Manuals+ — User Manuals Simplified.

OLEI A090 Laser Distance Sensor Sensing Reality User Manual

Contents

OLEI A090 Laser Distance Sensor Sensing Reality

Product Information

The OLEI Laser Distance Sensor is a device that can accurately measure distances using laser technology. The device has an input voltage range of 7-26V and an average current consumption of 100mA (when Vin=10V). It uses a peak current and supports a communication interface for data transfer.

Product Usage Instructions

Follow the steps below to use the OLEI Laser Distance Sensor:

1. Ensure that the input voltage is within the specified range of 7-26V.
2. Connect the device to the power source.
3. Use the communication interface to connect the device to a computer or other compatible device for data transfer.
4. Place the device at a desired location and aim it at the object whose distance needs to be measured.
5. Press the measurement button to take a distance reading.
6. Repeat steps 4 and 5 for multiple measurements if required.
7. Disconnect the device from the power source and communication interface when not in use.

Electrical parameters and specifications

- Input voltage 7-26V
- Average current 100mA(Vin=10V)
- Peak current <150mA(Vin=10V)
- Type of communication interface RS485, CAN, 1 analog output,2 switching output, 1 switching input
- Power consumption <1.5W Table 2 Basic parameters
- Measuring range 0.05-90m(90%,300lux,single) 0.2-45m(90%,300lux,30Hz) •1
- Resolution 0.1mm
- Measurement reference Front-end distance measuring sensor
- Accuracy
    - ±1.5mm (90% diffuse reflection,<20m)

- ◦ ±3.0mm (full range)
- Measuring frequency

  Support single measurement and continuous measurement; frequency of continuous measurement: 5Hz, 10Hz,20Hz,30Hz are available.
- Light source 650-660nm
- Laser class Class II (laser power is between 0.75~0.95mW)
- Typical spot size (distance) 7mm@10m
- Initialization time <1000ms
- Holder material Metal (aluminum)
- Type of connection M12,12P, Male
- Weight(excluding accessories and packaging materials) 350g
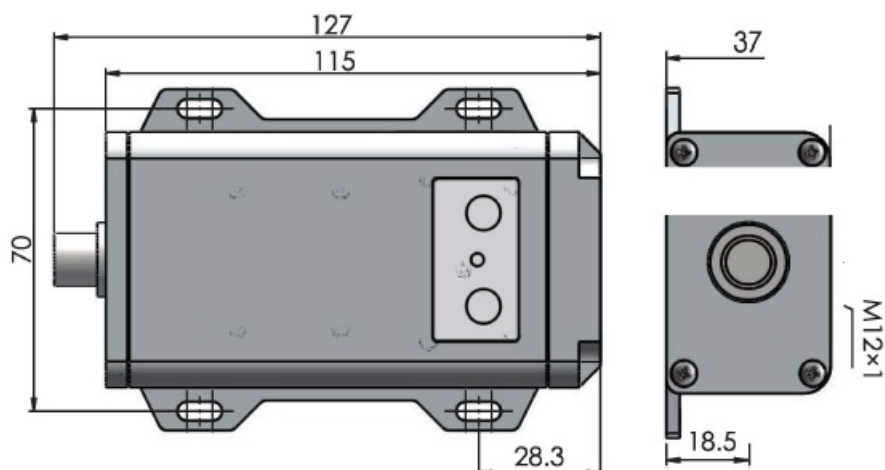- Dimensions(width x len th x height) 79*127*31mm

Notice:
The specific measurement range will change due to the measuring frequency, light intensity, and target reflectivity.

## Appearance and dimension

Appearance

Housing

Button and LED indicator

From the back

From the front

Rear cover

Front cover

Warning label

Aviation plug

Laser emission glass window

Installation dimension

127
115
70
28.3
37
M12×1
18.5

Instruction of wiring

Description of interface terminal

The external interface adopts 12P, M12 male aviation plug, and the pin sequence is as shown in the figure below:
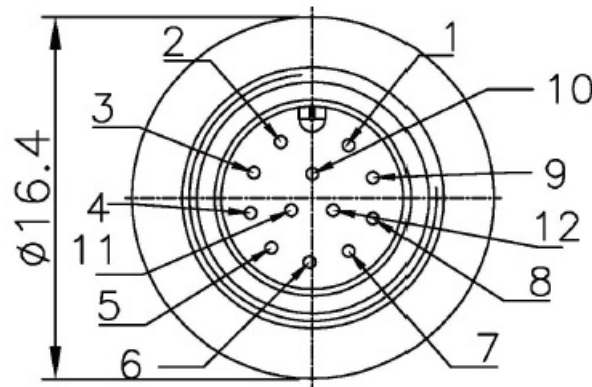
A 2m-long 12-core molding cable is included, with one end of M 12 female aviation plug, and the other end of colored wire.

1. V+ 7 … 26V
2. GND av
3. 01 Switching output channel 1, push-pull output, maximum drive current 200mA
4. 02 Switching output channel 2, push-pull output, maximum drive current 200mA
5. VCCIO 10 voltage, 12V-24V
6. 485A 485 output A
7. 485B 485 output B
8. **Multi1**

   CANH, IIC_SDA,5VIO (toggle switch to shift; program functions also need to be set to corresponding functions through parameters), default to CANH
9. **Multi2**

   CANL, IIC_SCL,5VIO (toggle switch to shift; program functions also need to be set to corresponding functions through parameters), default to CANL
10. GNDIO 10 ground
11. I1 INPUT1, switching input channel 1, when not connected, it is high level, Active low
12. **AnalogOut**

   Analog signal output, support -5V,0-10V,4-20mA, 0-20mA,0-24mA,parameter selection is required, default to 4-20mA out ut.

Notice:

1. The 485 interfaces, CAN interface, analog output, 10 output, and input all adopt a fully isolated design. Thus do not connect VCCIO and GNDIO with V+ and GND together, otherwise, the effect of power isolation will not be achieved.
2. If only 485 and CAN are used, VCCIO and GNDIO may not be connected. If the switching output and input functions are used, VCCIO and GNDIO must be connected.
3. If the analog output is used, GNDIO should be taken as the reference ground.

Communication interface description

RS485 Modbus RTU communication protocol
Please refer to "Industrial Ranging Sensor Modbus RTU Communication
Protocol" for detailed information.

CAN communication protocol

The CAN communication protocol supports standard frames and extended frames; the communication parameters could be set via RS485 bus. Please refer to "Industrial Ranging Sensor Modbus RTU Communication Protocol" for a detailed CAN communication setting method. For CAN communication protocol, please refer to "Industrial Ranging Sensor CAN Communication Protocol".

Analog output

There are 6 options for analog output function, namely:

- =0 off
- =1 0-5V
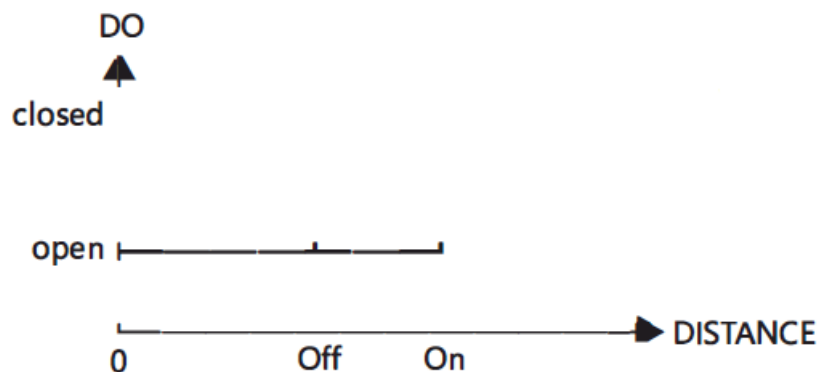- =2 0-10V
- =3 4-20mA
- =4 0-20mA
- =5 0-24mA

The configuration parameters should be set via the RS485 bus. Please refer to "Industrial Ranging Sensor Modbus RTU Communication Protocol" for details.

Switching outputs

The switching output is in push-pull mode and supports two modes of output setting, namely (1: ON> OFF, 2: ON <OFF). The device automatically judges the mode according to the set hysteresis parameters.

1. **Hysteresis parameter: ON level>OFF level**

   When the distance increases and exceeds the ON distance point, a high level is output. When the distance decreases and drops to the OFF distance point, a low level is output.

2. **Hysteresis parameter: ON level<OFF level**

   When the distance increases and exceeds the OFF distance point, low level is output. When the distance decreases and drops to the ON distance value, high level is output.

DO

closed

open

0   On   Off   DISTANCE
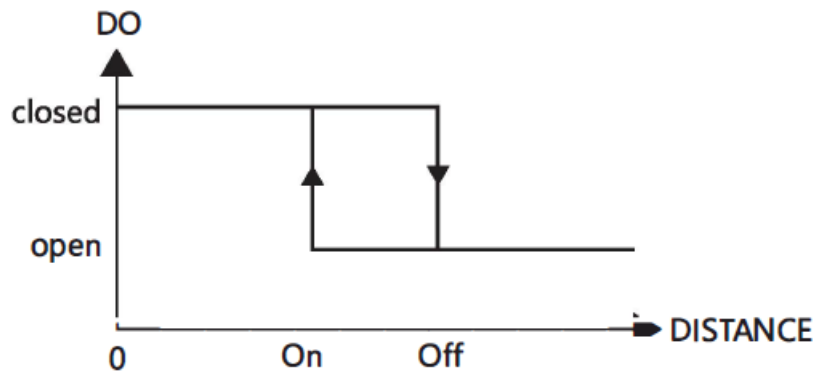
The 10 output configuration parameters should be set via the RS485 bus. Please refer to "Industrial Ranging Sensor Modbus RTU Communication Protocol" for details.

Switching input

The functional parameters of the switching input have three modes, as shown below:

- =0 off
- =1 not connected or high level to start the measurement, low level to stop measurement
- =2 not connected or high level to stop measurement, low level to start measurement

10 input configuration parameters should be set via the RS485 bus. Please refer to "Industrial Ranging Sensor Modbus RTU Communication Protocol" for details.

Service and maintenance

Please visit the OLEI official website for inquiry of service and maintenance information;
Website: www.ole-systems.com
Path: Service and Support>>Service and maintenance.

MorpheusTek
sales@morpheustek.com
http://morpheustek.com.

Documents / Resources

	OLEI A090 Laser Distance Sensor Sensing Reality [pdf] User Manual QSEN-A090-202103, A090 Laser Distance Sensor Sensing Reality, A090, A090 Distance Sensor Sensing Reality, Laser Distance Sensor Sensing Reality, Distance Sensor Sensing Reality, Laser Sensor Sensing Reality, Sensor Sensing Reality, Sensor Reality, Sensing Reality

References

- **morpheusTEK – Do more with robotics**
- **HANGZHOU OLE-SYSTEMS CO., LTD .(OLEI)**