Laser type

Scanning Laser Range Finder

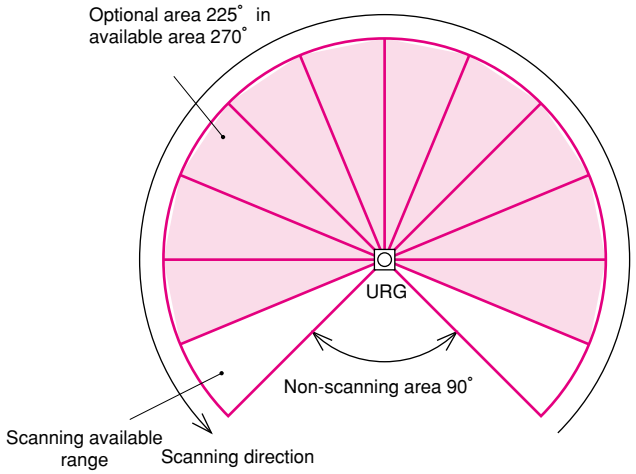
URG-04LN FDA approval

Detecting the obstacles in the specific area

URG-04LN is a 2-dimensional laser sensor for measuring the distance to the objects.
Possible to set the precise area because of laser beam.

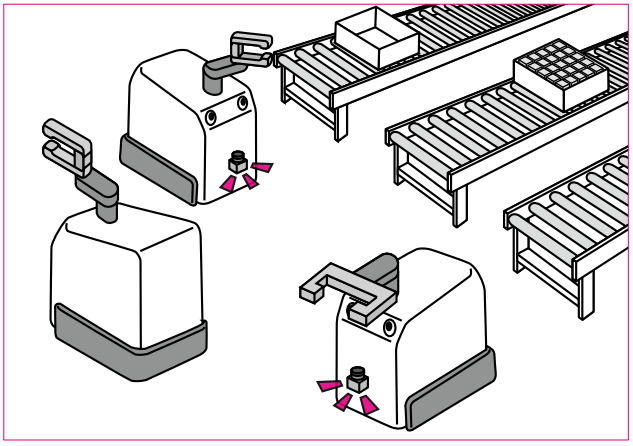
- URG-04LN is the same specification as URG-04LX and detects any obstacles in the setting area and output parallel data.
- URG-04LN can set the area with PC as well as PBS series and has 3 outputs (3 areas). Max.7 patterns of area can be set.

System structure

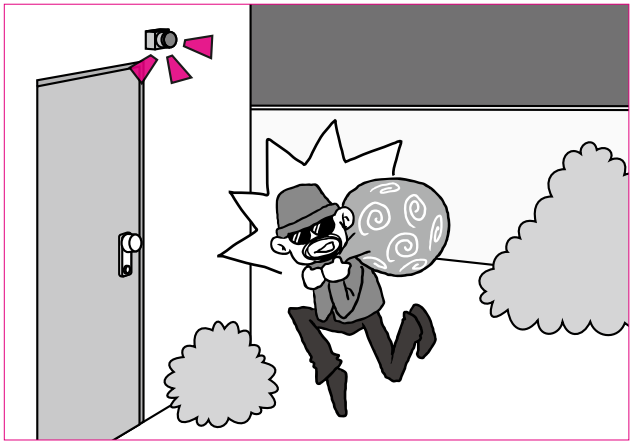


Applications

Obstacles detection of AGV in the factory



Invader detection to the buildings



■ Specifications

Kinds	Detection area setting type (parallel type)
Model No.	**URG-04LN**
Power source	5VDC ±5%*1
Current consumption	500mA or less (rush current approx.800mA)
Light source	Semiconductor laser diode λ=785nm (FDA approval, Laser safety class 1)
Detectable object	70×70mm white sheet
Scanning range	0.06 to 4m
Scanning accuracy	0.06 to 1m: ±10mm, 1 to 4m: 1% of measuring distance
Repeatability	0.06 to 1m: ±10mm, 1 to 4m: 1% of measuring distance
Scanning angle	Anlge: 225° *2
Resolution	Approx.1mm
Angular Resolution	Step angle: approx.0.36° (360° /1,024 steps)
Beam diameter	Approx. φ40mm (at 4m)
Detection area setting	Output1: free to draw with max.7 pointers (0 to 4m) Output2/3: (1) Straight (2) Fan shape (3) Percentage of Output1 area points
Output	NPN open-collector output (IN 3 pcs, OUT 3 pcs) USB (for detection area setting)
Output response time	210msec ro less (Scanning speed 100msec/1 revolution) Note1)
Start up Time	Within 10 sec after power supply. (Varies with startup conditions)
Indication lamps note2)	Power lamp (orange)
Connection	Exclusive cable (attached)
Ambient illuminance	Halogen/mercury lamp: 10,000lux or less, incandescent lamp: 6,000lux or less
Ambient temperature	-10 to +50℃ (-25 to +75℃when stored)
Ambient humidity	85%RH or less, not icing, not condensing
Insulation resistance	10MΩ 500VDC megger
Vibration resistance	Double amplitude 1.5mm, 10 to 55Hz, each 2 hour in X, Y and Z directions
Impact resistance	196m/s², each 3 time in X, Y and Z directions
Protective structure	Optical surface: IP64 (IEC standard), case: IP40 (IEC standard)
Life	5 years (motor life, vary depending on use conditions)
Noise	25dB or less (at 300mm)
Case materials	ABS resin
Weight	Approx.160g
Accessories	Cable for power/communciation/Input/output (1.5m)1 pce*3

*1. Sensor will not operate with USB bus power. Prepare power source separately.
*2. It can be set within 270° .
*3. USB cable and fitting metal don't provide.
Note1) If area is changed, 1 more scanning time is delay.
Note2) It may malfunction when receiving strong light like sunlight etc. directly.
★It can download the area setting software from our website.
ID and password for download are mentioned on inspection report enclosed in the box. Don't miss it.

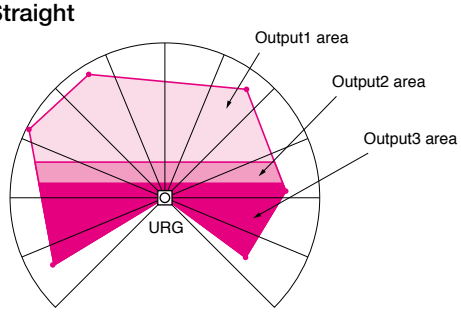
Note This sensor is not a safety device/tool.

Note This sensor is designed for indoor use only.

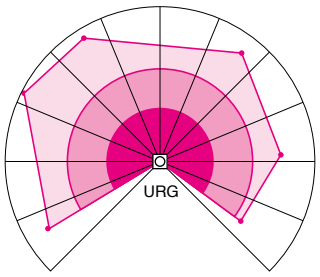
Note This sensor is not for use in military applications.

■ Detection area (URG-04LN)

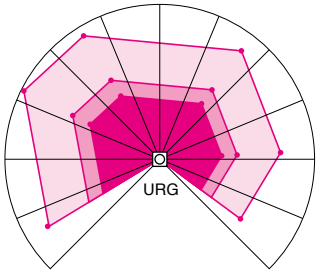
Straight



Fan shaped



Ratio

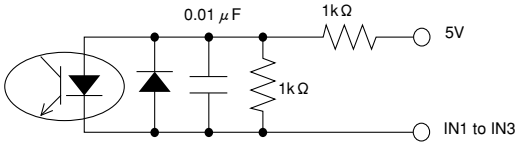


Notre) This device shows the detection area on the basis of the center position of scanning.

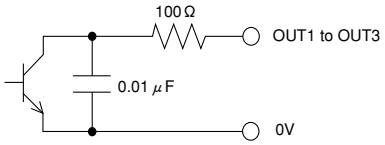
■ Connection

Output circuit

● **Input (IN1 to IN3)**



● **Output (OUTPUT, OUT1 to OUT3)**



Transistor 50V, 30mA

Wiring table

● **CN1**

Pin No.	Cable colors	Signals
1	Red	OUT3
2	White	OUT2
3	Black	OUT1
4	Purple	IN3
5	Yellow	IN2
6	Green	IN1
7	Blue	0V
8	Brown	5VDC

Note I/O direction is on the basis of URG.

● **CN2 USB-miniB (5P)**

Input/output

● **Input (choice 7 areas)**

IN1	IN2	IN3	
L	L	L	Laser OFF
H	L	L	Area 1
L	H	L	Area 2
H	H	L	Area 3
L	L	H	Area 4
H	L	H	Area 5
L	H	H	Area 6
H	H	H	Area 7

L: 0V, H: 5V or opened

● **Output**

Output 1 area	Output 2 area	Output 2 area	OUT1	OUT2	OUT3
No object	No object	No object	ON	ON	ON
Object	No object	No object	OFF	ON	ON
Object	Object	No object	ON	OFF	ON
Object	Object	Object	OFF	OFF	ON
Malfunction			OFF	OFF	OFF

Note) All OUT1, OUT2 and OUT3 are OFF when sensor malfunctions.
Kinds of malfunction: ①Laser malfunction ②Motor malfunction ③Other self-diagnosis malfunction.

☆The other caution items including external dimension etc. are the same as URG-04LX.