



8 CHANNEL VOLTAGE CAN NODE

Summary

The CAN Node is a user configurable voltage sensor node capable of reading up to 8 channels of data at a non-multiplexed 500Hz sample rate. A software filter can be enabled to suppress electrical noise. The CAN bus bandwidth is also user configurable to suit the particular application.



Dimensions: H10mm W 25mm D 35mm

Electrical Specification

Input Supply Voltage Min/Max	7/16 VDC
Current*	20mA TBC
Analog Input Range	0-5V
Resolution	16-bit
Absolute Accuracy	0.1%
Thermal Shift	TBC V/°C

*Does not include any current drawn from internal 5V ref/supply.

Cable Identification

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**Up to 35mA can be drawn from the 5V supply. This is intended to power external sensors such as Pots, Hall Sensors etc.

This supply is also used as a reference for the ADC so care should be taken not to exceed this limit.

CAN Data Format

The user is able to assign the following parameters to the device:

- CAN ID
- Data Frequency [10,20,100,500Hz]
- 50Hz 2nd order low pass Butterworth filter ION/OFF1.

The new parameters are applied instantly so a power cycle is not required to apply the new settings. Upon a power cycle the last received settings will be used.

Data Scaling

Data Scaling is such that:

$$0 = 0V$$

$$65535 = 5.0V$$

Host to node Packet Format

CAN ID	0x600	
BYTE	Value	Description
0	0x01	Fixed
1	0x02	Fixed
2	0x00,0x01	Filter OFF/ON
3	0x00 0x03	Rate[10,20,100,500 Hz]
4	0x00-0x7F	New CAN ID MSB
5	0x00-0xFF	New CAN ID LSB
6	0x00	SPARE
7	0x00	SPARE

Node to Host Packet Format

CAN ID	ID	
BYTE	Value	Description
0	MSB	CH1 [BIG ENDIAN]
1	LSB	
2	MSB	CH2 [BIG ENDIAN]
3	LSB	
4	MSB	CH3 [BIG ENDIAN]
5	LSB	
6	MSB	CH4 [BIG ENDIAN]
7	LSB	

CAN ID	ID+1	
BYTE	Value	Description
0	MSB	CH5 [BIG ENDIAN]
1	LSB	
2	MSB	CH6 [BIG ENDIAN]
3	LSB	
4	MSB	CH7 [BIG ENDIAN]
5	LSB	
6	MSB	CH8 [BIG ENDIAN]

Data is put on the CAN bus from each ID sequentially such that the time between each packet is the Rate/2 i.e. for a 500Hz data rate, the CAN bus will show two ID's transmitted 1mS apart.

Users should refrain from transmitting to the device on CAN ID 0x600 other than to configure it.

Connector type 15 way microD

Pin 1	Analog 1	Pin 8	Analog 8
Pin 2	Analog 2	Pin 9	2v
Pin 3	Analog 3	Pin 10	GND
Pin 4	Analog 4	Pin 11	5 V output**
Pin 5	Analog 5	Pin 12	CAN LOW
Pin 6	Analog 6	Pin 13	CAN HIGH
Pin 7	Analog	Pin 14	12V output
		Pin 15	GND

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