HXSP-2108B RS-232/RS-485/RS-422

Converter Instruction

Product introduction

HXSP-2108B is a multifunctional converter with external power supply, it compatible with RS-232/RS-485/RS-422 standard. It can change the single-ended RS-232 signal to balanced RS-485/RS-422 signal, RS-232 interface use the DB9 female connector connect with the serial of computer ,on the other side RS-485/RS-422 use the DB9 male connect with 6 terminal board, Or you can choose the RJ-45 port connect with the device which has the RJ-45 connector . Since the RS-485 support two wire half duplex, which means the RS-485 only have two lines to receive data and send data. Handshaking signal usually control the direction of data sending, the inner circuit of HXSP-2108B converter is able to auto sensing the direction of data flow, and switch to ENABLE CONTROLS automatic. A RS-485 network can be built convenient without any handshaking signal; the RS-485 ENABLE CONTROLS is full transparent, no need to modify any software for the old working method based on RS-232. HXSP-2108B converter comes with external power supply, the characteristic have small in design, long transmission distance, performance stable, etc. it is mainly used for the field of electricity, industrial automatic control, IC card billing system and time attendance, one card solution, access control system, parking system, and so on.

Specification

1. Standard: Accord EIA RS-232, RS-485, RS-422 standard.

2. Connector: DB9 female on RS-232 side, DB9 male with 6 terminal block on RS-485/RS-422 side or RJ-45 connector.

3. Work methods: asynchronous, point to point or multi-point, 2 wire half-duplex.

4. Transmission medium: twisted pair cable or shielded Wire

5. Baud rate: 300~115000bps.

6. Signal indication: three signal indication LEDs(TXD,RXD,POWER).

7. Surge Protection: 1500W.

8. Transmission distance: 5 meters (RS-232 side) and 1800 meters (RS-485/RS-422 side).

9. Dimension: 93mm x 23mm x 62mm.

10. Environment: -10℃ to 85℃ working temperature, 5% to 95% relative humidity.

11. Loading Capacity: 32~128 units device.

Pin Definition：

RS-232 pin definition

DB9 Female	1	2	3	4	5	6	7	8
RS-232	DCD	TXD	RXD	DTR	GND	DSR	RTS	CTS

RS-485/RS-422 pin definition

DB9 Male	1	2	3	4	5	6
RS-422	T-	T+	R+	R-	GND	FCN
RS-485	485-	485+			GND	FCN

RJ-45 pin definition

RJ-45	1	2	3	4	5	6	7	8
RS-422	T+	T-	R+	R-			GND	GND
RS-485	485-	485+					GND	GND

RJ-45 connection diagram
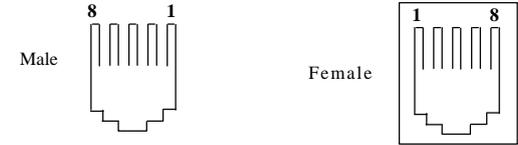
Application

Please read the instruction carefully before using HXSP-2108B converter, the 9pin female side of RS-232 cable comes with HXSP-2108B connect to the RS-232 connector of Main Host Computer. And the other side connects to the RS-232 connector of the HXSP-2108B. The power AC Adapter connect to +9V connector. Connect RS-45 or 6 terminal blocks on RS-485/RS-422 as required, when connect all the terminal blocks, it must be according to the Pin Definition.HXSP-2108B converters support 4 kinds of communication method as below:

(1) Point to point /four wires full-duplex

(2) Point to points /four wires full-duplex

(3) Point to point /two wires half-duplex
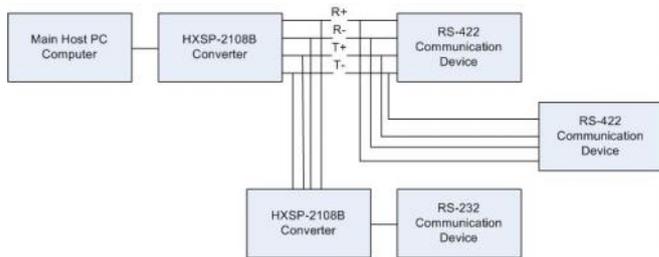
(4) Point to points / two wires half-duplex

The factory settings is auto adaptation status, when the customer use external connection as RS-485 , the HXSP-2108B will be in the half-duplex RS-485 status , and when the customer use external connection as RS-422 , the HXSP-2108B will be in the full-duplex RS-422 status.

(1) When the HXSP-2108B connects as RS-232/RS-422, the device connects as RS-422 connection method.

A. RS-232/RS-422 communicate as point to point four wire, asynchronous, full-duplex method, this method is mainly used for control-side equipment connector is RS-232, and the connector of equipment under control is RS-422, The two side can not communicate directly because of disaccord of two side electrical specialty, HXSP-2108B converter can be used for transparent change the RS-232 signals to RS-422 signals.

B. RS-232/RS-422 communicate as point to points four wire, asynchronous, full-duplex method, this method is mainly used for control-side equipment connector is RS-232, and the connector of equipment under control is RS-422,and it will connect many RS-422 devices. From device (RS-422 SLAVE) MAX connection is 32~128 RS-422 devices. In order to avoid signal reflex and interfering signal, it should be add the matched resistance on the terminal circuit (120 , 1/4 w)


(2) When the HXSP-2108B connects as RS-232/RS-4485, the device connects as RS-485 connection method.

A. RS-232/RS-485 communicate as point to point two wire, half-duplex method, this method is mainly used for control-side equipment connector is RS-232, and the connector of equipment under control is RS-485, The two side can not communicate directly because of disaccord of two side electrical specialty, HXSP-2108B converter can be used for transparent change the RS-232 signals to RS-485 signals, and it need not RTS.

B. RS-232/RS-485 communicate as point to points two wire, half-duplex method, this method is mainly used for control-side equipment connector is RS-232, and the connector of equipment under control is RS-485,and it will connect many RS-485 devices. From device (RS-485 SLAVE) MAX connection is 32~128 RS-485 devices. In order to avoid signal reflex and interfering signal, it should be add the matched resistance on the terminal circuit (120 , 1/4 w)
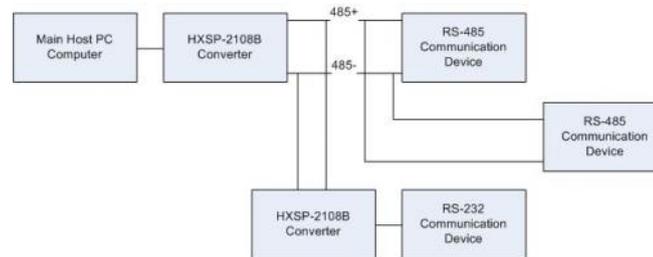
Power Supply and Surge Protection

1. HXSP-2108B converter can get the power from the 9V adapter or from other DC power or device. Power supply voltage should be +9V, electric should be 100mA.

2．Surging protection

Ordinary interface converters do not provide large energy protection equipment, and they try to release the energy to the Earth through the smallest resistance route for the transient high voltage in the interface data line of wire sensor. So it is easy to make the interface component's damage. Interface Converters during the process should avoid grounding vacant in order to ensure the safety of use and reliable communications .

Problem analysis：

1. Data communication unsuccessful

A. Check RS-232 interfaces whether to be correct;

B. Check RS-485 interfaces whether to be correct;

C. Check whether RS-232 signal level（TXD、DTR、RTS） lower than＋5V, if that, it can get through power from 6th pin of DB9 Male.

2. Data missing or messy code

A. Check whether the baud rate and format of both sides of data communication equipment are same.

B. If possible, add the matched resistance on the terminal circuit (120 ,1/4 w)