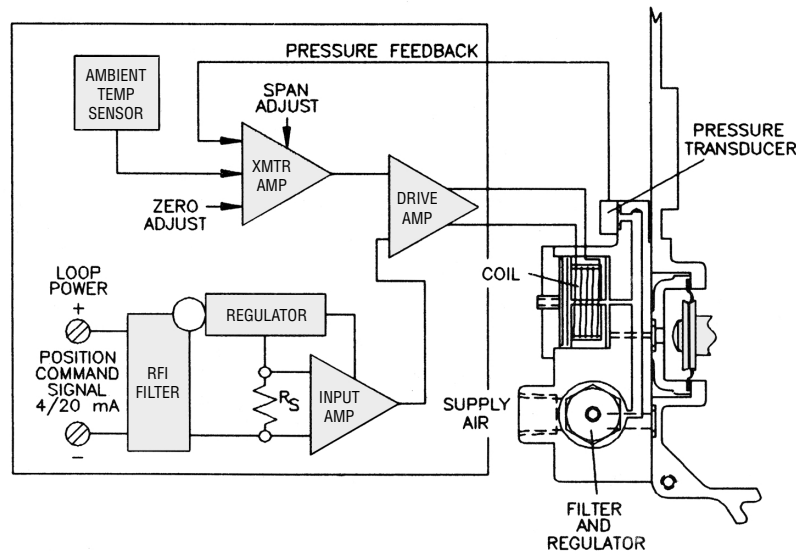


Principles of Operation:



The Apex 5100 I/P Module converts 4-20 mA current signals into 3-15 psi pneumatic signals needed by the Apex 5000 Positioner. A controller card compares the input signal with an electrical pressure feedback signal and outputs voltage, which is applied to a coil.

The coil voltage varies a magnetic field strength which influences a metallic diaphragm. This diaphragm throttles air flow out of the positioner input chamber (supplied by the internal regulator). As voltage and field strength increase, the diaphragm moves closer to the coil nozzle, reducing air flow and increasing positioner input chamber pressure.

The controller circuit board features temperature compensation and input signal filtration to provide accurate 3-15 psi output signals.

Representative:

APEX 5100 Current-to-Pressure Transducer (I/P Module)

Introduction:

The Apex 5100 I/P Module provides accurate 3-15 psi pneumatic signals for the Apex 5000 Positioner (shown). It receives 4-20 mA current input and only requires six volts to operate. The 5100 I/P has many advanced features including: RFI protection, internal closed loop control, integral filter (for start-up protection), and automatic temperature compensation.



Applications:

The Apex 5100 I/P Module's internal closed loop control system makes it insensitive to installed position. In addition, this feature enables steady output under the most severe vibration. This transducer may only be used with the **Apex Modular Positioning System (A.M.P.S.)**

The Apex 5100 is designed to NEMA 4 specifications. It requires only 6 volts minimum DC power, enabling series operation with other devices on 24 VDC current loops.

The I/P housing is constructed of durable die-cast aluminum and treated with a dichromate undercoat and polyester powder top coat for protection against the toughest applications in all process industries including:

1. Chemical and Petro-Chemical
2. Power
3. Food and Beverage
4. Pharmaceutical
5. Municipal
6. Wastewater treatment



Features:

1. RFI immunity to both externally radiated RF and cable-conducted RF is provided by a conductive housing and signal input filters.
2. Current loop connections are highly accessible and deplugable simplifying installation.
3. LED loop power indication simplifies troubleshooting.
4. Sensors automatically compensate for temperature fluctuations.
5. Internal regulator compensates for supply pressure changes.
6. Pressure feedback for precise output control, regardless of position, even under heavy vibration.
7. Internal zero and span calibration.
8. Integral filter provides initial startup protection against tubing scale or dirt.

*Note: the integral filter is **not** designed to act as a permanent source of clean, dry air.*

Accord Controls
A Unit of Flowserve Corporation

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Materials of Construction:

Part	Materials
Housing/Cover	Aluminum w/Dichromate/Powdercoat
Regulator	Plated Steel
Regulator and Filter Covers	Stainless Steel
Coil/Nozzle Assembly	Plated Steel
Coil Retainer	Anodized Aluminum
All Fasteners	Stainless Steel
All O-ring Seals & Gaskets	Nitrile Rubber

Performance Specs: Apex 5000 w/ 5100 I/P Module

Parameter	Units	Value
Resolution	% Full Scale	0.5
Deadband	% Full Scale	0.5
Repeatability	% Full Scale	0.5
Hysteresis	% Full Scale	0.5
Linearity	% Full Scale	1
Gain - Low Flow	%/%	15-50
High Flow	%/%	30-110
Max Flow	%/%	50-150
Supply Pressure Effect	%/1 PSIG	0.05
Supply Pressure Range	PSIG	30-120
Air Consumption	SCFM	0.3
Ambient Temp. Range	Degrees F	-40 to 180
Temperature Effect	%/1 Deg. F	0.5
Input Signal	mA	4-20
Signal Voltage	VDC	6-30

Dimensions: Apex 5000 w/ 5100 I/P Module

