

XW-PC-1B

Non-locating Leak Controller

Product Specification



- ◆ Adjustable sensitivity
- ◆ Break Alarm
- ◆ Relay output
- ◆ RS-485 communication
- ◆ One-click Silencing

Product Overview

XW-PC-1B is a liquid leak detection device, which supports break wire alarm function. It can select different sensitivity through the dip switch on the panel to adapt to different detection environment and grade requirements. The relay contact signal and 485 signal output by the controller can be integrated with various monitoring systems to realize remote monitoring.

Application & Features

Application

- IDC
- Data centre
- Library
- Museum
- Warehouse

Features

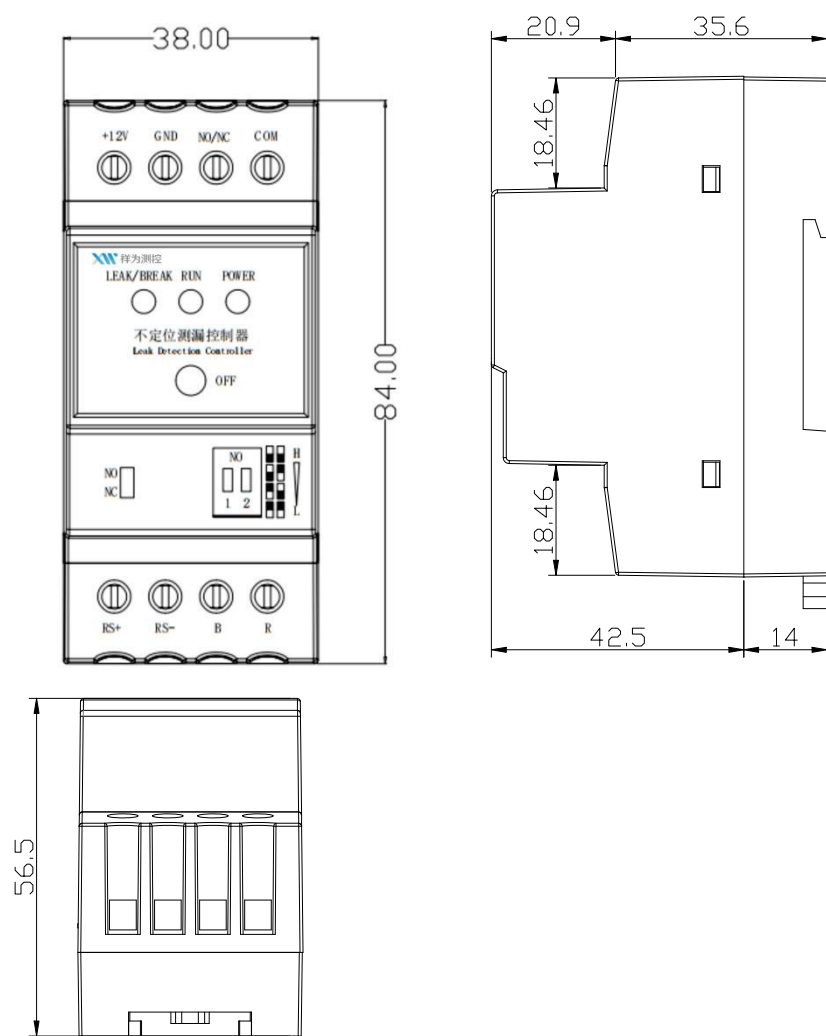
- The controller has the function of leakage alarm and break wire alarm, and the status of the controller can be displayed through the interfacing LED.
- Can output RS485 signals and connects to the monitoring platform to report real-time environmental monitoring data.

- Adopts all industrial-grade electronic components, which can not only ensure high sensitivity during detection, but also reduce false alarms caused by various external factors. The equipment adopts electromagnetic compatibility design, with anti-surge, anti-static, anti-EFT and other protection functions.
- Outputs RS485 signal to upload the leakage data to the monitoring platform to achieve real-time centralised monitoring, with a communication distance of up to 1200m.
- When detect liquid leakage, the panel LEAK/BREAK indicator light is always on, and the internal buzzer emits 0.4s periodic alarm sound; when the controller detects disconnection, the panel LEAK/BREAK indicator light flashes and the internal buzzer emits 1s periodic alarm sound.
- Supports one-key mute function, which can mute the internal buzzer through the mute button on the panel.
- Suitable for standard DIN 35mm industrial rail mounting, and all field wiring can be easily done through the terminal block. When a leak occurs, the relay operates, the leakage indicator lights up, and the controller automatically returns to the normal state after evacuation, without the need for manual on-site operation.

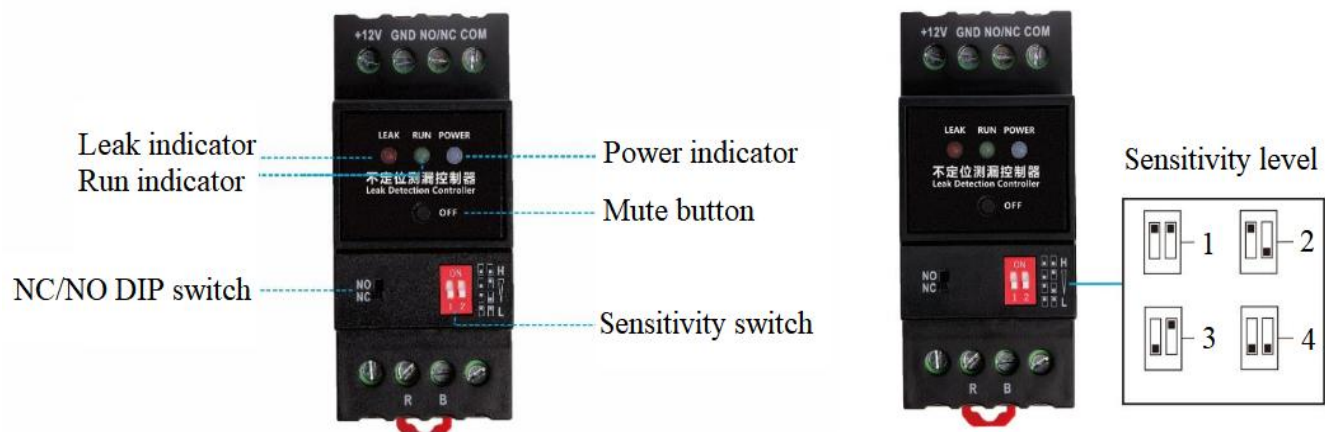
Technical Data

Sensing performance	Response time	≤5s(leakage alarm); ≤10s(break wire alarm)
	Detection distance	500m
Environmental rating	Operating Temperature	-40°C~70°C
	Operating humidity	0~95%RH(No condensation)
Power supply	Supply voltage	DC 9~30V(recommend 12V DC)
	Power Consumption	≤1W
RS485 interface	Communication protocol	MODBUS-RTU
	Bus address	1~254(default 1)
	Baud rate	2400, 4800, 9600(default), 19200bps
	Data format	N,8,1
Relay	Contact type	Dry Contact, NC/NO
	Load capacity	120VAC/2A, 24VDC/2A
EMC protection grade	ESD	Contact discharge±8KV, Air discharge±15KV
	Surge	±4KV
	EFT	±4KV

Product size (Unit: mm, error ±0.5mm)



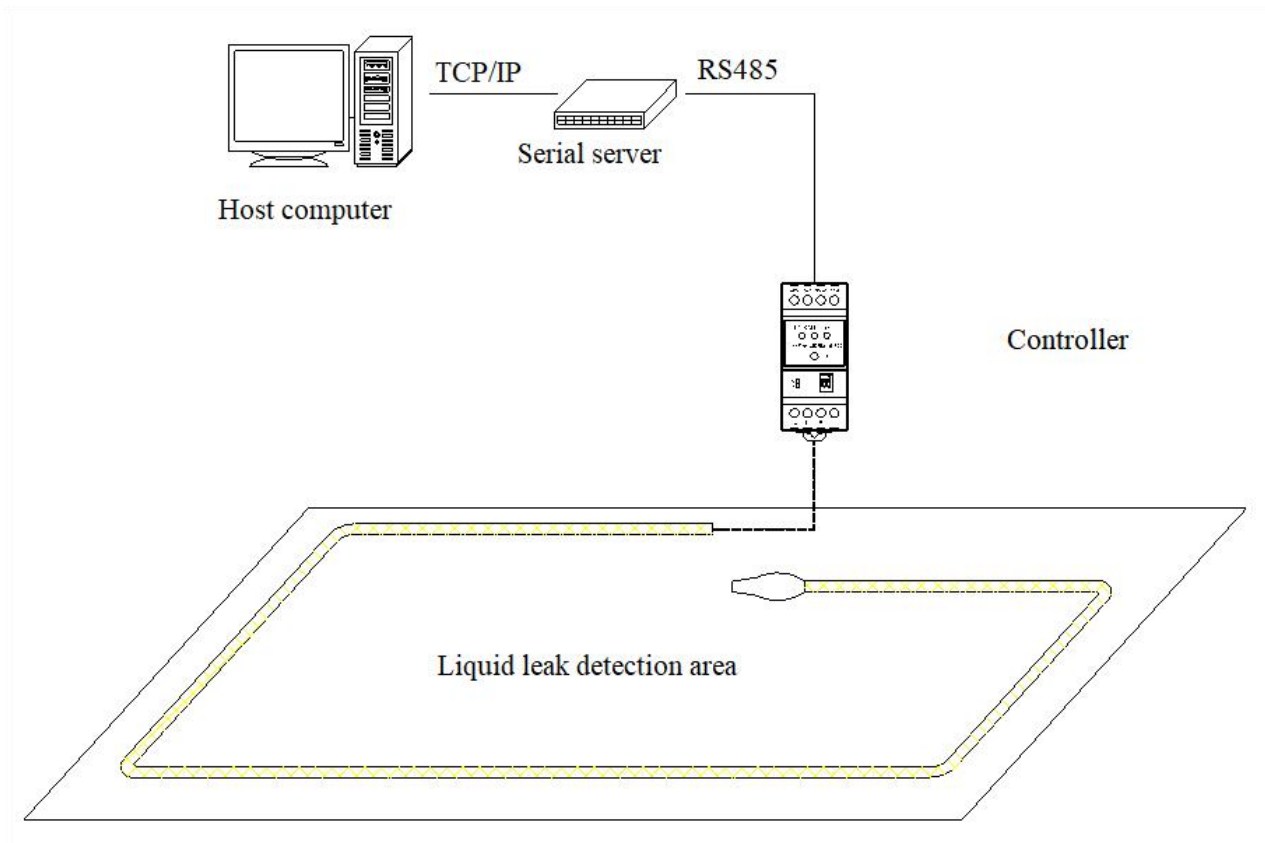
Button and Indicator



Button and Indicator Illustration

Sensitivity gear button adjustment

Operation Principle



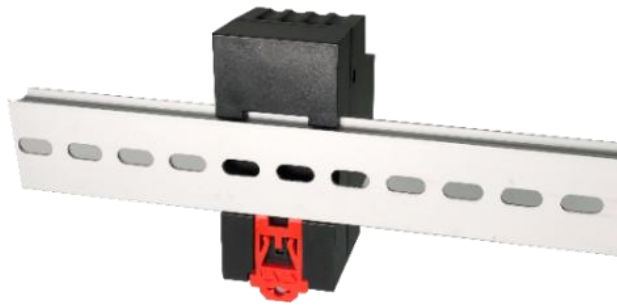
Operation Principle

The controller is connected to the sensor cable, which is laid in the liquid leakage detection area. When the liquid leakage occurs, it triggers the alarm and relay action of the controller, and uploads the leakage data to the supercomputer through the RS485 signal to realise real-time centralised monitoring. The controller relay output signal can be linked to control peripheral devices such as sound and light alarms, telephone diallers, SMS modules, switching acquisition modules and other devices.

(Note: The relay output is only associated with the leakage status, and has nothing to do with the disconnection status; the disconnection status can be viewed through the monitoring software, LED indicator, and buzzer).

Installation

- ◆ Install the controller in a secure indoor collection box or cabinet where it is easy to maintain and check. Avoid high temperature, high humidity, vibration, corrosive gases, and other electronic interference sources. The controller buckle is mounted on a standard 35 mm DIN rail.



Connection Instructions

- ◆ Non-locating leak detection system is composed of controller, outgoing cable, sensing cable and related accessories. Connect cables when the power supply of controller is disconnected.



Sensing cable	Connect the red and black core wires of the outgoing cable to the wiring terminals R and B of the controller separately, and then lay the sensing cables to the detection area.
Relay output	Output NO/NC contact can be connected to monitoring system, also can be connected to alarm devices to output alarm signal. When controlling high current equipment, it is necessary to add secondary relays to expand the contact load capacity, otherwise the controller may burn out.
Power Supply	DC 9~30V power input (DC12V is recommended to ensure long-term working stability). If voltage too low, it will not work properly, and if voltage too high, the controller will burn out.
RS485 Communication	Access the communication cable according to the terminal identification, "RS+" for RS485 positive, "RS-" for RS485 negative, positive and negative polarity reversal will lead to communication.
Restore the default parameters	Press and hold down the mute button for 10s to restore the default parameters automatically.

Sensor cable description

XW-PC-1B supporting the non-location of the inductor cable, the termination of the termination should be connected to the 220K Ω loopback resistor, in order to make the inductor cable form a circuit, otherwise access to the controller will be disconnected alarm.

Debug Instructions

- ◆ Power on the controller and the power indicator is steady on. Otherwise, the power supply or controller is faulty. The running indicator blinks periodically for one second, otherwise the controller is abnormal.
- ◆ Take a some water (non-purified water) and soak the sensor probe protection cover in water. After one second, the relay will act and the LEAK indicator lights up red, the buzzer rings, and press the OFF button to mute. After drying the water on the sensing cable, the relay is reset and LEAK light off.
- ◆ The detection sensitivity from grade 1 to 4 is successively enhanced, and the factory default is grade 4. The sensor sensitivity corresponding to each grade is as shown:

Grade 1	Sensor cable leakage alarm length	>16cm
Grade 2	Sensor cable leakage alarm length	6cm~11cm
Grade 3	Sensor cable leakage alarm length	4cm~5cm
Grade 4	Sensor cable leakage alarm length	3cm

Repair and Troubleshooting

There are 3 LEDs on the controller that represent: powered on, running, and leaking/broken. The table below lists the different indicator light states and common factors or corrective actions.

Indicator	Status	Description	Troubleshooting
POWER	NC	Normal power up	Check that the power supply and voltage are normal and the polarity is correct
	NO	Power on is not normal or the controller is faulty	
RUN	DIP	Controller works normally	
	NO	Abnormal controller	
LEAK/BREAK	NC	Leakage	Check that the sensing wire is properly connected to the controller; check that the sensing wire is not broken
	DIP	Sense wire broken	
	NC	Sensor wire is normal, no leakage	

Notices

- ◆ Please don't touch the controller with wet hands.
- ◆ Please don't modify or disassemble the controller .
- ◆ Before wiring, please ensure that the power is off.
- ◆ Check the load capacity of the power supply when connecting multiple devices.
- ◆ Avoid contact with metal files, grease, pipe paint and other contaminants.
- ◆ Before installation, confirm the rated voltage of controller and the power supply voltage.
- ◆ During regular inspection and maintenance, avoid using organic solvents and wipe with dry cotton yarn.



We recommend that you use this manual under the guidance of professional personnel. If the product is damaged by violation operation or a third party force majeure such as fire, flood, lightning and natural disaster, Xiangwei will not assume any responsibility.

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