

CURRENT TO PRESSURE (I/P) CONVERTER

Control Air
3-15 to 3-120 psi

IP210 Series



- ✓ Loop Powered
- ✓ Ideal for Pneumatic Control Systems
- ✓ IP65 Sealed Case
- ✓ Zero and Span Adjustments for Field Calibration
- ✓ Rugged Zinc-Cast Housing



IP210-X15 shown
actual size.

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. The IP210 is a loop-powered instrument, which eliminates the need for an external power supply (except for IP210-X120).

Principle of Operation

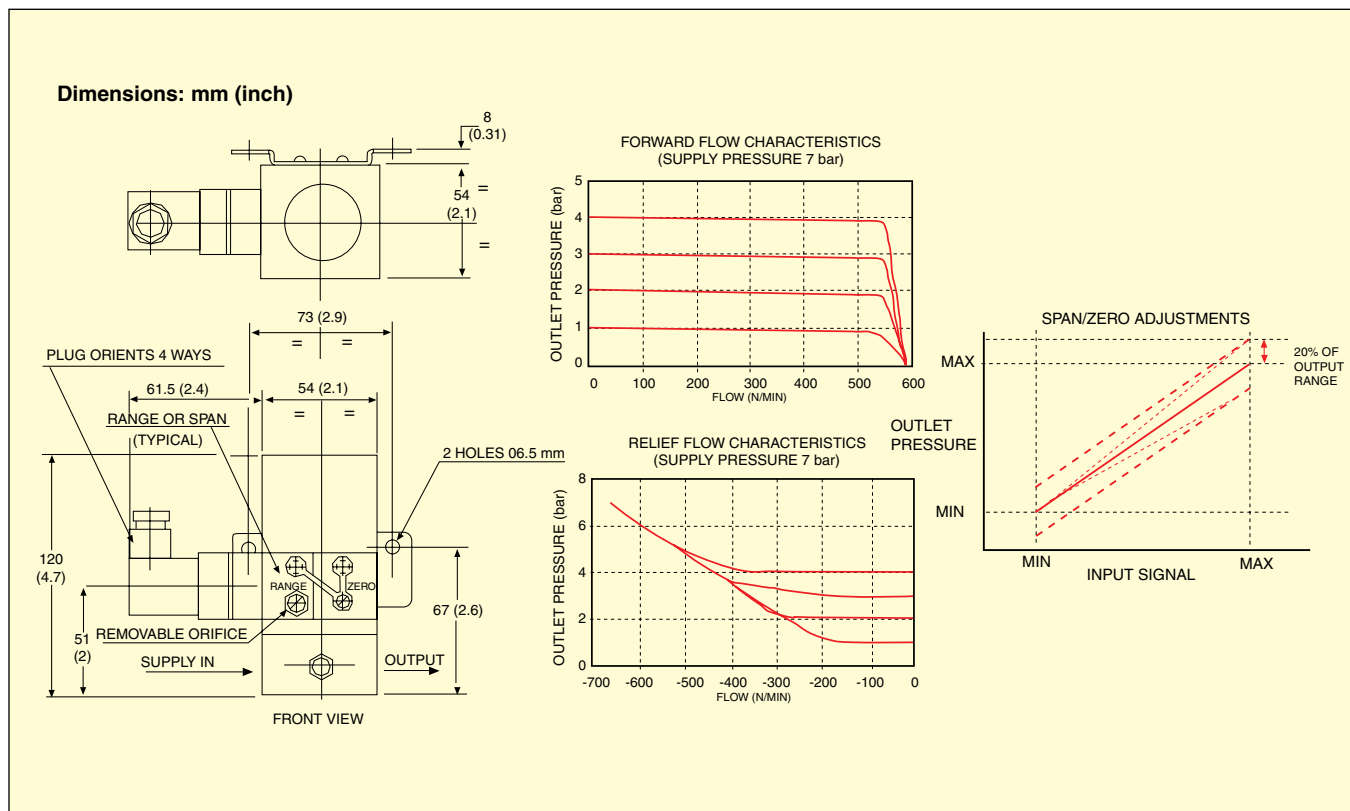
TRODEX's IP210 converts an analog signal (4 to 20 mA) to a proportional linear pneumatic output (3 to 15 psig). Its uncomplicated design and proven electromagnetic force balance deliver consistently high performance.

The IP210 provides 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.

LOOP-POWERED ELECTROPNEUMATIC CONTROL



SPECIFICATIONS

Accuracy: 0.5% FS

Supply Sensitivity: 0.025% span per % supply pressure change

Zero Adjustment: 5% FS

Span Adjustment: 20% FS

Operating Temp:

-20 to 70°C (-5 to 160°F)

Compensated Temp:

-10 to 60°C (15 to 140°F)

Thermal Effects:

<0.1%/°C over operating range

Input Resistance: <300 Ω

Media: Oil-free, clean, dry air filtered to 25 µm

Recommended Supply Pressure: 25 to 30 psig (filtered air)

Max Supply Pressure: 80 psig (for IP210-X120: 135 psi)

Min Supply Pressure: 10 psi above maximum output pressure

Air Consumption (Leakage): 0.03 scfm

Flow Rate: 10 scfm ≤60 psi;
0.06 >60 psi

Response Time: <30 psi
[less than 0.5 s (10 to 90% step);
≥30 psi: 2 s]

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

Pressure Port: ¼ FNPT

Electrical Connection: DIN 43650 with screw terminals included

Housing: IP65 rated, epoxy-painted zinc die castings

Construction: Nitrile diaphragms, stainless steel/nylon flapper, nozzle and supply valve, integral surface mounting bracket included

Weight: 1.7 kg (3 lb)

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

* 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-X60, I/P converter, takes a 4 to 20 mA control signal and converts it into 3 to 60 psig control air.