



## Industrial Grade HD-PLC

### KS700Q Robot DC type manual 1.1

- Hundred megabit bandwidth
- Online electricity supply
- Specialized for slid contact cord
- Industrial standard



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## Product Introduction

HD-PLC KS700Q is a broadband power carrier communication device that can draw power from a DC cable, support network port data in any two-core wire, such as slip touch cord, twisted pairs, coaxial cables, DC parallel lines, etc. for high-rate long-distance transmission , maximum physical layer rate up to 1000Mbps , point-to-point transmission distance up to 1000 meters, the relay version supports up to 10 levels of relay.

PLC KS700Q divided into host and slave via the device's master-slave dip switches, M-side is the host, S-side is the slave. Supports data transfer from one host to one slave or one host to multiple slaves. Self-contained routing algorithm , automatic networking , supports bus, star, tree, and hybrid network topologies structure. Data encryption, complete transparent transmission, plug and play.

PLC KS700Q support not only POC function , transmission of both network signals and DC power over power lines, and it supports POE function, supports POE cameras; Also has the ability to draw power on a DC line, PLC channel port can draw power from the DC power line without the need for a separate power supply.

PLC KS700Q conforms to industrial grade standards, high anti-interference , high stability and reliability , with POC, POE, on-line power pickup and other functions. Small volume , hanging ear installation method, it is suitable for carrier communication on power line or slip touch cord below DC 56 V. Products have been widely used in all walks of life, including slide rail robot, inspection robot, pipeline robot, underwater robot, high-definition video surveillance and so on.



## Technical data

Classification	Technical indicators
Power supply	DC 12-56V
PLC Signal port	Voltage 0-56V 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	Shielded twisted pair cable 1000 meters, ordinary power line 500meters, slip touch cord 300meters
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: 94.5*71*26.5mm (L*W*H) Weight: 260g 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

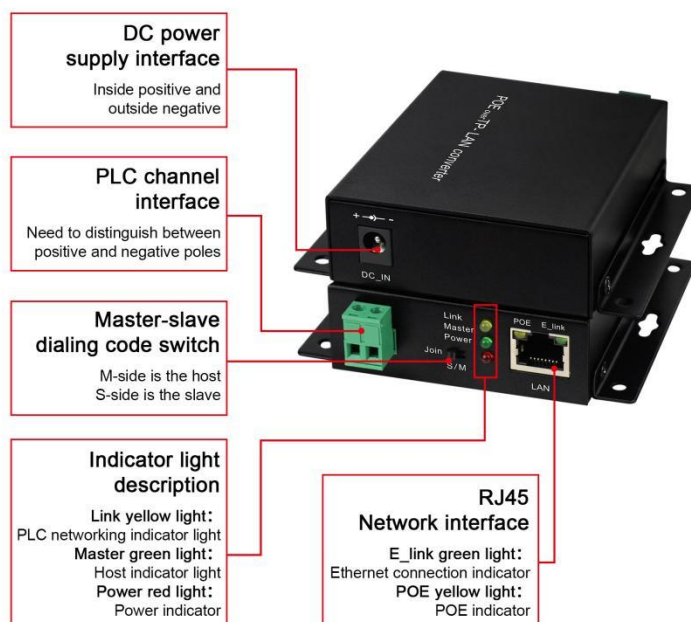


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## Interface specification



<b>PLC channel interface</b>	DC 0-56V power line or slip touch cord, left positive and right negative, need to distinguish between positive and negative poles.	<b>DC power supply interface</b>	Operating voltage DC:12-56V, DC 5.5-2.5/2.1mm socket, inside positive and outside negative.
<b>LED indicator</b>	Link yellow light: PLC networking indicator light, networking success yellow light is always on; Master green light: Host indicator light, green light on for host, green light not on for slave; Power red light:Power indicator,if power on,light on.	<b>Master-slave dip switch</b>	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.
<b>RJ45 network interface</b>	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 ; POE yellow light: POE indicator, connecting POE devices normally the light is on.	<b>Install way</b>	Earhook: There are four fixing holes on both sides of the fixing lugs, which are fixed with screws No. M3.

Note: KS700Q has the functions of POC, POE, and power on line, etc. The power line of PLC



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## Connection schematic diagram

The supply voltage of PLC KS700Q is DC 12 ~ 56V, it supports two-core line carrier communication below DC 56 V or uncharged, it has the functions of POC, POE, online power supply function and so on, PLC power line of the channel port needs to distinguish the positive and negative electrodes, support bus, star, tree, and hybrid network topology.

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

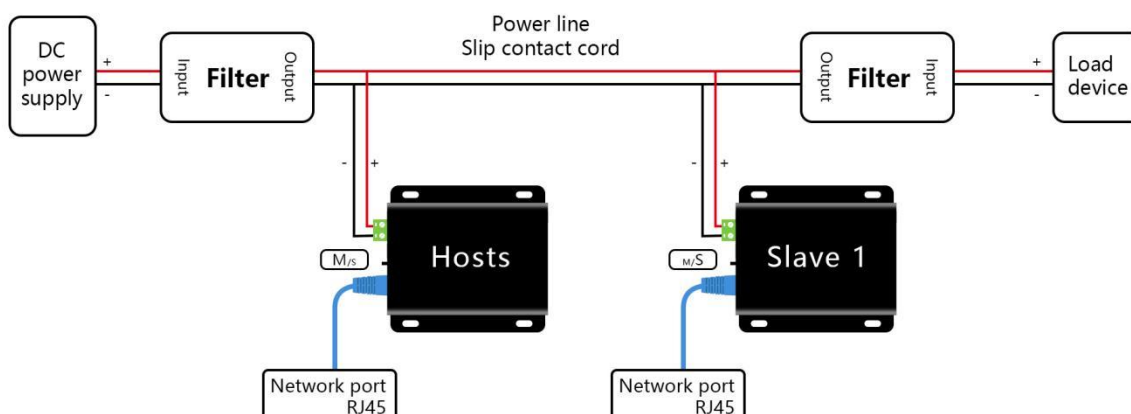


Figure 1

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

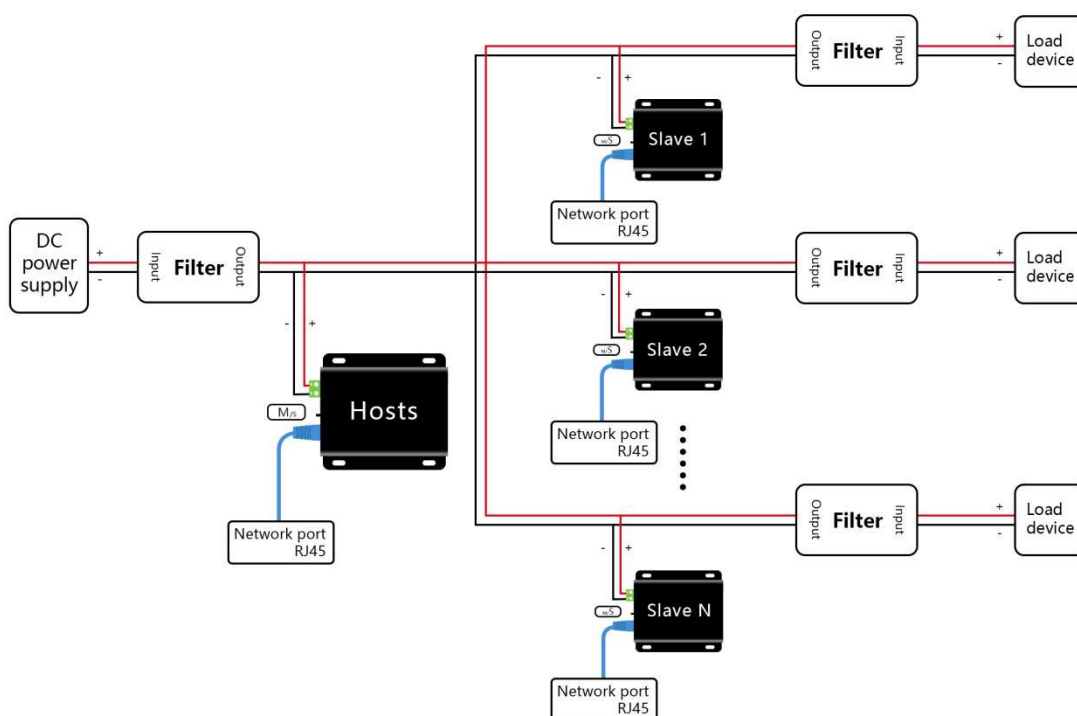


Figure 2



## 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, need to power off and restart the carrier before the master and slave can be networked. A network must have and can only have one host.

2. The minimum operating voltage of PLC KS700Q is DC 12V , the maximum voltage is DC 56V , ensure that each carrier is used within the specified voltage range.If the voltage is too low, the carrier will not work properly, and if the voltage is too high, the carrier will be damaged.

3. PLC must be used with a power filter , filter added to the outside of the carrier, no filters on power lines between carriers.

4. The filter needs to distinguish the direction , the input of the filter is connected to the power input or load , the output is facing the carrier.Special attention should be paid to the reverse connection of the input and output of the load side filter, the output is facing the carrier, the input side is connected to the load.

5. Please follow the connection diagram to connect the wires correctly, and the wiring should be secure. If the wiring is incorrect or loose, the network will not work.

6. 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.

If the product malfunctions, you can not disassemble and repair by yourself, please contact the manufacturer in time for processing.



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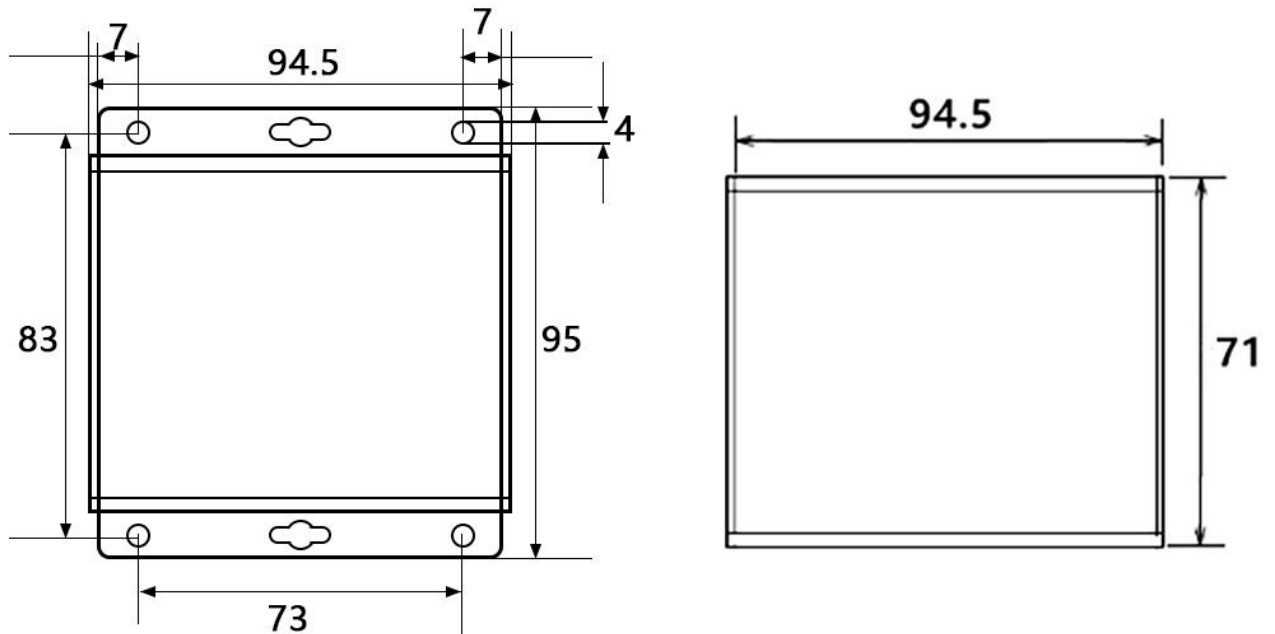
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## Exterior dimensions

PLC KS700Q' s length, width and height are: 94.5x95x26.5 mm(with fixed ear), four fixing holes on both fixing lugs, fixed with M3 screws. Without fixing lugs size is: 94.5x71x26.5mm, can be fixed with cable ties or double-sided tape.

Specific dimensions are shown below:





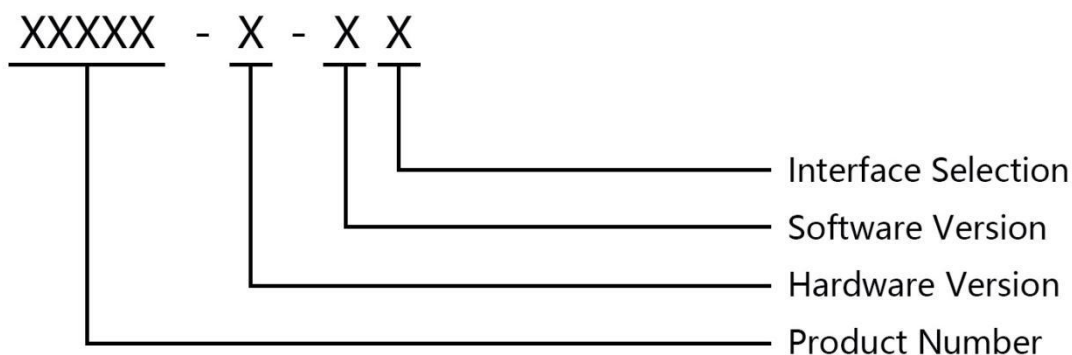
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## Model selection guide

Model specification description:



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

Product Type		
Robotics type: KS700Q	Power Supply voltage DC 12~56V	
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	



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