruments, valves, and other automatic control equipment. This filter regulator has been proven to provide accurate operating characteristics under variable conditions. Durable materials and a standard epoxy paint finish provide long lasting corrosion resistance in harsh environments. The Model 5200P is a quality unit that is ideal as an economical alternative for control of process applications.

FEATURES

- **STABLE OUTPUT AND REPEATABILITY -** Provides constant control under variable flow rates and supply pressures.
- **CORROSION-RESISTANT CONSTRUCTION -** Aluminum die-castings are finish with irridite and baked epoxy paint.
- **DEPTH FILTER -** Unit comes equipped with high capacity 5 micron filter housed in dripwell.
- **SELF RELIEVING**
- **LOW DROOP AT HIGH FLOW LEVELS -** Aspirator design helps maintain set pressure at higher flow levels.
- **TIGHT SHUTOFF -** A soft, rubberized valve provides a positive shutoff and compensates for dirt and other foreign matter.

APPLICATIONS

The Model 5200P is used extensively to supply air to pneumatic controllers, transmitters, transducers, valve positioners, air cylinders, and a wide range of pneumatic control systems.

LINE SIZES AVAILABLE
1/4" (DN8)

END CONNECTIONS
NPT

COMMON APPLICATIONS
SUPPLIES AIR TO PNEUMATIC CONTROLLERS, TRANSMITTERS, TRANSDUCERS, VALVE POSITIONERS, AIR CYLINDERS

DESIGN PRESSURE
INLET: UP TO 250 psig (17.2 Barg)

SPECIFICATIONS

Connections:	1/4" NPT female, all ports.
Body & Spring Chamber:	Die-cast aluminum alloy.
Additional Materials:	Brass, Zinc Plated Steel, Acetal.
Mounting:	Pipe or Through Body.
Diaphragm:	Nitrile Elastomer and Nylon Fabric.
Valve Seat Plug:	Nitrile Elastomer.
Filter:	5 Micron Phenolic Impregnated Cellulose
Maximum Inlet:	250 psig (17.2 Barg).
Adjustable Range Springs:	0– 30 psig (0–2.1 Barg). 0– 60 psig (0–4.1 Barg). 0–120 psig (0–8.3 Barg).
Capacity:	22 SCFM (1320 SCFH) (37.37 m^3/hr) with 100 psig (6.9 Barg) inlet and 20 psig (1.4 Barg) outlet.
Exhaust Capacity:	0.1 SCFM (6.0 Sm^3/hr) (.17 m^3/hr) with downstream pressure 5 psig (.34 Barg) above setpoint.
Sensitivity:	1” (2.5 cm) of water.
Air Consumption:	Less than 5 SCFH (.14 Sm^3/hr) (.13 Nm^3/hr).
Effect of Supply Pressure Variation:	Less than .2 psig (.01 Barg) for 25 psi (1.7 Bar) change.
Weight:	1.6 lbs. (725 g).
Option-2:	HANDWHEEL. Utilize when pressure setting changes are frequent.
Option-5:	MOUNTING BRACKET. Zinc-plated steel bracket for side mounting.

PRINCIPLE OF OPERATION

Turning the adjusting screw changes the force exerted by the range spring on the diaphragm assembly. In equilibrium of set pressure, the force exerted by the range spring is balanced by the force form the output pressure acting underneath the diaphragm assembly.

An unbalanced state between the output pressure and the set pressure causes a corresponding reaction in the diaphragm and supply valve assemblies. If the output pressure rises above the set pressure, an upward force is exerted on the diaphragm assembly causing the relief seat to lift and open. Excess pressure is vented to atmosphere until equilibrium is reached. If the output pressure drops below the set pressure the unbalance force of the range spring causes a downward force on the diaphragm assembly. The supply valve then opens until the pressure builds up once more to the equilibrium condition.

Under forward flow conditions, the range spring force is balanced by the diaphragm pressure force, with the supply valve open just enough to maintain the required equilibrium pressure. When high flow occurs, a specially designed aspirator helps maintain downstream pressure and compensates for droop.

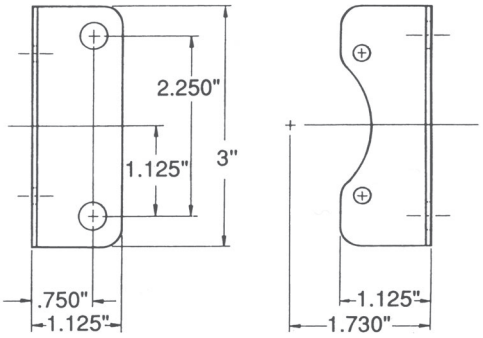
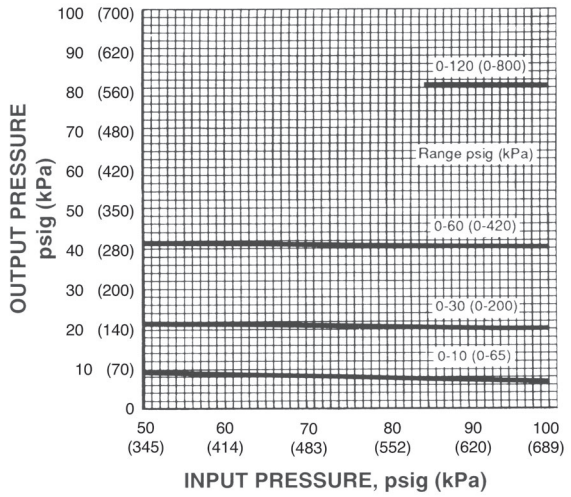


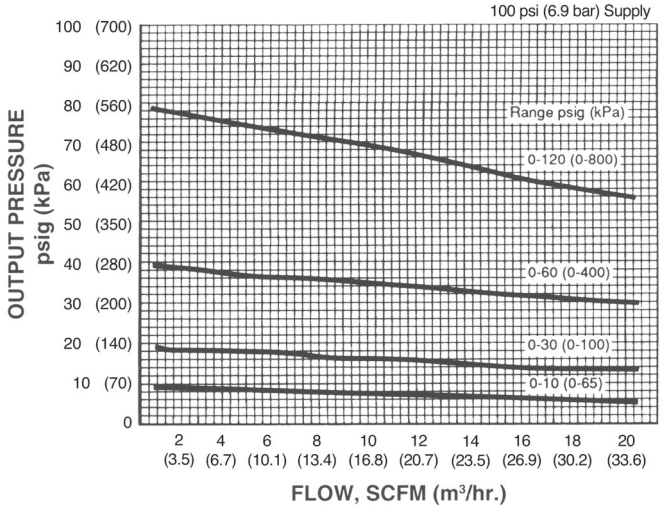
Figure 2: Option-5 Mounting Bracket

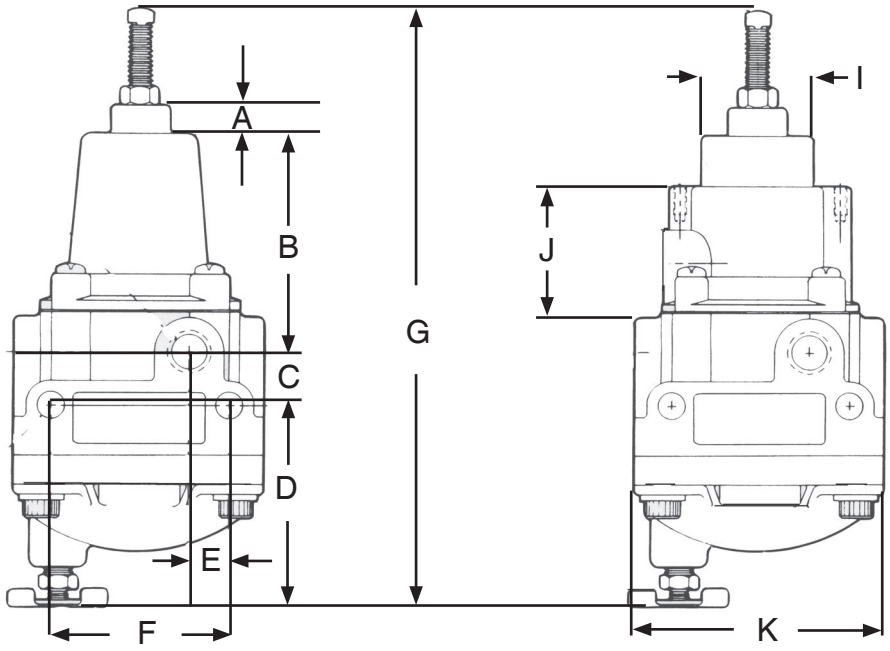
PERFORMANCE CHARACTERISTICS

EFFECTS OF UPSTREAM PRESSURE VARIATIONS ON REGULATED PRESSURE



EFFECTS OF CHANGES IN FLOW ON REGULATED PRESSURE





DIMENSIONS AND WEIGHTS

ENGLISH UNITS (Inches)											
1/4" Body Size	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**I**	**J**	**K**	**Ship Weight**
Standard	.38	2.82	.69	2.59	.50	2.25	7.75	1.44	2.16	3.13	1.6 lbs.
-2 (Handwheel)	.38	2.82	.69	2.59	.50	2.25		1.44	2.16	3.13	
-5 (Mtg. Bracket)	.38	2.82	.69	2.59	.50	2.25		1.44	2.16	3.13	

PRODUCT CODE 02/07/20

POSITION 11 - RANGE SPRING		
psig	**Barg**	**CODE**
0-30	0-2.1	**1**
0-60	0-4.1	**2**
0-120	0-8.3	**3**

5 2 2 – 0 0 0 7 – 1 [ ] [ ] [ ] 0 0 0 0 A

Model 5200P Airset

ASSIGNMENT OF "OPTION" CODES

1. When ordering a valve per one of Cashco's special drawings, the code "X" and the 5-digit number following override all other options. Otherwise, proceed with the following.
2. NUMERIC digits assigned first in "ascending" order.
3. ALPHA designations are assigned second (excluding the "X") in "alphabetical" order.
4. Left justify.
5. Add "0" to all unused squares.
6. If insufficient quantity of squares, consult factory for proper code.

POSITION 12 - OPTIONS		
Description	**Option**	**CODE**
None	–	**0**
Handwheel	-2	**2**
Mounting Bracket	-5	**5**

*** For information on ATEX see pages 3 & 4 on the IOM.**

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