Date : May 13, 2011

Scanning laser range sensor

UTM-30LX-F

SPECIFICATIONS

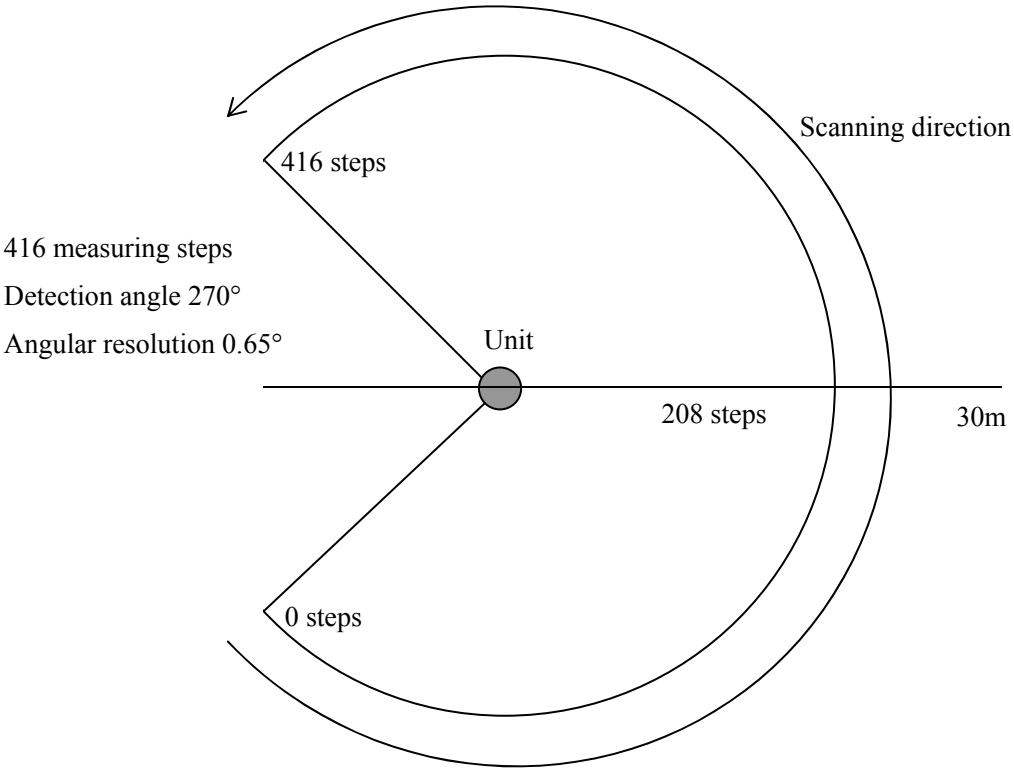
Svmbols	Amended reason				Pages	Date	Corrector	Amended No.
Approved by	Checkec by	Drawn by	Designed by	Title	Scanning Laser Range Sensor UTM-30LX-F Specifications		
			SAKAMOTO	Drawing No.	C-42-3844		1／5

1. Introduction

This model uses laser source (λ = 905nm) to scan a semicircular field and measures distance to objects in the range and co-ordinates of those point calculated using the step angle. Sensor's measurement data along with the angle are transmitted via communication channel.
(Laser Class 1)

2. Structure

Following is showing an image of the scanning.



3. Exemption clause

* This sensor is not a safety instrument/tool.
* This sensor is designed for detection human bodies.
* This sensor is not for use in military application and their involved research
* Read this specifications sheet before using.

4. Specification

Products	Laser range finder
Model No.	UTM-30LX-F
Light source	Semiconductor laser, λ=905nm, FDA laser safety class 1
Supply voltage	12VDC±5%
Power consumption	8W or less, rush current : approx.1A
Detecting range/object	At 0.1 to 30m : white kent sheet At 0.1 to 5m : reflector with 1% reflectance Min detectable object : 170mm up to 5m
Accuracy	Mentioned on data sheet attached (white kent sheet ±30mm*(at 0.1 to 5m)
Measuring resolution /repeatability	Unit 1mm 10mm (up to 5m with white kent sheet)
Scanning angle	270°
Angular resolution	Approx. 0.65° (416 steps)
Scanning speed	10msec (motor rotation speed : 6000rpm)
Interface	USB Ver.2.0 FS mode (12Mbps) Output 1 point(synchronous output and malfunction output in common use)
Ambient temperature/ humidity	-10℃～+50℃, 85%RH or less(Not condensing and icing)
Preservation temperature	-25℃～+75℃,
Ambient illuminance	Halogen/mercury lamp : 10000lux or less Fluorescent lamp : 6000lux Note) It may malfunction when receiving strong light like a sun light etc.
Vibration resistance	10 to 55Hz, double amplitude 1.5mm Each 2 hour in X, Y and Z directions 55 to 200Hz, 98m/s^2, sweep 2 min. each 1 hour in X, Y and Z directions
Impact resistance	196m/s^2 Each 10 times in X, Y and Z directions
Protective structure	IP60 for optical surface
Insulation resistance	10MΩ 500VDC megger
Material	Polycarbonate
External dimension	W60mm×D60mm×H85mm, MC-40-3127

Note) * under standard environment

5. Quality Reference Value

Operating Vibration resistance	10 to 150Hz 19.6m/s2 Sweep of 2min in each X,Y,Z axis for 30min
Operating Impact resistance	49m/s^2 each 10 times for X, Y and Z directions
Angular Speed	2π/s (1Hz)
Angular Acceleration	π/2rad/ s^2
Life	5 years (Varies with operating conditions)
Sound Level	Less than 25dB at 300 mm
Certification	FDA Approval (21 CFR part 1040.10 and 1040.11)

6. Interface

(1) 4-core Robot cable

Pin No.	Color	Function
1	Brown	DC+12V Power
2	Blue	0V Power
3	Green	Synchronous Output
4	White	COM Output *

* Power 0V and Output COM are not connected inside.
Please short between the 0V (blue) and the output COM (0V) when wiring.

(2) USB Cable TYPE-A

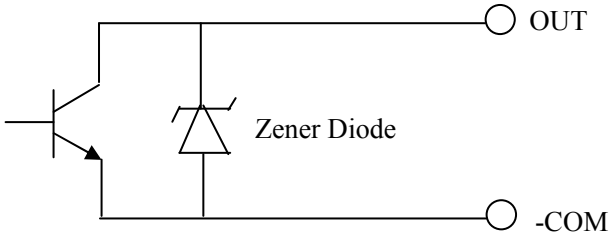
Note 1)

SG for communication and GND are connected internally (Isolated with Input -VIN).
Isolate the device form any connection that generate electric noise.
This sensor is compatible with SCIP2.0 protocol standard.

(3) Output circuit

Max. Applied Voltage : 30V

Max. Output current : 30mA

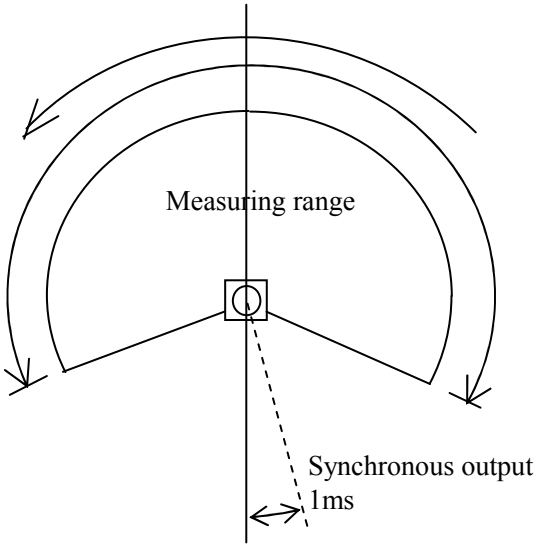


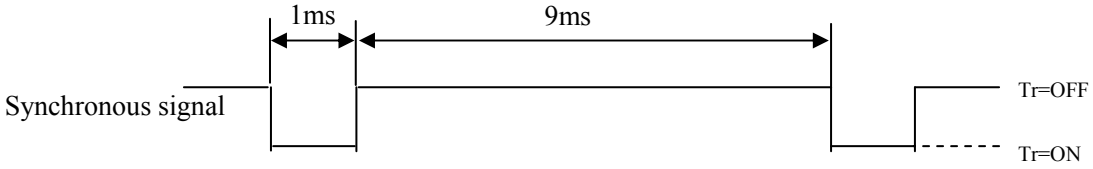
Limiting resistor is needed on OUT side.

7. Control signal

(1) Synchronous output

Output is one pulse for approximately 1msec after every scan in synchronization with scanning.
Output time is as follows :





(2) Malfunction output

When laser/motor malfunction state is detected continuously, this signal (Tr : Synchronous output transistor) turns to OFF.