



## Industrial Grade HD-PLC

## KS700M2P enhanced type manual 1.2



Hundred megabit bandwidth

Wide operating voltage

Support single-phase, three-phase power line or slip touch cord

Industrial grade standard

Anti-surge impact 2KV



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## Product Introduction

High Definition- Power Line Communication KS700M2P is an industrial-grade, high-bandwidth, long-distance transmission power carrier communication device with excellent performance, based on IEEE P1901, using OFDM modulation and demodulation technology, industrial-grade bandwidth power line carrier communication equipment compliant with the European Union's EN-50561 standard specification. HD-PLC utilize existing power lines or slip touch cord as the information transmission medium for high-speed, long-distance data transmission. It is characterized by high communication rate, bi-directional transparent transmission, good transmission stability, strong scalability and strong anti-interference.

HD-PLC KS700M2P built-in LDPC error correction codec, AES-128 bit encrypted data , data encryption and transparent transmission, self-contained routing algorithm, automatic networking, plug and play, supports bus, star, tree, and hybrid network topologies structure. Supports network port data on any two wires, such as DC wire, AC wire, twisted pair, parallel lines, coaxial cable, slip touch cord etc for high-speed long-distance transmission. Carrier rate up to 100 megabits, ordinary power line transmission distance can reach to 500 meter , the coaxial cable can transmit 2-3 kilometer. The relay version supports up to 10 levels of relay , it can transmit up to 5 kilometer.

For different applications, KS700M2P is available in several versions, hardware version is available in standard version, high bandwidth version, long-distance edition, and broadcast version , software version is include high performance edition, relay version, specialized version for slip touch cord, etc. KS700M2P need to set up the master and slave machines, one-touch setup of host and extension via master-slave dip switches , M-side is the hosts, S-side is the slave. Supports one-to-one or one-to-multipoint network device networking , hundred megabit bandwidth, long transmission distance. Supports hot-swapping, plug and play.



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HD-PLC KS700M2P meet Industry standard , internal integrated coupling circuitry , enhanced high voltage isolation , upgraded surge protection , high anti-interference , the performance is more superiority.It is suitable for carrier communication on single-phase, three-phase, DC power line or slip touch cord.It has been widely used in various types of video transmission systems and industrial control systems , such as three-dimensional parking garage, warehousing stereoscopic warehouse, intelligent air-car, railway communication monitoring system, mine monitoring system, wind energy new energy, new energy power station, industrial video surveillance and so on.



## Technical data

Classification	Technical indicators
Power supply	DC 12-48V
PLC Signal port	Voltage 0-500V any two core cable, power line, slip touch cord, slip ring cable etc
Modulation type	OFDM modulation type
Carrier frequency	2 ~ 28 MHz
Ethernet bandwidth	10M/100Mbps self-adaption
Transmission distance	Maximum transmission distance: Point-to-point 500 meter class 10 relay 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, Modbus-TCP, IEEE 802.3, IEEE 802.3U, IEEE 802.3ab, IEEE 1905.1, IEEE 1900, IEEE 1901 etc
Way of encryption	AES-128bit
Multicast	Support IGMP multicast protocols,the maximum number of nodes is 128
Exterior dimensions	Size: 93*144.6*30mm (L*W*H) Weight: 350g 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

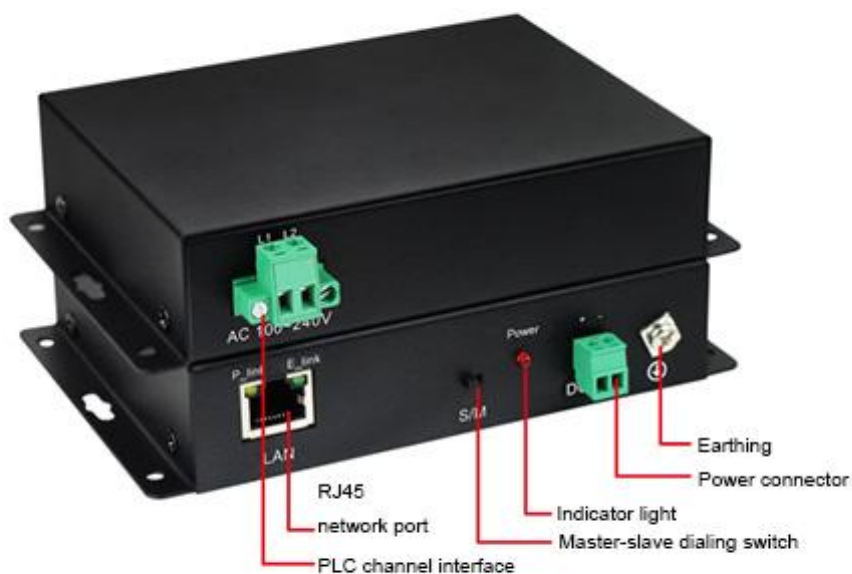


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## Interface specification



<p><b>PLC channel interface</b></p>	<p>L1,L2 parallel connection on power line or slip touch cord under 500V, AC and DC are available. 2P* with lugs 5.08mm industrial terminal block.</p>	<p><b>DC power supply interface</b></p>	<p>Voltage supply DC:12-48V 2P*3.8mm terminal, Note : Distinguish between positive and negative.</p>
<p><b>LED indicator</b></p>	<p>Power The red light is the power indicator, If electrified,light on; No electricity,light off.</p>	<p><b>Master-slave dip switch</b></p>	<p>Master-Slave setup switch, Dialing to M is the host, Dialing to S is the slave. Set up the master and slave before powering up.</p>
<p><b>RJ45 network interface</b></p>	<p>Connect network devices, such as computers, switches, network cameras, PLC devices, etc. ; E_link green light: Ethernet connection indicator, Connected device normal,the green light blinking ; P_link yellow light: PLC networking indicator,the yellow light is always on for successful networking, otherwise the light is not on.</p>	<p><b>Grounding terminal</b></p>	<p>M4 screw ground wire connector</p>
		<p><b>Install way</b></p>	<p>Earhook: There are four fixing holes on both sides of the fixing lugs, which are fixed with screws No. M4.</p>



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## Connection schematic diagram

HD-PLC KS700M2P supply voltage is DC 12 ~ 48V , support carrier communication on power lines below AC500V, PLC channel port wiring does not distinguish between phase sequence or positive and negative polarity. The PLC needs to set the host and slave , ensure that the host and slave are set before power-on, the dial switch dials to M as the host , dials to S as the slave. A host can have one slave or multiple slaves. A network must have and can only have one host.

### 1、Wiring diagram of one master and one slave, as show on figure 1:

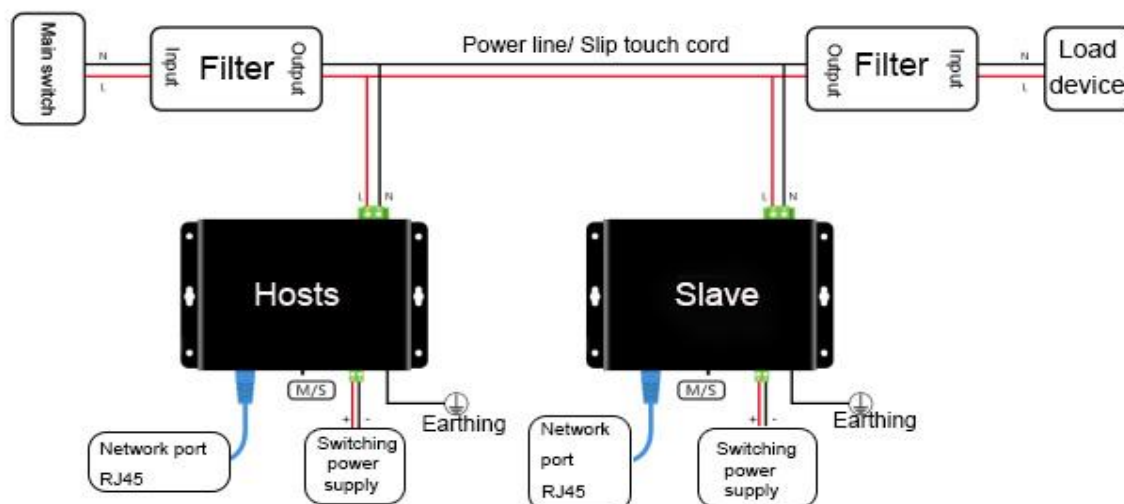


Figure 1

### 2、Wiring diagram of one master and multiple slaves, as show on figure 2:

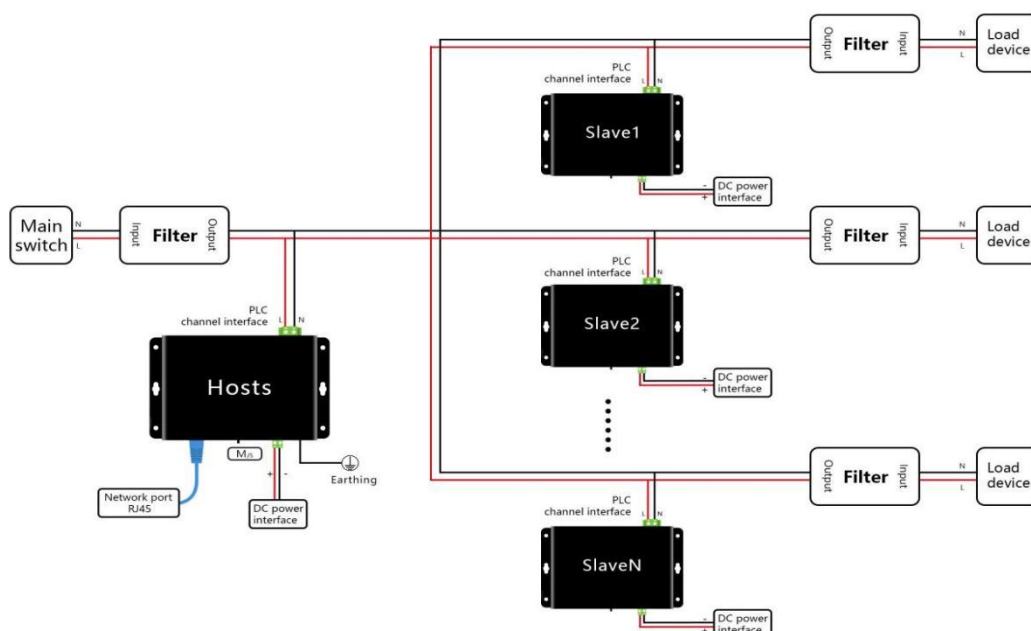


Figure 2



**Notice:**

1. PLC need to set up master and slave machine, be sure to set up the master and slave before powering on the machine.If you set up the master and slave after powering up, you need to power off and restart the PLC for the master and slave to take effect. A network must have and can only have one host.

2. PLC must be used with a power filter , the filter needs to distinguish directions, the input side of filter connected to power input or load, the output is facing the PLC. Especially note that the input and output of the filter on the load side need to reverse wiring, output side is facing to PLC, input side is connected to Load.

3. If the load has a servo or inverter, please use the special filter for the inverter.Shielded wire is recommended for the PLC's power lines,and can not parallel with the frequency converter output line or cross the line.

4. Do not operate with electricity, do not touch the output terminals directly, and do not short the output terminals or connect them to the housing.

5. The product is not designed to be waterproof, please ensure that the product is used in a dry environment.

6. If the product is malfunctioning, do not disassembled and repaired by yourself, please contact the manufacturer or purchase channel in time to deal with it.



## **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 dialing switch dialing to the M end is the host, and the switch dialing to the S end 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.

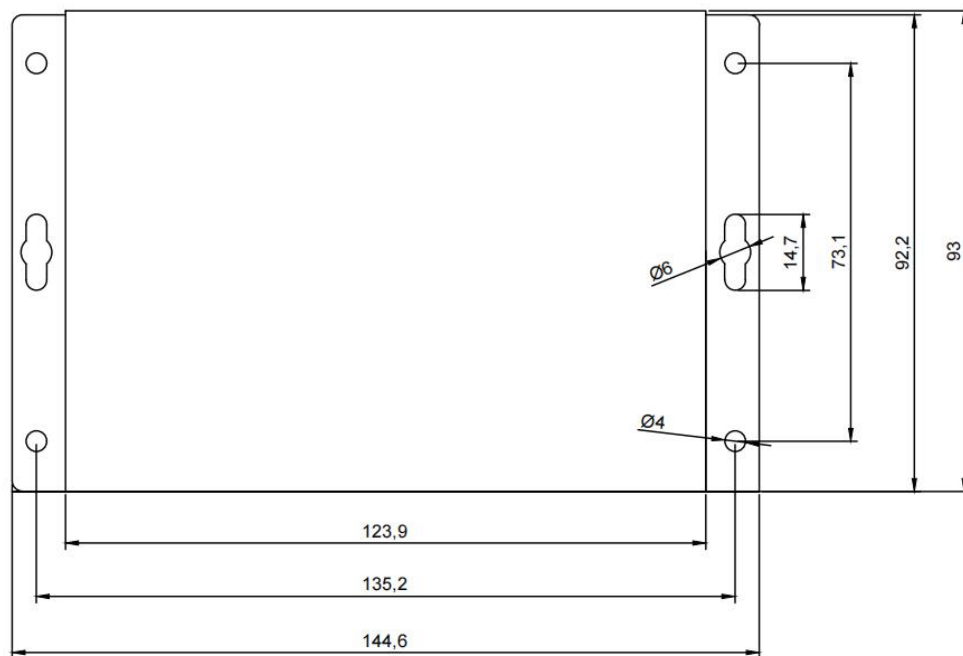
If you encounter problems in the process of use, you can always contact the manufacturer for technical support and assistance.Manufacturers provide professional technical support, including telephone, wechat, email, online remote support and other ways.



## Exterior dimensions

The PLC' s length, width and height are: 93\*144.6\*30mm (without terminals) , four fixing holes in both fixing lugs, fixed with screws M3.

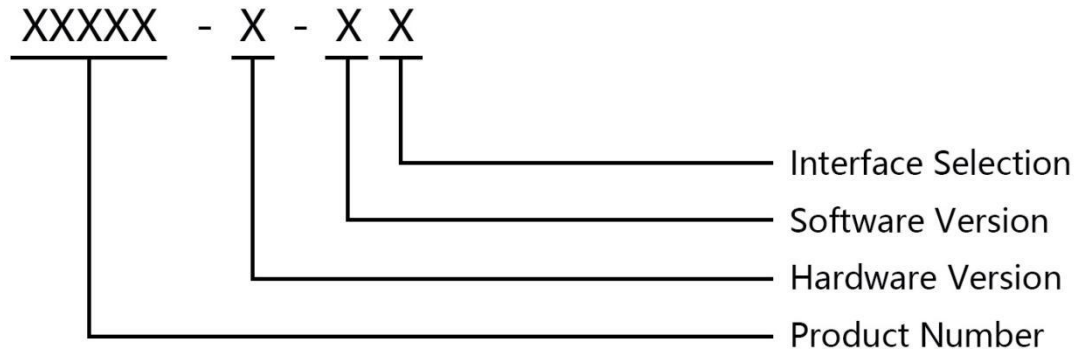
Specific dimensions are shown as below:





## Model selection guide

Model specification description:



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

Product Type		
Enhanced type: KS700M2P	Power supply voltage DC12~48V	PLC channel Interface: Power lines below AC 500V
Hardware Version		
B: Standard module	Point-to-point 500 meters	Bandwidths: 10/100Mbps
D: Long distance edition	Point-to-point 1000 meters	Bandwidths: 10/50Mbps
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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