

SCANNING LASER RANGE SENSOR
UTM-X002S

PROVISIONAL SPECIFICATIONS



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Symbol	Amended reason			Pages	Date	Corrector	Amended No.
Approved by	Checked by	Drawn by	Designed by	Title	Scanning Laser Range Finder UTM-X002S Provisional Specifications		
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1. Specifications

Products	Laser range finder
Model No.	UTM-X002S
Light source	Semiconductor laser, $\lambda=870\text{nm}$, FDA laser safety class 1
Supply voltage	12VDC ^o 5%
Power consumption	8W or less, rush current : approx.1A
Detecting range/object	0.1-30m : white kent sheet, 0.1-5m : reflector with black 1% Min detection object : 170mm up to 5m
Accuracy	Mentioned on data sheet attached(white kent sheet ^o 30mm*(0.1-5m)
Measuring resolution /repeatability	1mm unit / 10mm(white kent sheet up to 5m)
Scanning angle	270 ⁻
Angular resolution	Approx. 0.65 ⁻ (360 ⁻ /1440)
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 °C +50 °C, 85%RH or less(Not condensing and icing)
Preservation temperature	-25 °C +75 °C,
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 - 55Hz, double amplitude 1.5mm Each 2 hour in X, Y and Z directions 55 - 200Hz, 98m/s ² , sweep 2 min. each 1 hour in X, Y and Z directions
Impact resistance	196m/s ² Each 10 time in X, Y and Z directions
Protective structure	IP60 for optical surface
Insulation resistance	10M _Ω 500VDC megger
External dimension	W60mm D60mm H85mm, MC-40-3127

Note)*under standard environment

2. Quality reference value

Vibration resistance during operating	10 ^o 150Hz, 19.6m/s ² , sweep 2 min. each 30 minute in X, Y and Z directions
Impact resistance during operating	49m/s ² each 10 time in X, Y and Z directions
Angular speed	2 Π /s(1Hz)
Angular acceleration	$\Pi/2\text{rad/s}^2$
Life	5 years(varies from operating condition)
Sound level	25dB or less(at 300mm)
Certification	FDA approval(21 CFR part 1040.10 and 1040.11)

3. Interface

(1) Robot cable with 4 pins

Pin No.	Functions
Brown	+12V
Blue	0V
Green	Synchronous output
White	Output COM(connected to0V)

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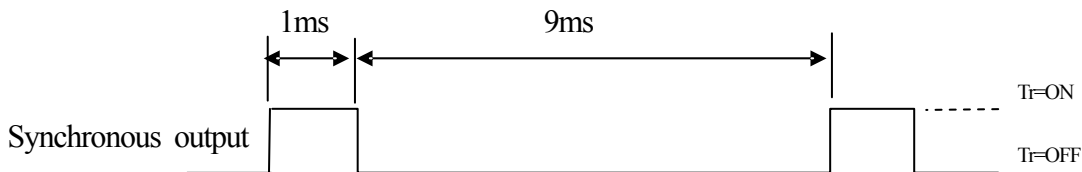
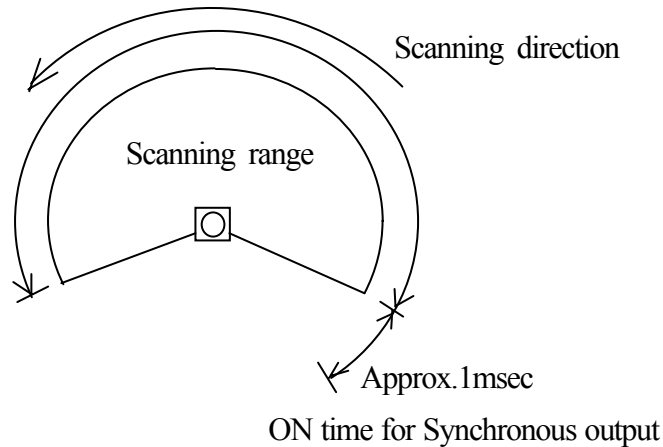
(2) USB cable : Type A

Note1) SG for communication and GND are connected inside sensor.(isolated with input-VIN) Make sure to isolate these cables from power cable etc. which generates electric noise.
Communication protocol is SCIP2.0.

4. Control signals

(1) Synchronous output

One pulse with approx. 5msec outputs every scan in synchronization with scanning. Output time is as follows:-



(2) Malfunction output

When laser/motor malfunction is detected, this signal(Tr) turns to OFF.

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