



Industrial Grade HD-PLC

KS710LD Dual LAN type manual 1.1

Power Supply: AC 220V Single-Phase

Network Interface: Dual LAN

Output: DC 12V

Standard: Industrial Grade

Mounting: Bracket Mounting



Catalogue

Product Introduction	3
Technical Data	4
Interface Specification	5
Connection Schematic	6-7
Common Problems Troubleshooting	8
Appearance Dimension	9
Selection Guide	10
Contact Us	11



Product Introduction

Broadband carrier KSF710LD is an industrial-grade bandwidth power line carrier communication device based on IEEE P1901, adopting OFDM modulation and demodulation technology, and conforming to the European Union's EN-50561 standard specification. It uses the existing power lines or slip contact cord as the information transmission medium for high-speed and long-distance transmission of data, and has the features of high communication rate, bi-directional transparent transmission, good stability of transmission, and strong scalability.

The KS710LD Broadband Powerline Communication Device is equipped with Dual Ethernet Ports, allowing it to connect two network devices simultaneously. This effectively expands single-point access capacity and facilitates flexible networking for various on-site equipment such as cameras, sensors, and controllers. The device draws power directly from the power line while also providing a DC 12V/24W output to supply power to connected network equipment.

The Broadband Powerline Communication Device KS710LD complies with industrial-grade standards. It supports carrier communication over AC 100V ~ 220V power lines, achieving a maximum transmission distance of 500 meters. The device features automatic networking and route optimization capabilities, allowing for the flexible construction of various network topologies, including bus, star, tree, and hybrid types. An integrated coupling circuit provides high-voltage isolation and surge protection, ensuring stable communication and equipment safety.

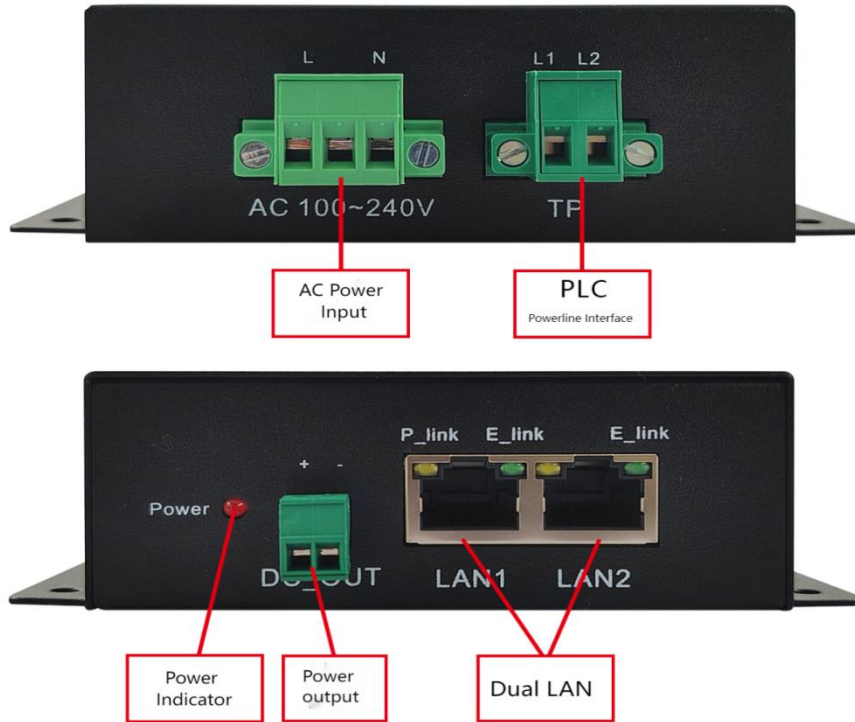
The KS710LD Broadband Powerline Communication Device utilizes existing power lines for carrier communication, eliminating the need for additional cabling and greatly simplifying network deployment. It is a reliable, efficient, and easy-to-deploy powerline communication solution, particularly suited for on-site environments requiring centralized access of multiple devices or cascaded deployment. Typical applications include various industrial scenarios such as elevator video surveillance, railway communication monitoring, mine monitoring, security systems, and factory video surveillance.



Technical data

Classification	Technical indicators
Power supply port	AC100-220V
PLC Signal port	AC100-220V power line, slip touch cord, slip ring cable etc
DC Power Output	DC Power Output: 12V/24W
Modulation type	OFDM modulation type
Carrier frequency	2 ~ 28 MHz
Network Interface	2 x Standard RJ45 Ports (Dual LAN)
Ethernet bandwidth	10M/100Mbps self-adaption
Transmission distance	Power line point-to-point 500 meter, coaxial cable 2-3 kilometer
Data delay	Within 10ms
Packet loss probability	Less than 0.1‰
Overall power consumption	≤3W
Standard agreement	TCP/IP, UDP, Profinet, Home Plug, Modbus-TCP, IEEE 802.3, IEEE 802.3U, IEEE 802.3ab, IEEE 1905.1, IEEE 1900, IEEE 1901etc
Way of encryption	AES-128bit
Multicast	Support IGMP multicast protocols,the maximum number of nodes is 128
Exterior dimensions	Size: 114*98*35.2mm (L*W*H) Weight: 330g Mounting: Bracket Mounting Type
Environmental requirement	Operating temperature: -40°C ~ 85°C Operating humidity: 20%-95% (non-condensable) Storage temperature: -40°C ~ 85°C
Working time	Industrial grade, supports 7*24 hours all-weather work

Interface specification



<p>AC Power Input</p>	<p>Terminals: L / N, Voltage Range: AC 100 ~ 220V Important: L and L1 are the same phase (Live). N and L2 are the same phase (Neutral).</p>	<p>PLC channel interface</p>	<p>Connect L1 to L (Live) and L2 to N (Neutral). These terminals can be connected to either the power line or conductor rail. Important: The power input and communication channel terminals are internally paralleled. In practical use, connect only one set—either the power input or the channel interface.</p>
<p>LED Indicator</p>	<p>The red Power LED indicates the power status. Light ON: Power is supplied. Light OFF: No power supply.</p>	<p>RJ45 Network interface</p>	<p>Ports: 2 x RJ45 Ethernet ports Compatible Devices: Computers, switches, IP cameras, PLC controllers, etc. LED Status Indicators: E_link (Green): Flashing = Ethernet link active and data transmitting P_link (Yellow): Solid ON = PLC network established; OFF = No PLC link</p>
<p>Master Slave</p>	<p>Slave (default). A master device is required for network setup</p>		
<p>Power Output</p>	<p>DC 12V/24W, 2-pin 3.81mm terminal block (Pin Assignment: Left: Positive (+), Right: Negative (-)). Please observe the correct polarity.</p>	<p>Mounting</p>	<p>Bracket mounting. Each side bracket features four mounting holes for secure installation with M4 screws. Dialed to the S side is the slave. Be sure to set the master and slave before powering up.</p>



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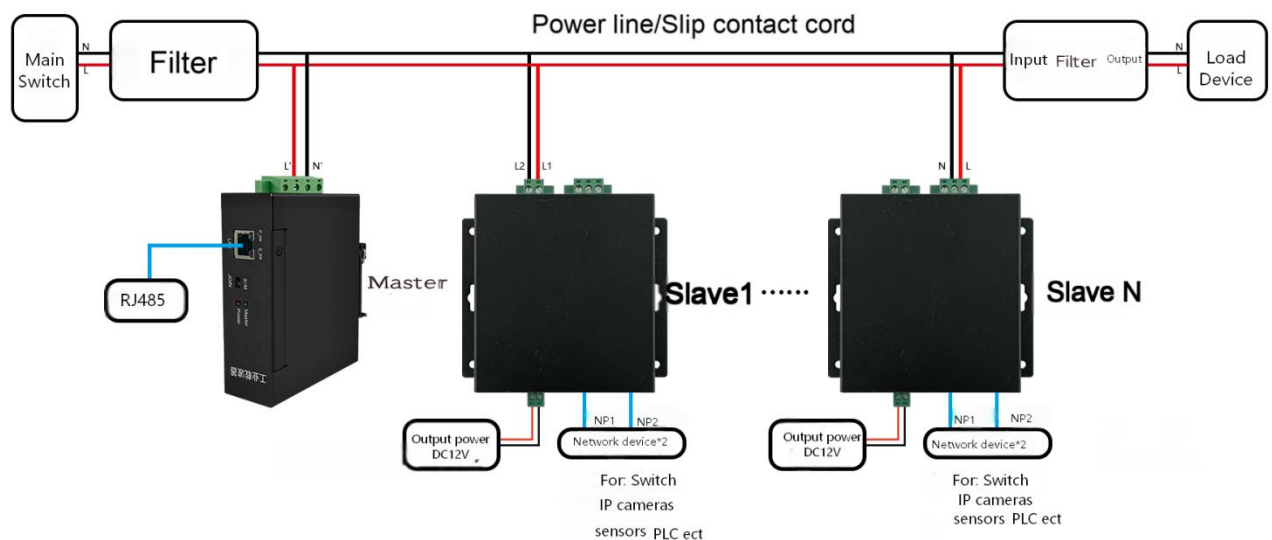
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Connection schematic diagram

The KS710LD Broadband Powerline Communication Device features dual Ethernet ports for connecting two network devices. It powers directly from AC 100–220V power lines. Either the PLC channel interface or AC power input must be connected in parallel to the power line, with correct phase sequence.

The KS710LD defaults to slave mode and requires a master device. In this example, the KS710L acts as the master, with two KS710LD units as slaves. See wiring diagram below:





Notice:

1. The KS710LD defaults to slave mode and must be used with a master device.
2. When connecting the KS710LD in parallel to the power line, only one of the following interfaces needs to be connected: the AC power input or the PLC channel interface. The AC power input and PLC channel interface are internally paralleled, with L connected to L1 and N connected to L2. Pay attention to phase sequence and connect accordingly.
3. The KS710LD provides a DC 12V power output with a maximum power of 24W. The connected device must have a power consumption less than 24W.
4. If the power line contains strong interference sources — such as frequency converters, servos, large motors, or high-capacity capacitors — a dedicated powerline isolation filter should be installed to isolate the interference.
5. For loads like frequency converters or servos, use a filter specifically designed for such equipment. Keep the KS710LD as far away as possible from these devices. Use shielded twisted-pair cables for signal lines, and avoid routing them in parallel or crossing with the output lines of the converter or servo.
6. The product is not waterproof. Ensure it is used in a dry environment.
7. In case of malfunction, do not disassemble or attempt to repair the device yourself. Please contact the manufacturer or your point of purchase for assistance.
8. Electric shock hazard: Never work on the device while it is powered on. The broadband powerline device contains energy storage components. There is still a risk of electric voltage within 10 seconds after power-off. Do not touch the terminals immediately after disconnecting power. Never short-circuit the output terminals or connect them to the enclosure.



Common problems troubleshooting

When installing and using a PLC , if the carrier network is disconnected or the communication is unstable , please follow these precautions , and as a reference to common problems troubleshooting , in order to minimize malfunctions and maintenance work during use.

1. Please connect correctly according to the connection diagram , the wiring should be secure.If the connection is wrong or loose, the network will be disconnected.

2. Check that the master and slave settings are correct.The master-slave dip switch to the M side is the host, and the switch to the S side is the slave.Setting up the master and slave before powering up , if setting up a master-slave with power, be sure to power down and reboot the entire network.Ensure that the network has one and only one host and can have one or more slaves.

3. Check whether the power filter is correctly connected.PLC needs to be used with a special power filter , and the PLC mustn' t be separated from each other by power filters.The power filter needs to distinguish directions , the input end is connected to the power input or load, and the output end is facing the PLC.Pay special attention to the load side filter to reverse wiring , that is, the output side is facing the PLC , the input side is connected to the load.

4. Check that the power lines for carrier communication are on the same loop.PLC must be used under the same transformer , master and slave must be connected on the same loop , and the less branches the better.Try not to pass the electric meter , through the number of air switches, contactors, etc, the less the better.

5. Check whether there are strong interference sources such as frequency converters and large capacitors on the line.In strong interference environments, it is recommended to use shielded cables for power lines and data signal lines for carrier communications.And do not parallel or cross-wire with the source of interference, as far as possible away from the source of interference.

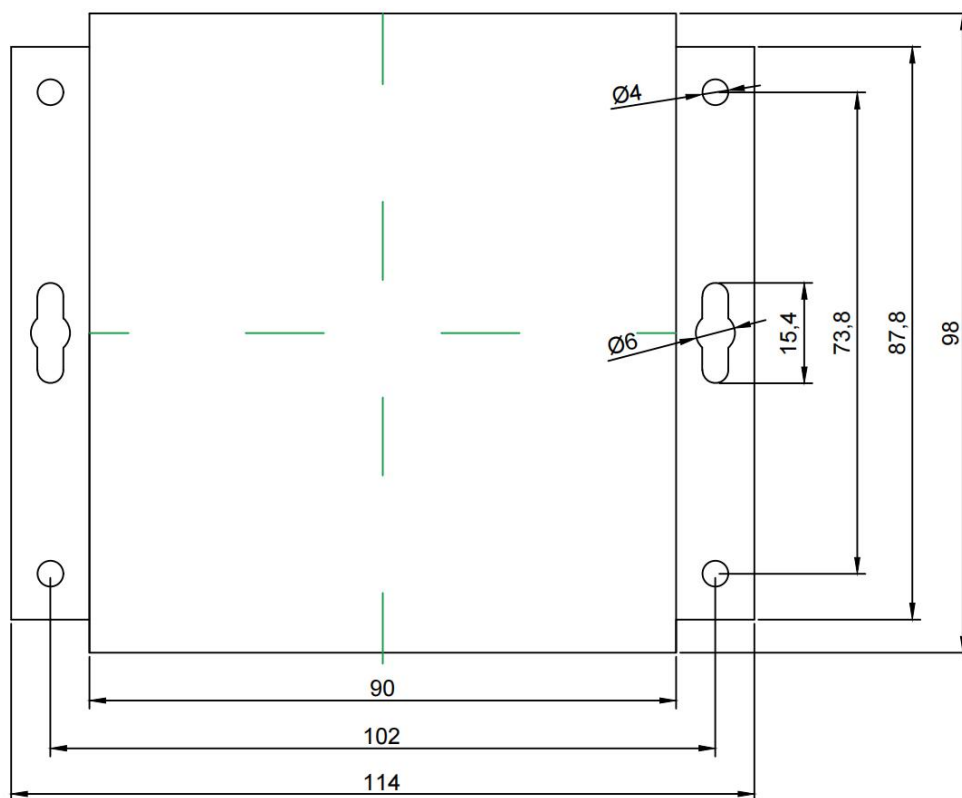
If you encounter problems in the process of use, you can always contact the manufacturer for technical support and assistance.Manufacturers provide professional technical support, including telephone, wechat, email, online remote support and other ways.



Exterior dimensions

The PLC' s length, width and height are: 114x98x35.2mm (without terminals) , Each side bracket features four mounting holes for secure installation with M4 screws.

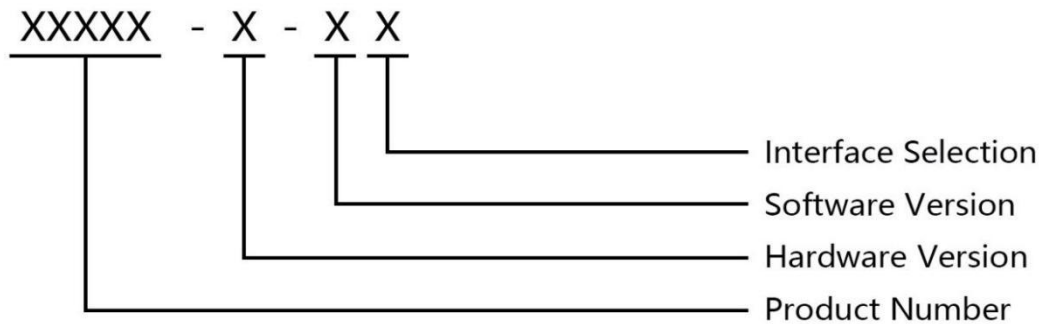
Dimensional drawings are as follows:





Model selection guide

Model specification description:



According to the actual application, you can refer to the following steps to select the model:

Product Type

Single-phase Dual LAN : KSF710LD	Operating voltage: AC100-220V
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Hardware Version

B: Standard module	Point-to-point 500 meters	Bandwidths: 10/100Mbps
C: High bandwidth module	Point-to-point 300 meters	Bandwidths: 10/100Mbps
D: Long distance edition	Point-to-point 1000 meters	Bandwidths: 10/50Mbps
E: Broadcast version	Point-to-point 500 meters	Bandwidths: 10/100Mbps
F: Extreme edition	Point-to-point 500 meters	Bandwidths: 10/100Mbps

Software Version

E: High performance edition	The number of communication nodes is within 16 pcs	
R: Relay version	The number of nodes ranges is from 16 to 999 pcs	
W: Sliding touch version	Special for sliding touch line	



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