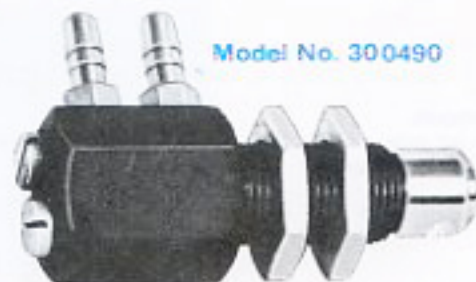


Cone-Jet Proximity Sensors



NOTE: Location of the connectors can be moved to alternate ports. (See figure 2)

FEATURES

- Senses the proximity of objects without physical contact up to 0.2 inch maximum.
- No moving parts to bind or wear out.
- Repeatability within 0.005 inch.
- Impervious to severe industrial environments.
- Easily installed — no mechanical cams to set or overtravel to consider.
- Exceptionally fast response time.
- Complete safety for hazardous atmospheres.

OPERATIONAL CONSIDERATIONS

In its simplest form, the Cone-Jet Proximity Sensor is connected as in Figures 1 and 2. Both signal and supply ports have barbed or threaded connectors for .25" OD plastic tubing. The output impedance is low and flow recovery high enough to control other devices operating at the same supply pressure as the Cone-Jet at sensing gaps up to 0.2 inch. The converging flow of high velocity gas allows precision in sensing edges, steps, grooves (as small as .0625 inch), or small diameter objects, and even cloth or screen mesh.

Flow to the signal port of the device is from within the conical flow pattern so that contamination from the surroundings cannot reach a control port through the sensor.

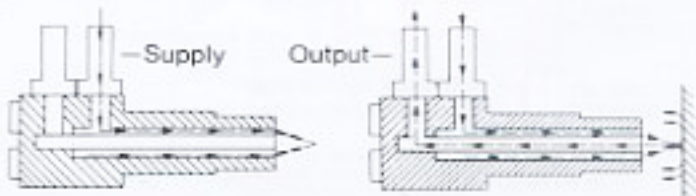
The recovery pressure of the Cone-Jet Proximity Sensor is so nearly directly related to supply pressure that a dimensionless curve of pressure recovery versus sensing gap can be made (Figure 4)

APPLICATIONS

The Cone-Jet can sense, without contact, the presence or absence of a physical body or liquid surface regardless of its material composition. This unique capability makes it an ideal device for sensing:

- (1) Non-magnetic bodies such as chrome, paper boxes, and wood.
- (2) Optically translucent material such as glass and clear plastic.
- (3) Non-rigid material such as cloth, mesh, and paper.
- (4) Liquid level surfaces
- (5) Surfaces which cannot be touched.

The Cone-Jet is an excellent substitute for mechanical limit valves where speed, long life, and accuracy are mandatory.



GENERAL DESCRIPTION

The Cone-Jet Proximity Sensor is a no-moving-part device which permits sensing the presence of objects without physical contact. It allows as much as ten times the sensing gap provided by ordinary back pressure sensors with far less flow consumption. Operation is based on the increase of pressure within a converging conical flow pattern when resistance to that flow is created by presence of an object or an opposing jet stream. The resulting pressure rise is recovered through the center tube and output port. It is operable on all gases. Operating characteristics are compatible with fluidic and conventional pneumatic logic and interface devices.

AXCO VALVE COMPANY

DIVISION OF AL KANDER CO., INC.
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SPECIFICATIONS

Sensing Gap: 0.2" max.
Supply Pressure: 2 to 35 psig
Air Consumption: See Figure 3
Pressure Recovery: See Figure 4
Typical Repeatability: 0.005" for movements perpendicular to jet axis
0.010" for co-axial movement

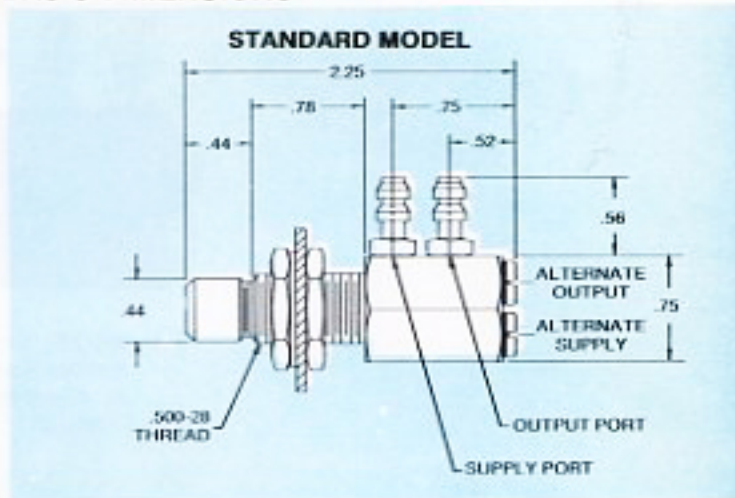
Temperature Range: -50 to 180°F — Aluminum model

Recommended Filtration of Supply Air: 40 micron

Response Speed: 1 ms

Life: Essentially limitless due to no moving part design.

BASIC DIMENSIONS



MODEL NUMBERS

Model No.	Materials		Ports
	Body	Washer	
300490	Anodized Aluminum	Neoprene	Barbed fittings for .25" O.D. plastic tubing

Other materials available on special order.

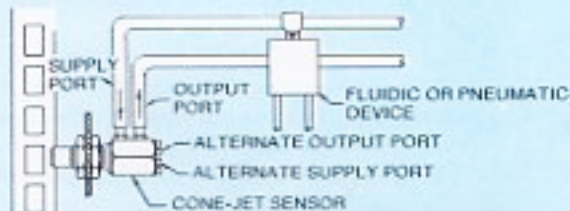


FIGURE 1
Typical Installation, illustrating Side Porting Arrangement

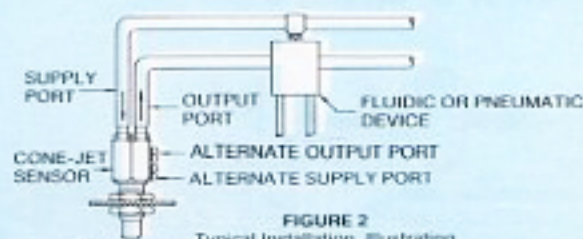


FIGURE 2
Typical Installation, illustrating Back Porting Arrangement

