

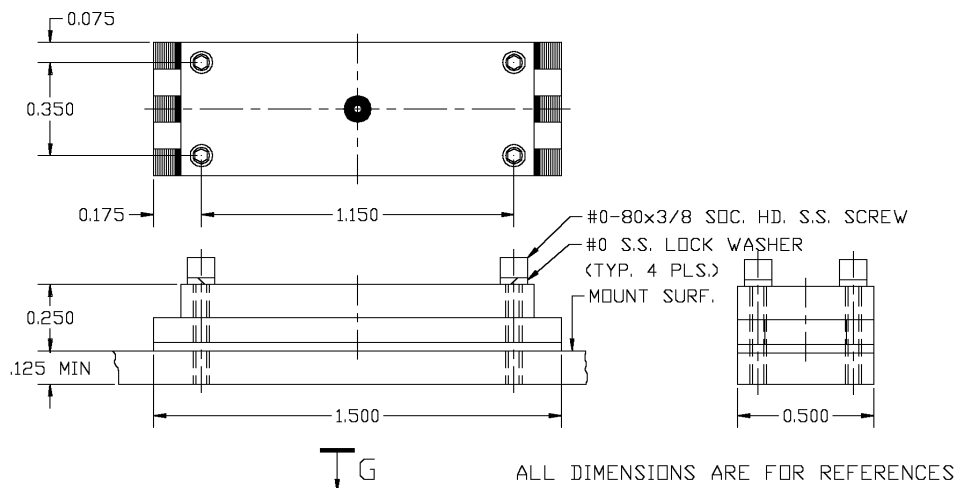
SX-003D-NULL

INSTALLATION APPLICATION NOTE

This application note provides users practical ideas and recommendations on how to properly install and wire the SX-003D-NULL sensor.

The main issue that the user should consider is the fact that in order to reliably measure angles the SX-003D-NULL sensor should be installed in a way that any thermal gradient along sensor's frame is minimized or removed completely. Only under these conditions can the user utilize the sensor to its full potential.

There are two approaches to thermal management of the SX-003D-NULL sensor. The first approach is based on installing the sensor on a temperature conductive material, while the second approach is centered on total thermal isolation of the sensor from the constantly thermally changing environment. It is important to note that in both cases the sensor should NOT be non-symmetrically exposed to direct winds, drafts, and/or positioned near extremely hot or cold components. In case the above is not observed, the sensor will not uniformly absorb the thermal energy which will result in a thermal gradient along its frame, thus shifting the NULL from its gravity referenced position.



The above drawing demonstrates proposed mounting arrangement which could be used for both temperature management approaches.

In case of the first approach the mounting surface indicated at the bottom of the drawing should be made of a thermally conductive material like Brass, Copper, Aluminum, Steel, etc. The user

must make sufficient accommodations for various thermal expansions that will occur during thermal changes. One way to reduce stress on the sensor during thermal changes is to use two mounting screws instead of four. In this case diagonally positioned screws should be selected.

In the second case the mounting surface should be produced from a rigid thermal insulator, preferably powdered Alumina. Due to the fact that this material is not as hard as Steel or Aluminum, no special precautions for temperature expansion are required.

It is also advised to use some type of a foam cover for additional insulation from direct wind or air turbulence which can create unwanted thermal gradients in the sensor. This is a global recommendation for both temperature management cases.

Customers may order raw or pre-made thermal insulator plates directly from AOSI upon request.