

USER'S MANUAL



PH232T485Y11P

RS-232, RS-485 and RS-422 Converter, Repeater and Isolator

IPEX

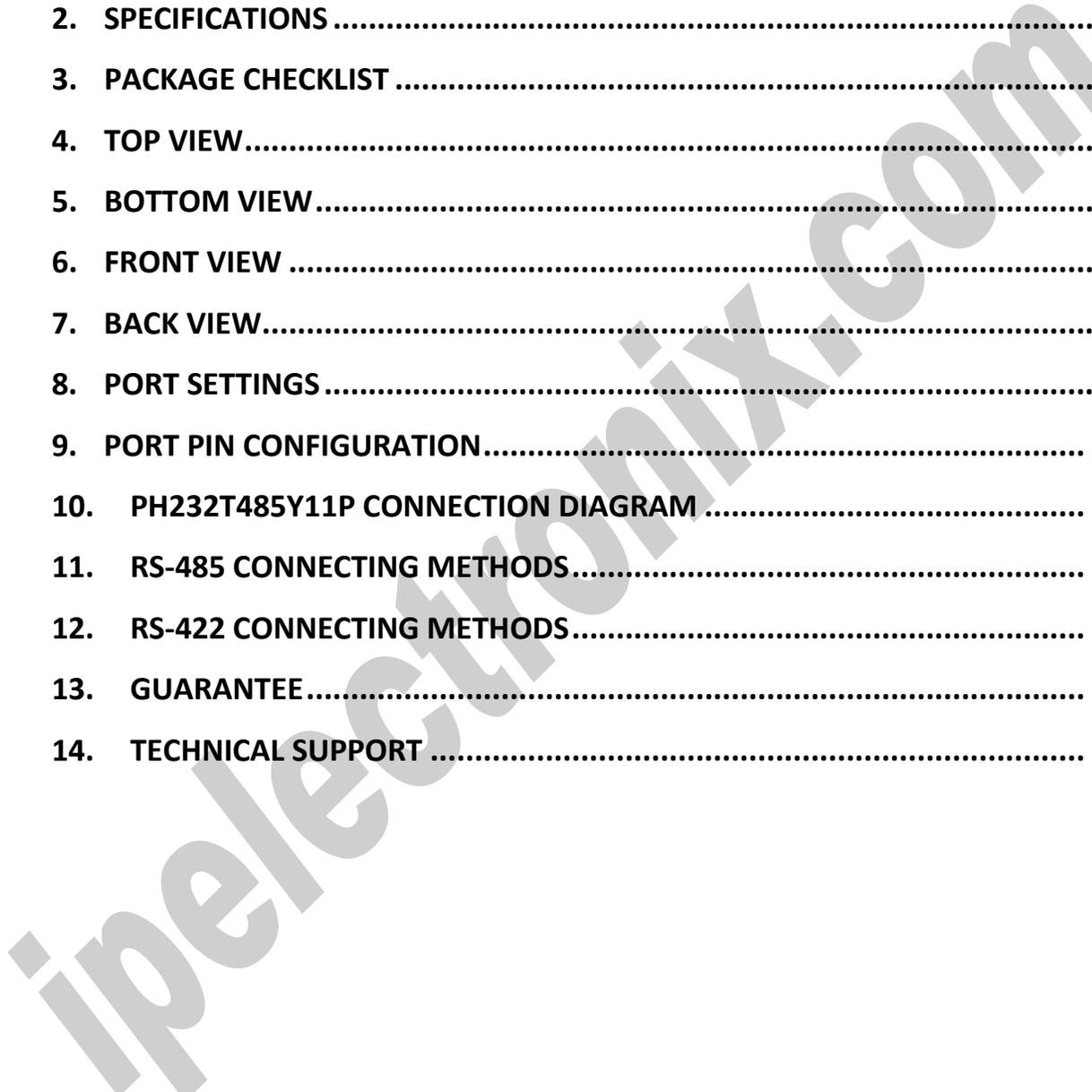
(IP Electronics)

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1. INTRODUCTION

IP Electronix PH232T485Y11P is an industrial RS-232, RS-485 and RS-422 Converter, Repeater and Isolator. It has two sides, in one side there are RS-232, RS-485 and RS-422 signals such as in another side, so you can use it as a converter, to convert (RS-232 to RS-485) or (RS-232 to RS-422) or (RS-485 to RS-422) bi-directionally. As well as, you can use PH232T485Y11P as a RS-232, RS-485 or RS-422 Repeater and isolator.

Since RS-485 is a Half-Duplex standard, switching between Transmit and Receive is done automatically and further signals (such as RTS) are not required. **PH232T485Y11P** supports Point-to-Point and Point-to-Multi Point Party Line network topologies.

There are 3kV Optical and Electrical isolations have between two sides, thus using this device in an industrial bus, can be very effective in eliminating electrically and electromagnetically noises.

Protection against Surge, ESD and EMI is considered in its design, so, **PH232T485Y11P** is good for industrial usage and is useful for Industrial Automation, Telecommunications, SCADA Systems, DCS Systems and ...

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2. SPECIFICATIONS

- **RS-232/RS-485/RS-422** Bi-Directional Converter, Repeater and Isolator;
- **Number of Ports:** #1 RS-232, #1 RS-485 or RS-422 in each side;
- **Serial Standard:** Meets or Exceeds the Requirements of TIA/EIA-232-F and ITU v.28 Standards;
- **RS-232 Signal:** TxD, RxD, GND;
- **RS-232 Parity:** Even, Odd, None, Mark and Space;
- **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:** +9V to +48V DC;
- **Serial Transmission Speed** up to 921.6 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 PH232T485Y11P, verify that the package contains the following items:



1) #1 PH232T485Y11P



3) #1 Document and Driver CD-ROM



4) #1 Quick Start Guide

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

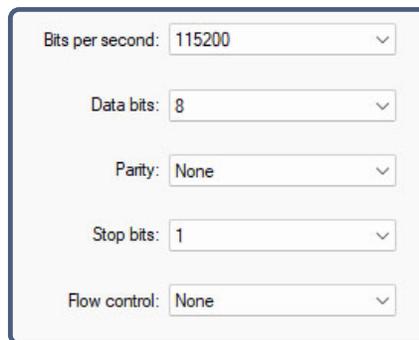


8. PORT SETTINGS

To change the device settings, do the following steps:

- 1- Connect RS-232 Port to PC by means of a standard RS-232 Male-to-Female Cable
- 2- Run "Hyper Terminal" Software with settings "115200, 8, N, 1"
- 3- Start the device and press 'S' to enter settings console page

Note: Console parameters are always "115200, 8, N, 1" and are fixed, even when you have changed the device settings.



Bits per second: 115200
Data bits: 8
Parity: None
Stop bits: 1
Flow control: None

Hyper-Terminal Settings

After turning on the device; press "S" to change the device settings

```
<< PH232T485Y11P is Starting >>  
Console Settings are: "115200,8,n,1" (Not Changeable)  
Left-Side Operating Settings are: "115200,8,None,2"  
Right-Side Operating Settings are: "19200,8,None,1"  
Press <S> to Change Operating Settings
```

Main Menu

```
PH232T485Y11P Main Menu  
1) Port Settings  
2) Start Up Melody: OFF  
3) Device Tests  
4) Factory Reset  
  
Press:  
<1:4> to Select an Item  
< S > to Save and Exit  
< E > to Exit without Saving  
  
Enter your choice here:
```

Main Menu

Press:

- "1" for change the Port Settings;
- "2" for change the Melody Settings;
- "3" for enter the Device Tests page;
- "4" for Factory Reset the device;
- "S" to save the settings;
- "E" to Exit

Port Settings Menu

```
Port Settings
1) Left -Side Baud Rate    (bps): 115200
2) Right-Side Baud Rate   (bps): 19200
3) Left -Side Data Length (bits): 8
4) Right-Side Data Length (bits): 8
5) Left -Side Parity      : None
6) Right-Side Parity      : None
7) Left -Side Stop Bits   (bits): 2
8) Right-Side Stop Bits   (bits): 1

Press:
<1:8> to Select an Item
< M > to Back to the Main Menu

Enter your choice here:
```

In this section you can change the settings for both Left-Side (RS-232) and Right-Side (RS-485/RS-422).

Press:

- "1" and "2" for change Baud-Rate (between 1200 to 921600 bps);
- "3" and "4" for change Data-Length (5, 6,7, 8, 9 bits);
- "5" and "6" for change Parity (None, Odd, Even, Mark, Space);
- "7" and "8" for change Stop-Bits (1, 1.5, 2 bits);
- "M" to Back to the main menu;

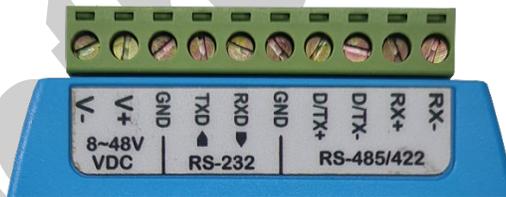
After changing the device settings, back to the main menu and save new settings.

Notice: In a normal operating, RS-232 and RS-485/422 side's settings **MUST** be the same, however you can set them differently, if you want for example change the Baud-Rate ...

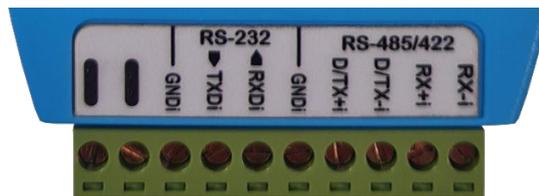
9. PORT PIN CONFIGURATION



Device Sides



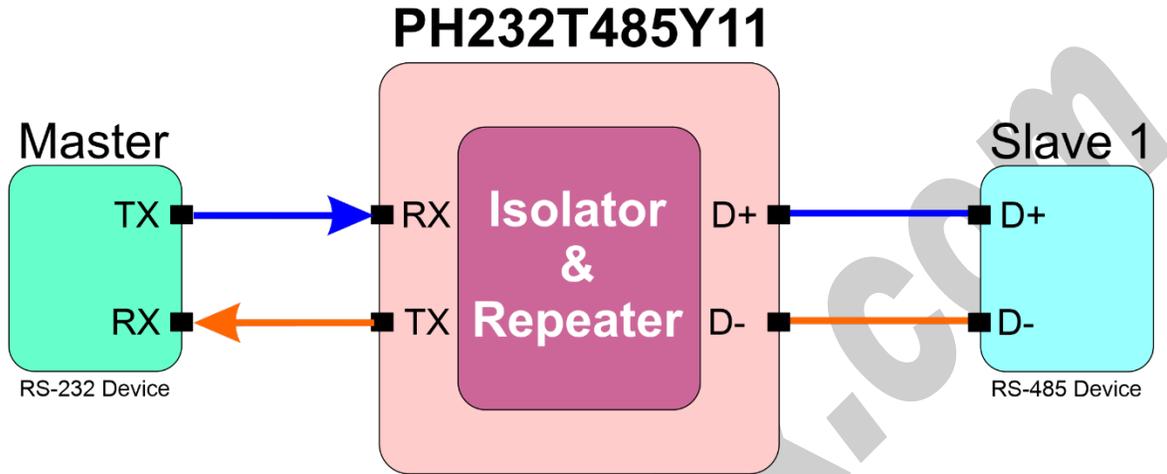
Left Side Pin Configuration



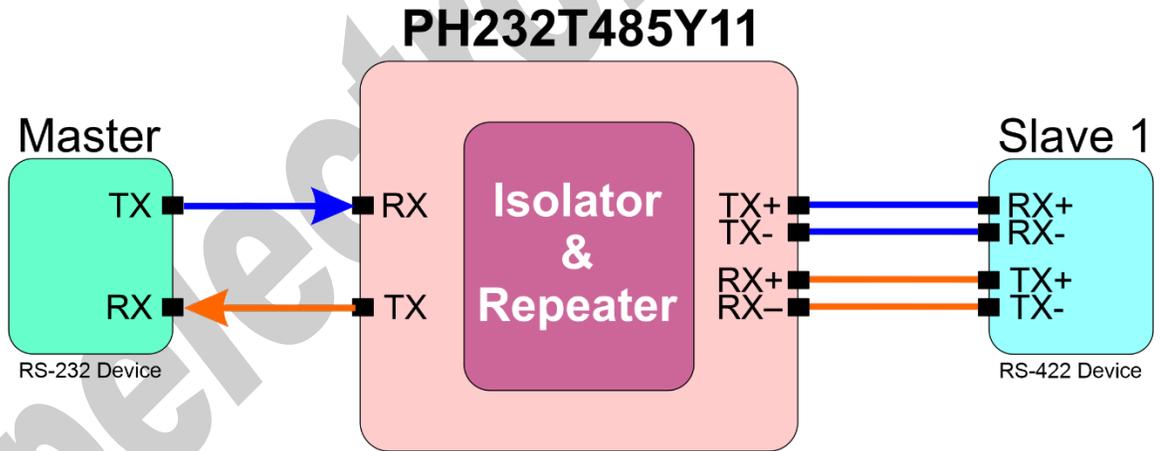
Right Side Pin Configuration

10. PH232T485Y11P CONNECTION DIAGRAM

- PH232T485Y11P in RS-485 Mode



- PH232T485Y11P in RS-422 Mode

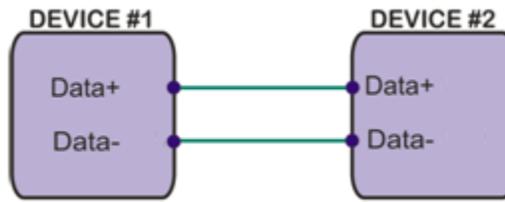


- PH232T485Y11P in Mixed Mode

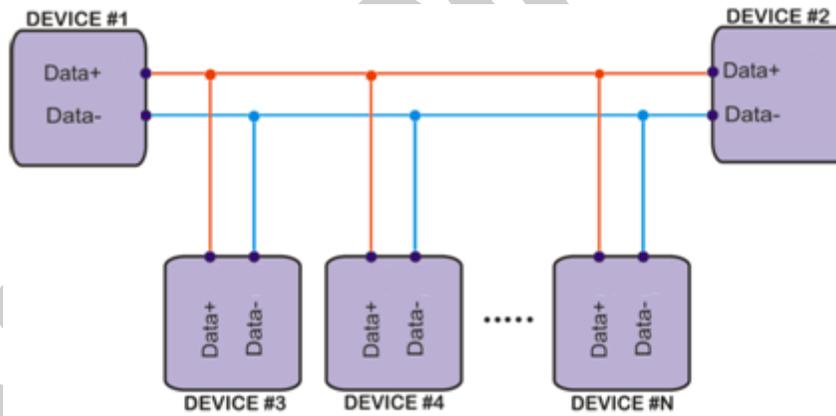
It is possible to use PH232T485Y11P in mixed mode, this means you can use each port as RS-485 or RS-232 separately.

11. RS-485 CONNECTING METHODS

- RS-485: Point to Point Connection



- RS-485: Multipoint Network

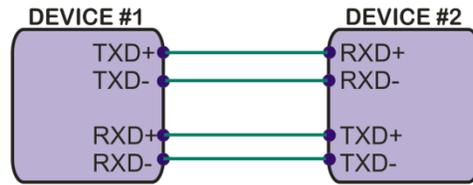


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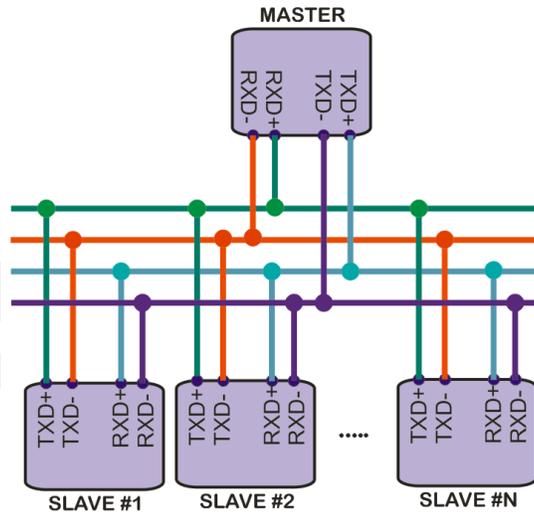
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12. RS-422 CONNECTING METHODS

- RS-422: Point to Point



- RS-422: Multi-Drop Network



13. GUARANTEE

All products manufactured by **IP Electronix** 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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