# Laser Distance Module LDL-P4

# Technical Data Sheet

## Introduction

LDL-P4 is a high-precision laser distance module, independently developed by Chengdu Meskernel Integrated Technology Co., Ltd. The extremely small and lightweight features make it suitable for size and weight limited scenario and convenient for users to integrate into their systems. With low power consumption, stable performance, high accuracy and fast measurement speed, the module has been widely used in industrial automation fields.

Meskernel provides a series of customization service including but not limited to range, accuracy, baud rate, frequency, communication interface, temperature, etc., if you have any customization request, please feel free to contact us.

# Specification

| Type | Parameter Name | Parameter Value | | |
|---|---|---|---|---|
| Product Performance | Measurement Range | 0.03m~40m (Reflectivity: 1.0,interference light intensity: 3kLux) | | |
| | Measurement Unit | mm | | |
| | Measurement Time | 0.05~4 seconds (Reflectivity: 1.0, interference light intensity: 1kLux) | | |
| | Accuracy | ±(3mm+D*(1/10000)) (Reflectivity: 0.2-1.0, interference light intensity: 1kLux) | | |
| | Measurement Resolution | 1mm | | |
| | Continuous Measurement Frequency | 3Hz/20Hz (Reflectivity: 1.0, interference light intensity: 1kLux, Distance：0.03m-10m) | | |
| | Reflectivity Range | 0.02~1.0 | | |
| Optical Parameters | Laser Class | CLASS-II, according to IEC 60825-1 | | |
| | Laser Power | <1mW | | |
| | Laser wavelength | λ=610-690nm | | |
| | Laser Spot Diameter | <8mm@10m<br><20mm@20m<br><40mm@40m | | |
| | Laser Spot Dispersion Range | Spread target circle diameter< 100mm@10m Target<br>Spread target circle diameter< 200mm@20m Target<br>Spread target circle diameter< 300mm@30m Target | | |
| Electrical Parameters | Power Supply Voltage | RS-485 version | | DC:5V-36V; |
| | | RS-232 version (5-36V) | | DC: 5-36V |
| | | RS-232 Version (5V) | | DC:5V; |
| | | TTL Version(3.3V ) | | DC:3.3V; |
| | | TTL Version(5-36V ) | | DC:5V-36V; |
| | Current | RS-485 version | Turn off laser | <30mA@5V |
| | | | Turn on laser | <50mA@5V |
| | | | Continuous measurement mode | <80mA@5V |
| | | RS-232 version（5V) | Turn off laser | <30mA@5V |
| | | | Turn on laser | <55mA@5V |
| | | | Continuous measurement mode | <90mA@5V |
| | | RS-232 version（5-36V) | Turn off laser | <30mA@5V |
| | | | Turn on laser | <50mA@5V |
| | | | Continuous | <80mA@5V |

| | | | | |
|---|---|---|---|---|
| | Current | | measurement mode | |
| | | TTL Version(3.3V ) | Turn off laser | <30mA@3.3V |
| | | | Turn on laser | <55mA@3.3V |
| | | | Continuous measurement mode | <120mA@3.3V |
| | | TTL Version(5-36V ) | Turn off laser | <30mA@5V |
| | | | Turn on laser | <50mA@5V |
| | | | Continuous measurement mode | <80mA@5V |
| Communication Characteristics | Transmission Rate | RS-485 version | | Maximum 12Mbps (theoretical value) |
| | | RS-232 version | | Maximum 250Kbps (theoretical value) |
| | | TTL Version(3.3V ) | Fixed Baud Rate | The default baud rate is 115200bps, customization (4800bps, 9600bps, 19200bps, 38400bps, 115200bps) |
| | | | Automatic Baud Rate | The default baud rate is 115200bps, and the baud rate can be set to (9600~115200bps) |
| | Communication Level | RS-485 version | | RS-485 |
| | | RS-232 version | | RS-232 |
| | | TTL version | | TTL（3.3V） |
| Other | Dimension | 68mmx42mmx17.4mm(length×width×height) | | |
| | Weight | 52g±1g | | |
| | Working Temperature | 0~40°C(32~104°F) | | |
| | Storage Temperature | -25~60°C(-13~140°F) | | |

## Appearance and Dimension

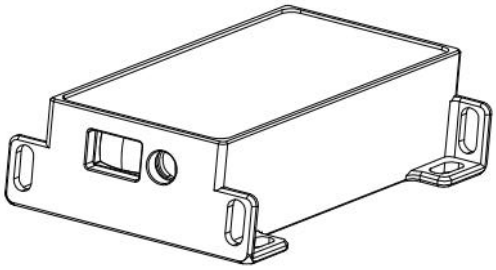

Figure 3-1 Module Overview

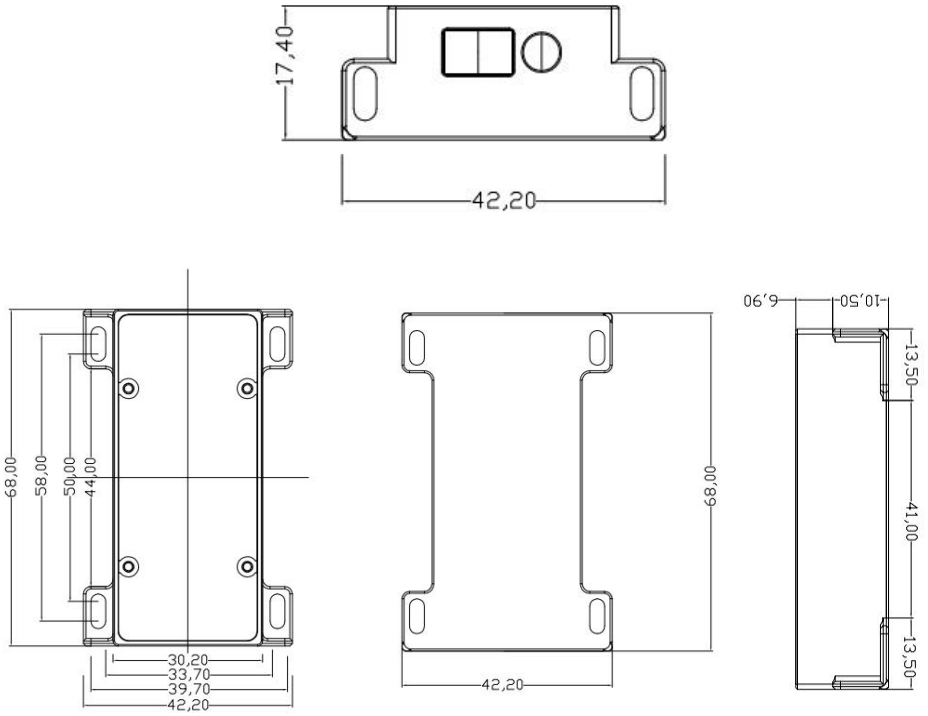


Figure 3-2 Module Structure Dimensional Diagram

## Note

1. Under poor conditions (such as: dark color, bad reflectivity or atmospheric visibility, strong ambient light, etc.), the measurement accuracy might be affected.
2. Please use the target plate when there is strong sunlight or the target with poor reflection.
3. Before using the product, please read the relevant chapters of installation and operation carefully to prevent damage to the sensor, please contact us if you need more information.

4. Free of Responsibility: INCORRECT using condition and storage condition, and service life of the module is exhausted during warranty period, the warranty will be TERMINATED.