



Rugged Remote Digital Boom Angle Inclinator

FEATURES

- Rugged Nema4 Housing
- Single Axis Measurement
- Operating Temperature - 40..+85°C
- Angle Range -10°..+90°
- Backlit LCD
- Display Resolution 0.1°
- LED Trip Angle Warning Lights
- Adjustable Trip Angle Settings
- Optional Audible Alarm
- Input Supply 8..30VDC Non-regulated
- Relative Zero for Level Adjust
- Minimum/Maximum: presents last high and low angle achieved

DESCRIPTION

Rieker's Digital Boom Angle Indicator Remote Inclinator Package (model RDSR3-BA-09) is an extension of the RDI series of digital inclinometers. The RDSR3 is supplied as a calibrated set featuring an environmentally sealed measurement inclinometer sensor package and a separate LCD display box (connected by an interface available in various lengths). This unit is Temperature Compensated to provide increased accuracy over industry standard operating temperatures.

Specifically configured to comply with safety regulatory agencies (OSHA, ANSI) concerning Boom Angle Indication for Cranes and Derricks (and certain boom lift equipment), the LCD display comes standard with 3 built-in LED's (1 green, 1 yellow, and 1 red). These can be set to activate at predefined angles within the specified measurement range. An optional audible alarm version (RDSR3-BA-09-A) is also available.

For indication of safe and unsafe conditions - the green light indicates the boom is within the safe operating zone, the yellow light indicates a warning zone, and the red light indicates the boom angle exceeds the recommended safe operating zone - giving the operator a bright visual immediate danger signal.

NOTE: It is the operator's responsibility to know their particular equipment specifications based on load, height, and length. At no time will Rieker be held liable for damage or injury caused by inappropriate use of this device beyond its intended purpose.

APPLICATIONS

- Cranes
- Off-Road Forklifts
- Material Handlers
- Antenna Positioning

INDUSTRIES

- Aerospace & Defense
- Construction
- Energy
- Mining
- Offshore
- Transportation

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RELATIVE ZERO (REL) BUTTON: To temporarily “zero” the RDSR - if the remote sensor box is not level but within ± 10 degrees - press and release the REL button. The display will read “REL ON” for one second then revert to normal operation with the LCD display reading 0.0°. If after pressing the REL button and the display reads “OVER RANGE” the remote sensor box is not within ± 10 degrees from level. The operator must re-position the remote sensor box then repeat auto leveling. When the unit is in REL mode you will see the (*) symbol displayed indicating that the relative zero (REL) function is active. Please remember that the unit should be auto leveled using the REL button while the equipment is on a flat surface. Once powered down, the RDSR will return to its factory calibrated zero.

MIN/MAX BUTTON: “Minimum/Maximum Angle” function provides the smallest and largest angle the device has sensed since the last reset.

OVER RANGE: The RDSR3-BA-09 has a total range of 100 degrees ($-10^\circ/+90^\circ$). When this range is exceeded the display will read “OVER RANGE”. The display will return to normal operation by bringing the remote sensor box back within its range.

TECHNICAL SPECIFICATIONS:

INPUT PARAMETERS	
Measuring Angle Ranges	$-10^\circ \dots +90^\circ$ (full scale of 100°)
Measurement Axes	Single
Power Supply	8..30VDC Non-Regulated via DSUB mating connector
Current Consumption	35mA typical (100mA max.)
OUTPUT PARAMETERS	
Non-Linearity ¹	< 0.5% FR
Null Repeatability	< 0.05°
Transverse Sensitivity	<1.0% at 30° Tilt
Response Time	< 0.3 seconds (300mSec)
Temperature Drift of Sensitivity ²	< -0.12%/°C
Temperature Drift of Zero ²	< ± 0.025 mV/°C
Temperature Compensation Output Drift	< $\pm 1.0^\circ$ (over full operating temperature range of $-40/+85^\circ\text{C}$)
Output Units	Degrees
DISPLAY PARAMETERS	
LCD Display	Single Line Display
Display Resolution	0.1°
Min / Max Readings	Stored in Volatile Memory
Relative Zero	Stored in Volatile Memory
Display LED's ³	1 Green, 1 Yellow, 1 Red (Adjustable Trip Angle Settings)

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MECHANICAL CHARACTERISTICS		
Housing	Die-Cast Aluminum – Painted Black	
Environmental Rating	Nema 4 (please note the LCD is not 100% waterproof)	
Display Box Mounting Thru-Holes	Two M4 x 0.7 or Two #8-32	
Display Box Outline Dimensions	4.54" x 3.54" x 2.27" (115 x 90 x 56mm) <i>See Figure 1</i>	
Remote Box with Mounting Feet	Remote Box Only	
Remote Box Outline Dimensions	5.89" x 3.75" x 2.33" (149,6 x 95,3 x 59,19mm) <i>See Figure 2</i>	
Display Box Electrical Connection	AMP 745782-4 DSUB15 Female mates to AMP 747908-2 Male	
Interface Cable Connection	PT06E8-4P(SR)-ND (interface cable sold separately)	
Weight Per Box	16 ounces (not including cable)	
Operating Temperature	Display Box	Remote Sensor Box/Storage Temp
	-20°C to +70°C, (-4°F to +158°F)	-40°C to +85°C, (-40°F to +185°F)
DSUB15 WIRING TABLE - POWER INPUT ONLY		
PIN NUMBER	FUNCTION	
PIN 2	Supply Voltage +8 to +30VDC	
PIN 3	Power Common	
NOTES		
<ol style="list-style-type: none"> 1. Non-linearity generated by best fit straight line using least squares regression. Output is linear with respect to the input angle directly. 2. Sensor Temperature Drifts apply to Non-Temperature Compensated versions. 3. 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 selected. 		

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FIGURE 1: LCD Display Box Dimensions (inches [mm]) and Mounting Position

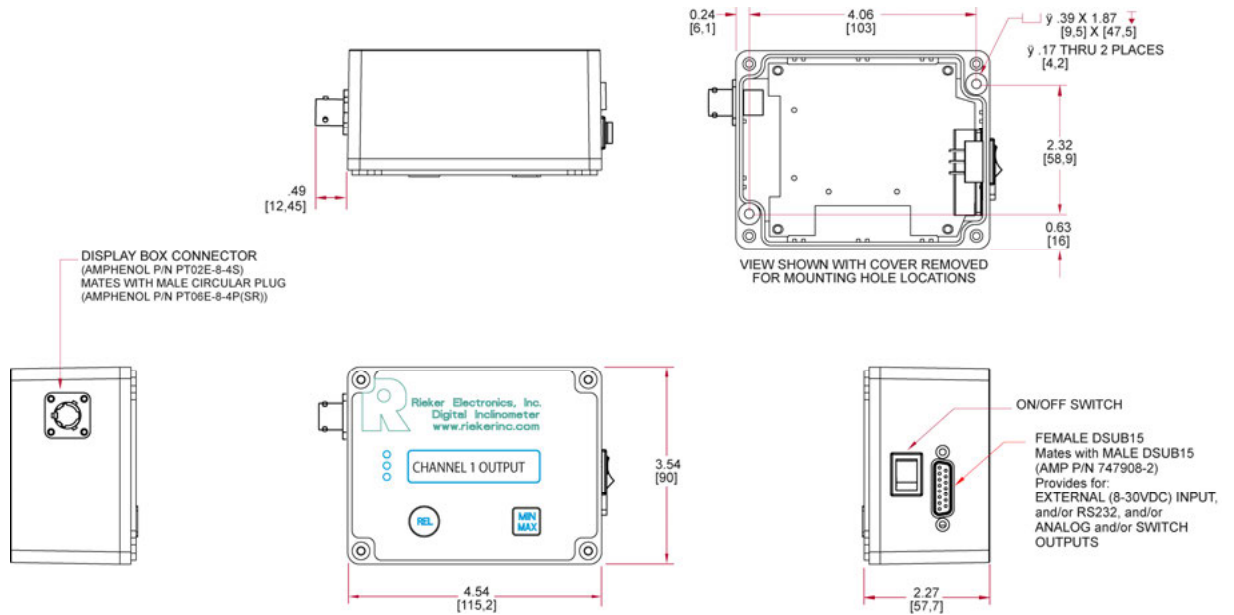
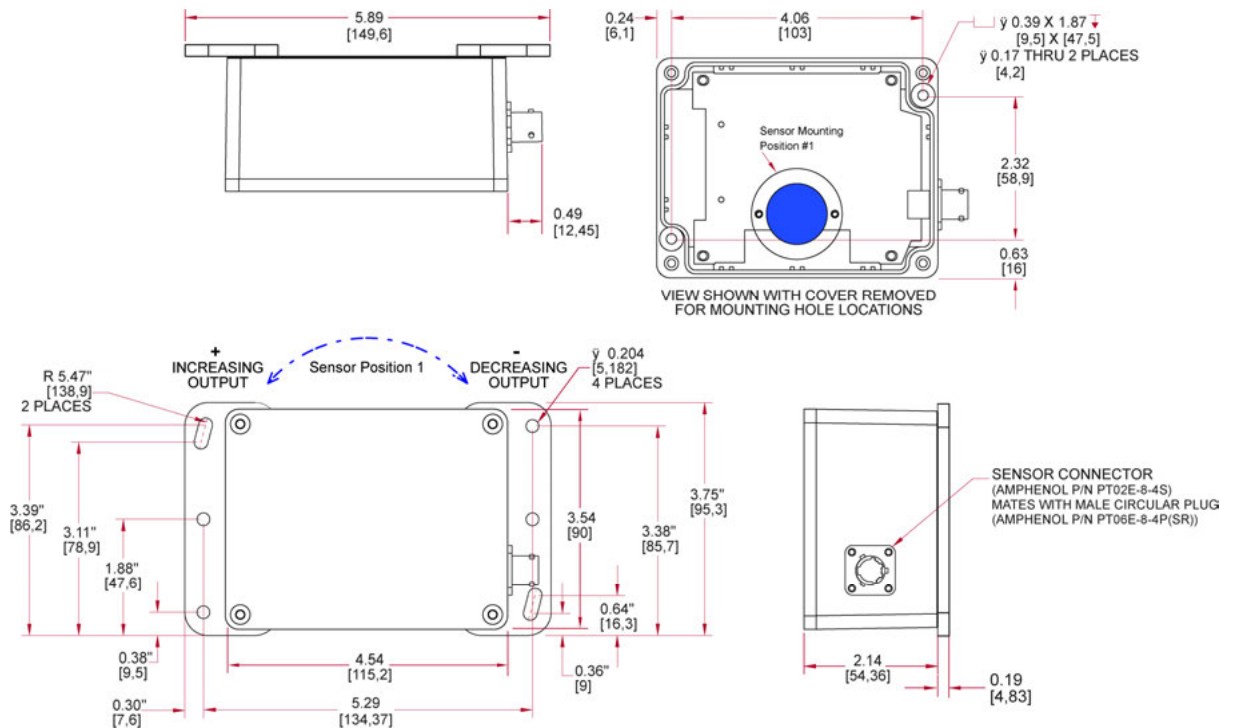


FIGURE 2: Remote Incliner Box Dimensions (inches [mm]) and Mounting Position



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