

DESCRIPTION

The XCAN-100 provides the ability to add analog or digital I/O to the SAE J1939 CAN bus. The module collects analog and digital input signals, then converts and broadcasts the data onto the SAE J1939 CAN bus. Use the XCAN-100 module with the Controls, Inc. uCAN™ product line (C3 and C4 series) for complete engine display, protection and control.

OPERATION

Upon power-up, the module immediately begins reading the value of the analog inputs and broadcasting the J1939 messages. The message formats may be modified by the DIP switch setting. The module is intended to be connected to switched battery voltage. 12 volt and 24 volt systems are supported.

COMMUNICATION

The module communicates data to other devices (typically an engine controller) via a standard CAN bus interface. A 120-ohm termination resistance may be enabled/disabled by a jumper block.

ANALOG INPUTS

Three analog inputs configurable as either 0-5V, 4-20mA (non-isolated), or resistive sender. One channel has a 4.5mA current source to excite a 0-1000 ohm range suitable for Stewart-Warner temperature units. The other two have 12mA current sources to excite 0-350 ohm senders such as oil pressure and fuel level units.

SPEED INPUT

The speed input reads a magnetic pickup sine wave or alternator tach pulse train of at least 200mV amplitude, 0-10000 Hz frequency and converts it to a broadcast engine speed in RPM. A 20K ohm pickup load is provided.

DIGITAL INPUTS

Two digital inputs are provided. The inputs are pulled up to battery voltage so that a contact closure to ground results in a minimum of 7.5mA wetting current at 12 volts. The wetting current is doubled (15mA) at 24 volts. The input states are reported as SPNs over the CAN bus.

RELAY OUTPUTS

Two relay contacts are provided. The contacts are normally open with common affixed to the battery voltage input. The relays are actuated via CAN bus SPNs.

CONFIGURATION

An eight-position DIP switch is provided to permit configurability. Six switches are used to define the type and message format of the analog inputs, and two are used to set the CAN bus address of the module.

ENCLOSURE

The enclosure is a self-contained, water tight Deutsch DT series enclosure.

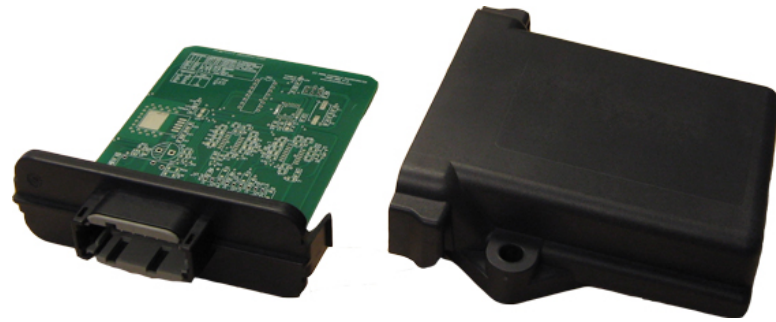
LED INDICATORS

Diagnostic LED indicators are provided for the following:

- Power: Green lamp indicates +5V logic voltage present
- Relay: Red lamp indicates relay is energized
- Bus Idle: Red lamp indicates no CAN bus activity

CONNECTOR

A water tight, 12-pin Deutsch DT series connector is utilized for simple installation.



SPECIFICATIONS

GENERAL

OPERATING VOLTAGE.....	5.5 VDC to 32 VDC
MAXIMUM CURRENT CONSUMPTION AT 12.6V.....	105mA
OPERATING TEMPERATURE.....	-40°C to +105°C
HUMIDITY.....	95% Non-condensing
REVERSE POLARITY PROTECTION.....	Yes
TRANSIENT VOLTAGE SUPPRESSION.....	Yes
LOAD DUMP PROTECTION.....	Yes
ENCLOSURE.....	Deutsch DT Series (Sealed)
APPROX. WEIGHT.....	10 oz.
APPROX. DIMENSIONS.....	1.25 x 5"W x 5.5"D

COMMUNICATIONS

ENGINE COM PORT..... CAN bus J1939 Protocol

INPUTS

ANALOG INPUTS.....	3
(Configurable as either 0-5V, 4-20mA or resistive sender)	
SPEED INPUT.....	1
(For magnetic pickup or alternator tach signal)	
DIGITAL INPUTS.....	2
(Digital inputs pulled up to battery voltage. Input states reported over CAN bus)	

RELAY OUTPUTS

5A FORM A DRY CONTACTS (Switched Battery Voltage)..... 2

CONNECTOR

DEUTSCH 12-PIN..... ENVIRONMENTALLY SEALED

CONNECTOR PINOUT:

Pin	Function
1	Ground (Battery Negative, Chassis)
2	Speed Input
3	Fuel Level Input
4	Oil Pressure Sender Input
5	Digital Input #1
6	Relay #2 Normally Open
7	Relay #1 Normally Open
8	Digital Input #2 / Speed Calibrate
9	CAN High
10	CAN Low
11	Coolant Temperature Sender Input
12	Battery Positive

DIP SWITCH SETTINGS:

Switch A Number	Switch B Number	Channel	Engine Parameter
1	2	Analog 1	Coolant Temperature
3	4	Analog 2	Fuel Level
5	6	Analog 3	Oil Pressure

Switch A	Switch B	Scale	Message Format
Off	Off	Resistive Sender	J1939 Engine Parameter
On	Off	0-5V or High-Z	Percent Scale
Off	On	4-20mA	Percent Scale
On	On	Do Not Use	Do Not Use

Switch 7	Switch 8	Address
Off	Off	0
On	Off	1
Off	On	2
On	On	3