USER'S MANUAL



PH485Ux1P

RS-232, RS-485 and RS-422 ISOLATED USB ADAPTER



18 December 2023



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1. INTRODUCTION

IPEX PH485Ux1P is a USB Adapter that provides a Serial COM Port via its USB connection and is compatible with RS-485 standard devices differential (Data+ & Data-); RS-422 standard devices differential (TX+, TX- & RX+, RX-) signals; and RS-232 standard devices RxD and TxD signals. **PH485Ux1P** is fully Plug & Play a and enables your laptop or workstation with the ability to communicate between a USB port and a RS-232/RS-485/RS-422 serial peripheral with baud-rate from 300bps to 230400bps.

PH485Ux1P supports Point-to-Point and Point-to-Multi Point Party Line network topologies. Since RS-485 is a Half-Duplex standard, switching between Transmit and Receive is doing automatically and no further signal (such as RTS) is required.

Any external power supply is not required, as **PH485Ux1P** takes its power from the USB Bus.

Protection against Surge, ESD and EMI is considered in its design and also has 3kV isolation between USB and RS-232/RS-485/RS-422 sides.

PH485Ux1P is designed for industrial usage and is useful for Industrial Automation, Telecommunications, SCADA Systems and DCS Systems ...

PH485Ux1P comes complete with drivers for Microsoft Windows. Drivers are also available for Linux, Mac OS and Android.

2. SPECIFICATIONS

- USB to RS-232, RS-485 and RS-422 Bidirectional Converter;
- Hi-Speed USB 2.0 supported (up to 480 Mbps);
- Number of Ports: #1 RS-232/RS-485/RS-422 Serial Port, #1 USB Port;
- Adds #1 COM Port to the PC;
- Fully Plug & Play;
- RS-232 Signal: RxD, TxD, GND;
- RS-485 Signal: Data+, Data-, GND;
- **RS-422 Signal:** TX+, TX-, RX+, RX-, GND;
- Maximum Communication Distance (RS-485/422): 1200m (4000 feet);
- Loading: RS-485 and RS-422 Side up to 32 Nodes are supported;
- Bus-Powered (No External Power Supply Required);
- Serial Transmission Speed Up to 921.6 kbps;
- Isolation Protection: 3kV Instantaneous, 500V DC continuous;
- Serial Standard: Meets or Exceeds the Requirements of RS-485/RS-422 Standards;
- RS-232/RS-485/422 Parity: Even, Odd, None, Mark and Space; Selectable;
- Driver Supported: Microsoft Windows, Linux, Mac OS and Android (32 & 64 Bits) Operating Systems;
- USB (Green) LED Indicator;
- Transmit (Blue) and Receive (Yellow) LED Indicator;
- ESD Protection: RS-232/485/422 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.

3. PACKAGE CHECKLIST

Before installing the PH485Ux1P, verify that the package contains the following items:



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4. TOP VIEW



5. BOTTOM VIEW



6. FRONT VIEW



7. BACK VIEW



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8. INSTALLATION ON WINDOWS

After you plug PH485Ux1P to USB port, you can see new device in the Device Manager window as below:



(To run Device Manager, right click on My Computer, select Properties and then select Hardware tab, finally click on Device Manager button like following picture or simply use "WIN-KEY + R" and then type DEVMGMT and press Enter)



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However, installation progress will be start automatically, and following window will be seen,



Select option "No, not this time" and then click "Next",



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Select "Install from a list or specific location (Advanced)" and click "Next",



Select "Include this location in the search:" and click on "Browse",

Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM)
✓ Include this location in the search:
C:\Drivers\
○ Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee t the driver you choose will be the best match for your hardware.
< <u>B</u> ack <u>N</u> ext > Cancel



Select "Driver Folder" on the Installation CD and click OK.

	Browse For Folder
	Select the folder that contains drivers for your hardware.
	To view any subfolders, click a plus sign above.
Now, click on "Next",	
Found Nev	v Hardware Wizard
Please	choose your search and installation options.
⊙ <u>s</u>	earch for the best driver in these locations.
U p.	se the check boxes below to limit or expand the default search, which includes local ths and removable media. The best driver found will be installed. Search removable <u>m</u> edia (floppy, CD-ROM) Include this location in the search:
	P:\Driver Browse
	on't search. I will choose the driver to install. noose this option to select the device driver from a list. Windows does not guarantee that
	e driver you choose will be the best match for your hardware.
	< <u>B</u> ack <u>N</u> ext > Cancel
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After finishing installation, you should see "USB Serial Port" in "Ports (COM&LPT)" section of Device Manager.

9. MANUAL INSTALLATION ON WINDOWS

If the installation procedure is not started after you plug the device to your computer you can install the driver manually as follow:





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0 0 1 14		
File Action	iger View Help	
A 🚽 OMID-F		
🕟 🔊 Bat		
⊳-jt Co ⊳-, Dis	🕞 📱 Update Driver Software - USB Serial Converter	
🛛 🖣 Dis		
⊳ 🔐 DV	Windows has successfully updated your driver software	=
DE Car		
⊳ · 🚆 IEE	Windows has finished installing the driver software for this device:	
⊳	LISB Serial Converter	
Mi		
⊳ - N IC		
a 👰 Ne		
⊿ <u>[}</u> Otl		
<u>ba</u>		
⊳ 🛄 Po		Close
	Communications Port (COM1)	

10. CHANGING COM PORT NUMBER

To change COM Port Number, right click on the USB COM Port on Device Manager and select properties,

🚔 Device Manager	
File Action View Help	
Disk drives Just drives Just drives DVD/CD-ROM drives Just Human Interface Devices	Â
IDE ATA/ATAPI controllers IEEE 1394 Bus host controllers Temping devices	
 Keyboards Mice and other pointing devices Modems Monitors Network adapters 	
 PCMCIA adapters Portable Devices Ports (COM & LPT) Communications Port (COM1) 	E
CCP Printer Port (LPT1) USB Serial Port (COM4) USB Serial Port (COM5) USB Serial Port (COM6) USB Serial Port (COM7)	
Processors Smart card readers Sound, video and game controllers Suttem devices	

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File Action View Help			
	` 🙀 🗗		
Disk drives		·	
Display adapters			
DVD/CD-ROM drives			
Human Interface Devices			
DE ATA/ATAPI controllers			
IEEE 1394 Bus host controller			
Imaging devices			
Keyboards			
Manager	ces		
Modems			
Network adapters			
Portable Devices			
Ports (COM & LPT)		_	
Communications Port (C	OM1)	=	1
ECP Printer Port (LPT1)			1
USB Serial Port (COM4			1
USB Serial Port (COM5	Update Driver Software		1
USB Serial Port (COM6	Disable		1
USB Serial Port (COM7	Uninstall		1
Processors			1
Smart card readers	Scan for hardware changes		1
🦻 📲 Sound, video and game co	Properties		
System devices			
Universal Serial Bus controlle	S		
<u> </u>		· ·	1
Opens property sheet for the current sele	ction.		1
		*	
ing:			

Select port setting:

	USB Serial Port (COM4) Properties
	General Port Settings Driver Details
	<u>B</u> its per second: 9600 ▼
	Data bits: 8
	Parity: None
	Stop bits: 1
	Elow control: None
	Advanced Restore Defaults OK Cancel
l	



And then click on "advanced...",

COM Port Number: COM4	•	ОК
USB Transfer Sizes Select lower settings to correct performance problems at lo Select higher settings for faster performance.	Cancel	
Receive (Bytes): 4096 ▼ Transmit (Bytes): 4096 ▼		
BM Options	Miscellaneous Options	
Select lower settings to correct response problems.	Serial Enumerator	
Latency Timer (msec):	Serial Printer	
	Cancel If Power Off	
Timeouts	Event On Surprise Removal	
Minimum Read Timeout (msec):	Set RTS On Close	

Now, you can choose a number from COM Port Number section and finally click ok.

Advanced Settings for COM4				? 🔀
COM Part Number	[1	
COM Port Number:	COM4	•		ОК
	COM1 (in use)		1	
USB Transfer Sizes	COM2			Cancel
Select lower settings to corr	COM3 (in use)	=	d rates.	
2	COM4			Defaults
Select higher settings for fa	S COMS (in use)			
	COMB (in use)			
Receive (Bytes):	COMP (IT use)			
	COM9			
Transmit (Butas)	COM10			
transmit (bytes):	COM11			
	COM12			
	COM13			
BM Options	COM14		Miscellaneous Options	
Select lower settings to corr	e COM15			
	COM16		Serial Enumerator	\checkmark
	COM17		Carriel Drinter	
Latency Timer (msec):	COM18		Serial Printer	
	COM19		Capcel If Power Off	
	COM20		Concerti Power Off	
Timeouts	COM21		Event On Surprise Removal	
	COM22 COM23			
Minimum Read Timeout (mse	COM24		Set RTS On Close	
	COM25			
Minimum Write Timeout (ms	COM26		Disable Modem Ctrl At Startup	
in the fine out (inst	COM27			
	COM28			
	COM29			
	COM30	-		

11. IDENTIFYING DEVICE PORTS COM NUMBER

To identify which COM Port belongs to PH485Ux1P, you can use a terminal utility software like "HYPER TERMINAL" which is exist in the Utility Folder on Installation CD. After running "HYPER TERMINAL", select a COM port and type some characters to transmit them, now you can find device COM port by watching TX LED (Blue LED).

12. RS-232/485/422 SERIAL PORT PIN CONFIGURATION









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16. 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.

17. TECHNICAL SUPPORT

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