NBIoT Distance Laser Sensor

Technical Parameters

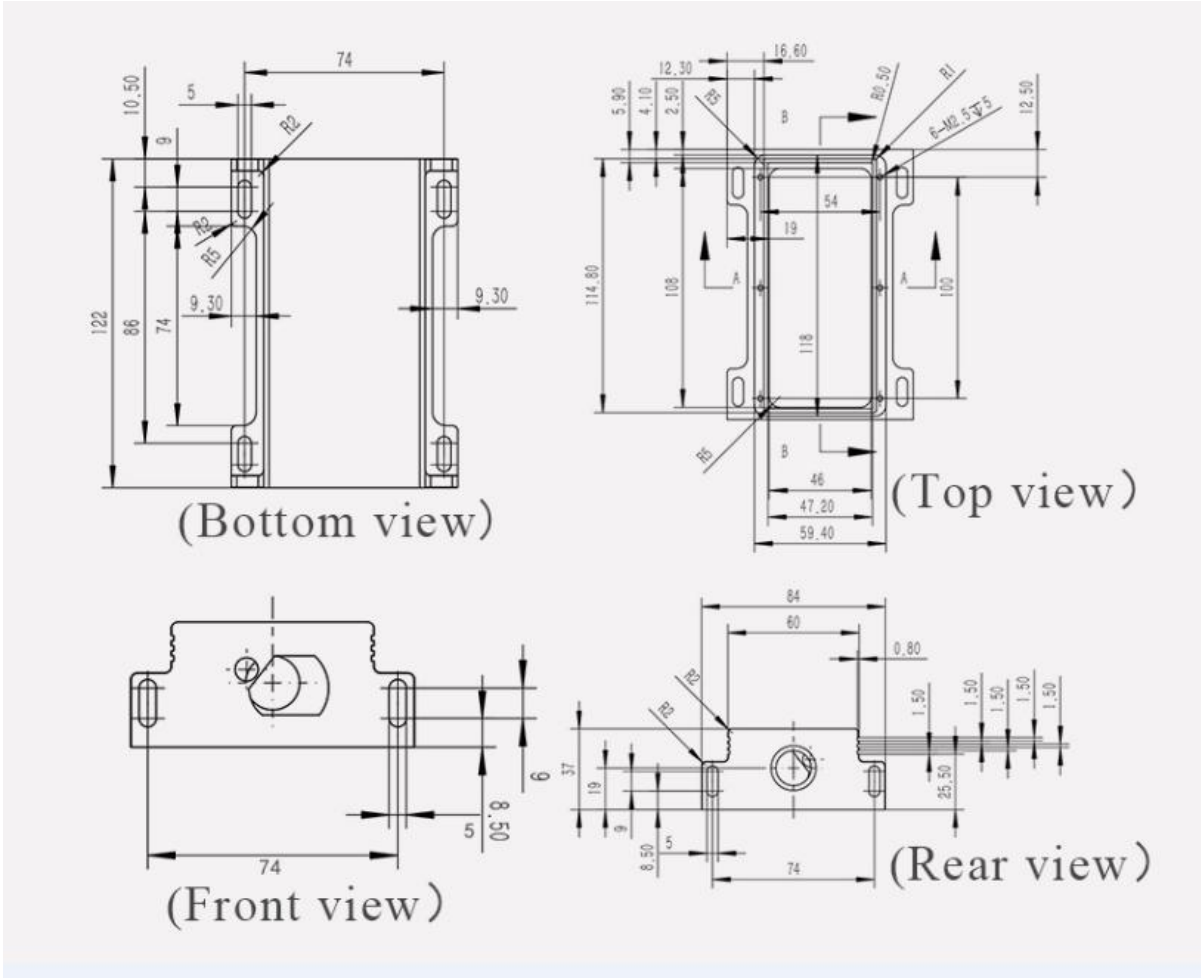
Product Name: PC LA 50
Measuring Range: 0-50m
Size: 122*84*37mm
Frequency: 2~3HZ
Accuracy: +/-3mm*
Repeat accuracy: 1mm
Operating voltage: 6V-36V
Interface: RS485（Can customize RS232 or TTL）
Laser type: Class2,620~690nm
Operating Temperature: -10~50°
Housing Material: anodized aluminum
Colors: Black, Blue

Note

The accuracy will become worse as the distance increases. The calculation formula is longer than 10 meters, for every 10 meters increase, the error is increased by 0.5 mm.

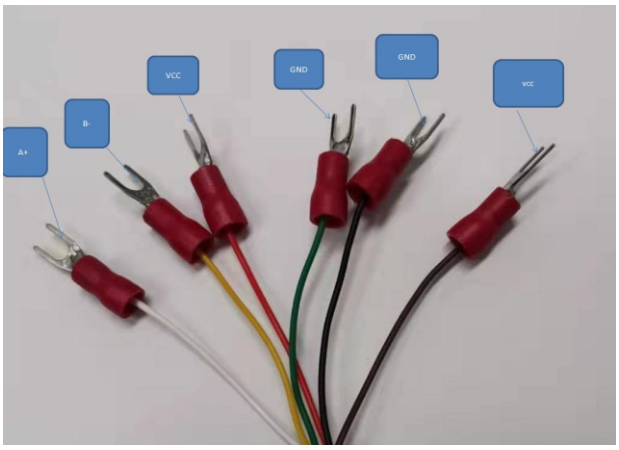
www.position-control.de e-mail: info@position-control.de tel. +49 (0) 6897 810 79

Dimension



www.position-control.de e-mail: info@position-control.de tel. +49 (0) 6897 810 79

Connection



Data +	Withe
Data -	Yellow
VCC	Red
Ground	Green
Ground	Black
VCC	Brown

Communication Protocol

Serial Asynchronous Communication

Baudrate:Default 19200bps

Start bits: 1 bit
Data bits: 8 bits
Stop bits: 1 bit
Parity: none
Flow control: none

Report error status code to master, the error code = 0x000F, please refer below status codes for ist meaning.

Test Command

Function	*Command*
Laser On	AA 00 01 BE 00 01 00 01 C1
Laser Off	AA 00 01 BE 00 01 00 00 C0
1shot Auto	AA 00 00 20 00 01 00 00 21
Continus Auto	AA 00 00 20 00 01 00 04 25
Continus Exit	58
Rd. Voltage	AA 80 00 06 86

All the commands in the table are based on the factory setting address of 00. If need modify address, please consult the after-sales.
The module supports multi-slaves, how to set the address and how to read it, please consult the after-sales.

Reply for Measurement

Bytes	0	1	2	3	4	5	6:9	10:11	8
Name	Head	RW/ Address	Register		Payload count		Payload Distance	Payload SQ	Check sum
Data	0xAA	0x00	0x00	0x22	0x00	0x03	0xAABBCCDD	0x0101	sum

Reply measure result to master, measure result = 0xAABBCCDD millimeters (frame byte6 = 0xAA, byte7 = 0xBB, byte8 = 0xCC, byte9 = 0xDD) and signal quality =
0x101,less signal quality number stands for stronger laser signal and more reliable distance result.

Reply for Voltage

Bytes	0	1	2	3	4	5	6	7	8
Name	Head	RW/Address	Register		Payload count		Payload		Checksum
Data	0xAA	0x80	0x00	0x06	0x00	0x01	0x32	0x19	sum

Input voltage = 3219mV

Error Reply

If any error occurred during measuring stage, laser rangefinder module will reply error report frame:

Bytes	0	1	2	3	4	5	6	7	8
Name	Head	RW/Address	Register		Payload count		Payload		Checksum
Data	0xEE	0x00	0x00	0x00	0x00	0x01	0x00	0x0F	0x10

Report error status code to master, the error code = 0x000F, please refer below status codes for ist meaning.

Error Codes

Status

Code	Description
0x0000	No error
0x0001	Power input too low, power voltage should >= 2.2V
0x0002	Internal error, don't care
0x0003	Module temperature is too low(< -20°C)
0x0004	Module temperature is too high(> +40°C)
0x0005	Target out of range
0x0006	Invalid measure result
0x0007	Background light too strong
0x0008	Laser signal too weak
0x0009	Laser signal too strong
0x000A	Hardware fault 1
0x000B	Hardware fault 2
0x000C	Hardware fault 3
0x000D	Hardware fault 4
0x000E	Hardware fault 5
0x000F	Laser signal not stable
0x0010	Hardware fault 6
0x0011	Hardware fault 7
0x0081	Invalid Frame

Important

The LA 50 laser distance sensor is an optical instrument that operation is affected by operating environmental conditions. Therefore, the range and accuracy that can be achieved in application are different. The following conditions may affect the measurement.
The color of the target surface, from white to black, is getting worse; The surface of the target is uneven Particles in the environment: such as dust, fog, heavy rain, blizzard; Stronglight.

Do not measure against a transparent surface, such as a colorless liquid (such as water) or glass (dust-free). Measurements can only be made when the target area is large enough to accommodate laser spots.

Contact us

Position-Control GmbH
Franzstr. 9
D-66299 Friedrichsthal
Fon +49(0)6897 . 810797
Fax +49(0)6897 . 810798
Mobil +49(0)178 . 8811410
Email info@position-control.de
http://www.position-control.de