

HighTek HT-8811

Industrial Grade RS232/485 to 8 Ports RS-485 HUB

User Manual

I. Overview

With a double-core and non-stop inside design HT-8811 is a RS-485 bus splitting hub specially designed to meet the requirements of RS-485 under sophisticated electromagnetic field environment. A transmission rate as high as 115.2 KBPS is supported by this product. What's more, photoelectrical isolation technology is adopted for RS-485 interface to avoid induction of lighting or surge into the converter and equipment to make sure the safety and reliability of signal transmission. The built-in photoelectrical isolator and the 1,500W surge protection circuit can provide a high isolation voltage of 2,500V for an efficient restriction of lighting and ESD, and at the same time, lighting strike and grounding interference can be reduced to the least extent. This product is suitable for outdoors engineering with adoption of outside switch power supply. Under RS-485 mode the determination circuit adopted can determine the direction of the data stream and switch the control circuit on an automatic basis for a very easy solution of the long existed transmission delay of RS-485. The transmission distance is as far as 1,200 meters with a very stable performance. This product is widely used in express way toll system road monitoring system and electricity monitoring system with nice performance and competitive price.

RS-485 star topology bus connection is provided by HT-8811 RS-485 HUB. Short circuit and open circuit is provided for all the terminals. Photo electrical isolation of 2,500V is provided. Re-construction of RS-485 bus structure and network range splitting can be easily realized to improve communication reliability. In the case of lighting strike or equipment failure, the affected range shall be isolated to make sure the normal function of other ranges. This feature can increase greatly the reliability of existing RS-485 with achievement of shorter time for network maintenance. Proper application of HT-8811 RS-485 HUB can help you with a nice design of RS-48 system of high stability.

II. Parameters

1. Interface features: compatible with RS-232C and RS-485 standards of EIA/TIA.
2. Electric connection: 10-bit wiring terminal for RS-485 interface
3. Transmission media: twisted-pair cable or shielded cable.
4. Working mode: asynchronous half-duplex.
5. Signal indication: 11 signal indicator including power (PWR), send (TXD), receive (RXD) and failure (E1-E8).
6. Isolation degree: isolation voltage of 2,500VRMS 500VDC non-stop and DC/DC isolation module.
7. Transmission rate: 300BPS-115.2K.

8. Transmission distance: 0-3km (115,200-300BPS)
9. Measurements: 122mmX72mmX26mm
10. Working environment: -40℃ to 80℃, relative humidity 5% to 95%.

III. Electric interfaces and definitions:

10 PIN	definition	Signal description
1	GND	Power Ground
2	VCC	Power input 9~40V DC
3	485B	IN RS-485-
4	485A	IN RS-485+
5	485B	E8 RS-485-
6	GND	E8 RS-485+
7	RXD	E7 RS-485-
8	TXD	E7 RS-485+
9	VCC	E6 RS-485-
10	GND	E6 RS-485+

10PIN (PIN)	Output Signal	RS-485
1	485A	E1 RS-485-
2	485B	E1 RS-485+
3	485A	E2 RS-485-
4	485B	E2 RS-485+
5	485A	E3 RS-485-
6	485B	E3 RS-485+
7	485A	E4 RS-485-
8	485B	E4 RS-485+
9	485A	E5 RS-485-
10	485B	E5 RS-485+

IV. Alarm and Protection of RS-485 Port Failures

Efficient solutions of RS-485 ports failures shall greatly increase the liability of RS-485 device connections. The short circuit protection function of all the 4 ports for subordinate machine shall work under turn-off mode. Any failure of any specific RS-485 port shall only influence the RS-485 BUS system connected to that port all systems connected to other ports will not be affected. Failed ports and other devices connected can be determined easily for solution by users based on the alarm indicators.

V. Protection of Power and Lighting Strike

Outside small-size power supply of DC 9-40V/350mA is adopted. Never user any other un-regulated power supply to avoid damage caused to your products. 1500W lighting strike protection is available for all the RS-485 interfaces of HT-8811 for efficient restriction



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of lighting strike and ESD. Grounding has to be ensured for a safe and stable communications.