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TMRS © Miniature Remote Sensor

Patent pending

TMRS Demonstration Configuration with Velcro Attachment to a Cap

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TMRS Remote Sensor

for the Multi-Taper © "Foot Pedal" Audio Control System

General Description and Application:

The TMRS sensing system is a revolutionary technology developed by Telonics, Inc. initially for Wildlife Research applications, but which has been adapted in order to add heretofore unavailable capabilities to the pro-audio field. When used with the Multi-Taper "Foot Pedal" Audio Control System, the TMRS assumes remote control of the position sensing function previously accomplished by the tilt platform/upper assembly of the "pedal". As it is plugged in, the TMRS automatically assumes full control of the host "pedal" system. (The tilt platform on the pedal is inoperative while the TMRS in connected.)

Tilting the TMRS over its prescribed range of movement accomplishes the same functions as the pedal.

This document describes its use when placed on a cap in a demonstration configuration, although it might just as easily have been clipped over the ear of the user, mounted on a headband, elbow or forearm clip, attached to a musical instrument, etc. This remote control system opens limitless possibilities, from mechanical control by instruments, to usage by musicians with a disability who have been prevented from playing until now.
Additional applications are virtually limited only by the imagination, from direct control by movement of an instrument itself (or a device on an instrument), to placement on the ear, arm, leg, torso, etc of a person, or any other platform which may be made to tilt in the proper axis.

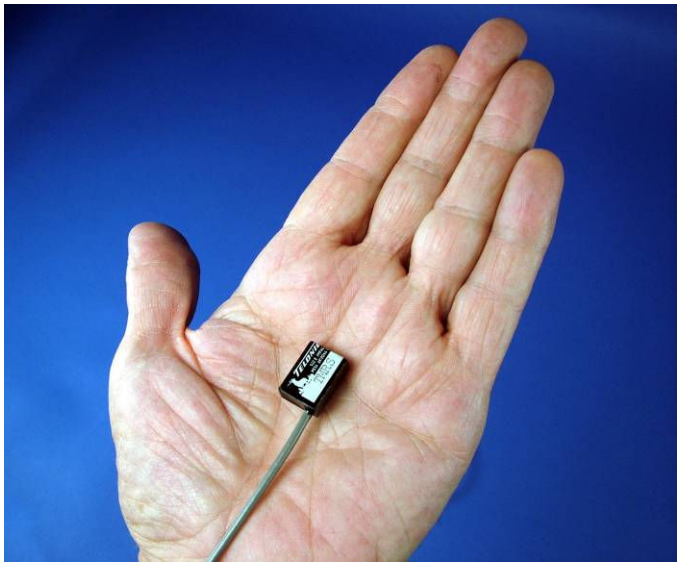
In its present configuration, ***it controls audio volume dynamics within a specific range of "pitch angle"*** (i.e., pitch forward and pitch backward, not to be confused with musical pitch). **The *manner* in which it controls volume in the present system is determined by the taper selected by the taper switch on the host "foot pedal" unit.**

(An optional TMRS remote sensor (as shown) will be supplied *at no charge* to individuals who suffer a physical impairment which can be aided by this remote control device).

The design of the TMRS can take various forms and utilize varying means of communication with its host device. As shown in this document, it consists of a patented miniature sensing device

affixed to a small cable which is terminated in a standard ¼" **TRS** plug. Its plug is designed to be inserted into the SENSOR/Tuner jack (J4) of the Multi-Taper "Foot Pedal".

The actual sensor is a very small and lightweight device. It is shown for size comparison on a hand for this particular application.



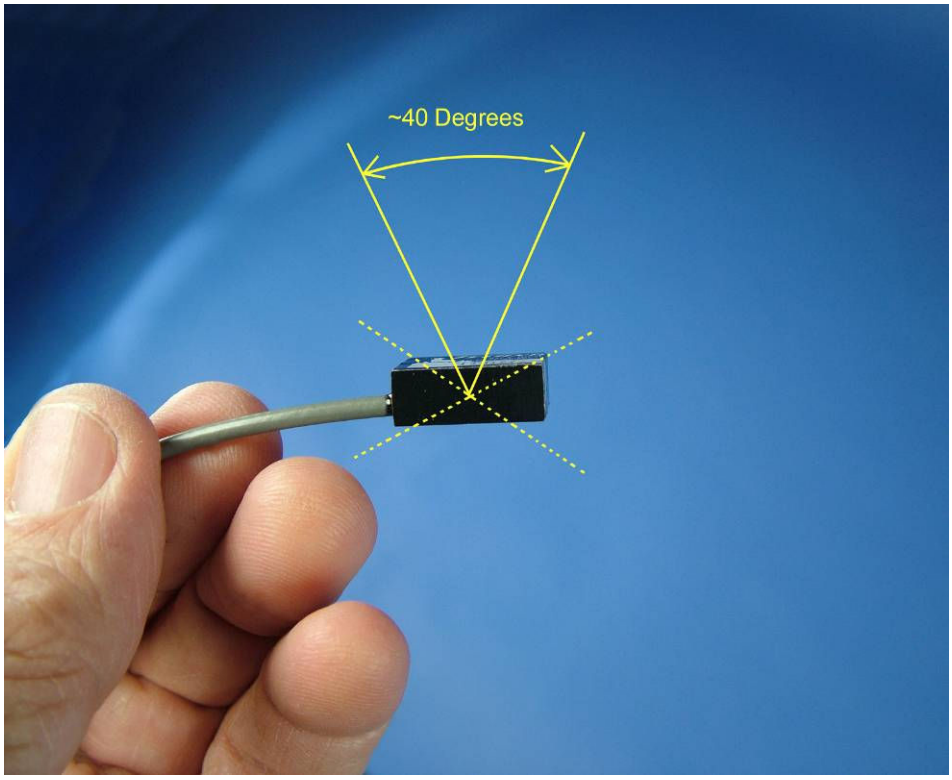
There are no controls or adjustments to operate with the TMRS sensor, its operational parameters are all established by the software within the host "pedal".

The sensor provided with this system is supplied with a hook-and-loop Velcro surface on the bottom side to allow convenient experimental position adjustment.

Similarly, the cap supplied has a companion Velcro pad stitched in place near the top as shown. Until you become more familiar with the system, it is suggested that you position the sensor either as shown in the photographs, or re-place it rotated 180 degrees in the yaw axis with the cord exiting forward (as opposed to rear-ward as currently shown in the photographs). The reason for making this change would be to reverse the sensing function as described in the following paragraphs. Remember to always keep the label facing upward.

If at any time, you move the sensor out of its prescribed angular range, the volume will drop to a preset level.

Referring to the photograph below, the sensor will control the audio volume when moved through a range of approximately 40 degrees as indicated by the arc arrow. Assuming it is mounted on a cap as shown in the earlier photographs, the volume will be OFF (or minimum) at one extreme, and MAXIMUM at the other extreme. In this application, this means that the volume will be at one extreme when the head is tipped forward and the other extreme when the head is tilted backward.



Some users prefer to have the volume at minimum when the head is forward, others prefer the reverse.

If you wish to reverse this function, simply remove the sensor from the Velcro patch on the cap, rotate it 180 degrees and replace it by pressing it firmly into the Velcro patch. The cord will now be exiting forward on the cap instead of rearward as shown in the previous photographs.

The taper (or volume change per degree of angular change) which is experienced during the transition from one extreme to the other, will be determined by the particular taper chosen by the TAPER switch (SW1) on the host "foot pedal" and may be changed at any time. Further, the OFF (or minimum) volume condition encountered at that end of angle travel ***will be the same*** as experienced when the sensor is unplugged and the pedal is positioned fully back, or at the OFF/minimum position *(as determined by the MINIMUM OFF adjustment previously set on the host "pedal")*. In short, movement of the sensor within the proper angular range will result in the same changes in audio volume characteristics which were selected on the host "pedal", with the exception that movement range of the sensor has been automatically expanded by a factor of approximately three (3X) over that of the pedal, in order to facilitate and improve the resolution capability when used in conjunction with head movement. (Obviously a tremor in head movement, either voluntary or involuntary, will produce vibrato….) This increase in angular movement range is, like all functions in the system, under software control within the host "pedal". If, when you are experimenting, you find that the sensing range is not within a comfortable position range for your head, simply reposition the cap on your head as necessary to reach a comfortable range of movement. The sensor can also be moved about and temporarily affixed with masking tape until a suitable spot is found. The Velcro pad can then be moved, or the sensor may be attached using some other means.

Please enjoy it - the applications are only limited by your imagination. ***Dave***