



## FEATURES

- Single galvanically isolated CAN channel
- High speed ISO 11898 compliant interface supports up to 1 Megabit/sec bit rates.
- Supports CAN 2.0A and 2.0B message format
- High speed (480 Mbit/sec) USB interface
- On board 32-bit processor



## DESCRIPTION

The USB-CAN-01 is a single channel CAN interface card with a high speed USB interface to a host PC. Its CAN interface is galvanically isolated to protect the PC hardware and provide better noise immunity in industrial environments.

The card incorporates a high performance 32-bit RISC processor. This processor handles all low level details of interfacing with the CAN hardware, offloading this task from the host processor. A high speed USB interface is used to communicate CAN messages back to the host.

Device driver support is provided for Microsoft Windows and Linux. CANview bus monitoring software is available for both Windows and Linux hosts.

## High speed USB interface

Most USB based CAN interfaces utilize the 12 Mbit/sec *full speed* USB. The USB-CAN-01 uses the much faster 480 Mbit/sec *high speed* USB protocol to minimize communication latency.

USB is inherently a polled bus. This means that all communication is initiated by the bus master (PC). It's not possible for a slave device to communicate a state change to the master independently, the slave must wait until the master requests the devices state.

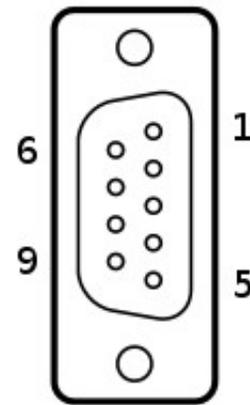
When the older 12 Mbit/sec USB protocol is used, the bus master polls devices at a maximum frame rate of once every millisecond. This adds up to a millisecond of delay between a CAN message being received over the network and that message being communicated to the host processor. A similar delay is added to the transmission of every CAN message. The software running on the host PC will queue

up a CAN message to be sent, but the message won't actually be passed to the CAN interface until the next USB bus cycle at the earliest.

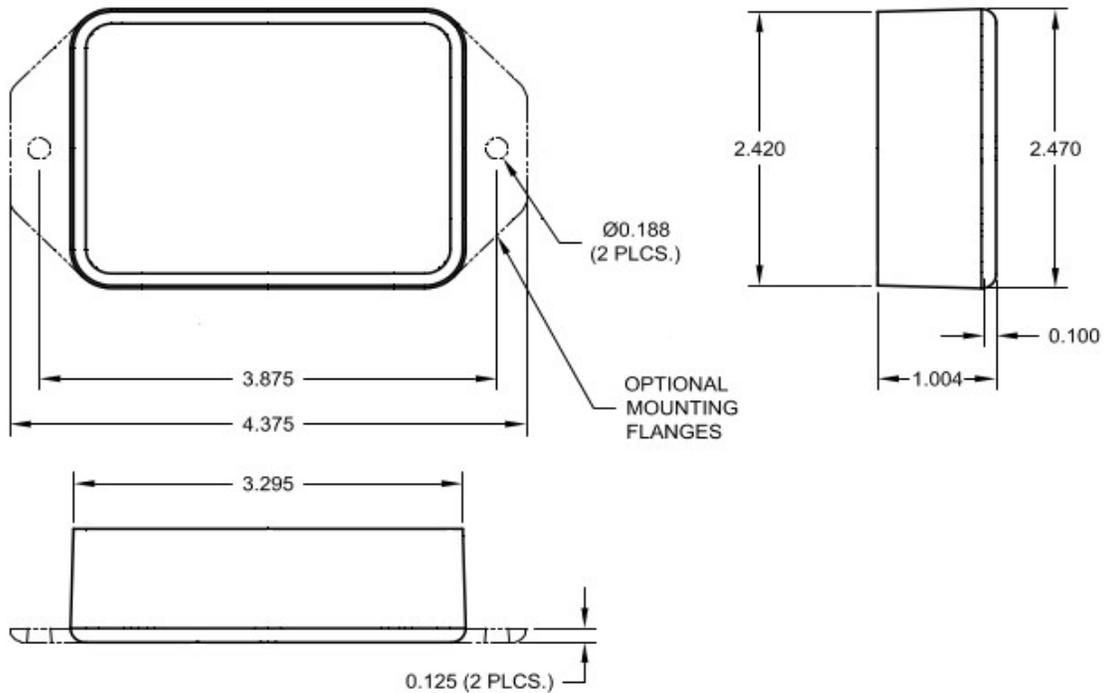
The USB-CAN-01 uses the much faster high speed USB protocol which has a maximum bandwidth of 480 Mbit/sec. An important feature of this higher speed protocol is a much faster frame rate. In high speed USB the host computer scans the bus every 125 microseconds, or 8 times faster than the frame rate used by the full speed USB protocol. This means that the latency added to every CAN message transmit and receive is only 1/8 of what it would be for more typical USB to CAN interface products. When using CAN to control industrial equipment, this reduction in latency can have a big impact on system cycle times.

### **CAN Bus Connector – Dsub 9, male**

<b>PIN</b>	<b>Signal</b>
1	No Connection
2	CAN Low
3	CAN Ground
4	No Connection
5	No Connection
6	CAN Ground
7	CAN High
8	No Connection
9	No Connection



## Dimensions



## Specifications

CAN Channels	1 galvanically isolated.
CAN bit rate	20 kbps to 1000 kbps
Message buffering	164 receive messages and 10 transmit messages
Timestamp resolution	1 microsecond
OS supported	Windows, Linux
USB interface	USB 2.0, high speed (480 Mbit/sec)
Input voltage	5V from USB connector
Input current	200 mA
Operating temperature	-10° to 70° C
Dimensions	3.3" x 2.4" x 1" (84mm x 61mm x 25mm)
Agency approvals	CE, FCC, RoHS.

## Ordering Information

CAN-USB-01	USB CAN module without mounting flange
CAN-USB-01-F	USB CAN module with mounting flange