

The RDR Remote Inclinometer Package is a boom angle monitoring and early warning system



FEATURES

- **Angle Range:** -10° to +90°, single axis
- **Angle Displayed:** in Degrees
- **LCD Display Resolution:** 0.1 °
- **Backlit LCD:** increased visibility
- **Relative Zero:** Auto Leveling
- **Minimum/Maximum:** presents last high and low angle achieved
- **LED Lights:** Adjustable trip settings
- **Audible Alarm:** Optional, adjustable trip setting
- **Power Supply:** 8-30VDC Non-regulated
- **Temperature Compensation:** Industry standard -40/+85°C
- **Rugged Housing:** Nema 4 Aluminum

RELATIVE ZERO (REL): 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.

DESCRIPTION: Rieker's Digital Boom Angle Indicator Remote Inclinometer 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 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 (like OSHA) 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 model is also available.

For indication of safe and unsafe conditions (such as preventing vehicle rollover) - the green light indicates the equipment 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. *Please note*, it is the operators 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.

Also among the standard features are the “Relative Zero” (REL) and “Minimum/Maximum Angle” (MIN/MAX) function. REL allows the operator to temporarily zero the digital readout to obtain relative slope changes. MIN/MAX 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°/+90°). 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.



RDSR3-BA-09

Digital Boom Angle Indicator

| INPUT PARAMETERS | | |
|--|--|---|
| Measuring Angle Ranges | -10° to +90° (full scale of 100°) | |
| Measurement Axes | Single | |
| Power Supply | 8 to 30 VDC 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 | < ±1.0° (over full operating temperature range of -40/+85°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 Settings) | |
| 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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 FORM NUMBER: RD0179_07/09 UPDATED: --



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RDSR3-BA-09

Digital Boom Angle Indicator

FIGURE 1: RDI Display Box, Dimensions (Inches [mm]) and Mounting Position

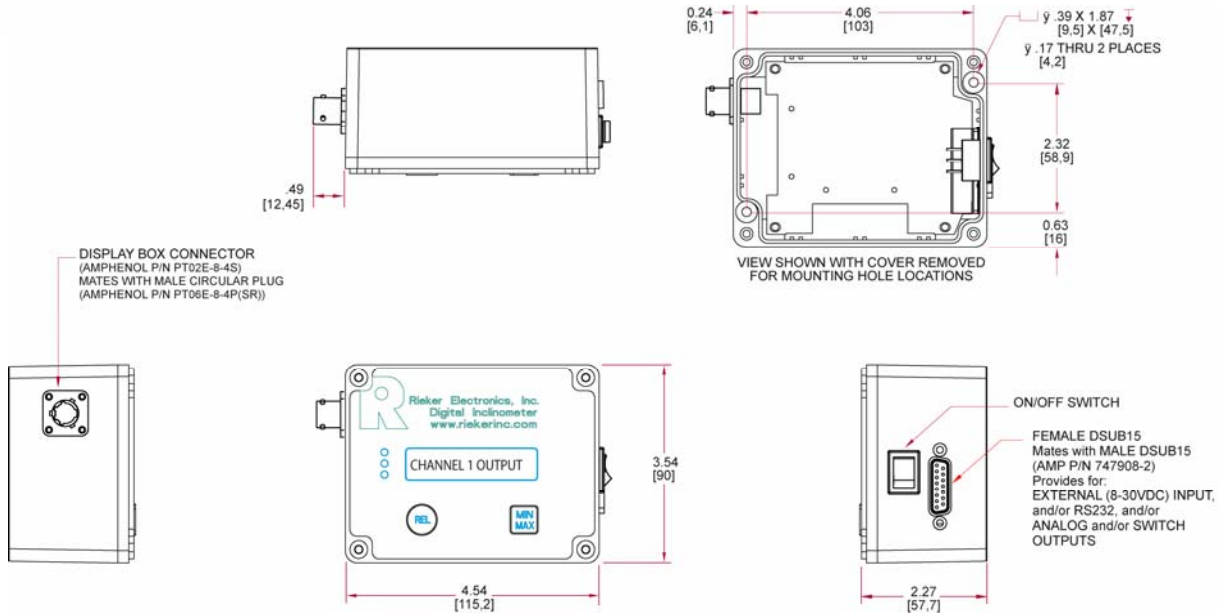
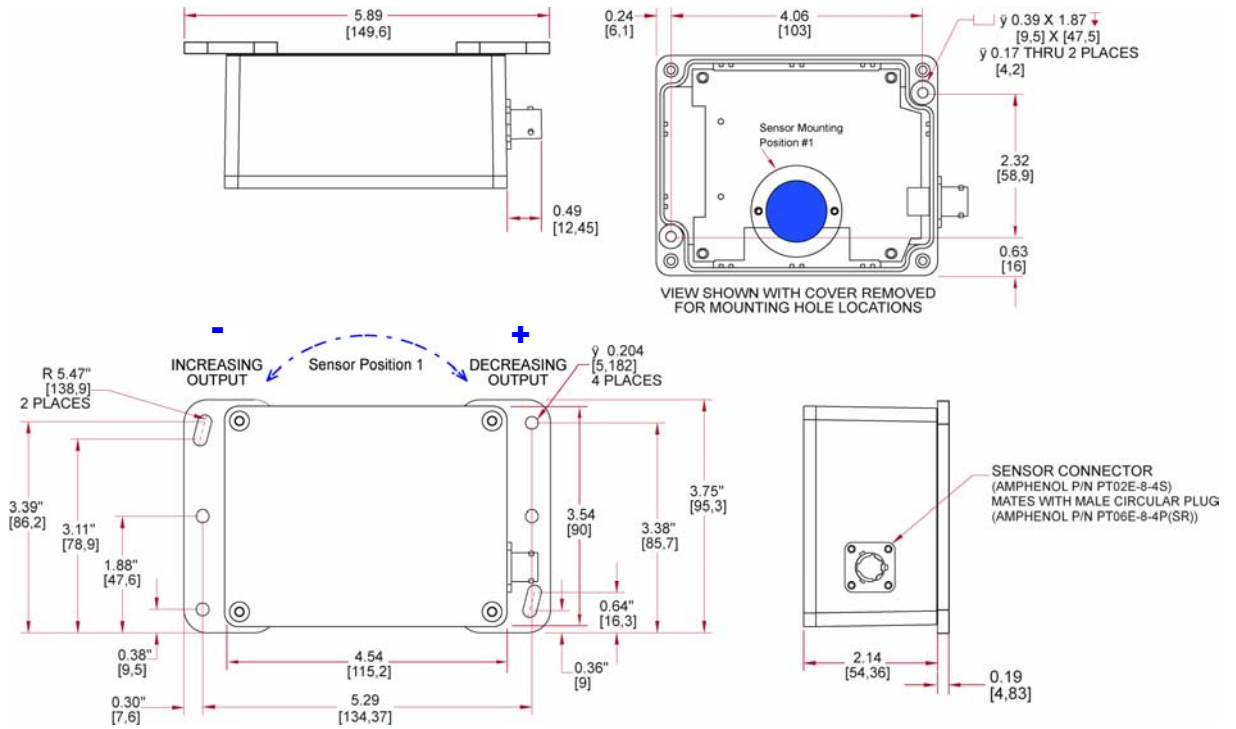


FIGURE 2: Remote Box (with mounting feet) Dimensions (Inches [mm]) & Mounting Position



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