Opus-Two
INSTRUMENT CONTROL SYSTEMS

Linear Transducer Installation Guide

Introduction

Please read this guide in its entirety before putting in a single screw. This guide is based upon feedback from users and will help you install the transducer successfully the first time.

Theory of Operation

A Linear Transducer is a type of position sensor which is used to measure movement in a linear fashion. They do this by converting the linear displacement into electrical signals proportional to the displacement, thus making it usable by machines.

The transducer is provided with a supply voltage (5 volts in this case) and its output voltage will range from 0 volts (fully closed shoe) to 5 volts (fully open shoe). Linear transducers are extremely reliable so long as they are not used as the stop mechanism for the shoe. Transducers make very poor stops and will not continue to function for long in this role. Opus-Two controllers do not require full travel of the device and will calibrate to any minimum and maximum voltage readings for full closed and full open.

Tools and Materials Needed (per shoe)

- 1 liner transducer
- (2) angle bracket assemblies (one preinstalled)
    - each with socket head screw and locking nut
- (1) Hex L-Key (4mm)
- (4) #10 Sheet Metal Screws (2 each ½" and ¾")

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Orienting The Transducer

The top end (with the thin shaft) gets affixed to the swell shoe. Many swell shoes have existing brackets that this end can be attached to. If they do not, an additional angle bracket is supplied if that is necessary.

The bottom of the transducer (the end that gets mounted to the console) is the end with the cable coming from it. This end should be attached to a fixed surface with no movement whatsoever.

The cable should not be strapped tightly but should form a “loop” to relieve stress as the transducer pivots.

In an ideal installation, the shoe should stop mechanically before the transducer does. Account for felt wear when making this calculation. A transducer travels almost 3” full travel; an acceptable result can be obtained from just half that travel.

Wiring The Transducer

Brown Wire – 5 Volts

White Wire – Analog Return

Green Wire – 0V / Common

An Analog Distribution Board is available to convert the 6 pin analog header to 4 3 pin connectors that directly connect to transducers.