

SEVERE ENVIRONMENT HALLPOTS®

These versions of hallpot® angle sensors are built to operate in hostile environments that are more severe than usual industrial or military environments. Their internal and bearing structures are designed so that large shocks and continuous vibration will not cause failure or interference with signals.

Most of them are designed and built around a user's particular needs using their intrinsic designs which are modified to meet the user's particular needs. Their geometry may be modified as a user needs such as the usage of metric shafts or the addition of sealed endcaps with attached wire leads.

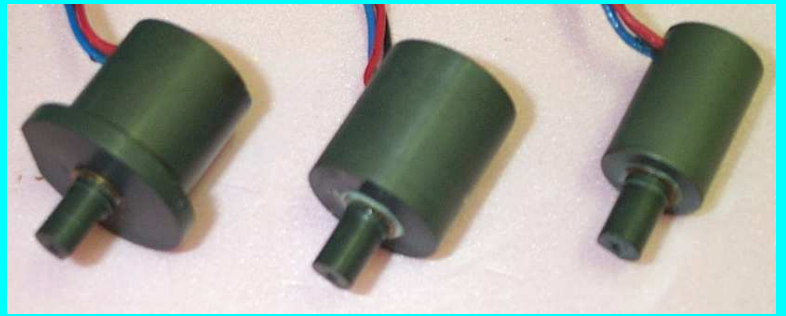
Three of the most common environments that hallpots® may be subjected to are described here with the particular features of each design. All of these versions are used somewhere in the world and have proven to be reliable. These environments are:

- 1 --- Severe Shock Environments**
- 2 --- Severe Chemical and Pressure Environments**
- 3 --- Dirty and Wet Environments With Severe Shock and Vibration.**

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SEVERE CHEMICAL AND PRESSURE ENVIRONMENT



These versions are used in crude-oil transmission lines and are subjected to environmental pressures up to 1,500 psi with temperatures to +85 degrees C. They are designed to operate to +125 degrees C.

The electronics are sealed from the crude-oil with special flexible urethane that is not attacked by crude-oil and its associated saltwater and other corrosive components. The shaft end is lubricated with special teflon® impregnated silicone grease that resists the crude-oil. This grease will not dissolve and it fills the cavity around the rotating magnets. This feature permits the pressure of the surrounding fluid to enter the device and therefore equalize such that there is no differential pressure from inside to outside. They are immersed directly into the corrosive liquids with no additional protection.

SEVERE SHOCK ENVIRONMENTS

These versions contain reinforcing materials internally to enable them to provide signals continuously



and through periods of large shock that may last for only a few milliseconds. Their initial application is for usage in automobile test dummies, ATDs, to measure deflection of various appendages of the ATDs. Some versions are used on military cannons to provide control signals for ammunition feed. Small diameters of 0.55 inches provide Basic Signal Response without amplifiers and the larger 0.75 inch diameter versions contain amplifiers to provide calibrated signals.

DIRTY AND WET ENVIRONMENTS WITH SEVERE SHOCK AND VIBRATION

Application of this design is for automotive or industrial equipment in locations exposed to dirt, dust and water. They are used on the suspension or throttle



systems of vehicles in locations that expose them to road dirt, mud and whatever liquids that may splash on them from the road or engine. Versions that contain O-rings on the shaft and seals around the wires may be immersed directly into water for brief periods of time.

They provide accurate signals throughout shock and vibration of the vehicle or industrial equipment. All hallpot® models work through shock and vibration but these are sealed against the environment.

Hallpot® [DIMENSIONS](#) ----- Describes the dimensions of the standard common versions.

Hallpot® [ENVIRONMENTAL](#) ----- Describes the design criteria for the working environment.

Hallpot® [MOUNTING](#) ----- shows various ways to properly mount hallpot® sensors.

Elweco, Inc ---- www.elweco.com , www.hallpot.com , Ph/Fx 440-254-1716, sales@hallpot.com
PO Box 909, Painesville, OH 44077 USA