CURRENT TO PRESSURE (I/P) CONVERTER

Control Air
3-15 to 3-120 psi

IP210A and IP210 Series

2 YEAR WARRANTY

IP210A-X15

- **Loop Powered**
- **Ideal for Pneumatic Control Systems**
- **IP65 Sealed Case / NEMA 4 Type Enclosure**
- **Zero and Span Adjustments for Field Calibration**
- **Rugged Zinc-Die Cast Housing**

IP210-X15

A “current to pressure” converter (I/P) converts an analog signal (4 to 20 mA) to a proportional linear pneumatic output (3 to 15 psig). Its purpose is to translate the analog output from a control system into a precise, repeatable pressure value to control pneumatic actuators/ operators, pneumatic valves, dampers, vanes, etc.
Both IP210 and IP210A are loop-powered instruments, which eliminates the need for an external power supply (except for IP210-X120).

Principle of Operation

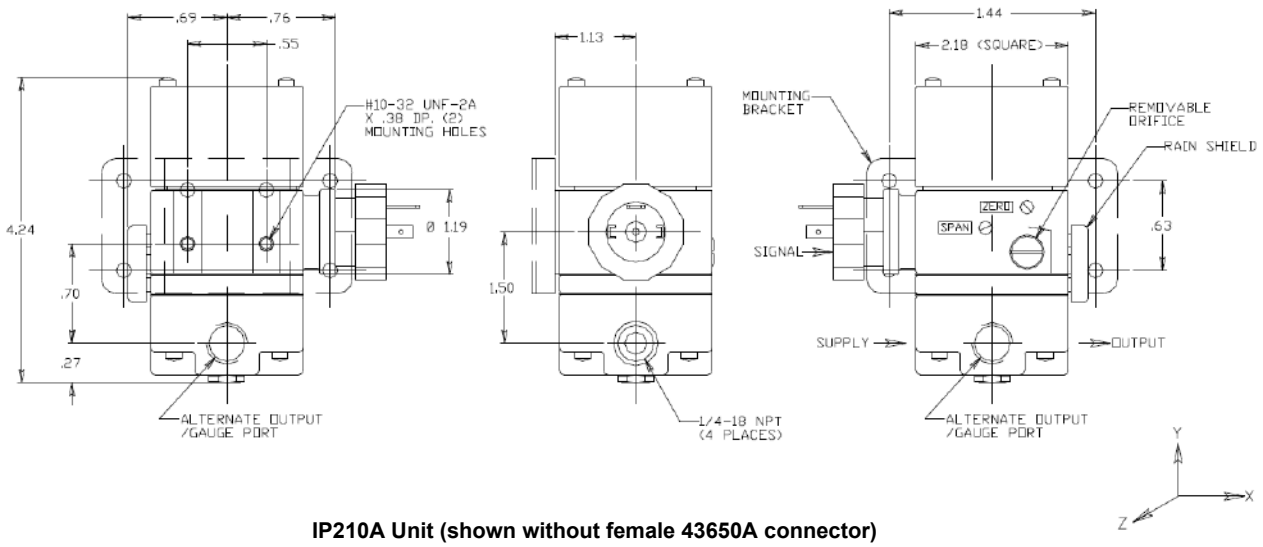
OMEGA’s IP210 and IP210A convert an analog signal (4 to 20 mA) to a proportional linear pneumatic output (3 to 15 psig). Its uncomplicated design and proven electromagnetic force balance deliver consistently high performance.

Both Series provide a reliable, repeatable, accurate means of converting an electrical signal into pneumatic pressure. Its force balance principle is a coil suspended in a magnetic field on a flexible mount. At the lower end of the coil is a flapper valve that operates against a precision ground nozzle to create a backpressure on the servo diaphragm of a booster relay.

The input current flows in the coil and produces a force between the coil and the flapper valve, which controls the servo pressure and the output pressure.

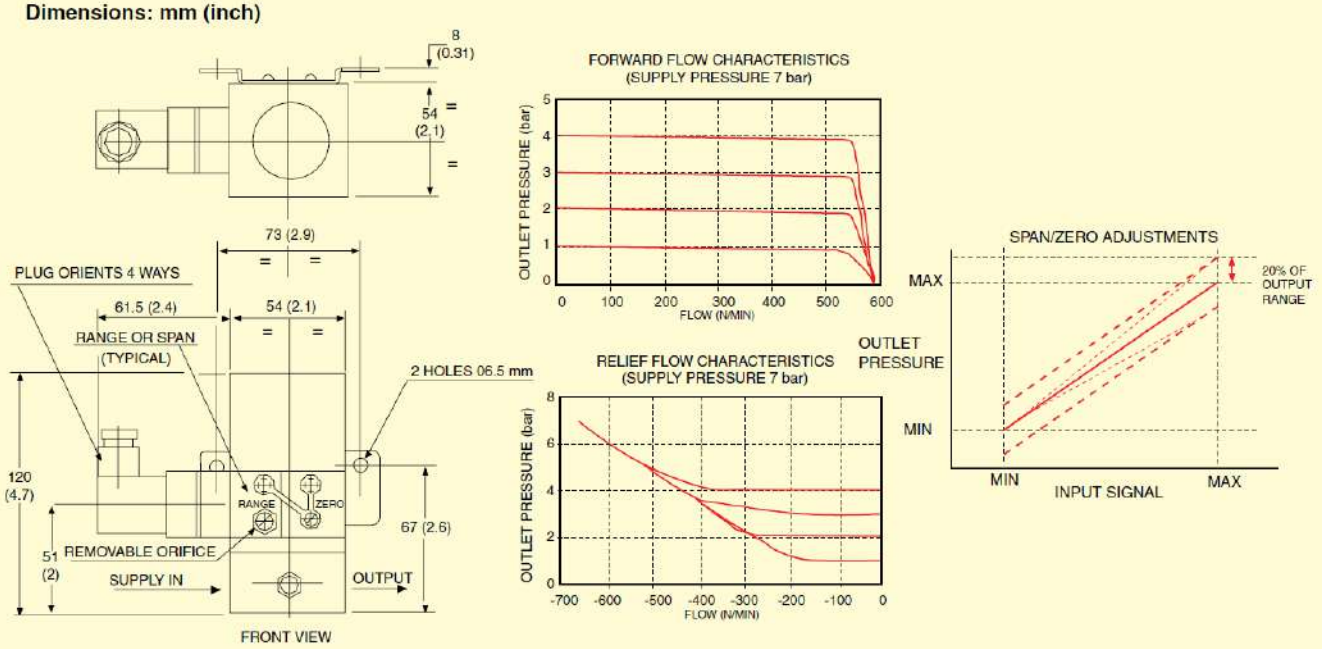
Zero adjustment of the unit is made by turning a screw that regulates the distance between the flapper valve and the air nozzle. Span adjustment is made by varying a potentiometer, which shunts input current past the coil. An integral volume flow booster provides adequate flow capacity, resulting in fast response time and accurate control.

Dimensions: inch



IP210A Unit (shown without female 43650A connector)

Dimensions: mm (inch)



IP210 Unit and Flow Characteristics

IP210A and IP210 Series Specifications:

SERIES	IP210A Series		IP210 Series
MODEL NO.	IP210A-X15 IP210A-X30	IP210A-X60 IP210A-X120	IP210-X15, IP210-X30, IP210-X60, IP210-X120
Accuracy	±1.5% FS	±2.3% FS	±0.5% FS
Linearity	<1.0% of span	<2.0% of span	-
Repeatability	<0.5% of span	<0.5% of span	-
Hysteresis	<1.0% of span	<1.0% of span	-
Supply Sensitivity	±0.15% span per 1.5 psig	±0.004% span per 1.0 psig	0.025% span per % supply pressure change
Max Supply Pressure	100 psi	150 psi	80 psig (for IP210-X120: 135 psi)
Min Supply Pressure	3 psi above maximum output pressure	5 psi above maximum output pressure	10 psi above maximum output pressure
Air Consumption	0.1 SCFM	0.07 SCFM	0.03 SCFM
Operating Temp	-29 to 60 °C (-20 to 140 °F)		-20 to 70°C (5 to 160°F)
Pressure Port	1/4" FNPT		1/4" FNPT
Electrical Connection	DIN 43650 with screw terminals included		DIN 43650 with screw terminals included
Flow Rate	12 SCFM for 2-60 psi ; 24 SCFM > 60 psi		10 scfm ≤60 psi; 0.06 <60 psi
Input Resistance	<300 Ω		<300 Ω
Media	Oil-free, Clean, Dry Air Filtered to 25 µm		Oil-free, clean, Dry Air Filtered to 25 µm
Housing	NEMA 4 Type, Epoxy-painted Zinc Die Castings		IP65 rated, Epoxy-Painted Zinc Die Castings

Construction:
Nitrile Diaphragms, nozzle and supply valve, integral surface mounting bracket included

Failure Mode:
Upon electrical failure, the signal pressure falls to bleed pressure

To Order

MODEL NO.	INPUT RANGE	OUTPUT RANGE
IP210-X15	4 to 20 mA	3 to 15 psig
IP210-X30	4 to 20 mA	3 to 30 psig
IP210-X60	4 to 20 mA	3 to 60 psig
IP210-X120	4 to 20 mA*	3 to 120 psig
IP210A-X15	4 to 20 mA	3 to 15 psig
IP210A-X30	4 to 20 mA	6 to 30 psig
IP210A-X60	4 to 20 mA	2 to 60 psig
IP210A-X120	4 to 20 mA	3 to 120 psig

** 3-wire system. External 24 Vdc power supply required.*
Comes complete with operator's manual.
***Ordering Examples: IP210-X15**, I/P converter, takes a 4 to 20 mA control signal and converts it into 3 to 15 psig control air.*
***IP210 A-X60**, I/P converter, takes a 4 to 20 mA control signal and converts it into 2 to 60 psig control air.*