



Industrial Grade HD-PLC KS800N Hundred megabit single network port type manual1.2

Hundred megabit bandwidth
Highly versatile
Ultra-small volume
Industrial grade standards



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Product Introduction

The KS800N Broadband Powerline Communication Device is an industrial-grade powerline communication module based on the IEEE P1901 standard, utilizing OFDM modulation technology and compliant with the EU EN50561 specification. Broadband Powerline Communication (HD-PLC) refers to a high-speed data transmission method that uses existing power lines as the information transmission medium. Compared to traditional narrowband powerline communication, broadband powerline communication offers significant advantages, including higher data rates, bidirectional transmission, improved stability, and strong scalability.

The KS800N features transparent Ethernet data transmission, integrating LDPC error correction codec technology and AES-128 data encryption to ensure secure and reliable data transfer. It supports carrier communication speeds of up to 100 Mbps and achieves a transmission distance of up to 500 meters on standard power lines. The repeater version supports up to 10 levels of daisy-chained repeaters, extending the maximum transmission distance to 5 kilometers.

Configuration of the KS800N is extremely simple—just set the master or slave mode via the DIP switch. When the switch is set to "M", the device operates as the master. When set to "S", it operates as a slave. In any network, there must be one and only one master, which can connect to either one slave or multiple slaves.

The KS800N is available in multiple versions to suit different application scenarios:
Hardware Versions: Standard, High-Bandwidth, Long-Distance, Broadcast
Software Versions: High-Performance, Repeater, Dedicated for Slip-Rail (Conductor Rail) Systems

Designed to industrial-grade standards, the KS800N features a compact size (120 × 40 × 25 mm), 100 Mbps bandwidth, and long-distance transmission capability. It supports carrier communication on power lines or conductor rails with voltages below DC 300V. Typical applications include: Inspection robots, Rail-guided robots, Pipeline robots, Underwater robots, Smart charging stations



Technical data

Classification	Technical indicators
Power supply	DC 12-48V
PLC Signal port	DC: 0-300V
	Any two-core cables, power line, slip touch cord, slip ring cables, etc.
Modulation type	OFDM modulation type
Carrier frequency	2 ~ 28 MHz
Ethernet bandwidth	10M/100Mbps self-adaption
Transmission distance	The maximum transmission distance is 500 metre(ordinary power line), class 10 relay can reach to 3-5 kilometre
Data delay	Within 10ms
Packet loss probability	Less than 0.1%
Overall power consumption	≤3W
Standard agreement	TCP/IP, UDP, Profinet, Home Plug, Home PlugAV, 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: 120*40*25mm (L*W*H)
	Weight: 200g
	Install: Earhook
Environmental requirement	Operating temperature: -40°C ~ 85°C Operating humidity: 20%-95% (No condensation) Storage temperature: -40°C ~ 85°C
Working time	Industrial grade, supports 7*24 hours all-weather work

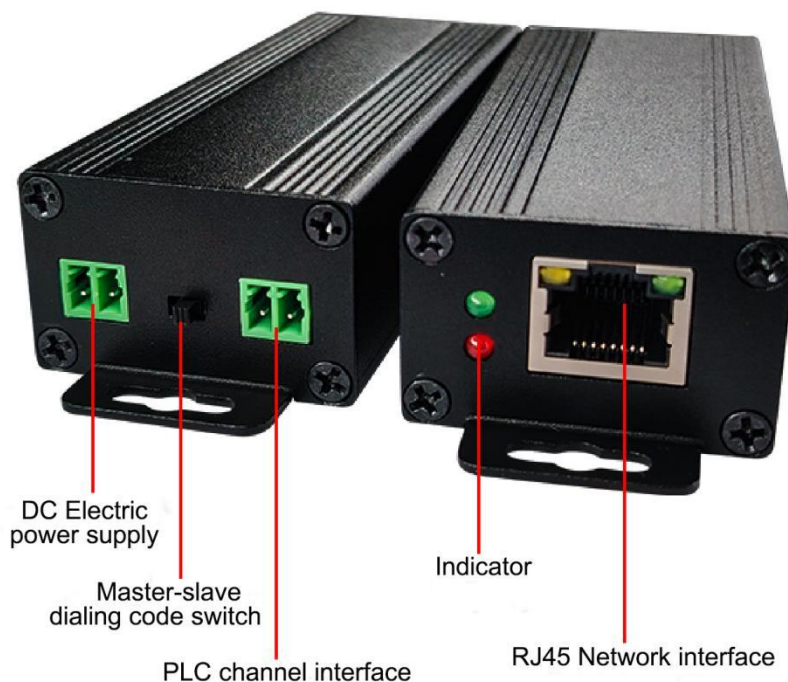


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Interface specification



<p>PLC channel interface</p>	<p>DC: 0-300 power lines, sliding contact lines, or non-live dedicated lines.</p> <p>The channel port does not distinguish between phase sequence or positive and negative poles.</p>	<p>DC Power interface</p>	<p>Operation voltage DC:12-48V</p> <p>Note: Distinguish between positive and negative poles.</p>
<p>RJ45 Network port</p>	<p>Connect network devices, such as computers, switches, network cameras, PLC devices, etc;</p> <p>Network port green light : Ethernet connection</p>	<p>Master/slave dip switch</p>	<p>The master-slave setting switch.</p> <p>Dialled to the M side is the master.</p> <p>Dialled to the S side is slave.</p> <p>Be sure to set the master and slave before powering up.</p>
<p>Indicator</p>	<p>Green light: host indicator, the host green light is on, the slave green light is not on ;</p> <p>Red light: power indicator, with power light on.</p>	<p>Installation method</p>	<p>Earhook: M4 screw*2pcs</p>

Connection schematic diagram.

The KS800N Broadband Powerline Communication Device features a power input of DC 12–48V. Its PLC channel interface supports carrier communication over two-wire cables or conductor rails with voltages below DC 300V. Before powering on the device, ensure the master/slave mode is properly set via the DIP switch: Set the switch to "M" to configure the device as the master. Set the switch to "S" to configure it as a slave. In any network, there must be one and only one master.

1. External Isolation Filter Wiring Instructions:

Connect the power input of the KS800N to a DC 12–48V power supply, observing correct polarity. Connect the PLC channel interface in parallel to the power line. No need to distinguish phase sequence or polarity. Since the power line carries loads, isolation filters must be installed on both sides of the KS800N. Refer to the wiring diagram below:

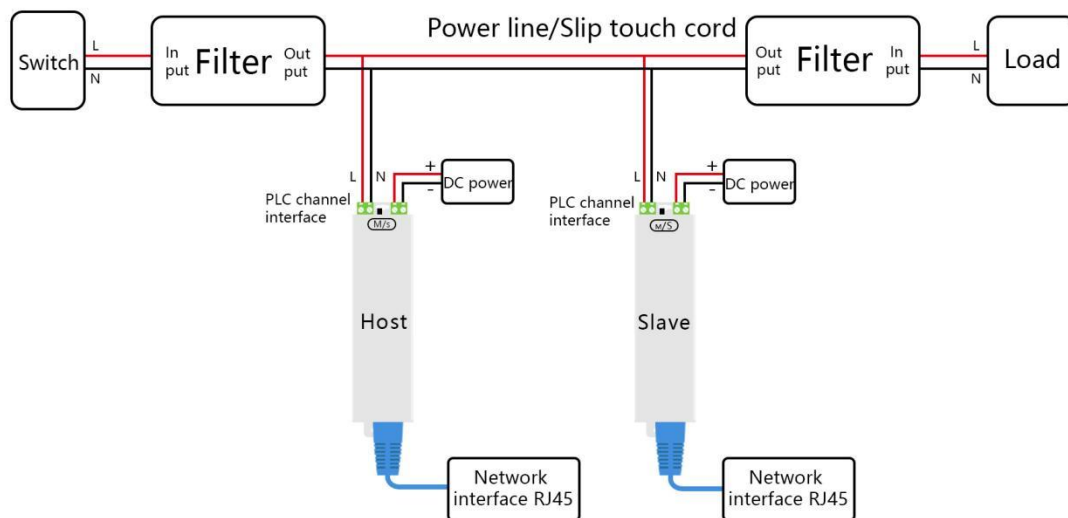


Fig 1

2. Dedicated Cable Wiring Instructions: Connect the power input of the KS800N to a DC 12–48V power supply, observing correct polarity. Connect the PLC channel interface in parallel to the power line. No need to distinguish phase sequence. Since the dedicated cable is not live, no isolation filters are required in this wiring configuration.

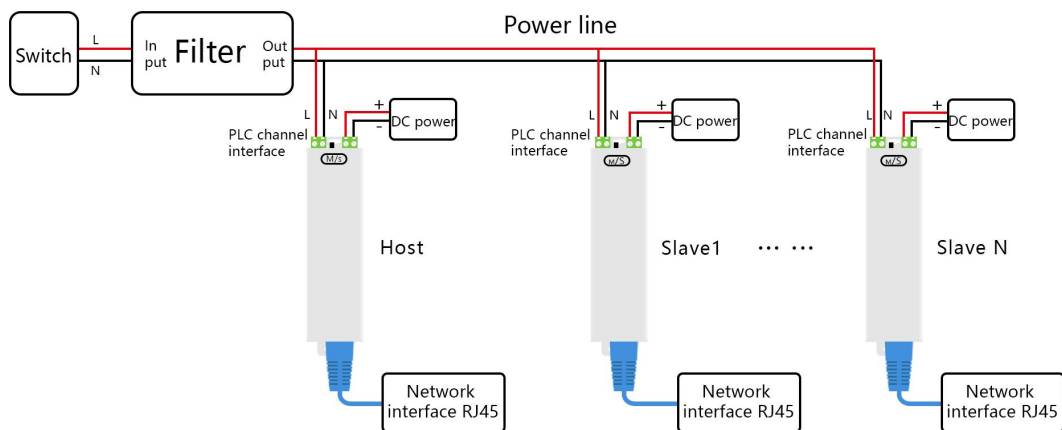


Fig 2



Notice:

1. The KS800N Broadband Powerline Communication Device is designed only for power line communication on DC power lines below 300V and is not suitable for AC power lines. If the power line is a loaded DC cable, isolation filters must be installed at both the switching power supply end and the load end.

If the cable is a dedicated unpowered cable, no isolation filters are required.

2. The device uses a DIP switch to set the master or slave mode. Master/slave settings must be configured before powering on the device. If settings are changed after power-on, the device must be power-cycled for the new settings to take effect. In any network, there must be one and only one master, while the number of slaves can be one or more.

3. Follow the connection diagram carefully to ensure correct wiring. All connections must be secure. Incorrect or loose wiring will result in network failure.

4. The product is not waterproof. Ensure it is used in a dry environment.

5. 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.

6. Electric Shock Hazard: Never work on the device while it is powered on!

The 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

If you experience network failure or unstable communication during installation and use of the powerline communication device, please follow the precautions below and use them as a reference for common issue troubleshooting. This will help reduce failures and maintenance work during operation.

1. Follow the connection diagram carefully to ensure correct wiring. All connections must be secure. Incorrect or loose wiring will result in network failure.

2. Check that the isolation filters are correctly wired. The device must be used with dedicated isolation filters, which have directionality requirements:

The input side of the filter should be connected to the power input or load.

The output side should face toward the KS800N device.

The KS800N should be installed between the output sides of the isolation filters.

Do not install isolation filters on the loop between KS800N devices.

3. Special Note on Load-Side Filters, The load-side filter must be connected in reverse orientation, meaning: The output side faces toward the KS800N. The input side connects to the load.

4. Power Line Loop Inspection, Verify that the power lines used for carrier communication are on the same loop. The KS800N must be used under the same transformer. Master and slave devices must be connected on the same loop.

The loop should be as short as possible, with as few branches as possible.

The number of devices on the loop—such as circuit breakers, contactors, and meters—should also be minimized.

If you encounter any issues during use, please feel free to contact the manufacturer for technical support and assistance. The manufacturer provides professional technical support through various channels, including:

Phone, WeChat, Email, Online remote support.



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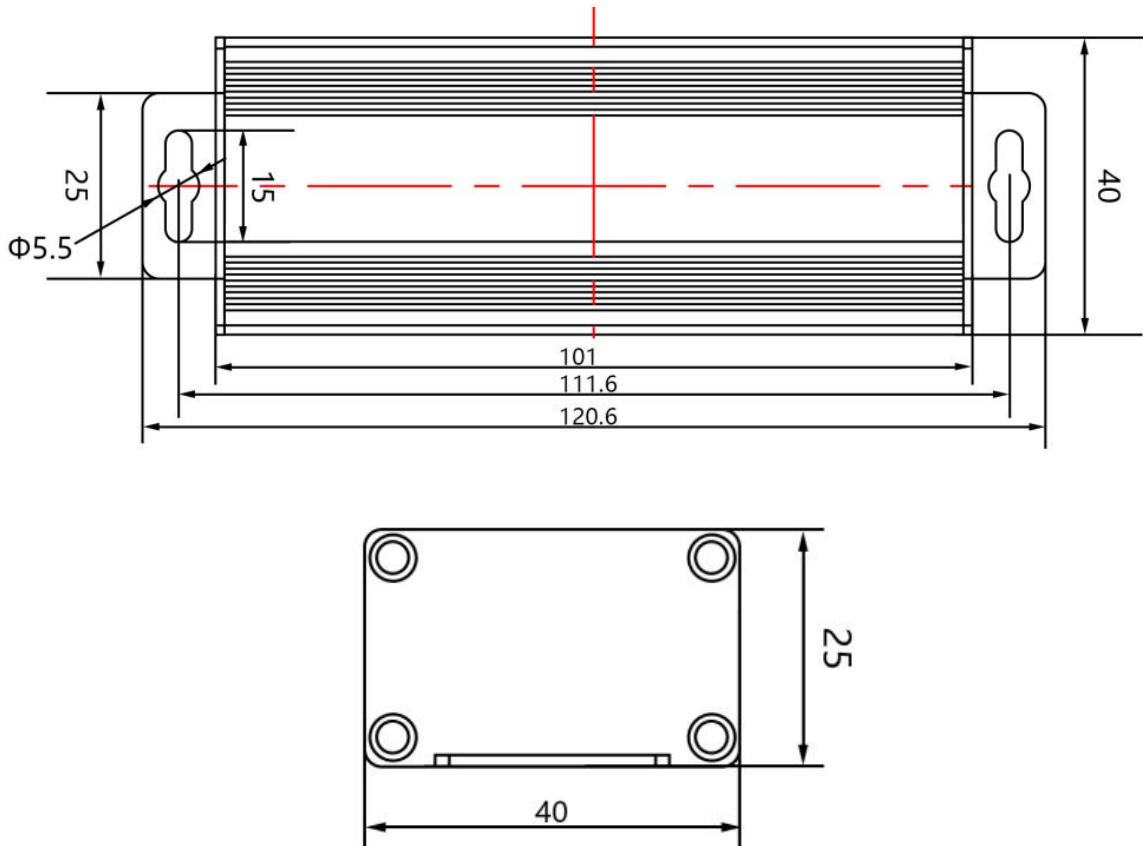
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Exterior dimensions

The PLC' s length, width and height are: 120x40x25mm(with fixed lugs), the spacing of the fixed hole is 111mm, secure with screws No. M4.

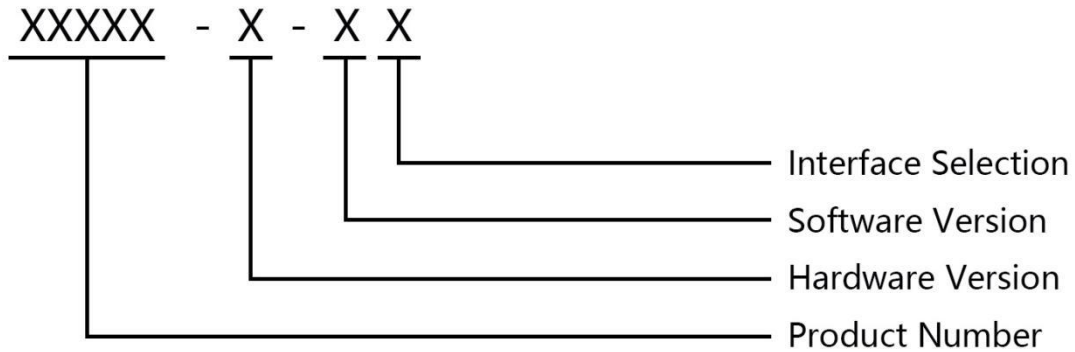
KS800N dimension figure:





Model selection guide

Model specification description:



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

Product Type		
General type: KS800N	Operation voltage DC12~48V	PLC channel port: DC 0-300V
Core module		
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	
Interface selection		
1.Single network port RJ45		



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