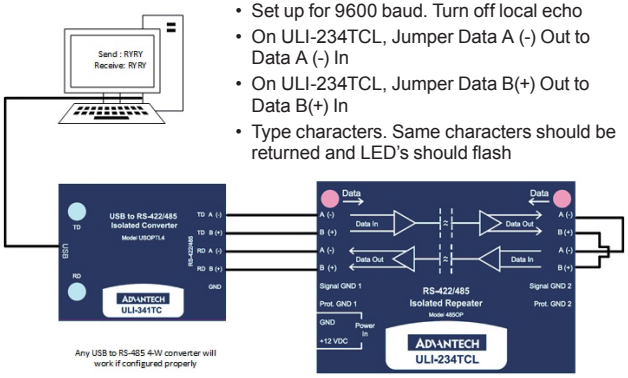
4 Loopback Test

- Use terminal emulation software such as Hyper Terminal
- Set up for 9600 baud. Turn off local echo
- On ULI-234TCL, Jumper Data A (-) Out to Data A (-) In
- On ULI-234TCL, Jumper Data B(+) Out to Data B(+) In
- Type characters. Same characters should be returned and LED's should flash



5 Troubleshooting

Timing Issues?

(Usually applies when using RS-485 2-wire)

Model BB-485OP uses RC time constant. This means that, when you are setting the DIP switches for the "baud rate", you are setting a turnaround time, not a "baud rate".

Sometimes, the turnaround time on an RS-485 2-wire device does not match the turnaround time that is set on the BB-485OP converter, even though they are both set for the same baud rate. Refer to the chart in Step 3 to match the turnaround time of your RS-485 2-wire device. If you do not know the turnaround time of your device, you can do the following:

- **Keep your device at its current baud rate, but change the "baud rate" on the BB-485OP. Set it for one or two steps above or below the baud rate of your device until you get communication.**

Note: Do Not use the shield drain wire as the Signal Ground between RS-422/485 devices. RS-422/485 systems may communicate successfully without the Signal Ground when nodes are located close together and circuit grounds for all nodes are at the same potential – e.g., a controlled lab environment. However, this practice is not recommended. If a Signal Ground is not used when nodes are separated by distance, and there is the possibility of lightning and/or other electrical noise, the common mode voltage can rise to levels that could compromise communications, or even damage the transceivers in the system nodes.

Installation Information

Underwriters Laboratories Conditions of Acceptability – When installed in the end-use equipment, consideration should be given to the following:

1. The wiring terminals are suitable for factory wiring only.
2. This device is to be mounted in a suitable enclosure in the end-product.
3. This device is suitable for operation at a maximum surrounding air temperature as described in the documentation.
4. These devices are intended for use in a pollution degree 2 environment.

- Input Voltage: 10 – 14 VDC
- Input Power: 1.0 Watt
- Wire Range: 22 – 14 AWG
- Tightening Torque: 0.5 Nm
- Temperature rating of field installed conductors is 105 °C minimum, sized for 60 °C ampacity.
- Use copper wire only maximum surrounding ambient air temperature 55 °C.

ADVANTECH

www.advantech.com

Documenatation Number: 710-10767-00_r3_485OP_5023qsg

+ QUICK START GUIDE

ULI-234TCL

Model: BB-485OP
RS-422/485 Optically Isolated Repeater

Before you begin, be sure you have the following:

+ BB-485OP Repeater
+ 12 VDC Wall Power Supply with Stripped & Tinned Leads

ADVANTECH

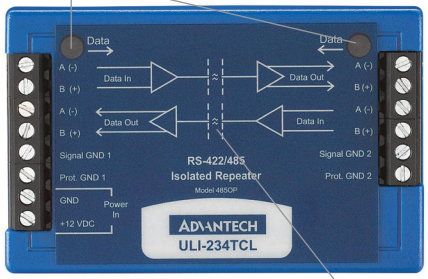
Fast and easy on the web: ***www.advantech.com***

Product Overview

2000 V, 2-way Optical Isolation

Gain an extra 1219 m (4000 ft) range

Data LEDs

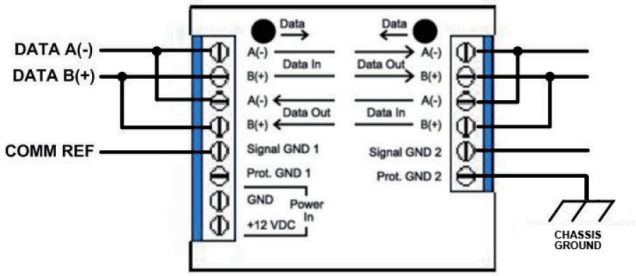


Terminal blocks for RS-422 or 2 and 4-wire RS-485

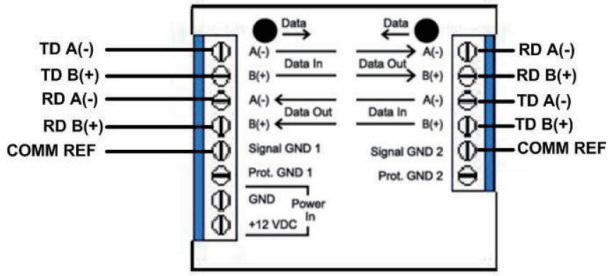
Convenient wiring schematic

1 Wire the BB-485OP

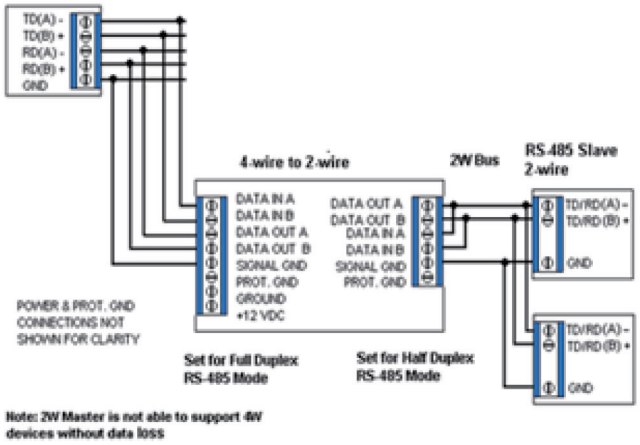
LABEL	SIDE	SIGNAL
A(-) Data In	Left	TDA(-) / Data A(-)
B(+) Data In	Left	TDB(+) / Data B(+)
A(-) Data Out	Left	RDA(-) / Data A(-)
B(+) Data Out	Left	RDB(+) / Data B(+)
Signal GND 1	Left	Signal Ground
Prot. GND 1	Left	Protected Ground
GND	Left	Power Ground
A(-) Data Out	Right	RDA(-) / Data A(-)
B(+) Data Out	Right	RDB(+) / Data B(+)
A(-) Data In	Right	TDA(-) / Data A(-)
B(+) Data In	Right	TDB(+) / Data B(+)
Signal GND 2	Right	Signal Ground
Prot. GND 2	Right	Protected Ground



RS-485 2-Wire



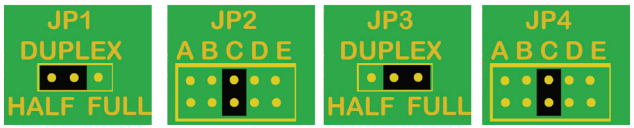
RS-422/485 4-Wire



RS-485 Master 4-Wire

2 Set the Jumpers

Set the jumpers for 2 or 4-wire and for baud rate. Default on both sides is 2-wire, 9600. If you want to set the unit for 4-wire or change the baud rate, you will need a screwdriver. Remove the 4 screws and open the unit. Set jumpers as shown below.



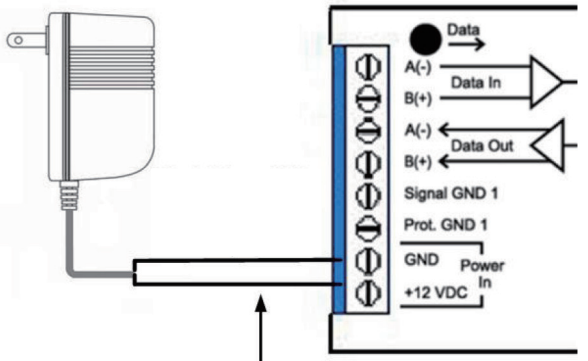
BAUD RATE	TIME (ms)	R26 & R27 (KΩ)	C15 & C16 (mfd)	JP2 & JP4
2400	4.16	STD (430)	STD (0.01)	A
4800	2.08	STD (200)	STD (0.01)	B
9600	1.04	STD (100)	STD (0.01)	C
19.2 K	0.52	STD (56)	STD (0.01)	D
38.4 K	0.26	STD (27)	STD (0.01)	E

If you set the unit for 38.4, it will usually work at higher baud rates. If you need a specific turnaround time, contact Advantech.

3 Power the Unit

Included Power Supply is rated for 12 VDC@500 mA max

Power Requirements: 10 to 14 VDC, 1 Watt



PSU polarity information is contained inside the PSU Box