

1064nm 20mJ Laser Target Designator with Rangefinder



The JIO-D20M small Laser Target Designator with Rangefinder are precision optoelectronic products that emit laser light to specific targets and calculate distance information based on laser flight time. Communication is achieved through the RS422 communication interface, which has the characteristics of outstanding performance and simple operation. It has a wide range of application scenarios and the following advantages: small size, light weight, low power consumption, suitable for various platform environments such as handheld, airborne, and vehicle mounted. Using a 1064nm YAG laser, direct eye contact is prohibited.

Product Features

- Equipped with laser ranging function;
- Provide target laser irradiation;
- Respond to laser ranging commands and can stop ranging at any time according to the stop command;
- During distance measurement, each pulse outputs distance data and status information once;
- Distance measurement has distance selection function;
- If no stop command is received after starting continuous ranging, the ranging will automatically stop after 5 minutes (1Hz)/1 minute (5Hz);
- Can set irradiation mode and coding;
- Respond to laser irradiation commands, follow the set mode, code, and irradiation, and can stop irradiation at any time according to the stop command;
- If no stop command is received after starting the irradiation, it will automatically stop after one cycle of

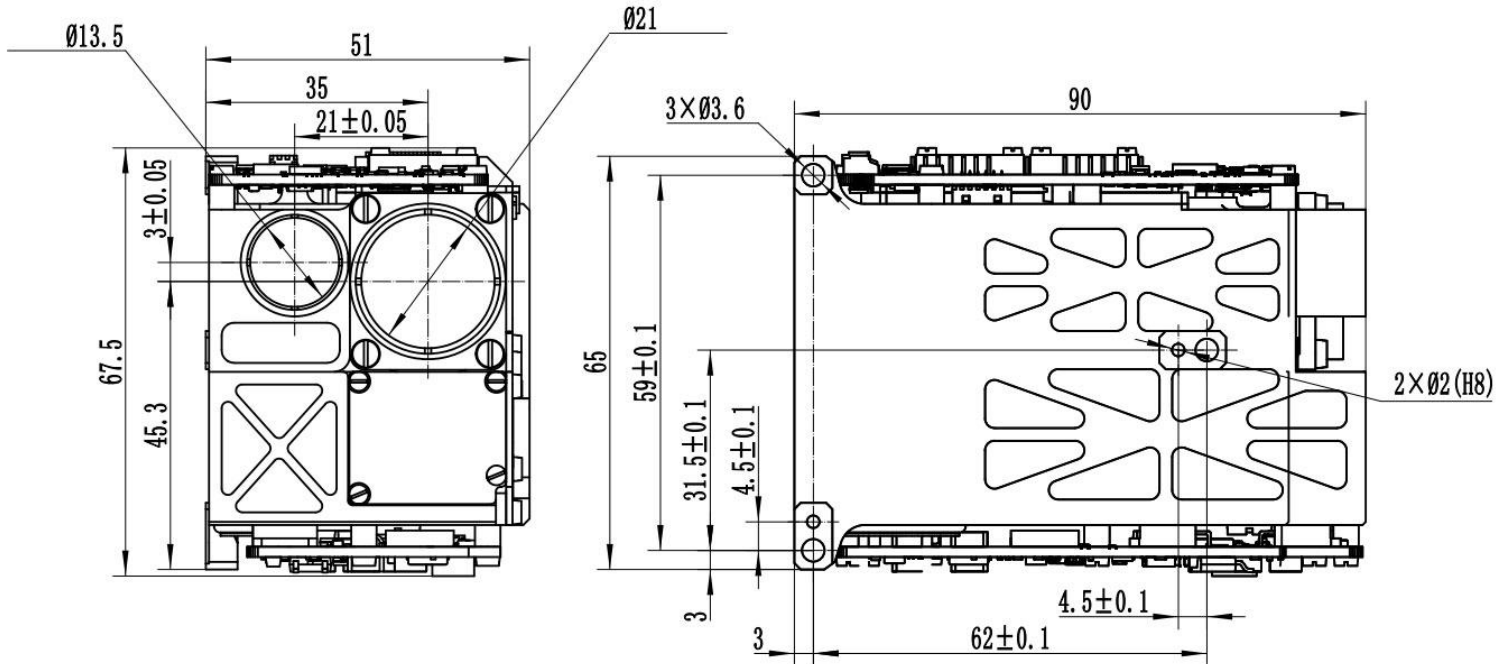
irradiation;

- During laser irradiation, each pulse outputs a distance value and status information;
- Power on self check and periodic self check, and output status information;
- Respond to the self check command and output status information;
- Can report the cumulative number of laser pulses; Laser pulse counting function;
- Distance measurement function for initial and final targets;

Product performance index

Item	Index
Model	JIO-D20M
Operating wavelength	1064nm
Max Range	≥4000m
Range hole	≤100m
Ranging accuracy	≤±2m
Ranging frequency	1 Ranging、1Hz、5Hz、20Hz
Weight	≤440g
Size	≤91mm×68mm×51.5mm
Voltage	18V~32V
Environmental adaptability	Working temperature: -40℃~60℃ Storage temperature: -55℃~70℃
Average energy	≥20mJ
Energy Stability	≤8%(Statistics after 2 seconds of light output)
Divergence angle	≤0.5mrad
Pulse width	15±5ns
Laser irradiation distance	≥2000m
Encoding method	Accurate frequency coding and external synchronization
Encoding accuracy	≤±2.5μs

Structure installation interface



Laser designator and rangefinder end power supply and communication port pin definition

Socket MOLEX 53048-0810		
Corresponding plug MOLEX 51021-0800		
Pin number	Signal name	Explain
1	24V	Power supply +
2	24V	Power supply+
3	24VGND	Power supply-
4	24VGND	Power supply-
5	422_A	Upper computer-> LIR component +
6	422_B	Upper computer-> LIR component -
7	422_Z	LIR component-> Upper compute-
8	422_Y	LIR component-> Upper compute+
Socket MOLEX 530480210		
Corresponding plug MOLEX 151340201		
Pin number	Signal name	Explain

1	SYNC_IN+	The external synchronization signal is a differential signal, and the interface type is RS422
2	SYNC_IN-	

Software

Communication protocol definition

Asynchronous serial communication standard: RS422;

Porter rate: 115,200 bps;

Transmission format: 8 data bits, 1 start bit, 1 bit stop bit, no check bit;

For each byte information, transmit the lowest bit (lsb) first, if the multibyte information, transmit the low byte first.

The command sent by the upper computer system to the laser illumination measurement module

Information header (0x55);

Command word 1;

Command word 2;

Command word 3;

Information tail is a checksum, a result of 1-4 bytes.