



NAVITOP ISOLATED USB-TO-NMEA0183 CONVERTER

This converter is a variation of the one offered by Sean D'Epagnier.

It allows you to connect NMEA0183 (input and output ports) to a USB port while providing 1500V galvanic isolation from the USB. The NMEA ports are also protected against power surges.

The NMEA 0183 ports are compatible with all RS432 and RS422 serial protocols, ensuring compatibility with all NMEA 0183 devices, regardless of their age.

This converter, which is powered via the USB port, consumes very little power. Its isolation prevents ground loops and effectively protects the USB-connected device.

Two LEDs indicate the status of the exchanges:

- Yellow : Receive
- Green : Transmit

Connection:



Converter USB-NMEA	NMEA0183 device RS422 protocol	NMEA0183 device RS232 protocol
A input	Y or output +	Common or GND
B input	Z or output -	Output +
Y output	A or input +	Common or GND
Z output	B or input -	Input +

If the yellow LED remains lit with no data, check the wiring.

If no incoming data is detected, reverse the wires at inputs A and B.

If no NMEA0183 data is detected at the converter output, reverse the wires at outputs Y and Z.

For better moisture resistance, it is recommended to secure the converter housing with double-sided tape, orienting the waterproof end of the USB cable upwards. You can also seal the USB ports with Liquid Electrical Sealant or Liquid Electrical Tape.

To use this converter with Tinypilot-Pypilot, you must have the file nmea0device containing the following line in the .pypilot directory:

```
["\\dev\\serial\\by-id\\usb-1a86_USB2.0-Serial-if00-port0",38400]
```

This configuration file is included in Sean's Tinypilot-Pypilot image for Pi 0, 1, 2, 3, or 5, as well as in NaviTop's Tinycore13-Tinypilot-Pypilot image, which is compatible with all Pi models.

Note that this file is not in Stellan's Tinycore13-Tinypilot-Pypilot image, whose configuration files are those of his boat.