

USER'S MANUAL



PH485Y11

RS-485/RS-422 REPEATER & ISOLATOR & AMPLIFIER

IPEX

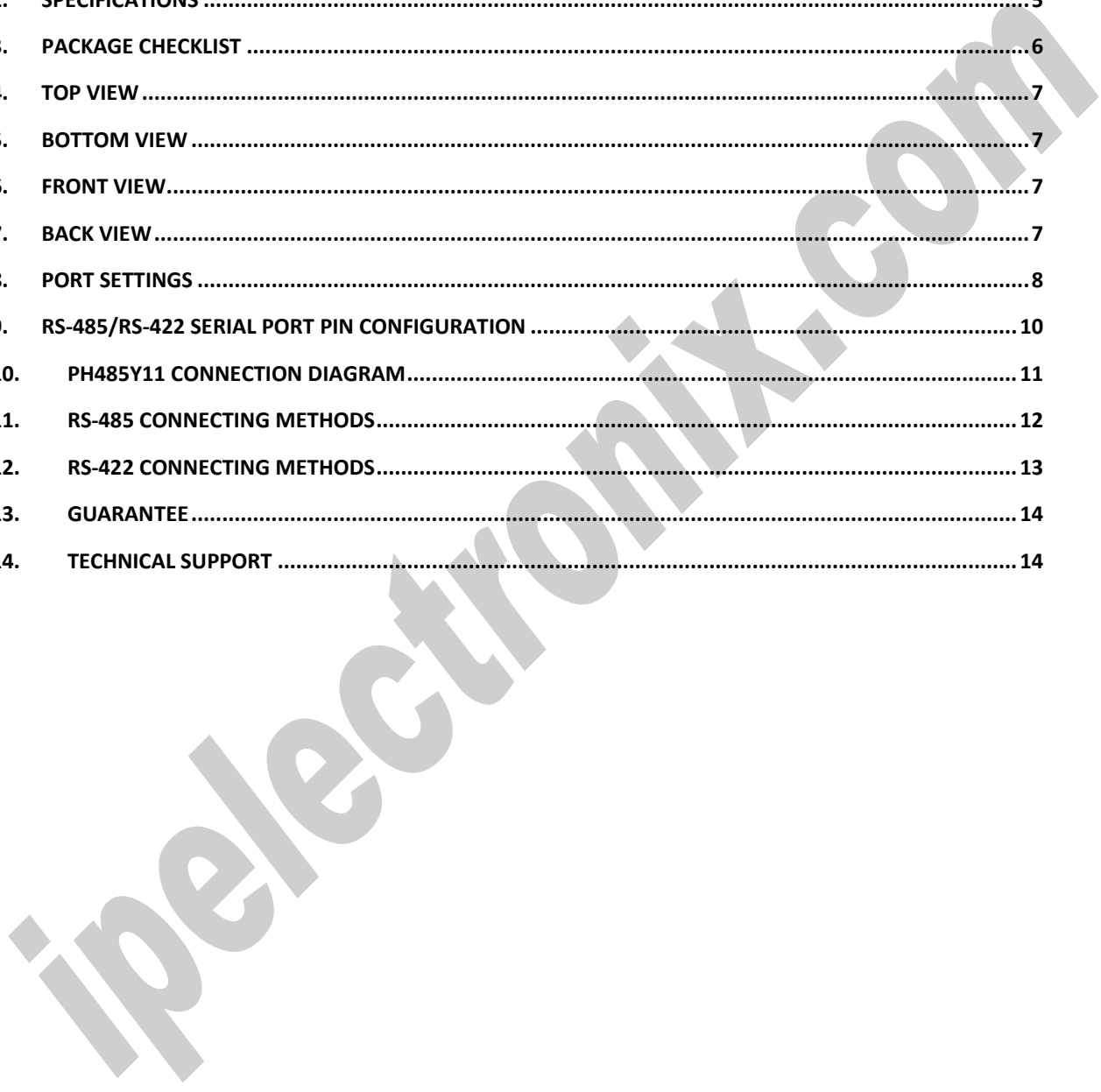
(IP Electronix)

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1. INTRODUCTION

IPEX PH485Y11 is a RS-485 and RS-422 Repeater and Isolator. If it is needed to have RS-485/RS-422 network with length more than 1200m or to have more than 32 nodes, using a **PH485Y11** helps you to increase the network length up to 2400m and also to have up to 64 devices connected to it.

PH485Y11 is compatible with RS-485 standard devices differential Data+ & Data- signals and is fully Plug & Play. It works with a wide range of +8V up to +48V DC power supply with low (about 1W) consumption.

Since RS-485 is a Half-Duplex standard, switching between transmit and receive is done automatically and no further signal (such as RTS) is required. **PH485Y11** supports Point-to-Point and Point-to-Multi Point Party Line network topologies.

Protection against Surge, ESD and EMI is considered in its design and also has 3kV insulation between RS-485/RS-422 sides, so **PH485Y11** is good for industrial usage and is useful for Industrial Automation, Telecommunications, SCADA Systems, and DCS Systems ...

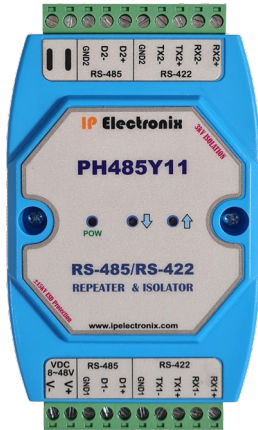
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2. SPECIFICATIONS

- **RS-485/422 Repeater, Isolator and Amplifier;**
- **Number of Ports:** #1 RS-485/422 to #1 RS-485/422 Bi-Directional Repeater;
- **Serial Standard:** Meets or Exceeds the Requirements of RS-485/422 Standards;
- **RS-485 Signal:** Data+, Data-, GND;
- **RS-422 Signal:** TX+, TX-, RX+, RX-, GND;
- **RS-485/422 Parity:** Even, Odd, None, Mark and Space;
- **Maximum Communication Distance:** 2400m (1200m each side);
- **Loading:** RS-485 and RS-422 Side up to 32 Nodes are supported;
- **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:** 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.**

3. PACKAGE CHECKLIST

Before installing the PH485Y11, verify that the package contains the following items:



1) #1 PH485Y11

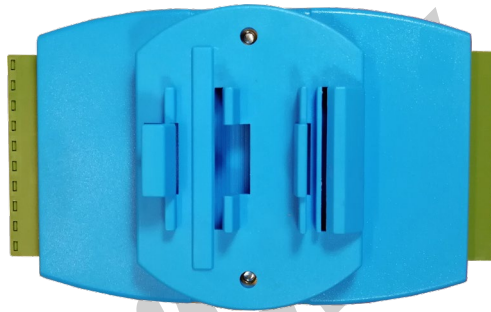
2) #1 Document and Driver CD-ROM

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

4. TOP VIEW



5. BOTTOM VIEW



6. FRONT VIEW



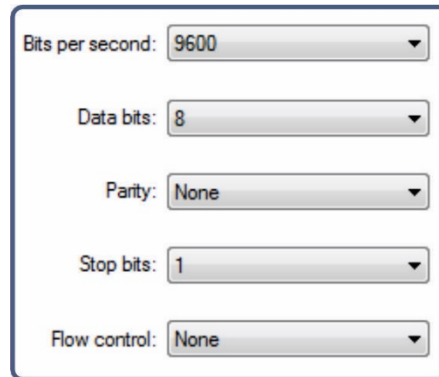
7. BACK VIEW



8. PORT SETTINGS

Device Default Settings is: 9600, 8, n, 1

For change settings, connect the RS-485 port by means of a USB to RS-485 Converter [such as PH485Ux1] to the computer; then open a Hyper-Terminal software (a copy of it, is in the Product CD in Utility folder) with the settings as following picture.



Bits per second: 9600
Data bits: 8
Parity: None
Stop bits: 1
Flow control: None

Then turn on the device; you can see blow device message.

```
<<PH232T485Y>>  
Settings: 9600, 8, None, 1  
1) Change Settings  
2) Test  
3) Factory Reset  
Enter your choice  
<4> _
```

For change settings press number '1'.

- Parity

"None", "Even" and "Odd" Parity type are supported by PH485Y11. The Parity setting are shown in the following table.

```
<Select Parity>  
1) Parity None  
2) Parity Even  
3) Parity Odd  
4) Return  
_
```

- Stop Bit

1 and 2 bits are selectable for Stop Bit according to the following figure:

<Select Stop-Bit>

- 1) 1 bit
- 2) 2 bits
- 3) Return

- Data-Length

5, 6, 7, 8, 9-Bits Data-Length are supported by PH232T485Y11. Set Data-Length according to the following figure:

<Select Data-Length>

- 1) 5 bits
- 2) 6 bits
- 3) 7 bits
- 4) 8 bits
- 5) 9 bits
- 6) Return

- Baud-Rate

In this section you can change Baud-Rate from 600bps to 230400bps.

<Select Baud-Rate>

- 1) 600 bps
- 2) 1200 bps
- 3) 2400 bps
- 4) 4800 bps
- 5) 7200 bps
- 6) 9600 bps
- 7) 14400 bps
- 8) 19200 bps
- 9) 28800 bps
- A) 38400 bps
- B) 57600 bps
- C) 115200 bps
- D) 153600 bps
- E) 230400 bps

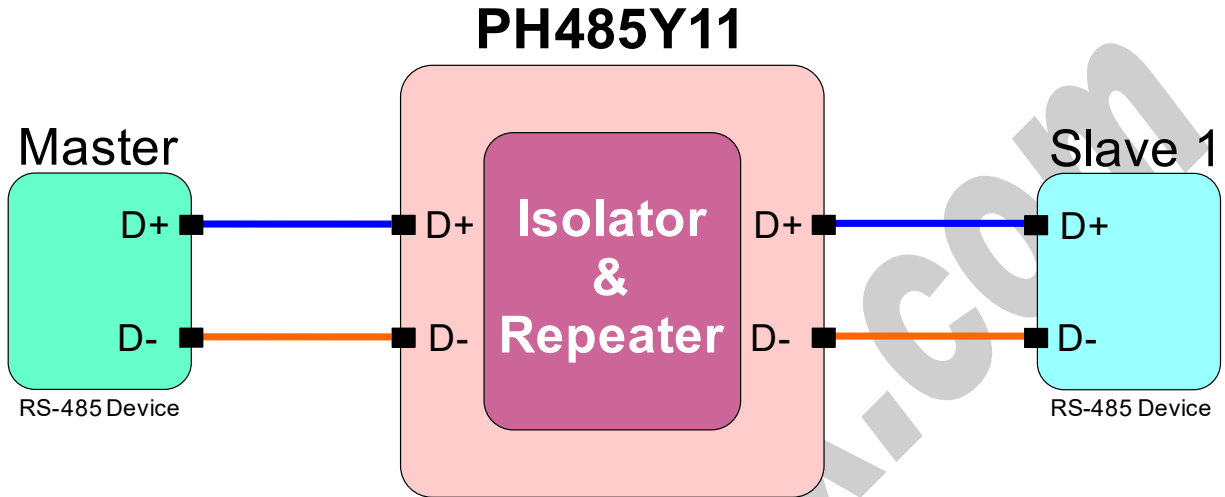
9. RS-485/RS-422 SERIAL PORT PIN CONFIGURATION



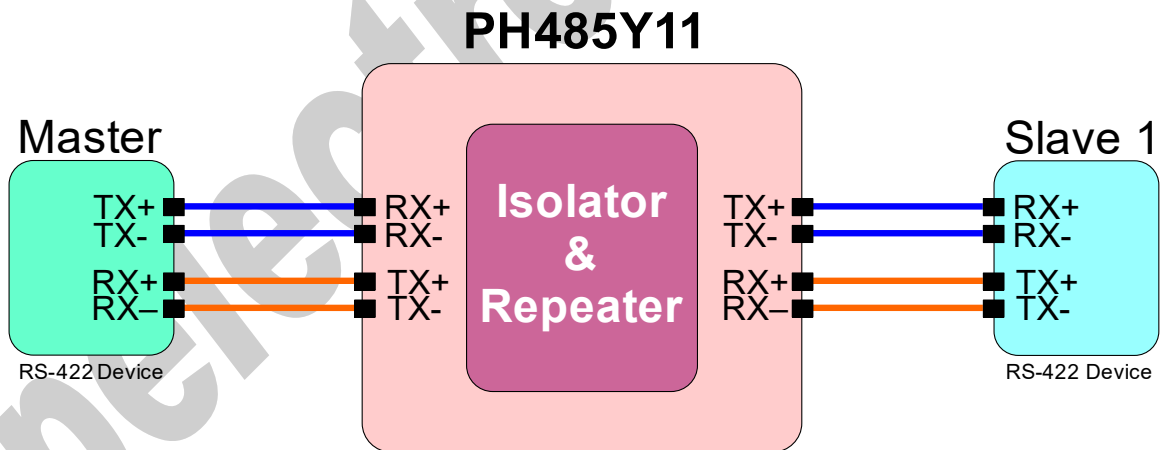
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10. PH485Y11 CONNECTION DIAGRAM

- **PH485Y11 in RS-485 Mode**



- **PH485Y11 in RS-422 Mode**

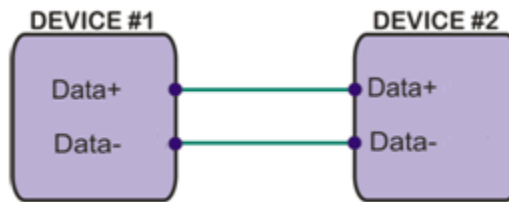


- **PH485Y11 in Mixed Mode**

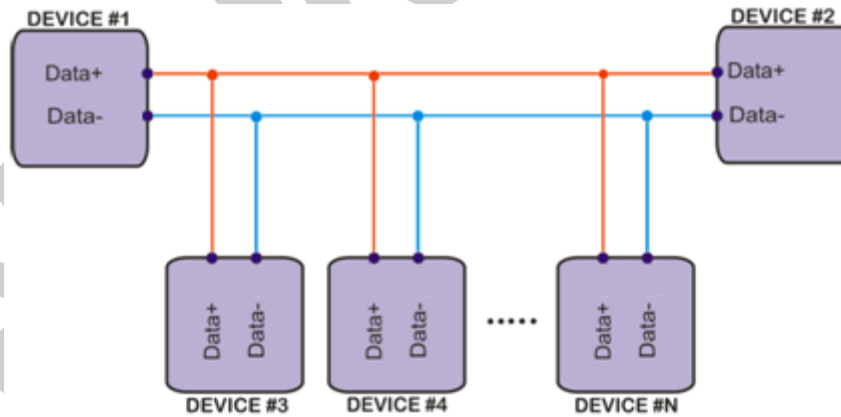
It is possible to use PH485Y11 in mixed mode, this means you can use one side in RS-485 mode and another side in RS-422 mode.

11. RS-485 CONNECTING METHODS

- RS-485: Point to Point Connection

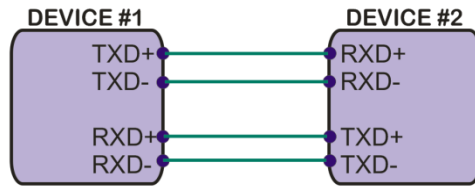


- RS-485: Multipoint Network

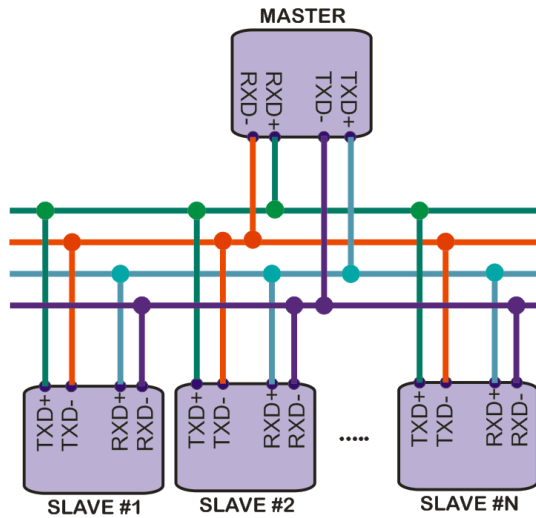


12. RS-422 CONNECTING METHODS

- RS-422: Point to Point



- RS-422: Multi-Drop Network



13. 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.

14. 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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