

LR-1F
LR-1BS

2D LiDAR Sensor Communication Data Protocol v2.0



Please read this manual before using the product for the best product performance.
Be sure to keep this manual for future reference.

CPEN-1F/1BS-202012

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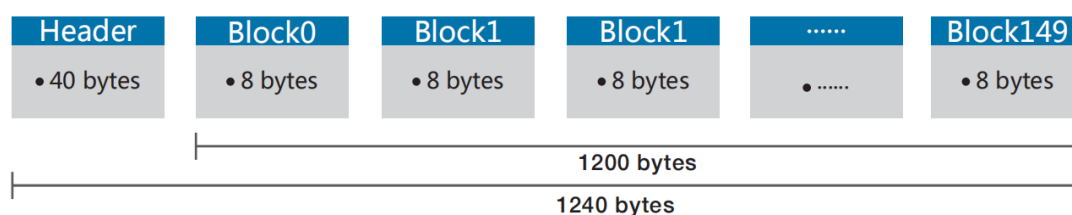
1. Type of Connector

1.1 Connector: RJ-45 standard internet connector

1.2 Basic protocol: UDP/IP standard internet protocol. Data are in little-endian format, lower byte first

2. Data Packet Format

2.1. General



The total length of a data frame is 1240 bytes, including:

- Frame header: 40 bytes
- Data block: $150 \times 8 = 1,200$ bytes

2.2. Header

Definition of Frame Header

Offset	Length	Description
0	4	ID, it is always 0xFE0010F
4	2	Protocol version code, the current code is 0x0200
6	1	Distance scale, distance = readout data x distance scale
7	3	Brand name code, use capital letters and digits. Using "\0" for missing code
10	12	Commercial type code: ended with "\0"
22	2	Internal type code
24	2	Hardware version
26	2	Software version
28	4	Time stamp: unit ms, presenting hour, minute, second, millisecond with 24 hours cycle
32	2	Bit[14:0]: Rotation rate Bit15:Rotation direction(0: clockwise, 1: counter clockwise)
34	1	Safe zone status,same as the hardware INPUT/OUTPUT BIT[3:0]:Same as OUTPUT[3:0], BIT[7:4]:Same as INPUT[3:0]
35	1	Error status. A corresponding bit of "1" indicates an error BIT0:Motor fault,BIT1:Abnormal voltage,BIT2:Temperature fault
36	4	Reserved (TBD)

2.3. Data block definition

Offset	Length	Description
0	2	Angle, unsigned integer. Range: 0~35999 Unit:0.01 %LSB, range 0 ~ 359.99 ° Note: Data block is invalid if this value is greater or equal than 0xFF00
2	2	Distance readout data,unsigned integer, indicating that the distance is determined by “readout data x distance scale”
4	2	Signal strength, indicates the strength of the received signal, range 0~65535
6	2	Reserved (TBD)



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