

The RAD is a complete remote angle monitoring system capable of coordinating multiple sensors from one display.



Photo A: RAD2-70-E2 ($\pm 70^\circ$, dual remote sensor boxes, horizontal mount)



Photo B: RAS2-70-D1 ($\pm 70^\circ$, single CS9 remote sensor with XLR)

Features

- Hand Held Display Box
- Rugged Remote Sensors
- XLR Cord Plug Connectors
- $\pm 30^\circ$ and $\pm 70^\circ$ Measuring Ranges
- Non-symmetrical Ranges Available
- Angle Displayed in Degrees
- 0.1° or 0.01° LCD Display Resolution
- 9V Battery Powered
- ON/OFF Switch
- Low Battery Warning
- Relative Zero or Relative Difference
- Minimum/Maximum Angle Display
- RS232 Output Available

Applications

- Sound System Remote Alignment
- Line Array/Speaker Positioning/Installation
- Remote Platform Leveling

Description

The (RAD) Remote Angle Display was specially designed for line array/speaker positioning.

Available as a single line display reading one sensor at a time (RAS2, see Photo B) or a dual line display to measure two sensors at the same time (RAD2, see Photo A), multiple sensors can be used interchangeably with one display box to coordinate multiple remote locations.

Each system includes a display box with a number of matched sensors; typically 1, 2, or 4 sensors (see Photos C & D). Both the sensor unit and the display box use standard type audio XLR cord plug connectors.

The RAD system has two sensor options (see Figures 3 & 4) in ranges of $\pm 30^\circ$ (60° total range) or $\pm 70^\circ$ (140° total range). The display can be calibrated to anywhere within the total range of the sensors specified. For example, a $\pm 70^\circ$ sensor can be scaled to read +50° to -90°. (Typical V-DOSC configuration).

MIN/MAX Button:

The MIN/MAX function provides the smallest and largest angle the device has sensed since it was last reset.

Relative Zero (REL) Button:

Standard on all display models: The REL button allows the user to set a new zero position after the RDI is mounted. Press the REL button and release and the display will read REL ON * for 1 sec then 0.00°. The (*) indicates the measurement is not referenced to the true calibrated 0, but a referenced zero. The MIN/MAX angles are now referenced to the new referenced zero. Press the REL button again and the display will read REL OFF for 1 second then return to the true calibrated zero. The MIN/MAX angles are now again referenced to the true calibrated zero.

Relative Difference (REL) Button:

Available for RAD2 only: The REL button is programmed to give the difference between the TOP and BOTTOM sensors. A RAD2 with this feature would display the following: SENSOR 1/SENSOR 2: SENSOR 1 would be placed on top of the speaker array = TOP LINE OF DISPLAY = TOP CONNECTOR on side of box; SENSOR 2 will be placed on the bottom of the speaker array = BOTTOM LINE OF DISPLAY = BOTTOM CONNECTOR on side of box.



RAD Series

Remote Angle Display for Sound Engineers

Input Parameters	
Sensor Measuring Ranges Optional Non-Symmetrical	±30° or ±70° Can be scaled within the total sensor range.
Power Supply – Standard Optional	9 VDC Battery Wall adapter (110 or 240VAC) or 8-30VDC Non-regulated
Remote Sensor	Option A (N+Nema, see <i>Figure 3</i>) Option B (CS9, see <i>Figure 4</i>)
Display Parameters	
Output Units	Degrees
LCD Display	Dual Line (RAD2, see <i>Figure 1</i>) Single Line (RAS2, see <i>Figure 2</i>)
Display Resolution – Standard Optional	0.01° 0.1°
Min / Max Readings - Standard	Stored in Volatile Memory
Relative Zero – Standard	Stored in Volatile Memory
Relative Difference – Optional	Stored in Volatile Memory
Optional Features	
Display LEDs	Activated per customer request* (1 green, 1 yellow, 1 red)
Open Collector Outputs	Up to 4 provided
Open Collector Current	1A each
Switch Function	Normally Open or Normally Closed
Switch Trip Delay	0 to 16 seconds
Switch Trip Angles	Anywhere within sensor range
Optional RS232 Output	
RS232 Output	Decimal Output
Baud Rate	9600
Data Bits	8
Parity	None
Stop Bits	1
Display Mechanical Characteristics	
Display Housing	Die Cast Aluminum – Painted Black
Mounting Holes	Two M4 x 0.7 or Two #8-32
Outline Dimensions	4.53" x 3.54" x 2.21" (115 x 90 x 56mm)
Electrical Connection – Standard Optional	Female XLR Cord Plug Receptacle (Switchcraft PN D3F) Amphenol Cylindrical Connector
Weight	16 ounces
Operating Temperature	-20°C to +70°C
Storage Temperature	-40°C to +85°C

*LED trip angles can only be set within the measuring range of the device and must match the open collector switch outputs if they are chosen.

XLR Connecting Wire	
Pin 1	Sensor Ground
Pin 2	Sensor Signal Output
Pin 3	Sensor Supply Voltage

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Figure 1: RAD2 Display Box Dimensions (inches [mm])

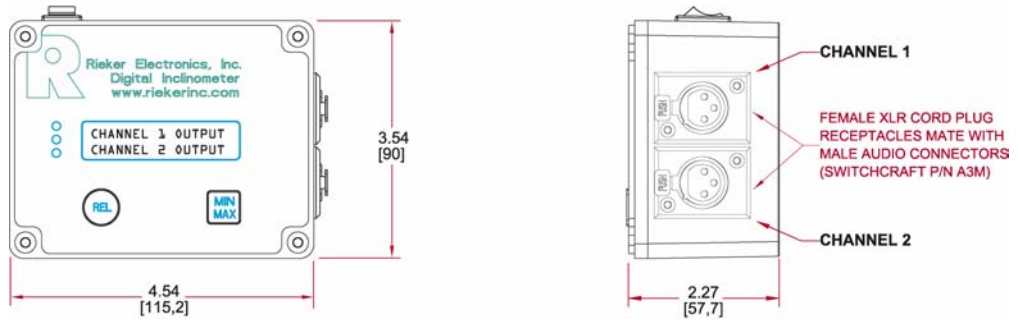
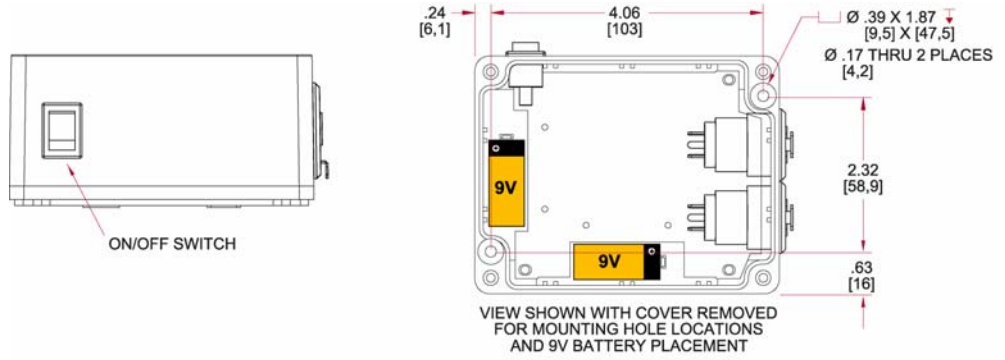
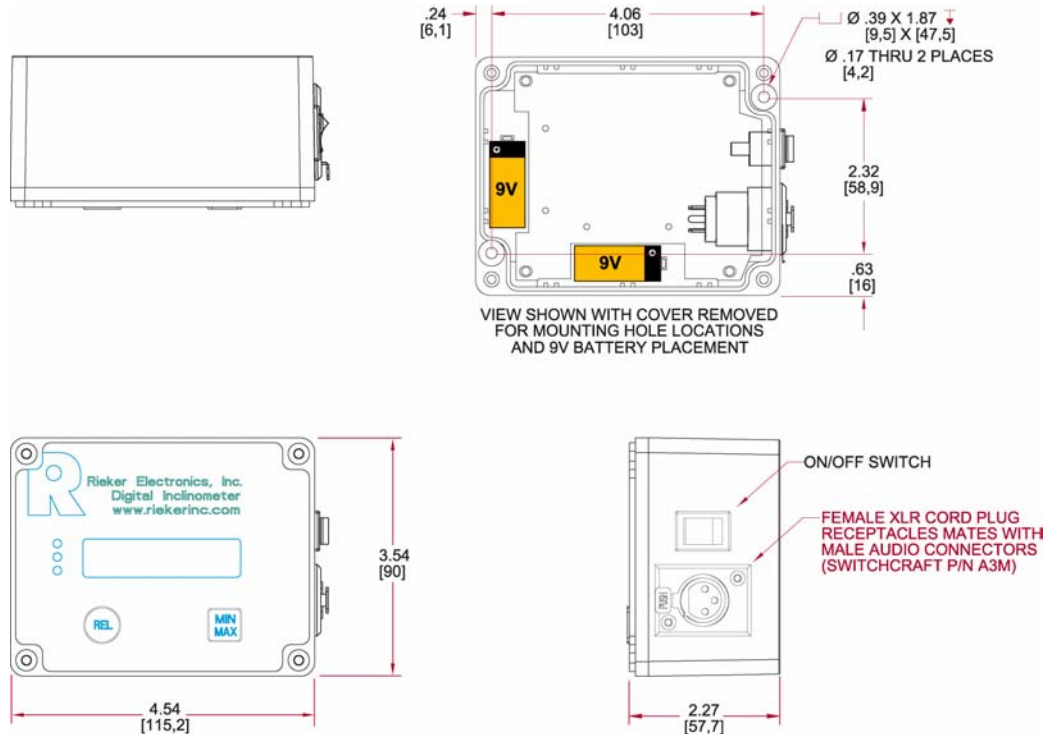


Figure 2: RAS2 Display Box Dimensions (inches [mm])



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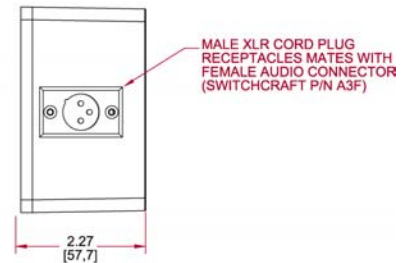
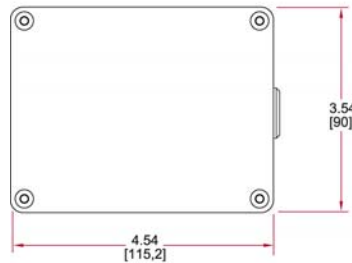
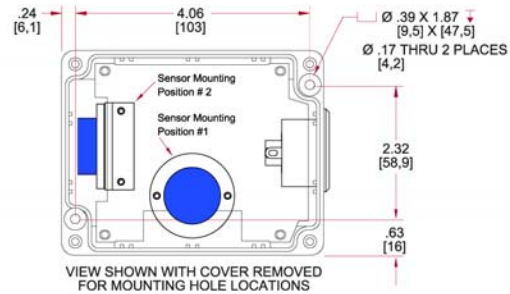
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Figure 3: Remote Inclinator Sensor Option A Dimensions (inches [mm])



Photo C: Remote Sensor Box (Nema 4 protection) Vertical Mount

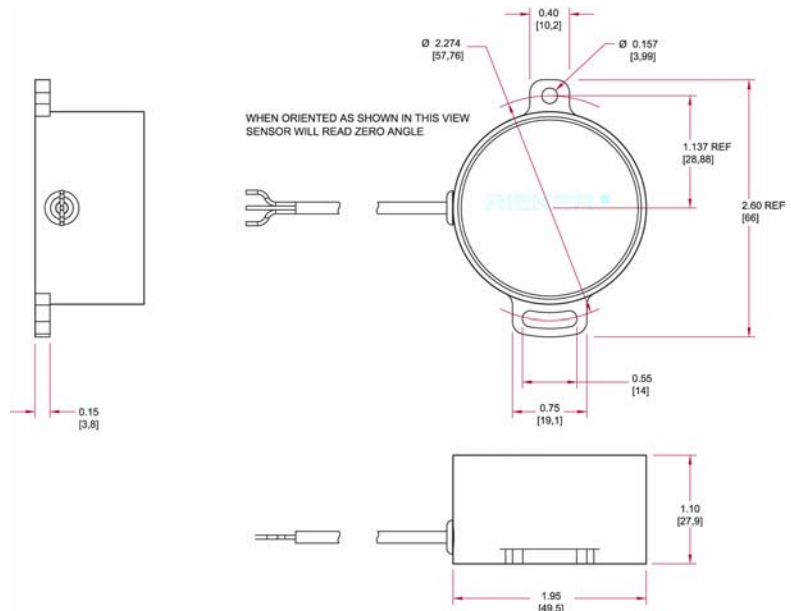


Sensor Option A: "N+Nema4 Box"; N Series sensor is mounted into Nema 4 box for extra protection, cable strain relief, and easier, more flexible mounting position. Includes XLR connector built into box. Mounts either vertically or horizontally, specified at time of order. Bolt on or mount with gaff tape or heavy Velcro for easy removal for transportation and storage.

Figure 4: Remote Inclinator Sensor Option B Dimensions (inches [mm])



Photo D: CS9 Remote Inclinator Sensor with XLR connector.



Sensor Option B: "CS9"; Solid Zinc metal housing, small footprint, sturdy and extra rugged for a more permanent mounting. Includes XLR connector. Mounts vertically.

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