



Installation Guide – P500 High Performance OEM Pressure Sensor



WARNING!
Read Before
Installation of P500
Pressure Sensor

DO NOT use the P500 without reading the installation guide in its entirety. Failure to do so may result in death or serious injury.

1. General Information:

A failure resulting in injury or damage may be caused by excessive overpressure, excessive vibration or pressure pulsation, excessive instrument temperature, corrosion of the pressure containing parts, or other misuse. Should you have any questions prior to installation, contact Kavlico.

2. Overpressure:

Caution – DO NOT exceed the pressure overload rating of the P500. Failure to comply may result in irreversible electrical and/or mechanical failure to the pressure measuring and containing elements of the P500.

Both static and dynamic overloads must be considered, especially if the P500 is going to be installed in a hydraulic system application.

Hydraulic pressure fluctuations can result in very high and very fast peak pressures (i.e. water hammer effect).

To avoid damaging liquid surges, fluid lines should remain full (if possible) and pumps should be brought up to power slowly, and valves should be opened slowly. To avoid damage from both fluid hammer and surges a surge chamber should be installed.



If system pressure pulses are anticipated, select a P500 sensor with a pressure rating high enough to allow continuous operation at the highest expected pressure spikes.

3. Freezing:

DO NOT allow freezing of process media in the pressure port of the P500. The P500 should be drained (mount in a vertical position with electrical termination facing upward) to prevent possible overpressure damage from frozen media.

4. Use in Life Support Devices:

The P500 is not recommended for use as a critical component in a life support device or system without the express written approval of Kavlico.

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5. Use in Life Support Devices (cont.)

- A. Life support devices or systems are those which are (a) intended for surgical implant into the body, or (b) support to sustain life, and whose failure to perform, when properly used in accordance with the instructions for use provided in the product labeling, can be reasonably expected to result in a significant injury to the user.
- B. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Description:

The Kavlico P500 Pressure Sensor is a high performance instrument that is intended for use in industrial applications where the process media to be measured is compatible with 304 stainless steel or Brass.

Mechanical Installation:

- A. Environmental – The P500 can be stored at -40°C to +125°C (-40°F to 257°F), and used within the temperature limits of -15°C to +125°C (5°F to 257°F).
- B. Mounting – The P500 does not require any special mounting hardware and can be mounted in any orientation with negligible mounting position error effect. The P500 can withstand substantial vibration without damage or significant output effect; however, it should always be a reasonable practice to mount the P500 where there is minimum vibration. For sensors with an NPT type pressure fitting, apply sealing tape or equivalent sealant to the threads prior to installation.

When installing or removing the P500, apply a wrench to the hex wrench flats which are located above the pressure fitting. DO NOT under any circumstances tighten by using a pipe wrench on the housing as this can cause significant damage to the P500. A wrench can only be used on the wrench flats of the hex. Do Not use a socket wrench as this can cause damage to the connector.

Electro-Magnetic Interference:

The electronic circuitry of the P500 has been designed to minimize the effect of electro-magnetic and radio frequency interference (RFI/EMI). To minimize susceptibility to noise, avoid running the termination wiring in a conduit that contains high current AC power cables. Where possible, also avoid running the termination wiring near inductive equipment.

Field Adjustments:

The P500 has been precisely calibrated and temperature compensated at the Kavlico factory to ensure long and stable performance. The P500 can not be adjusted in the field.

Electrical Installation:

Page 3 of the installation guide provides power supply requirements and the appropriate wiring instructions based upon the specific output signal and electrical termination features of the transmitter being installed.

Bench Test:

For incoming inspection or failure evaluation, connect the P500 to a dc voltage supply (off). The voltage supply should be set to 5 volts. Connect the output leads to a volt meter. With no pressure on the unit, turn on the power supply and read the output signal on the volt meter. The reading should correspond to the specification indicated for null offset. If not, check the connections, wire color code and the setting of the power supply.

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Safety Considerations:

- Prior to installing and start-up of the P500 Pressure Sensor, you should verify that you have selected the appropriate scale range, and that the P500 meets your desired performance and specific measurement conditions.
- You **MUST** observe the relevant local/national regulations and observe the applicable standards and directives for special applications (e.g. with dangerous media such as acetylene, flammable gasses or liquids and toxic gases or liquids and with refrigeration plants or compressors). **Should you NOT observe the appropriate regulations, serious injuries and/or damage can occur!**
- Open pressure connections only after the system is without pressure!
- DO NOT use the P500 outside of the overload threshold. Make sure that the device is used only within the overload threshold limit at all times.
- Observe the ambient working conditions of the P500.
- Only use the P500 with compatible liquids and gases and avoid installing the sensor in an environment with mechanical hazards.
- Only use the P500 in accordance with the installation guidelines as described within this document: **Installation Guide – P500 OEM Pressure Sensor**
- DO NOT interfere with or change the P500 pressure sensor in any way other than may be described within this installation guide.
- Should the P500 become damaged or unsafe for operation, remove it from service and mark it to prevent the sensor from being reinstalled accidentally.
- Should you be required to remove the P500 from service, take all necessary precautions with regard to the remaining process media that may still reside within the pressure port as it may be hazardous or toxic.
- Repairs to the P500 should be made by Kavlico only. To obtain a Return Material Authorization Number (RMA) call: **619-710-2000**
- Before removing the connector from the P500, make sure to open circuit.
- Additional information about the P500 in respect to features and specifications can be found in the P500 Data Sheet which can be found on the Kavlico website at: www.kavlico.com in the Resource Center.



Electrical Installation and Wiring Guide
P500 High Performance
OEM Pressure Sensor

