# ZLAN9440

# RS485 HUB

# User Manual

## 1 channel RS232/485 to 4 channels RS485

**Version Information**

The History of the revision to this document:

**History**

| Date | Version | Document ID | Revising content |
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# Content

# 1.  Summary

ZLAN9440 is a 4 ports industrial isolation RS485 hub, can extend 4 channels RS485 sub-ports through 1 channel RS485/232 main port. It can effectively implement reply, extension and isolation of RS485 network. ZLAN9440 can also be as an active isolation RS232 to RS485 converter. If you only need 1 channel the model is ZLAN9410.



**Figure 1 ZLAN9440 appearance**

The main port of ZLAN9440 provides isolation two interface RS485 and RS232 at the same time, the sub-ports extend 4 channels isolation RS485 interface.

Generally the RS485 wiring require hand-in-hand wiring style, need avoid star connection of master station as center. But sometimes need star connection, in this case using RS485 hub can effectively isolate connection interference between multi-RS485.

ZLAN9440 is active isolation RS485 hub, the product are specially designed for industrial scene in harsh environment, is especially suitable for situations requiring

high reliability and safety. The photoelectric isolation function can effectively make master and sub devices separate from each other, avoid damage from ground potential difference of master-slave devices and static, lightning, surge to devices, also can avoid damage from ground loop current caused by ground potential difference.

ZLAN9440 has 4 main application styles:

1) Isolation: effectively isolate master and slave ends of RS485 network; meanwhile isolate 4 slave stations.

2) Relay: can effectively extend communication distance of RS485 network.

3) Extension: can implement 1 channel RS485 extending to 4 channels RS485, multiply the numbers of RS485 devices in the network.

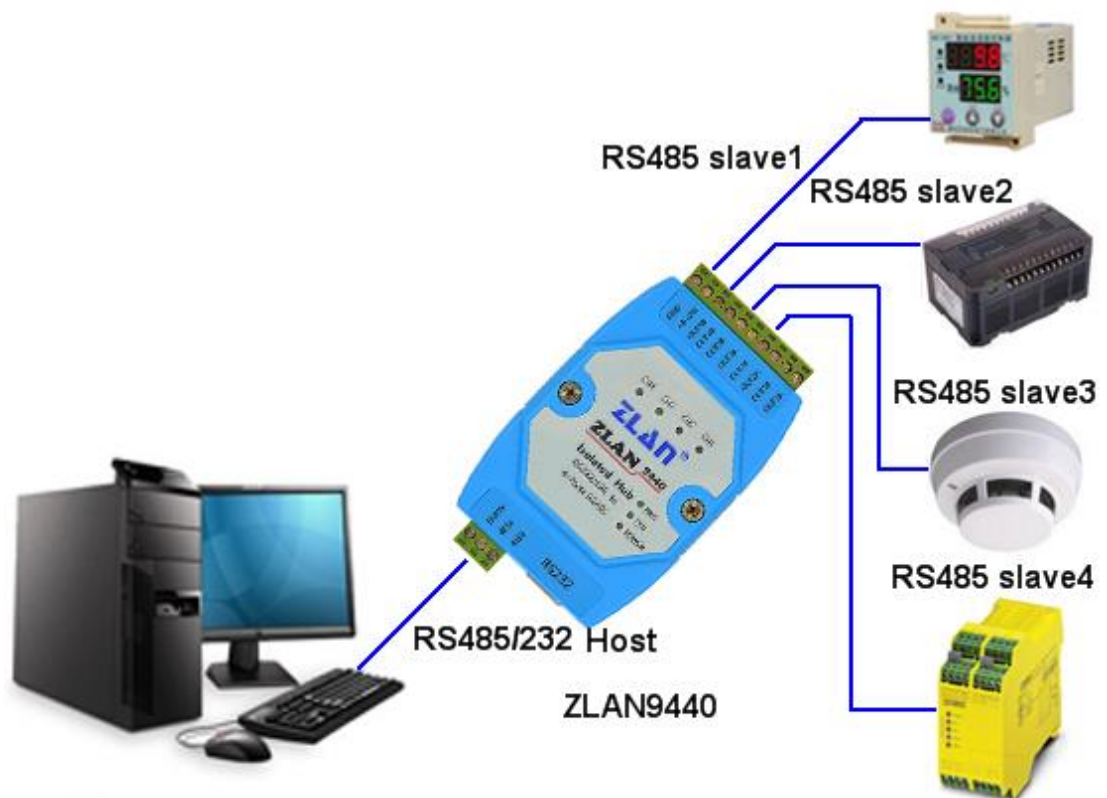4) Conversion: also can realize 1 channel RS232 converting to 4 channels RS485.

**Figure 2 ZLAN9440 connection diagram**

## 2.  Feature

1) RS485 master port and slave port has 2500V voltage isolation protection.

2) RS485 master port and slave port support 256 slave stations.

3) The back is equipped with guide installation card slot, suitable for guide installation.

4) 9~24V wide range input.

5) RS485 opposite connection indicator. The CH1~CH4 indicator is always on when line A and line B are opposite connected.

## 3.  Technical parameter

| Interface Standard | meet EIA/TIA RS232/RS485 standard |
|---|---|
| Physical Interface | RS232: DB9 (hole); RS485: Terminal |
| Serial Port Type | RS485: two-line (A, B); RS232: three line (TXD, RXD, GND) |
| Communication Rate | 0~200Kbs（self-adaptive） |
| Support Qty. | each RS485 port support up to 256 node |
| Communication Distance | 1200m (9600bps); higher rate shorter distance |
| Isolation Voltage | RS485 isolation voltage: 2500V |
| Static Protection | RS485: 12KV |
| Operation Mode | half-duplex transparent transmission |
| Input Voltage | DC 9~30V |
| Work Temperature | -45℃~+85℃ |
| Environment Humidity | <95%RH |
| Transmission Medium | normal parallel lines or twisted-pair |

| Size | L×W×H=12.2cm×7.2cm×3.4cm |
|------|--------------------------|

# 4. Hardware



**Figure 3 9440 Interface Diagram**

The front view of ZLAN9440 is shown as figure 3, the interface instructions are as below:

| Name | Instruction |
|-------|-------------|
| EARTH | Shell grounding, for RS485 lightning and big current drainage, can be non-connected. |

| 485A, 485B | RS485 main port |
|---|---|
| RS232 | RS232 main port, can choose 1 between it and RS485 main port |
| OUT1A, OUT1B | RS485 slave port 1 |
| OUT2A, OUT2B | RS485 slave port 2 |
| OUT3A, OUT3B | RS485 slave port 3 |
| OUT4A, OUT4B | RS485 slave port 4 |
| GND, +9～24V | Power supply terminal input |

# 5. Usage

1) **Extension usage:** when master RS485 device need connect 4 RS485 slave stations through star-type, connect master station with 9440 master port, slave station connect 9440 slave port, it can prevent interference between RS485 as effectively isolation.

2) **Isolation:** connect one end of RS485 wire to the RS485 master port, the other end connect to any of the RS485 slave ports, so the RS485 wire is isolated effectively, can  be lightning protection and anti-interference. Effectively protect the RS485 device in other end from damage by big voltage and strong current.

3) **Relay:** when RS485 wire exceeds 1200m, the signal will attenuate and the interference will increase. ZLAN9440 is adopted to extend the communication distance.

4) **Conversion:** can realize RS232 converting to RS485, and it's active converter with strong compatible. Also has isolation character, prevent the monitoring computer to be damaged by RS485 strong voltage.

# 6. After-service

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