

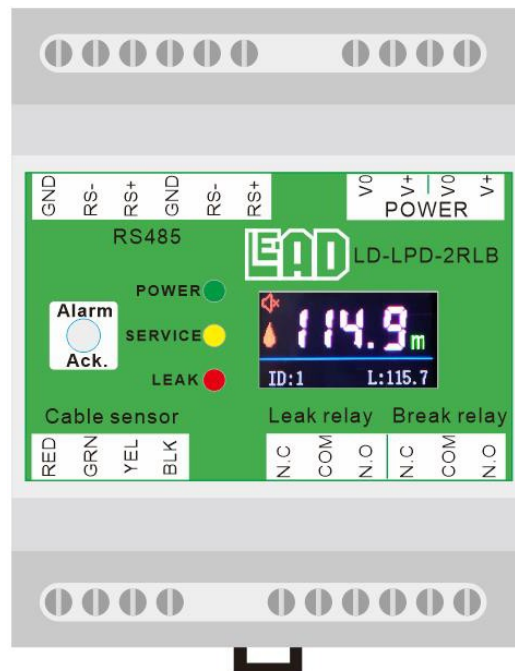
# Lead Leak Detection System Ltd.

## LEAD Locating Panel – LD-LPD-2RLB

Product specification (LD-LPD-2RLB)



### Key product highlights

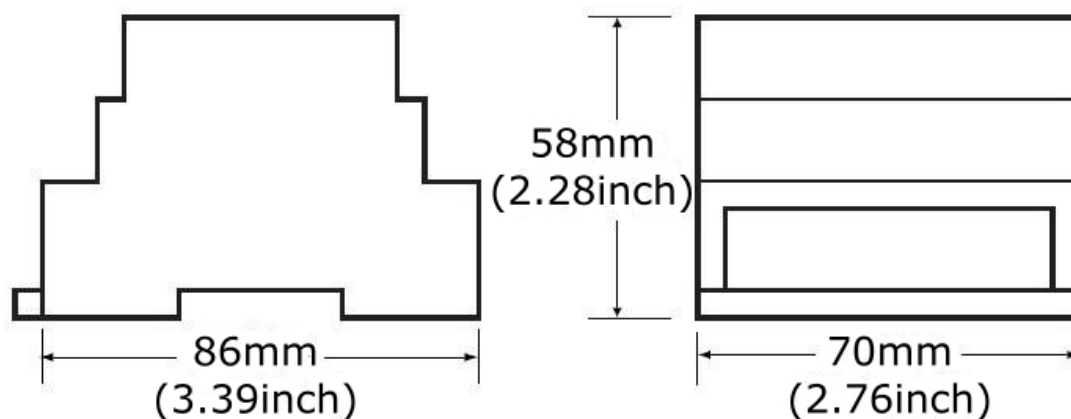


1. Operating voltage: 12V-24V DC with dual power supply terminals
2. Detection of 800 meters water leakage sensing cable length when used together with LEAD sensing cable.
3. Two relay output design with leakage output relay and cable break output relay 30V DC with maximum current of 1A.
4. OLED LCD display with operation status.
5. With alarm acknowledgement / mute button.
6. The measurement accuracy is 0.5% of the full range or  $\pm 0.5$  meters.
7. When the controller is powered on, it will automatically enter the self-checking state without manual intervention.
8. Real-time detection of the cable length and leakage status of the sensing cable.
9. Adjustable sensitivity can be adapted to different leakage site application.
10. Dual RS485 serial port interface.
11. Standard Modbus communication protocol, which can easily access BMS system.
12. Fail-safe loop back connection is supported.

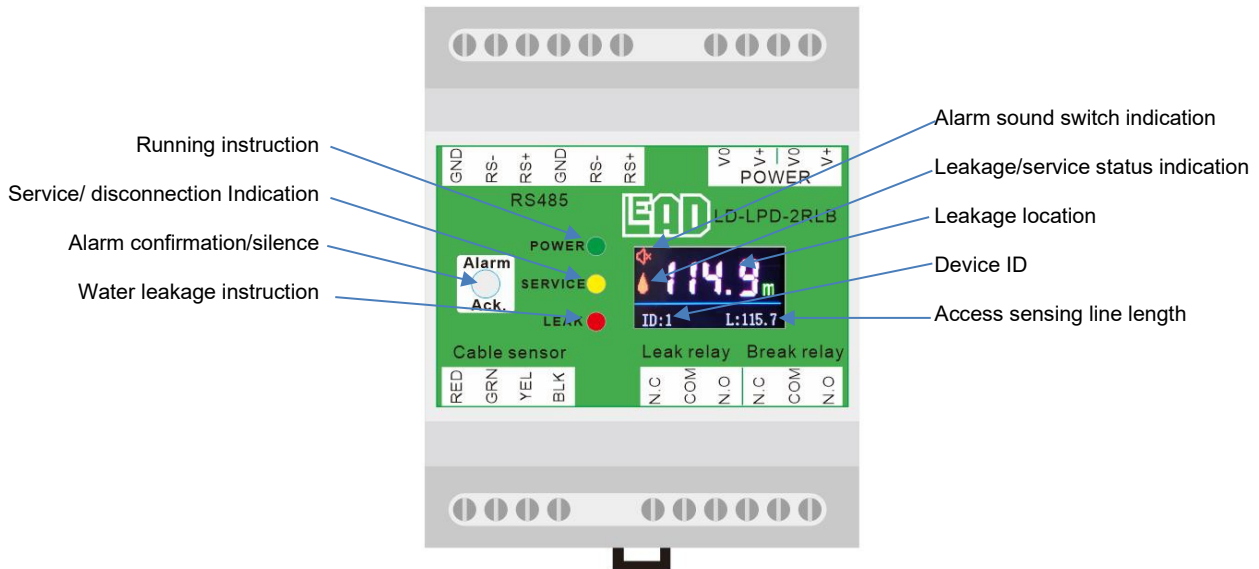
Measurement result of locating panel LD-LPD-2RLB via the connection of leading cable terminal is shown in the table below:

Sensing cable or Leading cable terminal (0=Disconnected & 1=Connected)				Alarm Function		
RED	GRN	YEL	BLK	Cable break alarm	Leakage alarm	Leakage location
0	1	1	1	Yes	Yes	Yes
1	0	1	1	Yes	Yes	Yes
1	1	0	1	Yes	Yes	Yes
1	1	1	0	Yes	Yes	Yes
0	1	0	1	Yes	Yes	No (0)
0	1	1	0	Yes	Yes	No (0)
1	0	0	1	Yes	Yes	No (0)

Display installation category    Overvoltage category II, pollution level 2  
 Storage temperature                -18°C~60°C  
 Operating temperature            0°C~50°C  
 Enclosure                              NEMA1 standard: IP00  
 Dimension                             86\*70\*58mm



## Details on locating panel LD-LPD-2RLB (as shown below)

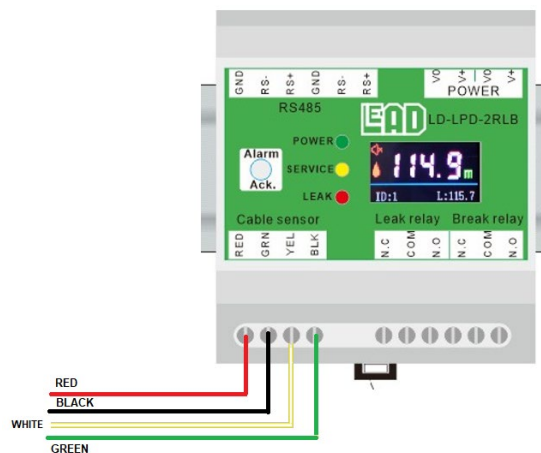


## Wire connection of LEAD sensing cable

The LD-LPD-2RLB location leakage controller can be used with LEAD water sensing cable. As shown in the figure, LEAD leading cable is connected to the locating panel LD-LPD-2RLB as below:-

Sensing cable connection as below:-

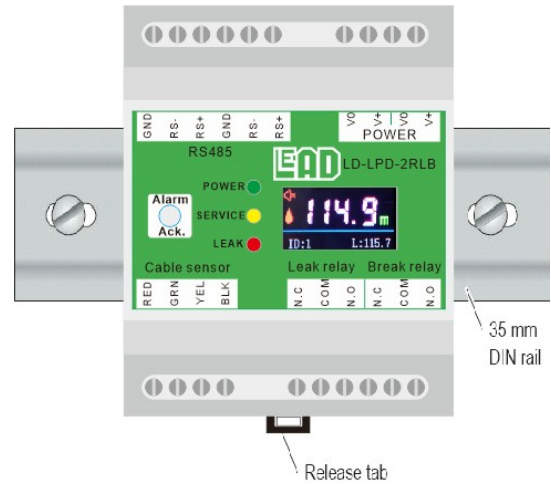
Terminal	Description
RED	Leading cable RED
GRN	Leading cable BLACK
YEL	Leading cable WHITE
BLK	Leading cable GREEN



*Leader cable connection*

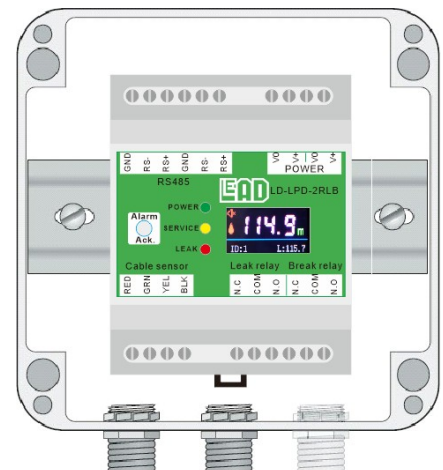
## **LD-LPD-2RLB without enclosure installation**

Fix suitable length of DIN guide rail to meet the requirements on the plane, or find enough position on the existing DIN guide rail to install LEAD LD-LPD-2RLB. When installing, be careful to release the latch downward.



## **LD-LPD-2RLB mounting with external enclosure**

- Typical outdoor or harsh environment installation requires the enclosure to have three mounting holes: one for power supply and telemetry communication cable inlet, one for power source and telemetry communication cable outlet, one for sensing cable outlet as shown as left.
- Make use of the mounting holes in the four corners and matching hardware to firm the shell to a suitable vertical plane.
- Roughly install the conduit according to the requirements and draw in the power supply and telemetry communication cable. Reserve about 20cm for terminals connected to LD-LPD-2RLB. Puncture leakage sensing cable.
- In order to ensure maximum electrostatic discharge protection and meet relevant standards, DIN guide rail must be grounded.



**Note:** simple installation and final wiring are not necessary to complete at the same time, but if the installation of the enclosure is not completed, the outer cover should be covered, and tighten the screws of the outer cover, and then open the enclosure when the restart to do the unfinished work.

## Power supply selection

LD-LPD-2RLB has a variety of power supply options. Wiring requirements will vary depending on the type of equipment installed and local regulations. In all cases, it should be ensured that the power supply voltage retrieved by each LD-LPD-2RLB came from the same power source.

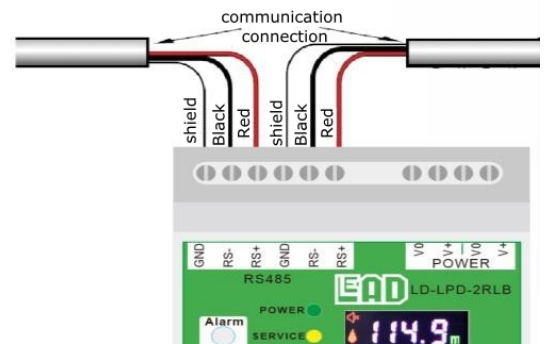
## Power supply and serial port connection

LD-LPD-2RLB can transmit all alarm and status information through RS-485 shielded twisted-pair cable.

### Serial Interface

Network Configuration RS-485 Serial port, different baud rates are available, and the default is 9600 bps, the address is 1 through to 255, and the factory default address is 1.

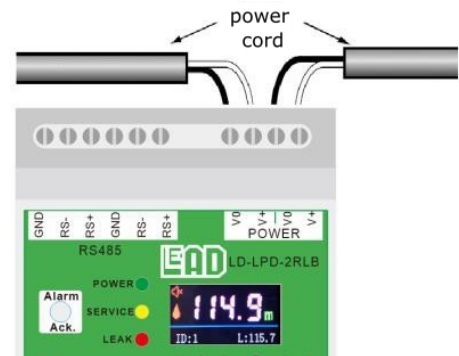
### Communication Protocol Modbus RS485 RTU



Strip the insulation coat and shielding layer on the part of the power cable and expose the four core wires about 25mm in length.

Peel the insulation layer of the core wire to expose a conductor about 6mm in length, which will be connected according to figure as shown

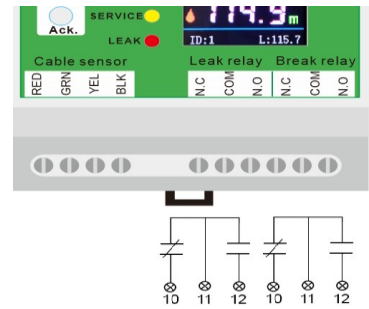
**Note:** The power supply voltage must be limited to the range specified on the LD-LPD-2RLB label.








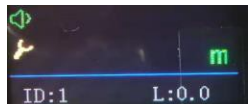


## Alarm relay connection

Programmable LD-LPD-2RLB relay output can be used for local or remote alarm, control valves or other devices, and can also be connected to the control automation system contact input. The relay can be programmed to alarm only for leakage or leakage or sensor failure. The two alarm modes of the relay, normally open and normally closed, coexist. Users can select according to the project requirement.

**Note:** Relay contact capacity should strictly comply with the requirements of the manual, otherwise it will cause safety hazards or accidents.



## Event correlation and status indication

Event	Status indicator			OLED display content	Relay		Buzzer
	POWER	SERVICE	LEAK		leak relay	break relay	
Sensing line access normal, without water leakage or broken line	ON (Green)	OFF	OFF		No action	No action	Silent
Sensing line is connected normally, without broken line, with water leakage	ON (Green)	OFF	FLASH (Red)		Action	No action	Alarm
Sensing line single circuit broken line, without water leakage	ON (Green)	FLASH (Yellow)	FLASH (Red)		No action	Action	Alarm
Sensing line single circuit broken line, with water leakage	ON (Green)	FLASH (Yellow)	FLASH (Red)	 	Action	Action	Alarm
Sensing line double circuit broken line, without water leakage	ON (Green)	FLASH (Yellow)	OFF		No action	Action	Alarm
Sensing line double circuit is broken line, with water leakage	ON (Green)	FLASH (Yellow)	FLASH (Red)	 	Action	Action	Alarm

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