

Hokuyo UST-05LN/05LA

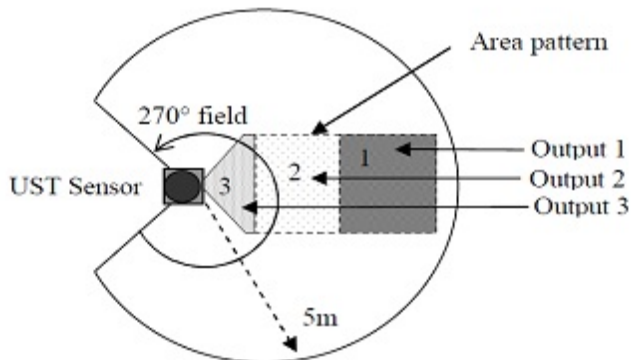


Scanning range finder
(SOKUIKI sensor) -
Sensor for intelligent robots

Features

- 2D scanner for measuring distance between the sensor and its surroundings.
- Supply voltage 10 to 30V
- The smallest and lightest of its kind
- Measurement distance, 5m
- Faster response, 66msec
- More flexible field setting available

Connection



Applications

Obstacle detection of AGVs



Load shifting detection

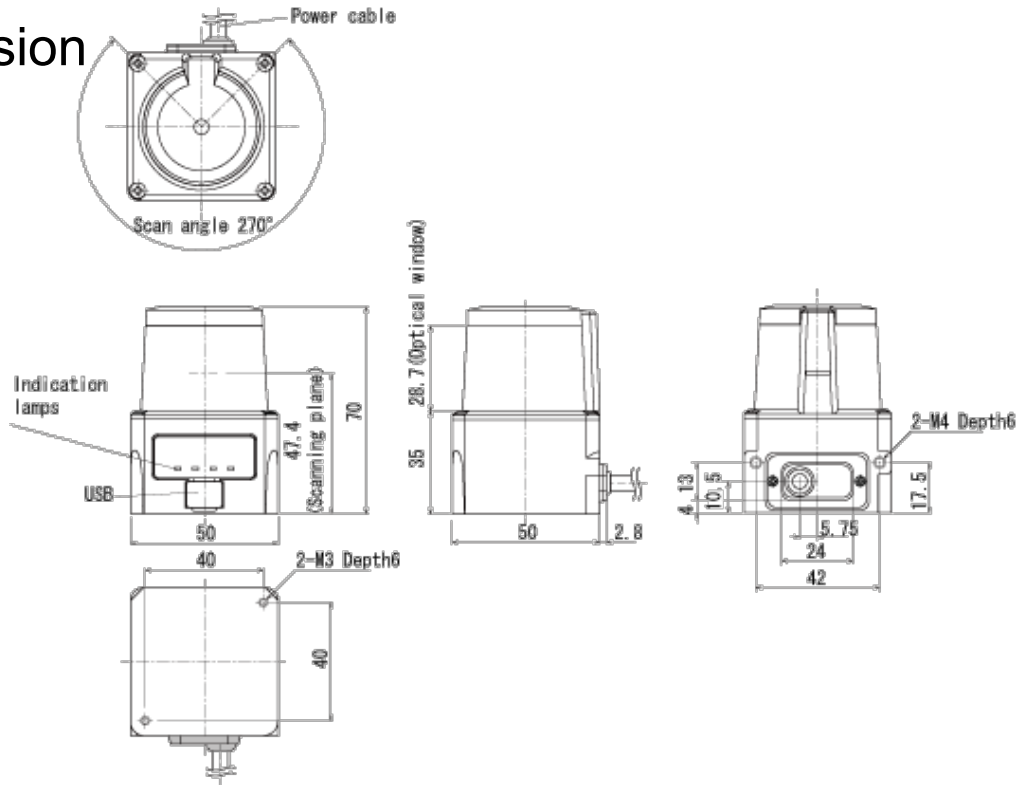


Specifications

Product name	Scanning Laser Range Finder	
Model	UST-05LN	
Supply voltage	DC 12V/DC 24V (operation range 10 to 30V, ripple within 10%)	
Supply current	150mA (DC 24V) or less (during start up about 400mA is necessary.)	
Light source	Laser semiconductor (905nm), Laser class 1(IEC60825-1:2007, Accession number:1420210-000)	
Detection range and object	60mm to 5000mm (white Kent sheet) 60mm to 2000mm (diffuse reflectance 10%) Minimum detectable size 130mm (changes according to distance) *1	
Accuracy	60mm to 5000mm ±40mm*2	
Standard deviation	σ < 20mm*2	
Scan angle	270°	
Scan speed	25ms (motor speed 2400rpm)	
Angular resolution	0.5°	
Start up time	Within 10 sec (start up time differs if malfunction is detected during start up)	
Outputs	Photo-coupler, open collector output Max DC 30V 50mA Output 1: Output 1 OFF during object detection Output 2: Output 2 OFF during object detection Output 3: Output 3 OFF during object detection Malfunction output: ON during normal operation, OFF during malfunction Synchronization output: Synchronization signal during Master/Slave operation. Note: Output 1 to 3 are switched OFF during malfunction state	
Inputs	Photo-coupler, common anode, power supply is 4mA when input is ON Input 1 to 5: Area switching inputs (refer Table1) Synchronization input: Input synchronization signal during Slave operation.	
Output response time*3	OFF	66msec to 3241msec
	ON	66msec to 3241msec
Hysteresis	Hysteresis high (6.25%, not less than 60mm) Hysteresis low (3.125%, not less than 30mm) No Hysteresis (Default)	
Interface	USB	
LED display	Blue LED: ON during normal operation, blink during the start up, configuration and malfunction state Orange LED 1: Output 1 ON during object detection Orange LED 2: Output 2 ON during object detection Orange LED 3: Output 3 ON during object detection	
Synchronization function	Synchronization Master/Slave operation mode (can set by using Area Designer) *4 Synchronization slave mode (0°) Synchronization slave mode (90°) Synchronization slave mode (180°) Synchronization slave mode (270°)	

Surrounding intensity	Less than 15,000lx Note : Avoid direct sunlight or other illumination sources as it may cause sensor malfunction
Ambient temperature humidity	-10°C to +50°C, below 85%RH (without dew, frost)
Storage temperature humidity	-30°C to +70°C, below 85%RH (without dew, frost)
Vibration resistance	10 to 55Hz double amplitude of 1.5mm for 2hrs in each X, Y, and Z direction 55 to 200Hz 98m/s ² sweep of 2min for 1hr in each X,Y and Z direction
Shock resistance	196m/s ² (20G) X,Y and Z direction 10 times.
Insulation resistance	10MΩ, DC 500V
Protective structure	IP65
EMC standards	(EMI) EN61326-1:2013 EN55011:2009 + A1:2010 (EMS) EN61326-1:2013 EN61000-4-2:2009 EN61000-4-3:2006 + A1:2008 + A2:2010 EN61000-4-4:2012 EN61000-4-6:2009 EN61000-4-8:2010
Weight	130g
Material	Front case: Polycarbonate, Rear case: Aluminum
Dimensions (W×D×H)	50×50×70mm

External Dimension



Input/Output Circuit

