

HYDRAULIC



Pressure Sensors, Transmitters and Transducers

OVERVIEW

American Sensor Technologies, Inc. (AST) supplies pressure sensors, transducers, and transmitters for hydraulic pressure measurement applications. The most popular product is the **AST4000** series. It is constructed using AST's **Krystal Bond™ Technology**. The sensor is constructed taking a single bar of high strength stainless steel, machining the threads and hex on the outside, then drilling the center. This MEMS technology has the thickest diaphragm in the pressure sensor industry. Combining this feature with strain gages that offer a high raw output signal, the AST sensor can be packaged with excellent proof (4X) and burst pressure (10X) capabilities, high cycle life, and long-term stability.



MECHANICAL

The AST4000 is available with 1/4" NPT Male, 7/16-20 UNF (SAE4) and 9/16-18 UNF (SAE6) pressure ports. AST can integrate a welded stainless steel restrictor plug inside the pressure port in order to reduce the inside diameter orifice size to protect against pressure transient common to hydraulic applications. For example, if a fork lift has a full load on the forks and drops the load onto a concrete floor at full speed, the hydraulic system will see a pressure transient exceeding the limits of the pressure sensor. The restrictor plug dampens the pressure spike and protects the diaphragm of the sensor. The AST restrictor plug, also referred to as a snubber, is on the inside of the port rather than an added adapter. This can reduce the overall length and weight of sensors that use external restrictor plugs.

The AST family of hydraulic pressure sensors offer flexibility in the connection type. With a variety of cable lengths, the customer can connect to their electronics with ease. Depending on the output signal, AST will recommend maximum distances to run the cable to limit signal loss. AST also offers a full line of connectors that are integrated into the housing of the pressure sensor including: Deutsch DT04, M12x1, Packard Metripack 150, Bendix, and Hirschmann. For OEM applications, AST can also offer a custom cable assembly with specific cable lengths and integral connectors.

APPLICATIONS

- Fork Lifts
- Scissor Jacks
- Man Lifts
- Pumps
- Accumulators
- Valve Controls
- Trash Compactors
- Test Stands



ENVIRONMENTAL

A customer can package the sensor with the electronics sealed from the outside environment. Known as Sealed Gauge, the pressure sensor is calibrated to the barometric pressure of the date of calibration. This will prevent moisture and dust from entering the pressure sensor for

Common Option Codes For AST Pressure Sensors	
Option Code	Description
009	Sealed Gauge Reference
117	Internal Restrictor Plug
129	4X Proof Pressure
165	Internal Restrictor Plug and Sealed Gauge Reference
212	4X Proof Pressure and Sealed Gauge Reference
262	4X Proof Pressure and Internal Restrictor Plug
367	4X Proof Pressure, Sealed Gauge Reference, and Internal Restrictor Plug

gauge pressure sensors. Because gauge pressure sensors are referenced to the atmosphere, they typically "breathe" through a vent tube in the cable jacket or through a hole in the connector. Sealing the pressure sensor is common for hydraulic applications because the pressure ranges are high enough that the difference

in barometric pressure from location to location and day to day is insignificant as a percentage of the measurement range. The better trade-off is to protect the sensor from humidity, dust, icing, and high pressure wash-down.



ELECTRICAL

The product features a welded housing, to shield from electrical interference and protect the electronics of the sensor from application environments and tough installations.

The electronics of the pressure sensor also have EMI (Electromagnetic Interference) and RFI (Radio Frequency Interference) protection to the latest CE standards for industrial equipment.

