USER'S MANUAL

PH232Y11

RS-232/TTL UART REPEATER & ISOLATOR

IPEX

(IP Electronix)

16 January 2022

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1. INTRODUCTION

IPEX PH232Y11 is a Bi-Directional RS-232/TTL UART Repeater and Isolator and Amplifier. It works with Baud-Rate from 300bps to 230400bps. This device adds up to 3kV optical and electrical insulation between the two RS-232 sides, which eliminates noise from the RS-232 path. Also, if a length of more than 15m is required for the RS-232 line, by adding one PH232Y11, the length of the RS-232 cable can be increased up to at least 30m, i.e., 15m meters on each side. Also, due to having the TTL ports, PH232Y11 can be connected directly to a microcontroller system.

Protection against Surge, ESD and EMI is considered in its design and also there is 3kV Electrical and Optical insulation between RS-232/TTL UART sides.

PH232Y11 is designed for industrial usage and is useful for Industrial Automation, Telecommunications, SCADA Systems, DCS Systems and …

2. SPECIFICATIONS

- **RS-232 Repeater,** Isolator and Amplifier;
- **Number of Ports:** #1 RS-232/TTL UART to #1 RS-232 Bi-Directional Repeater;
- **Serial Standard:** Meets or Exceeds the Requirements of TIA/EIA-232-F and ITU v.28 Standards;
- **RS-232 Signal (Full Flow Control Support):** TxD, RxD, DTR, RTS, DSR, DCD, CTS, RI, GND;
- **RS-232 Parity:** Even, Odd, None, Mark and Space;
- Fully **Plug & Play;**
- **Wide Range Power Supply:** +8V to +48V DC;
- **Serial Transmission Speed** up to 230.4 kbps;
- **Power (Green)** LED Indicator;
- **Transmit (Blue)** and **Receive (Yellow)** LED Indicator;
- **Isolation Protection:** 3kV Instantaneous, 500V DC Continuous;
- **Surge Protection:** Embedded 1500W Surge Protection;
- **Magnetic Isolation:** 1.5 kV Built-in;
- **ESD Protection:** RS-232 Bus-Pin ESD Protection Exceeds ±15 kV Using Human-Body Model (HBM);
- **Dimensions:** 26mm x 71.6mm x 122 mm (1.03in x 2.8in x 4.82in);
- **Operating Temperature:** -10°C to +70°C (+14°F to +158°F);
- **1 Year Guarantee** and **5 Years Support.**

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3. PACKAGE CHECKLIST

Before installing the PH232Y11, verify that the package contains the following items:

1) #1 PH232Y11

2) #1 RS-232 Male to Female Cable

3) #1 Document and Driver CD-ROM

NOTE: Notify your sales representative if any of the above items is missing or damaged.

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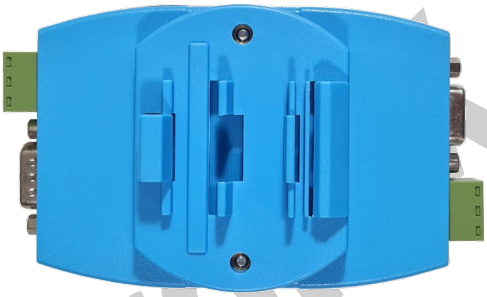
4. TOP VIEW

5. BOTTOM VIEW



6. FRONT VIEW

7. BACK VIEW

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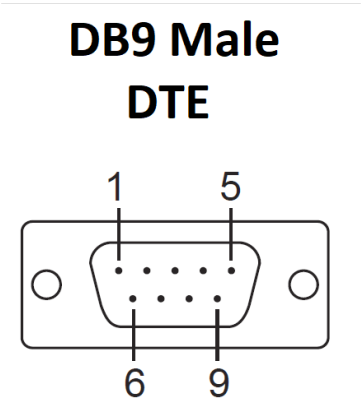
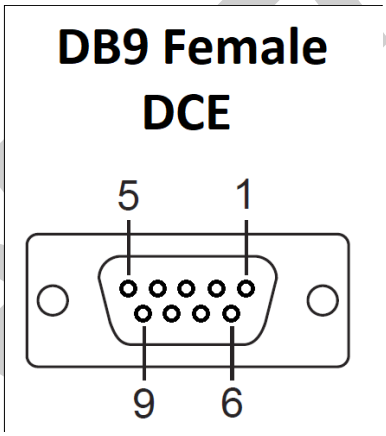
8. RS-232 SERIAL PORT PIN CONFIGURATION



PIN	NAME	TYPE
1	DCD	INPUT
2	RxD	INPUT
3	TxD	OUTPUT
4	DTR	OUTPUT
5	GND	GROUND
6	DSR	INPUT
7	RTS	OUTPUT
8	CTS	INPUT
9	RI	INPUT

Data Terminal Equipment (DTE)



PIN	NAME	TYPE
1	DCD	OUTPUT
2	RxD	OUTPUT
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4	DTR	INPUT
5	GND	GROUND
6	DSR	OUTPUT
7	RTS	INPUT
8	CTS	OUTPUT
9	RI	OUTPUT

Data Communication Equipment (DCE)

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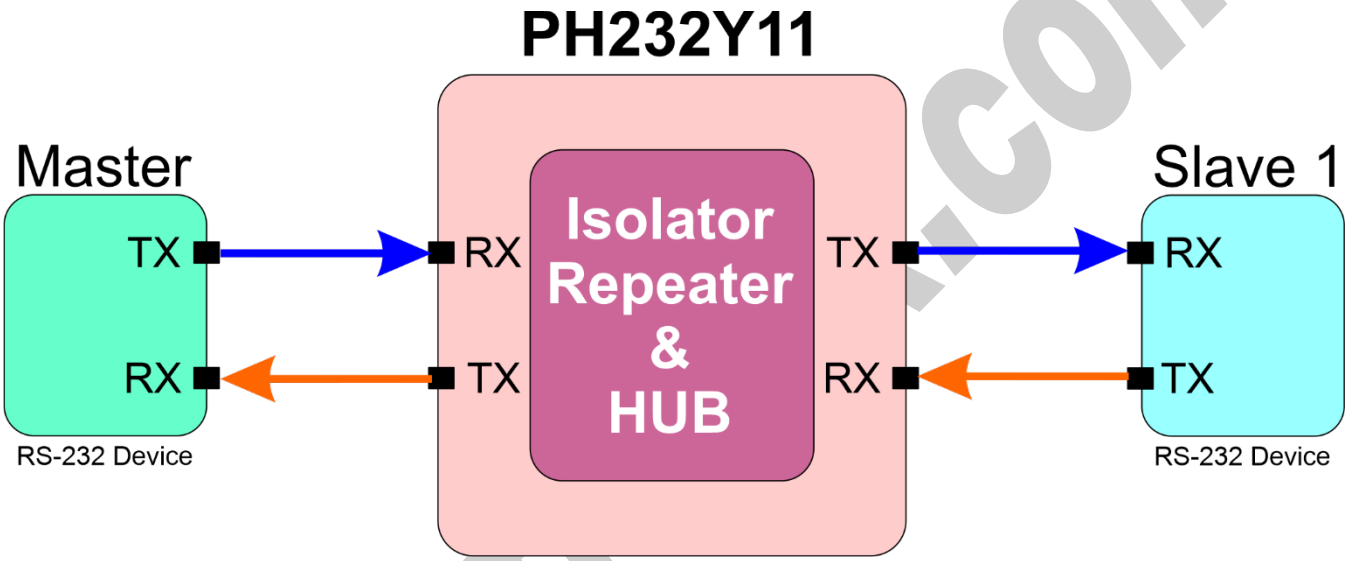
9. PH232Y11 CONNECTION DIAGRAM



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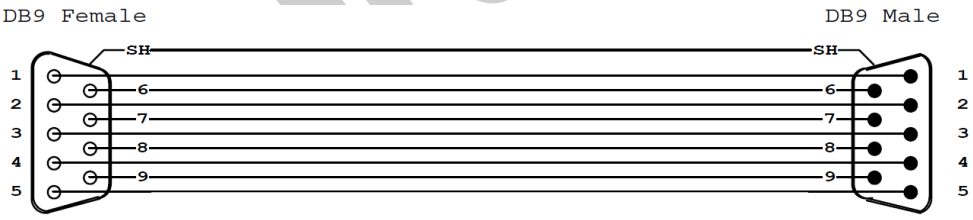
10. RS-232 CONNECTING METHODS

- Modem Connection (to a Modem, any DCE devices)

DTE DB9-Male Pin Number		Modem or other DCE devices DB9-Female Pin Number	
Pin 1: DCD	(Input)	Pin 1: DCD	(Output)
Pin 2: RxD	(Input)	Pin 2: RxD	(Output)
Pin 3: TxD	(Output)	Pin 3: TxD	(Input)
Pin 4: DTR	(Output)	Pin 4: DTR	(Input)
Pin 5: GND	(Ground)	Pin 5: GND	(Ground)
Pin 6: DSR	(Input)	Pin 6: DSR	(Output)
Pin 7: RTS	(Output)	Pin 7: RTS	(Input)
Pin 8: CTS	(Input)	Pin 8: CTS	(Output)
Pin 9: RI	(Input)	Pin 9: RI	(Output)



(Modem Cable)

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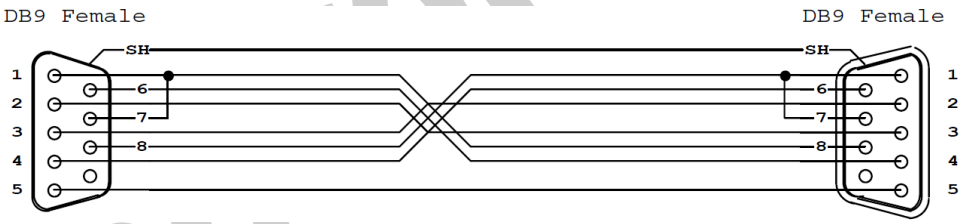
- **Null Modem Connection (to PC, PLC, RTU or any other DTE devices)**

DTE DB9-Male Pin Number		PC, PLC or other DTE devices DB9-Male Pin Number	
Pin 1: DCD	(Input)	Pin 7: RTS	(Output)
Pin 2: RxD	(Input)	Pin 3: TxD	(Output)
Pin 3: TxD	(Output)	Pin 2: RxD	(Input)
Pin 4: DTR	(Output)	Pin 6: DSR	(Input)
Pin 5: GND	(Ground)	Pin 5: GND	(Ground)
Pin 6: DSR	(Input)	Pin 4: DTR	(Output)
Pin 7: RTS	(Output)	Pin 8: CTS	(Input)
Pin 8: CTS	(Input)	Pin 7: RTS	(Output)
Pin 7: RTS	(Output)	Pin 1: DCD	(Input)



(Null Modem Cable)

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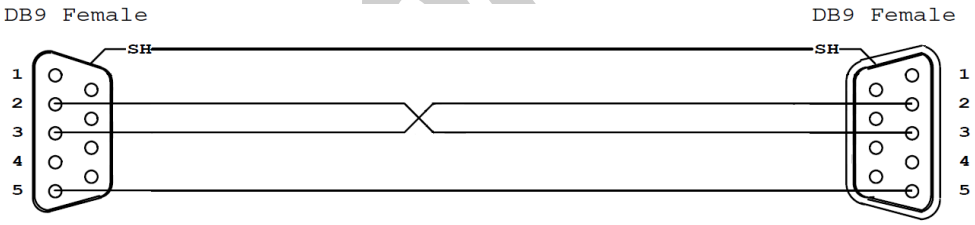
- **Simple Null Modem Connection (to PC, PLC... Without Hardware Flow control)**

DTE DB9-Male Pin Number		PC, PLC or other DTE devices DB9-Male Pin Number	
Pin 2: RxD	(Input)	Pin 3: TxD	(Output)
Pin 3: TxD	(Output)	Pin 2: RxD	(Input)
Pin 5: GND	(Ground)	Pin 5: GND	(Ground)



(Simple Null Modem Cable (Without Hardware Handshaking))

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11. GUARANTEE

All products manufactured by **IPEX** are under warranty regarding defective materials for a period of one year from the date of delivery to the original purchaser.

12. TECHNICAL SUPPORT

If you have any technical question or need any technical support, please contact us using this Email address: support@ipelectronix.com.

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