

P-LFP1:Position Controller Use Manual



Installation/Operation Instructions

General information

Please read these instructions and keep them in a safe place. These instructions must be followed carefully to ensure proper operation.

The P-LFP1 has been designed for use with leak sensing cables, point sensors and normally open, dry contact devices (float switch, pressure or vacuum switch, optical probe with adapter, limit switch, etc.). Up to 1500M (5000 ft) of sensor cable can be monitored by the P-LFP1. Please contact us for information regarding longer monitoring distance.

The P-LFP1 is designed for installation in ordinary (non-hazardous) areas. The P-LFP1 has five small LED's to indicate power, status and communications activity, as well as a relay with SPDT contacts. Once detected, P-LFP1 liquid leakage positioning controller will trigger the acousto-optic alarm, digital tube show leakage location, and starts relay, produce the machine without voltage contacts closed, P-LFP1 leak positioning controller using ModBus RTU agreement programming, convenient and monitoring system integration. The P-LFP1 can be used as a stand-alone leak detection alarm, or connected to a host system (computer, or control automation system) via simple, twisted pair RS-485 serial communication wiring.

Suitable for checking the machine room base station, warehouse, libraries, museums and the industrial field in important places such as real-time leakage detection.

Product features:

- LED instructions power supply, leakage alarm, sensing cable faults and communication state.
- It can record 32 leakage alarm data records.

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- Practical reliable twisted pair serial RS-485 communication mode And as far as communication distance up to 1200 m,programming agreement is the standard of industrial ModBus agreement.
- 12V DC power supply,no polar access.
- The communication baud rate and address can be set through the test software.
- The SPDT relay’s output form to often open closed coexist free of choice.
- Good ESD,and surge transients immunity technology,guaranteed that the reliable operation of the P-LFP1.
- It is very easy to be installed with DIN rail or enclosure.

Basic characteristics

compatibility	P-LFP1000 sensor cable and TraceTek leak detecting sensing cables or the same type sensing cables	
Sensor cables maximum length	1500M	
Accuracy	Sensor cable’s length of 0.5%±0.5m	
Environmental rating	Storage temperature	-40 °C~60 °C (0 °F~140°F)
	Operating temperature	-20°C~50 °C (32 °F~122°F)
	Operating humidity	5%~95% (No condensation)
Power supply	12VDC, 3W	
Serial interface	Network configuration	RS-485 communication mode,baud rate can be chosen,optional address for 0 to 247,the factory default baud is 9600,and address is 0
	Programming agreement	MODBUS RTU
Relay contacts	AC125V, 0.5A, DC24V, 1A。 To often open, closed can be chosen	

Installing the P-LFP1

Note:To avoid damage to the P-LFP1,store the unit int it's packaging until ready to install.

Selecting the mounting position

Choosing a location where the module will be protected from the elements,temperature extremes or heavy vibration.The P-LFP1 is designed to be snapped onto standard 35 mm DIN rail. Existing electrical or instrumentation cabinets with spare rail space make good mounting locations. It is also possible to install a small section of DIN rail directly on a wall or cabinet surface and mount the P-LFP1 in any location as long as it does not create a tripping hazard or expose the P-LFP1 to impact damage. The P-LFP1 should be mounted within 1200m wire run from the control system host.Contact us for methods to increase the wire run distance beyond 1200m.

Important : The P-LFP1 is an electronic unit. Take the following precautions to avoid damage to electronic components:

- Handle with care and avoid mechanical shock and impact.
- Keep dry.
- Avoid exposure to static electricity by touching a nearby piece of grounded equipment or water pipe prior to handling the P-LFP1.
- Avoid contact with metal filings, grease, pipe dope and other contaminants.

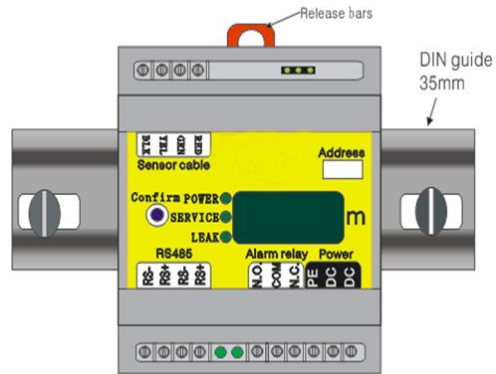


Figure 1: DIN rail mount

Mounting the P-LFP1 module

- Secure a sufficient length of DIN rail to the desired mounting surface, or locate and existing DIN rail with sufficient space to install the P-LFP1.
- Remove the P-LFP1 from its packaging and snap onto the DIN rail with the release Tab towards the bottom. Shown in Figure 1.

Connections for Power and Telemetry

P-LFP1 communicates all alarm and status messages Via RS-485 twisted pair telemetry. Two of the four conductors in the power/telemetry cable are used for telemetry and the other two may be used to provide the supply voltage. Alternatively, separate wiring may be used for the supply voltage, as shown in Figure 2.

The P-LFP1 can be supplied DC12V access (DC two terminals), PE terminal for power ground (not the power negative), can achieve good access to power ground of anti-interference ability. The specific method of pick up is shown in the Figure 2

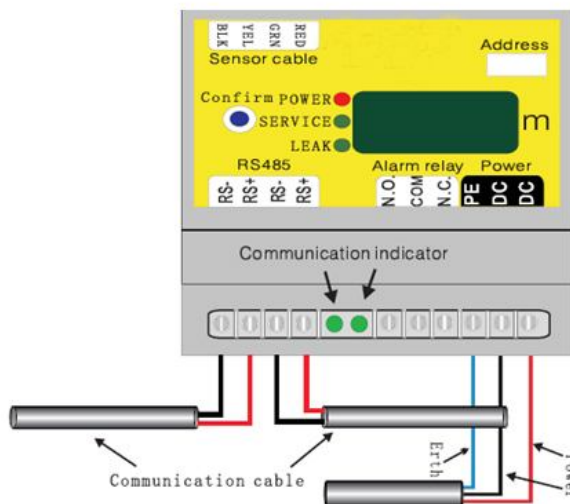


Figure 2 : Power and Telemetry Connections

Connections for Alarm Relay

P-LFP1 of relay contacts can be used for local or remote alarm, or control valve or other devices, also can control automation system contacts input connection. It only for leakage alarm relay. The relay has often open, closed, two kinds of state, the user can choose by choice. Alarm signal see the table below.

Wiring combination	Alarm condition	Output state
N.O.—COM	No alarm	open
	alarm	closed
	Lose power	open
N.C.—COM	No alarm	open
	alarm	closed
	Lose power	open

Leader Cable Connections for Sensor

The P-LFP1 can be used with the P-LFP1000, or any of the similar leak detecting sensing cables. Connect the leader cable to the P-LFP1 as shown in Figure 3.

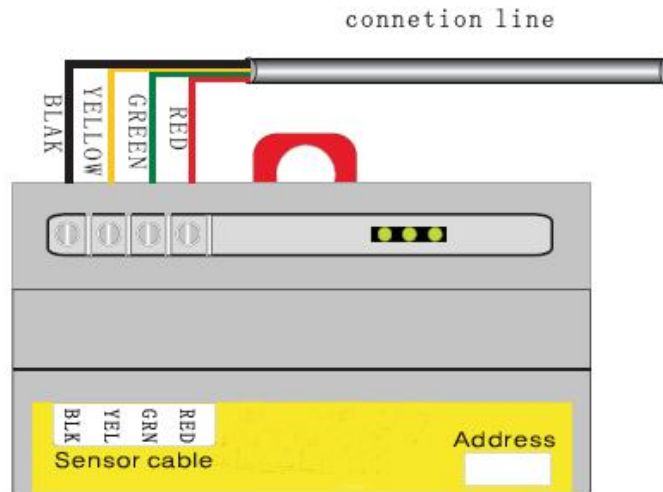


Figure 3: connetion line (leader cable)

The system configuration operating instructions

P-LFP1 address and baud rate settings

If P-LFP1 integrated in a monitoring system, each piece of P-LFP1 are required to have a separate address. Default P-LFP1 network address is 0, baud rate is 9600.

In setting P-LFP1 network address, need to do the following steps:

- P-LFP1 on electricity, and communication lines change the RS485 single into RS232 signal, access the PC designated serial interface.
- Open configuration software as below Figure 4.

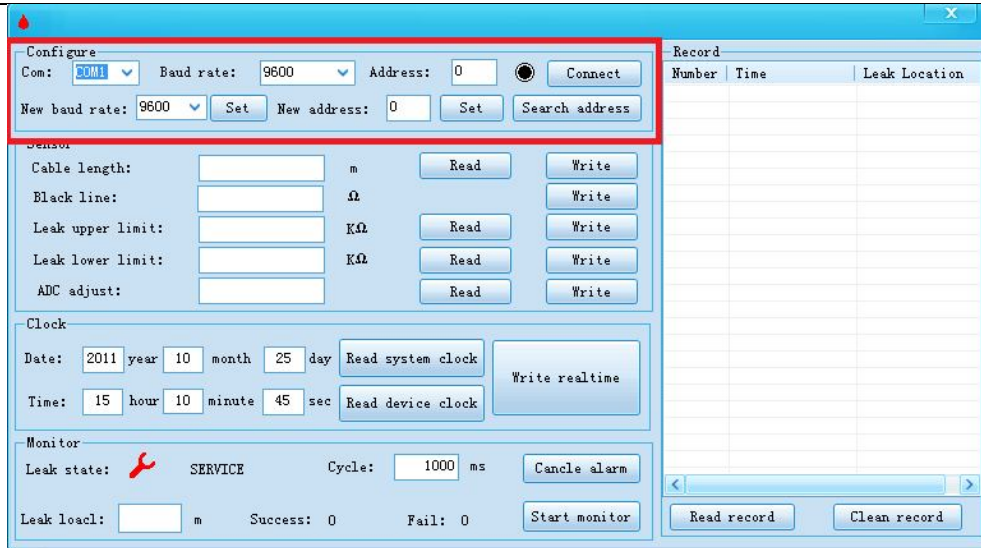


Figure 4:Address and baud rate settings

·Choose the correct number of serial,baud rate and the address,and then click"Connect".Set the PC and the P-LFP1 communications connection success,then "New baud rate "and ""New address"input for new baud rate and new address,click on "Set" respectively.Set respectively after success,then baud rate and address is set to complete.**Note :set new baud rate ,must restart the P-LFP1 set to take effect.**

Leakage induction cable parameter set

Because each manufacturer of the parameters cable leakage is different,so for different bands of leakage of the parameters of the induction cable to set up,and the specific procedure is as following and see the Figure 5:

- Leak induction cable ,termination and lead line connected together correctly,using a multimeter to ohms gear measurement the resistance value of yellow line between the black line.
- In"Cable length"input access induction the length of the sensor cable ,and then click"write",in "Black line" input the resistance value which using a multimeter to measured sensor cable,click"writing".Other please don' change.

Note:if use the company's complete fittings products,Leakage induction cable parameter keep all default value.

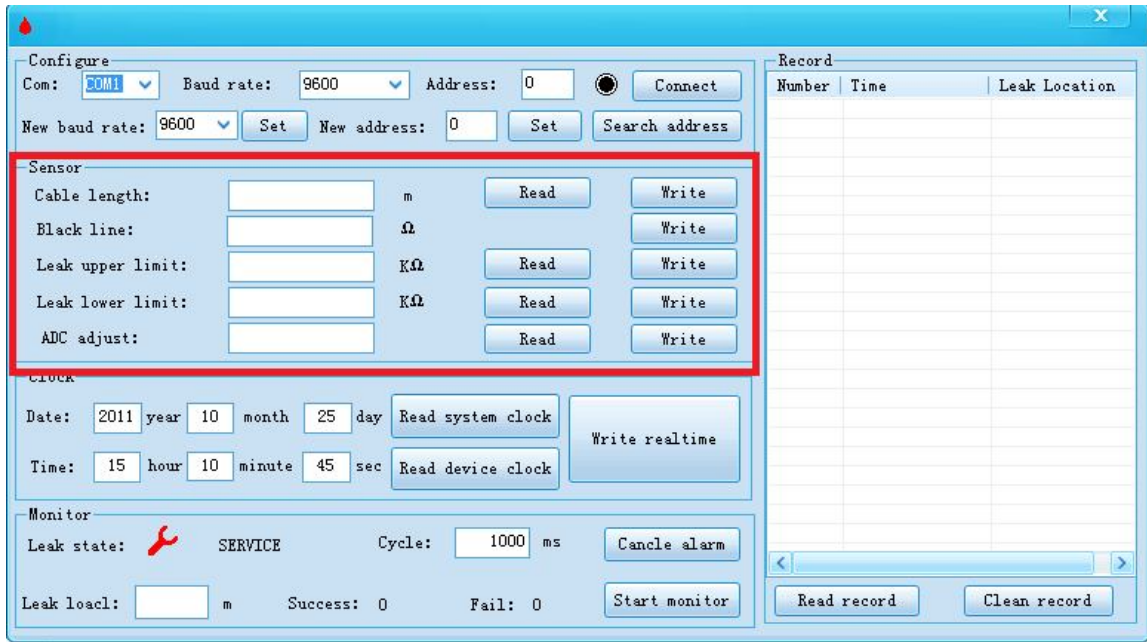


Figure 5:Leakage induction cable parameter set

Set the clock of the P-LFP1

Click on the "Read system clock" to read the computer system clock and display in time in the box, click "Write real time" to set the P-LFP1 clock and computer system clock are exactly the same. Click "Read device clock" also can read the P-LFP1 clock and shown the clock in the box. Please see the Figure 6 Set the clock of the P-LFP1.

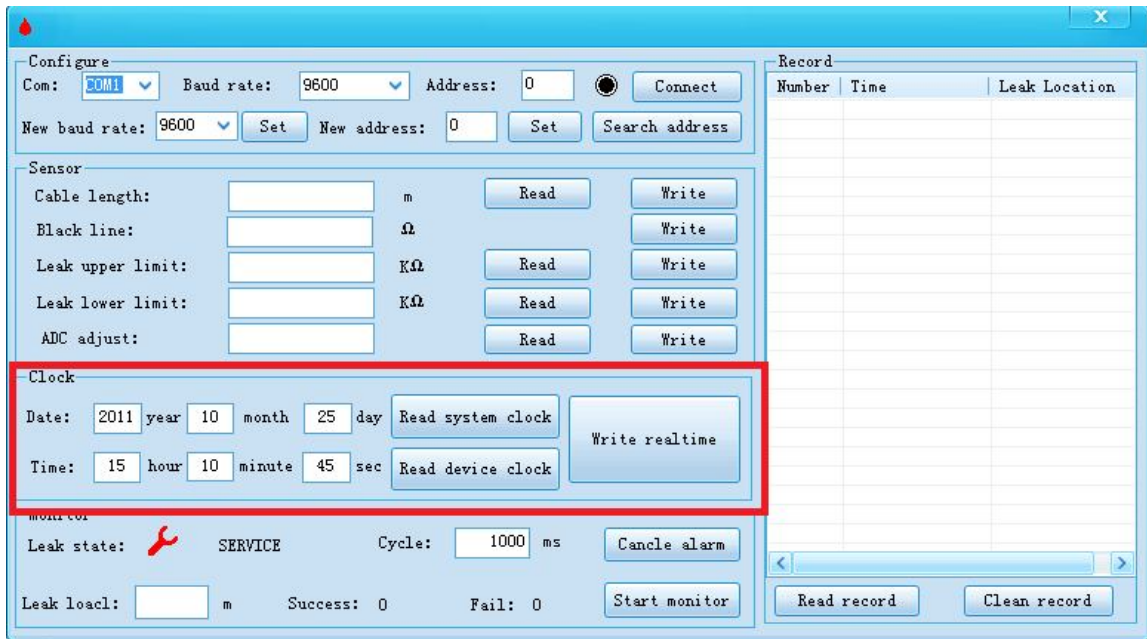


Figure 6:Set the clock of the P-LFP1

Real-time leakage condition monitoring

Please see the Figure 7:Real-time leakage condition monitoring

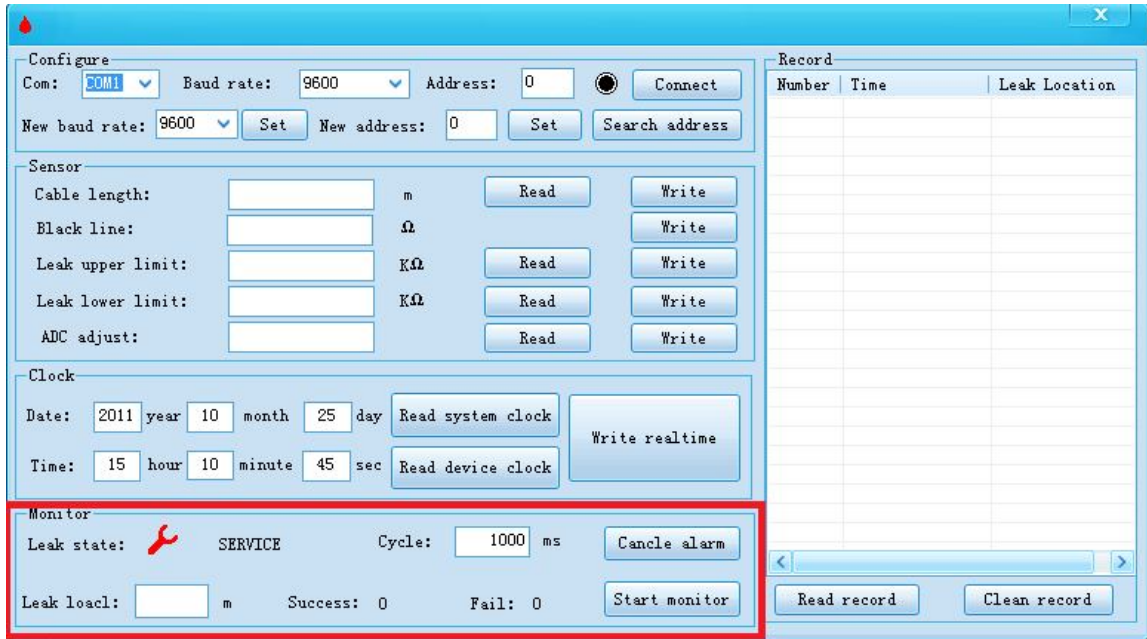


Figure 7:Real-time leakage condition monitoring

Alarm event record

The P-LFP1 most can record 32 item leakage alarm records,the alarm information including leaking time , sequence and leakage position. When record full article 32 after recorded,if produced,once leakage alarm coming ,the P-LFP1 will delete 32 item records, at the same time record this new leakage alarm record.If leakage alarm record of less than 32 items,also you can use the P-LFP1 test software manually remove it.Please see the Figure 8.

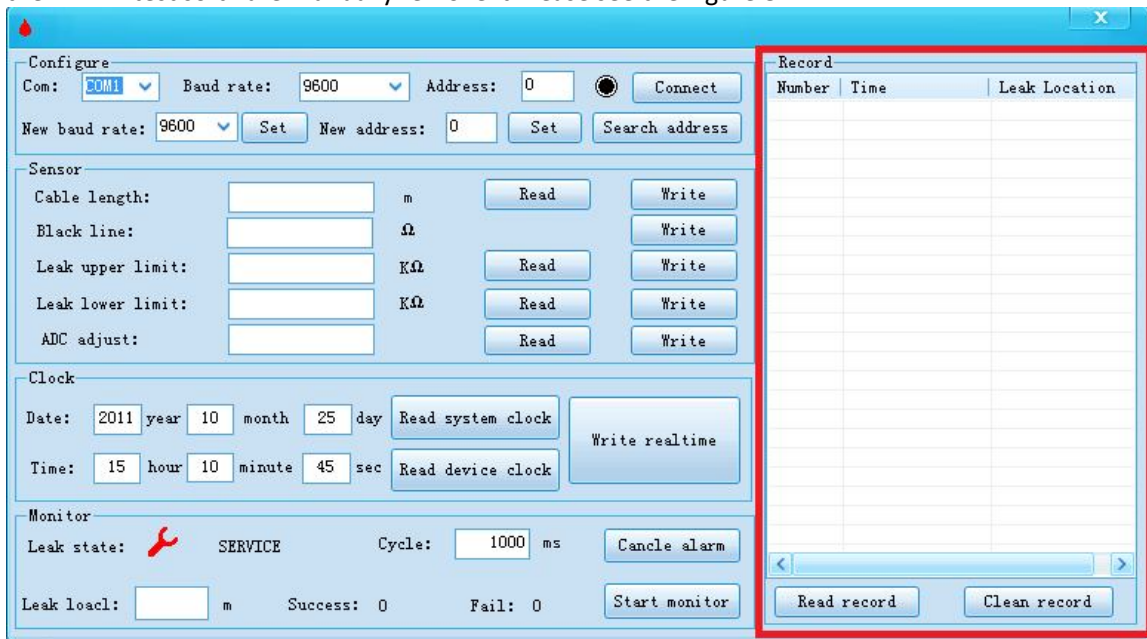


Figure 8:Alarm event record

Maintenance and Troubleshooting

No user maintenance is required! There are no user adjustments or calibrations that can be performed in the field.

Each P-LFP1 is tested and calibrated at the factory. An operation P-LFP1 runs a continuous self check routine and reports any discrepancies to host computer. If the P-LFP1 or the network wiring fails in such a way that the P-LFP1 can not communicate with the host, then the host reports the failure as a communication failure.

Status Indicators

There are 5 LED's on the P-LFP1 circuit board to indicate: power, communications (RX=inbound and TX=outbound), sensor status (leak detected and trouble). See Figure 9.

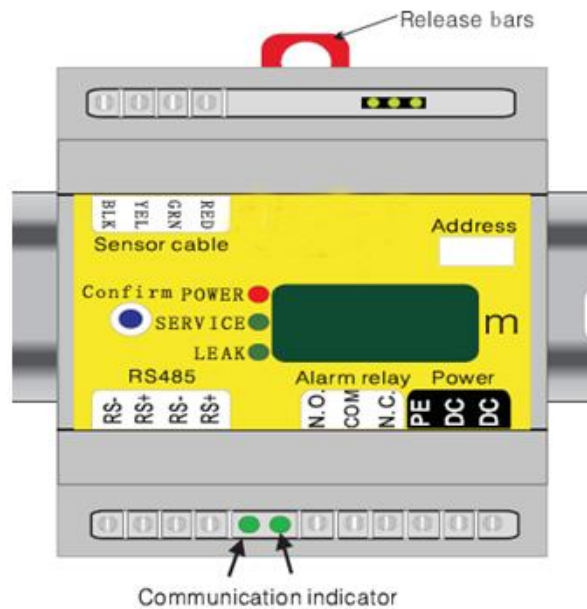


Figure 9. P-LFP1 LED locations

The red Power LED will be on when the P-LFP1 is powered on and functioning correctly. Table 1 lists various sensor status conditions and possible corrective actions. Table 2 lists communication status conditions (applicable when the P-LFP1 is used in a network system).

Table 1. P-LFP1 LED operational status indications

LEAK	ON	Leak detected. Check sensor for leak or spill.
	OFF	No leak detected.
SERVICE	ON	The sensor needs servicing. Check sensor and leak wires/jumpers/end terminal for continuity or contamination.
	OFF	Sensing loop has been properly connected.

Table 2. P-LFP1 communication status indications (only active if connected to a network)

TX	RX	INDICATION
FLASH	FLASH	P-LFP1 unit is in communication normally with host

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OFF	FLASH	P-LFP1 unit is receiving communication from host but is not responding.
OFF	ON	RS-485 communication wires are reversed
OFF	OFF	P-LFP1 unit is not communicating with host

Leak positioning of the monitoring system accessories

SERIAL NUMBER	MODEL	NAME
1	P-LFP1	The leak position controller
2	P-LFP1000	Leak position sensor cable
3	P-LFP86	End terminal
4	P-LFP58	connection wire
5	P-LFP96	Fixed glue stick a clip

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