# SenSpot™ Wireless Laser Distance Sensor

Ultra–Low Power Precision Sensing & Wireless Communication

## Typical Applications

- Bridge health monitoring
- General structural integrity monitoring (buildings, dams, tunnels, etc.)
- Crane position monitoring
- Glass Manufacturing
- Measuring flood gate height
- Bulk storage & Level measurement
- Automated diameter & width measurement
- Monitoring saw blade alignment

## Specifications

- **Wireless communication** :(IEEE 802.15.4)
- **Wireless communication range**: 1.0km (0.62 mile) free space
- **Ingress Protection:** IP68, weatherproof, water-proof, protected against rain, snow, and UV ex-posure
- **Working temperature:** -30°C to +55°C (-22°F to +131°F)
- **Absolute Accuracy:** ±25 mm (± 0.98 inch)
- **Resolution:** 1 mm (0.039 inch)

- **Repeatability:** <5mm (0.197 inch)
- **Measuring Range:**
  - 0.2m (0.65ft) to 15m (49ft) without a reflector to a cooperative target
  - 0.2m (1.6ft) to 50m (164ft) with special reflective target
- **Dimensions:**
  - Wireless transceiver box: 140mm (5.50”) x 105mm (4.12”) x 62mm (2.44”)
  - Laser distance sensor: 102mm (4.01”) x 54.3mm (2.14”) x 25.8mm (1.02”)
  - Solar panel: 140mm (5.5”) x 114 mm (4.5”) x 89 mm (3.5”)
- **Weight:**
  - Wireless transceiver: 120 g (4.2 oz)
  - Laser distance sensor: 90 g (3 oz)
  - Solar panel **:** 100 g(3.5 oz)

# Benefits

- **Wireless transmission:** No wiring is required for data collection.
- **Long lifetime** : Unlimited lifetime in presence of ambient light
- **Easy mounting :**Flange mount or adhesive tape
- **Maintenance free :** No battery replacement, calibration or post-installation maintenance is required
- **Energy self-sufficient**: solar powered

# Description

SenSpot™ Laser Distance sensor provides an easy to install, scalable solution for distributed structural integrity monitoring. Resensys SenSpot™ technology offers a high performance method for large-scale sensing, wireless synchronization, and ultra-energy efficient wireless communication.

SenSpot™ is designed to operate maintenance-free for more than a decade. After installation, SenSpot™ does not need calibration, battery replacement, or any other maintenance during its entire service life. Due to small size and lightweight, adhesive-mount SenSpot™ sensors can be applied easily to as many critical spots on a structure as needed, with minimal installation effort.

SenSpot™ Laser Distance sensor uses Micro Epsilon NCDT IRL1030 series of laser distance sensors to measure the absolute distance up to 50m (164ft) without contact. For more information about it please visit:

https://www.micro-epsilon.com/displacement-position-sensors/laser-distance-sensor/optoNCDT_ILR_1030_1031/

SenSpot™ Laser Distance sensor can be used for measuring distance and displacement, thickness, width, length and diameter.

Applications include measurement of location of structures and structural components, level monitoring in tanks, silos, rail cars, and quarries, crane, gantry, and hopper car positioning, loop control in paper mills, conveyor belt positioning, positioning and control of hydraulic cylinders, monitoring thickness and width of steel in process, cant size in lumber mills, log length, pipe length, paper mill roll width and length, roll diameter in paper mills, pipe diameter and steel bar size.

# Installation

Wireless transceiver box has mounting flange. It can be installed either through the flange holes and screws (for concrete and rough surfaces) or VHB adhesive tape (for steel and smooth surfaces).

# Wireless Transceiver Dimension

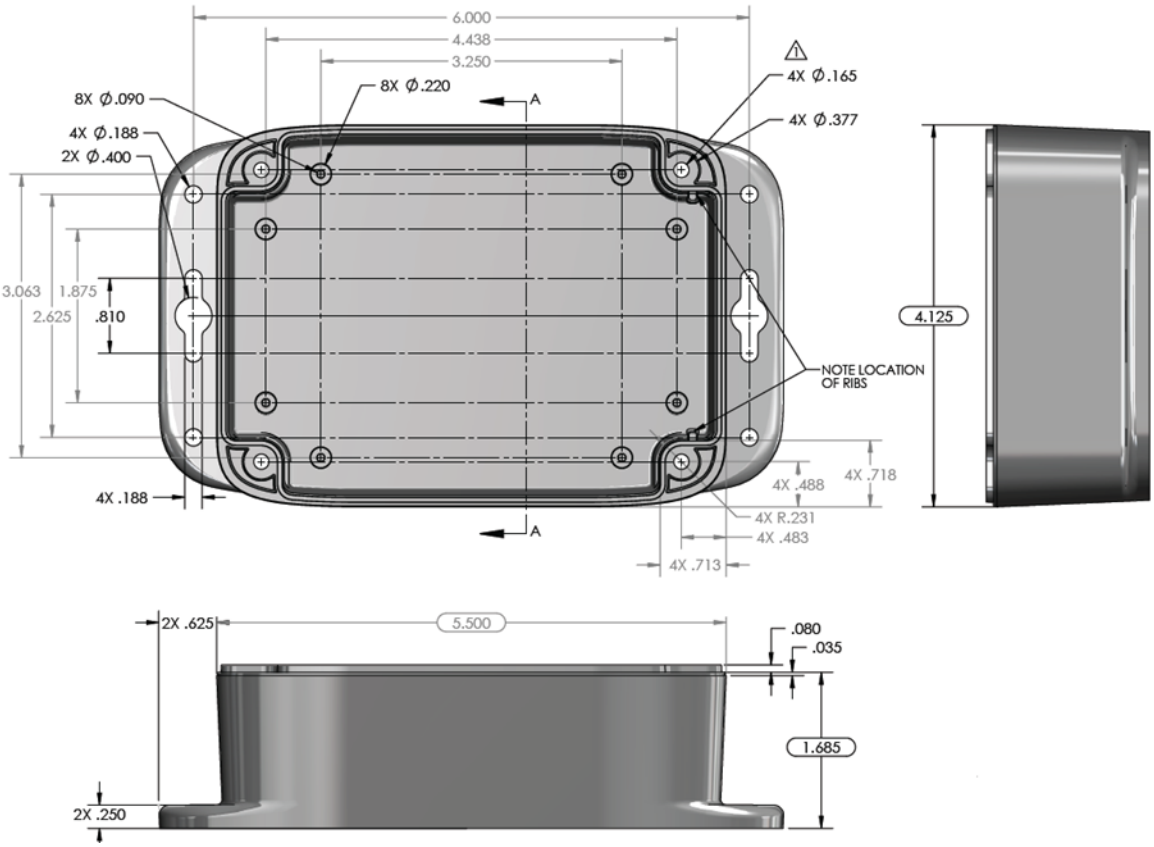


**Figure 1: Wireless transceiver dimensions for laser distance sensor. All dimensions are in inch.**