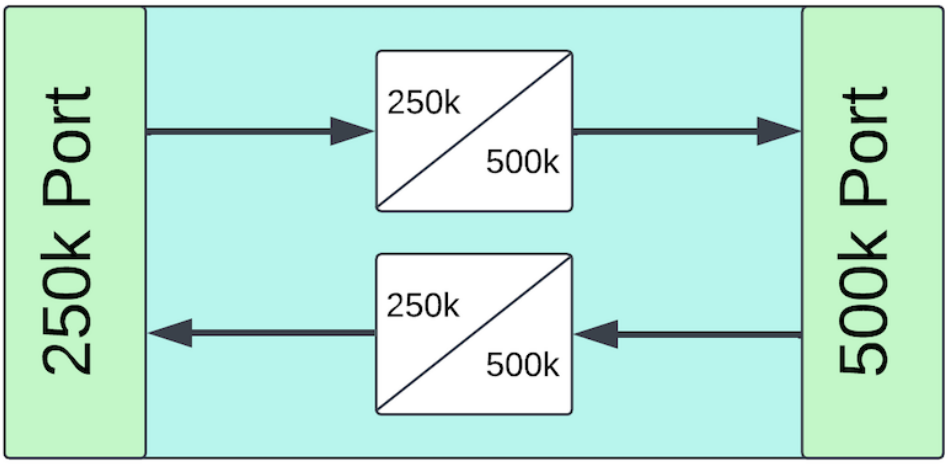
SAE J1939 250k/500k Baud Rate Converter with Silent Mode Support

For more information on the converter, see the online product page at: https://copperhilltech.com/sae-j1939-250k-500k-baud-rate-converter-with-silent-mode-support/

Functionality

The JCOM.J1939.BRC converts SAE J1939 standard baud rates 250k to 500k and vice versa. The converter provides one CAN Bus port at 250k baud and another at 500k baud. The converter operates at voltages between 7 VDC and 32 VDC, therefore well-suited for operation with diesel engines.



To answer a frequently asked question: The device converts **any PGN** it receives. If it receives it on the 250k port, it will pass it on to the 500k port. If it receives it on the 500k port, it will pass it on to the 250k port.

Important!

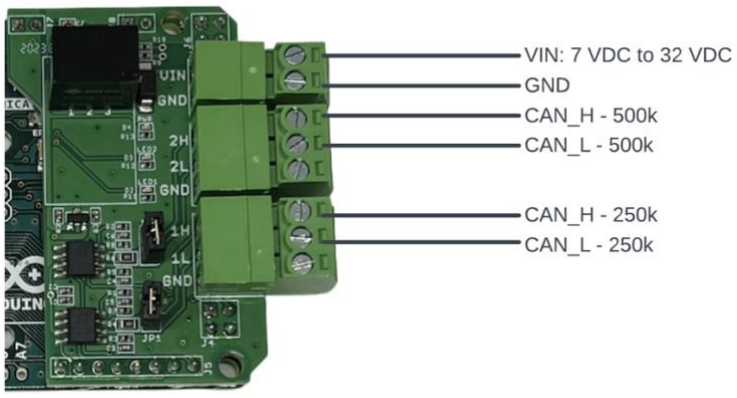
Understanding the data exchange between the 250k and 500k components is crucial when using this device. Many customers replace truck engines and related components assuming that they all communicate well with each other. However, not all devices are compatible when it comes to the required data. In other words, assure that the data (PGN) is compatible with all J1939 components.

We regret that we are unable to provide support for converting truck equipment as it is outside our area of expertise. We thoroughly test the baud rate converter before delivery to ensure proper functionality, and we are happy to retest it at the customer's request. However, this is the limit of the support we can provide.

Features

- One CAN Port @ 250k baud
- One CAN Port @ 500k baud
- Input Power Range: 7 VDC to 32 VDC
- Operating Temperature: 0 to 50C - 32 to 122F

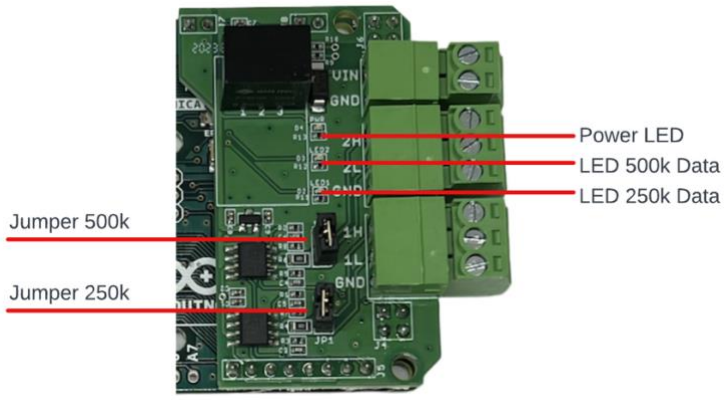
Hardware Connection



In order to connect the two networks (250k and 500k), CAN_H (a.k.a. CAN High) on the converter must be connected to CAN_H of the network. The same applies to CAN_L (a.k.a.

CAN Low). Please refer to the devices' (engine, transmission, dashboard, etc.) manuals to determine where you can access CAN_H and CAN_L.

There are three onboard LEDs: One red LED to indicate power, two green LEDs to indicate data traffic on the corresponding port.

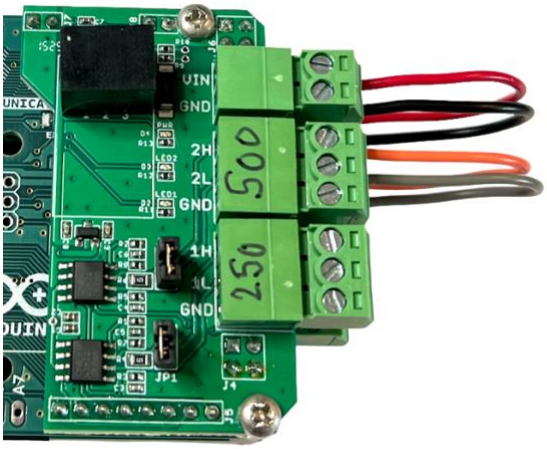


After all connections are established and you power up the network, the red LED should be on all the time. Both green LEDs should flash, indicating data traffic. If that is not the case, please re-check the hardware connection (i.e., wiring).

Please note the jumpers J1, J2. They activate the CAN Bus termination resistors. If you connect to an existing functional network, we recommend removing the jumpers. If you connect to a single SAE J1939 device, we strongly recommend activating the termination resistor, and please assure the other device uses a termination resistor as well.

Connecting to a Dashboard - Silent/Listen-Only Mode

When connecting an engine to a dashboard, note that most dashboards operate in **Silent** (also known as **Listen-Only**) mode. A regular baud rate converter will not recognize the display and will cease working after 10 attempts of sending data. This extended version guarantees that the Silent/Listen-Only Mode is bypassed.
The image below illustrates the wiring, assuming the dashboard is connected on the **500 kbit/s** side. If your dashboard instead operates on the **250 kbit/s** side, simply move the wire jumpers accordingly.

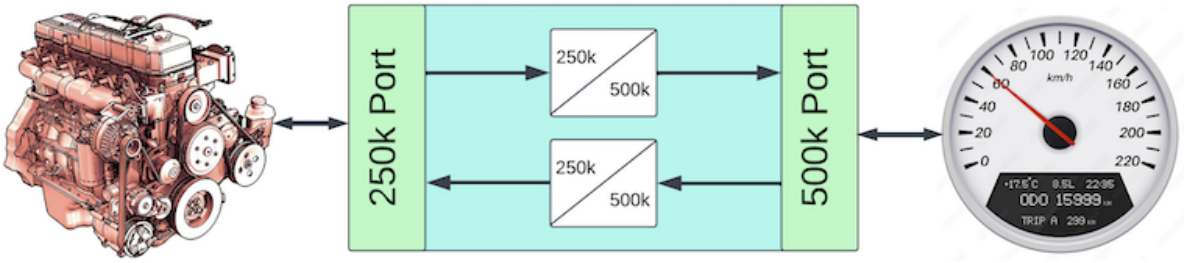


Please ensure that **both your devices** (engine and dashboard) **as well as the power connection** are connected **only to the upper board**.

Troubleshooting

If the connection does not work expected, feel free to activate/reactivate the termination resistors (Jumpers J1, J2). Furthermore, assure that the devices you connect on either side "understand each other." They speak the same language (i.e., SAE J1939) but that does not mean they deliver the data the other one requires.

Many applications include the addition of modern J1939 devices (such as a display) to an old diesel engine, as shown here.



Last but not least, please understand that there are a myriad of SAE J1939 devices and engines in the marketplace. Consequently, we cannot comment on the components you utilize. Our SAE J1939 baudrate converter is a generic device that only does what the name implies.

Notes

- The operating temperature range (0 to 50C - 32 to 122F) may require the mounting in a temperature-controlled environment.
- The two CAN ports are not galvanically isolated.
- The converter supports Classical CAN according to ISO 11898-2.0B. It does not support J1939-22 - CAN FD Data Link Layer.

https://copperhilltech.com