



USB Data Acquisition (DAQ) Module Product Specification & User Guide

Document Number: DOC00645

Document Revision: A

Product Part Number: MP00009

Product Revision: D

MEMSENSE.COM

888.668.8743

Document Change History

| REV | STATUS | DESCRIPTION | DATE |
|--------|----------|------------------------------------|-----------|
| Prelim | Obsolete | Specification preliminary release. | 2-12-2018 |
| A | Released | Official Revision A release. | 9-18-2018 |

TABLE OF CONTENTS

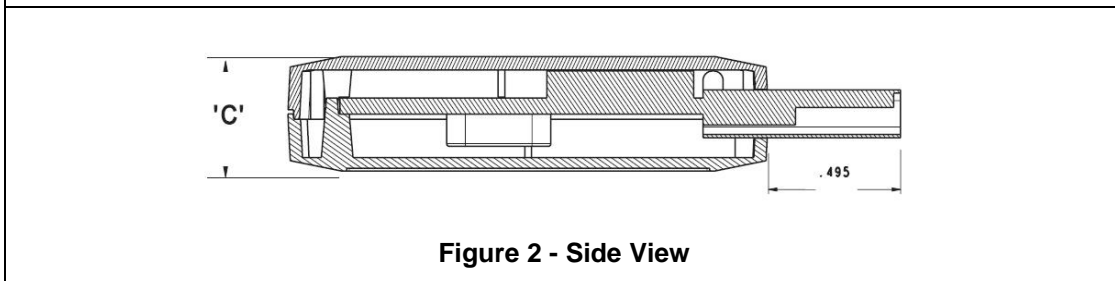
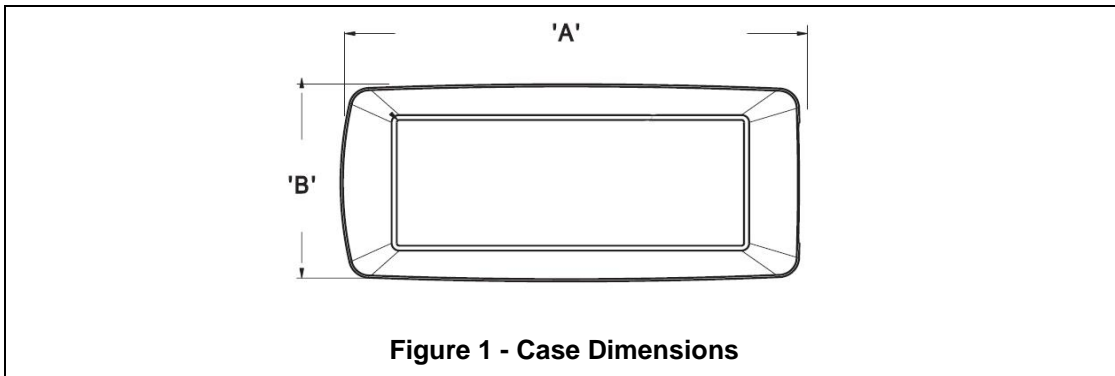
| | | |
|------------|---------------------------------------|----------|
| 1.0 | OVERVIEW | 3 |
| 2.0 | SETUP | 4 |
| 2.1 | Dimensions..... | 4 |
| 3.0 | HARDWARE | 4 |
| 3.1 | Connections | 4 |
| 3.2 | Pin Function Description | 4 |
| 4.0 | PART NUMBERING | 5 |
| 4.1 | Options and Ordering Information..... | 5 |

1.0 OVERVIEW

The USB Bridge includes a USB 2.0 full-speed function controller, USB transceiver and serial data bus interface in a compact 2.3 x 0.8 in. x 0.48 in. package. No other external USB components are required. Table 1 shows the dimensions for Figures 1 and 2.

Table 1 - Dimensions

| Dimension | 'A' | 'B' | 'C' |
|-------------------------------|------|-----|------|
| Enclosure Dimensions (inches) | 1.80 | 0.8 | 0.48 |



2.0 SETUP

2.1 Dimensions

The RS422-USB data acquisition module operates using virtual com port drivers that are compatible with typical com port communication. These devices show up as com ports in the windows device manager. The RS422 to USB data acquisition module's inputs and outputs include differential TX (transmit), RX (receive) data signals, voltage, and ground. The data format uses 8 data bits, 1 stop bit, and no parity.

Driver downloads can be found at:

<https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>

3.0 HARDWARE

3.1 Connections

The USB0x ships with an eight-inch cable terminated with a circular connector manufactured by Hirose. The connector part number is HR30-6J-6P(71).

3.2 Pin Function Description

Table 2 – Hirose pin functions

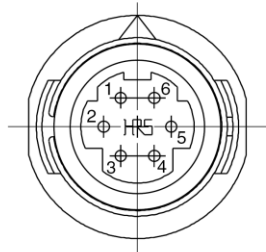


Figure 3 HR30-6JA-6P(71)

| Pin No. | USB-422 |
|---------|------------|
| 1 | RS422_RX_A |
| 2 | Vdd |
| 3 | RS422_TX_Y |
| 4 | RS422_TX_Z |
| 5 | GND |
| 6 | RS422_RX_B |

Table 3 - Pin Descriptions

| Name | Function |
|------------|------------------------------------|
| RS485_RX_A | RS422 Non-inverting Receiver Input |
| RS485_RX_B | RS422 Inverting Receiver Input |
| RS485_RX_Y | RS422 Non-inverting Driver Output |
| RS485_RX_Z | RS422 Inverting Driver Output |
| Vdd | Power |
| GND | Ground |

4.0 PART NUMBERING

4.1 Options and Ordering Information

The standard part numbers for the RS422 to USB Data Acquisition Module are listed in Table 4. The table further indicates the applicable IMU typically used with each type of acquisition module.

Table 4 –RS422-USB DAQ Module Options

| Model Number | Part Number | Description | Max Voltage | Applicable IMU |
|-------------------------|-------------|---|-------------|-----------------------|
| RS422-USB Internal Male | MP00009-004 | RS422-USB Data Acquisition Module, Internal Power | 8.5V | MS-IMU3020/MS-IMU3030 |
| RS422-USB External Male | MP00009-002 | RS422-USB Data Acquisition Module, External Power | 8.5V | MS-IMU3050 |



Figure 3 - RS422-USB Internal Male, PN: MP00009-004



Figure 4 - RS422-USB External Male, PN: MP00009-002