AC-1-4

ANALOG TO CAN BUS MODULE

USER MANUAL

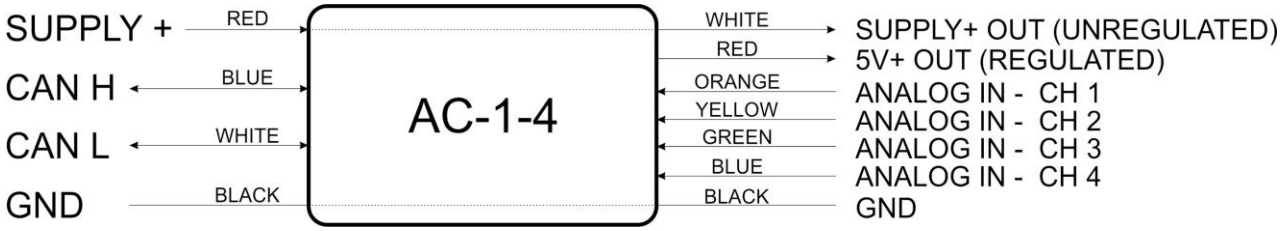
Rev. G 5/26/2018

Overview

The Techmor AC-1-4 is a precision four-channel module that converts 0-5 volt analog inputs to digital messages which are transmitted to the CAN bus. The AC-1-4 has an integrated 5 volt, 75 mA supply to power sensors or other peripherals. The module's CAN ID and CAN Bus Bitrate can be changed via CAN bus programming messages.

Connections

All connections to the AC-1-4 are through the two multi-conductor cables on either end of the enclosure.



Caution: Do Not connect SUPPLY+ OUT (UNREGULATED) (white) to the 5V+ OUT (REGULATED) (red), or feed more than 5V into any of the analog inputs.

Input

The AC-1-4 has four 16-bit 0-5 volt analog channels. The inputs are accessed via the 6-conductor cable on the "Input" side of the enclosure. The channels are single-ended and share a common ground.

Number of Analog Channels	4	-
Input Voltage Range	0-5	V
Resolution	16-Bit	-
Accuracy	0.1% F.S.	-

Electrical

The AC-1-4 can be supplied with 6-30V DC via the red and black wires on the 4-conductor cable on the Power/CAN side of the enclosure.

Supply Voltage	6 - 30	V DC
Current (No Load)	35	mA
Excitation Voltage	5	V DC
Excitation Current	75	mA

CAN Bus Message Format

CAN Message Bits

Default CAN Message ID	Bits 0-15	Bits 16-31	Bits 32-47	Bits 48-63
11 (0x00B)	AN1	AN2	n/a	n/a
12 (0x00C)	AN3	AN4	n/a	n/a

Note: All Messages are Unsigned 16-bit Words (U16)

CAN Bus Message Decode

Channel Output (Voltage) = Counts * 0.0001

Changing the AC-1-4 Settings

CAN ID

The CAN ID of the AC-1-4 can be set by sending a special CAN programming message to the unit. The message format is as follows:

Change CAN ID

Message ID	Bits 0-15	Bits 16-31	Bits 32-47	Bits 48-63
0x7FE	0x9269	0x0000	ID to write (0x0 to 0x7FD)	Serial # of device to program (after the "-")

Note: The serial number engraved on the unit is in decimal form, and may need to be converted to hex, depending on your CAN communication tool.

CAN Bus Bitrate

(programmable for units with serial number xxx-0536 and higher)

The CAN Bus Bitrate of the AC-1-4 can be set by sending a special CAN programming message to the unit. The message format is as follows:

Change CAN Bus Bitrate

Message ID	Bits 0-15	Bits 16-31	Bits 32-47	Bits 48-63
0x7FE	0x9269	0x0001	CAN Bus Bitrate Code (see Table below)	Serial # of device to program (after the "-")

Note: The serial number engraved on the unit is in decimal form, and may need to be converted to hex, depending on your CAN communication tool.

CAN Bus Bitrate	
Bus Bitrate	**Code**
1Mbit/s	0x0001
500kbit/s	0x0002
250kbit/s	0x0003

Note: After receiving the CAN Bus Bitrate change message, the AC-1-4 will immediately restart, using the new CAN Bus bitrate. The communication tool's CAN bitrate must be adjusted accordingly to view the new messages.

Message Rate

(programmable for units with serial number xxx-0775 and higher)

The message rate of the AC-1-4 can be set by sending a special CAN programming message to the unit. The message format is as follows:

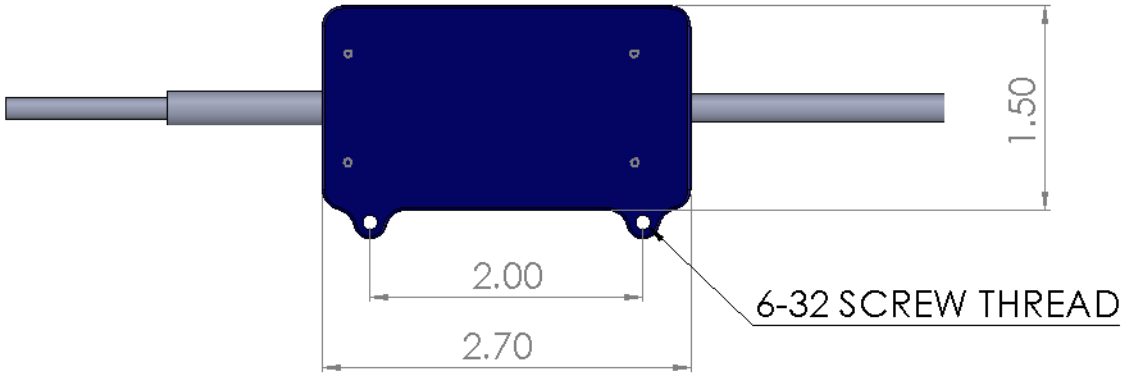
Change Message Rate

Message ID	Bits 0-15	Bits 16-31	Bits 32-47	Bits 48-63
0x7FE	0x9269	0x0003	Message Rate Code (see Table below)	Serial # of device to program (after the "-")

Note: The serial number engraved on the unit is in decimal form, and may need to be converted to hex, depending on your CAN communication tool.

Message Rate	
Message Rate	**Code(hex)**
200 Samples/s	0x00C8
100 Samples/s	0x0064
50 Samples/s	0x0032
20 Samples/s	0x0014
10 Samples/s	0x000A
5 Samples/s	0x0005

Mechanical Dimensions



DIMENSIONS ARE IN INCHES

Ordering and Contact Information

Ordering Information

AC-1-4

Company Information

Techmor, Inc. creates advanced test and measurement equipment. Techmor is a world leader in innovation for aerospace, automotive and industrial systems.

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