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ELECTROPNEUMATIC TRANSDUCER SERIES IP6000

The Valtorc IP6000 Transducer converts a current or voltage input signal to a linearly proportional pneumatic output pressure. This versatile instrument is designed for control applications that require a high degree of reliability and repeatability at an economical cost. Optional NEMA 4X (IP65) version allows for splashdown and outdoor installation. Typically, these units are used for applications that require the operation of valve actuators, pneumatic valve positioners, damper and louver actuators, final control elements, relays, air cylinders, web tensioners, clutches, and brakes. Industries that utilize the IP6000 include Petrochemical, HVAC, Energy Management, Textile, Paper, Paper Converting, Food and Drug

Features

- Low Cost
- Integral Volume Booster
- Compact Size
- Low Air Consumption
- Field Reversible
- Flexible Zero & Span Adjustments
- Standard Process Inputs
- Split Ranging

The IP6000 is available in two different versions. The lower range model is designed for standard process control applications which typically utilize a 3 to 15 psig output. The extended range unit provides up to 120 psig output for higher pressure industrial pneumatic and process control system requirements.

Principle of Operation

The IP6000 Transducer is a force balance device in which a coil is suspended in the field of a magnet by a flexure. Current flowing through the coil generates axial movement of the coil and flexure. The flexure moves towards the nozzle and creates back pressure which acts as a pilot pressure to an integral booster relay. Input signal increases (or decreases for reverse acting) cause proportional output pressure increases.

Zero and Span are calibrated by turning adjust screws on the front face of the unit. Adjustment of the zero screw repositions the nozzle relative to the flexure. The span adjustment is a potentiometer that controls the amount of current through the coil.

NEMA-4X (IP65) Enclosure

Optional Factory Mutual NEMA 4X enclosure rating allows for installation in splashdown or outdoor environments. Unit also meets the requirements of IEC standards IP65.

Mounting

The IP6000 may be mounted by pipe, panel, or bracket. Field adjustment of the zero may be required if position is changed. High external vibration may cause output fluctuations. Mounting in a vibration-free area is recommended.

Split Ranging

If split ranging is required the 4-20 mA input, 3-15 psig output version can be recalibrated to provide a 3-9 psig or 9-15 psig output.

Intrinsically Safe

The IP6000 has been tested and approved by Factory Mutual as Intrinsically Safe Class I, II, and III, Division 1, Groups C, D, E, F and G when used with an apparatus meeting the following entity requirements:

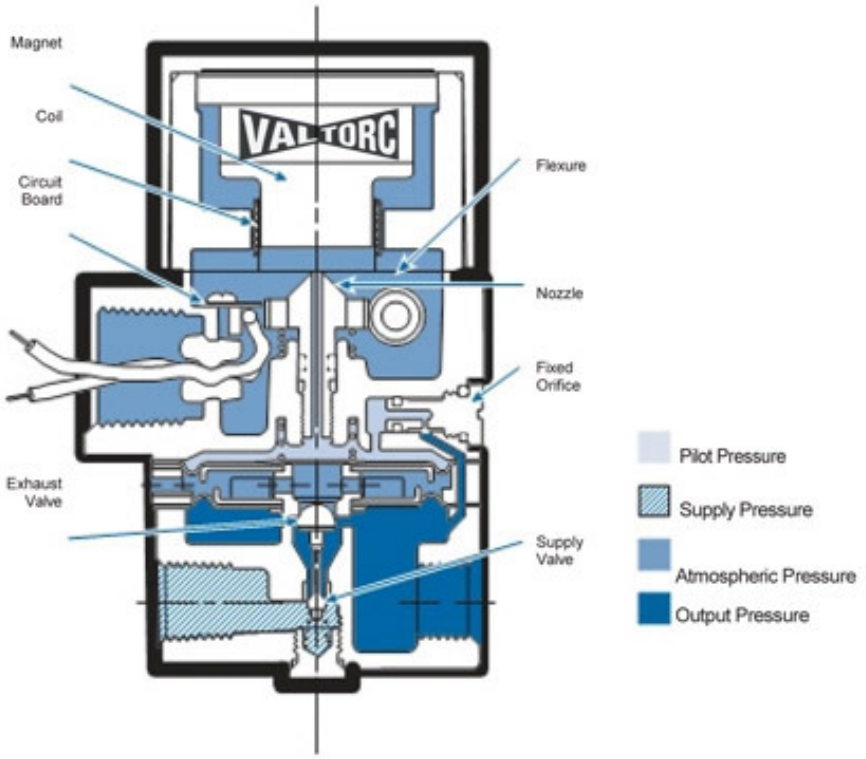
Vmax = 29.9 V C_i = 0 **C_i is capitance**
Imax = 65 mA L_i = 35 mH L_i is inductance

This drawing is included in the IP6000 Installation, Operation and Maintenance Instruction. The Intrinsically Safe approval is a standard feature of the IP6000 and applies only to units with a 4-20 mA input signal that are installed with the following barriers:

The IP6000 is also Factory Mutual Approved as Nonincendive for Class I, Division 2, Groups A, B, C and D, and suitable for Class II and III, Division 2, Group F and G. Barriers are not required for nonincendive rating.

Field Reversible

In the reverse acting mode the output is the opposite of the direct acting mode (i.e. 4-20 mA input creates a 15-3 psig output). To change from direct acting to reverse acting simply reverse the polarity of the signal leads and recalibrate. Input signal failure causes output pressure to reach maximum value (i.e. 15 psig) when reverse acting.



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Specifications

	LOW OUTPUT RANGE (UP TO 30 PSIG)	HIGH OUTPUT RANGE (UP TO 120 PSIG)
Min./Max. Supply Pressure	Minimum - 3 psig (.21 BAR) Above maximum output Maximum - 100 psig (7 BAR)	Minimum - 5 psig (0.35 BAR) above maximum output Maximum - 150 psig (10.5 BAR)
Supply Pressure Sensitivity	<± 0.1% of span per psig (<± 0.15% of span per 0.1 BAR)	<± .04% of span per 1.0 psig (0.07 BAR)
Terminal Based Linearity	<± 0.75% of span	<± 1.5% of span typical, ± 2.0% max.
Repeatability	< 0.5% of span	< 0.5% of span
Hysteresis	< 1.0% of span	< 0.5% of span
Response Time	Dependent on pressure range - typically less than 0.25 sec for 3-15 psig units	
Flow Rate	4.5 scfm (7.6 m3/hr ANR) at 25 psig (1.7 BAR) supply 12.0 scfm (20.0 m3/hr ANR) at 100 psig (6.8 BAR) supply	20.0 scfm (34.0 m3/hr) at 150 psig (10.5 BAR) supply
Relief Capacity	2 scfm (3.4 m3/hr) at 5 psig (2.4 BAR) above 20 psig (1.3 BAR) setpoint	7 scfm (11.9 m3/hr) at 10 psig (0.7 BAR) above 20 psig (1.3 BAR) setpoint
Maximum Air Consumption	.05 scfm (.07 m3/hr) midrange typical	.07 scfm (.14 m3/hr) midrange typical
Media	Oil free, clean dry air filtered to 40 micron	
Temp. Range (Operating)	-20°F to +140°F (-30°C to 60°C)	
Port Sizes	1/4 NPT (Pneumatic) 1/2 NPT (Electric)	1/4 NPT (Pneumatic) 1/2 NPT (Electric)
Weight	2.1 lbs. (0.94 kg)	2.1 lbs. (0.94 kg)

IP6000 DIMENSIONAL DRAWINGS