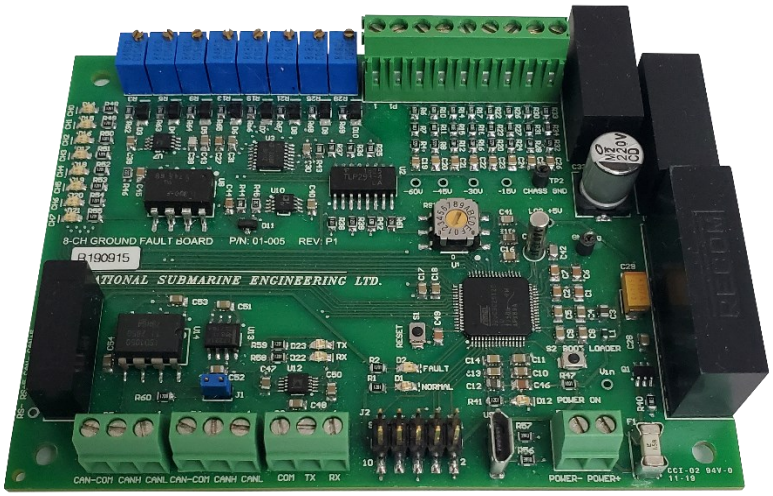
International Submarine Engineering Ltd.

ISE 8 Channel Ground Fault Monitoring Board
P/N: CEP-01-005
02/2025

Description/Features

The ISE Ground Fault Monitoring board (P/N: CEP-01-005) can monitor ground fault isolation for up to 8 channels simultaneously. The Ground Fault board communicates via CAN bus or isolated RS-232 communication port.

The Ground Fault board measures the isolation of each of the channels (<30VDC) with respect to chassis ground and outputs an alarm status if the value falls below the 500kΩ trigger level. Impedance from 0 MΩ to 10 MΩ is reported for each channel at 1 Hz (default) over the configured communication channel.



Specifications

Ground Fault Monitoring Channels:
GFM Channels: 8
Monitored Input: < 30 VDC

RS-232 Communication:

Baud Rate: 9600 - 115200 bps

Data Bits: 8

Stop Bits: 1

Parity: None

Flow Control: None

CAN Bus Communication:
Specifications: CAN 2.0A and 2.0B
Baud Rate: 100, 125, 250, 500 Kbps

Mechanical:
Dimensions: 3 in x 4 in

Environmental:
Operating: -20 – +60 °C
Storage: -40 – +85 °C

Electrical:
Power Input: 9-28 VDC
Consumption (@ 12/24 VDC): 1.37/2.38 W
Fuse: Littelfuse 05701.5DR

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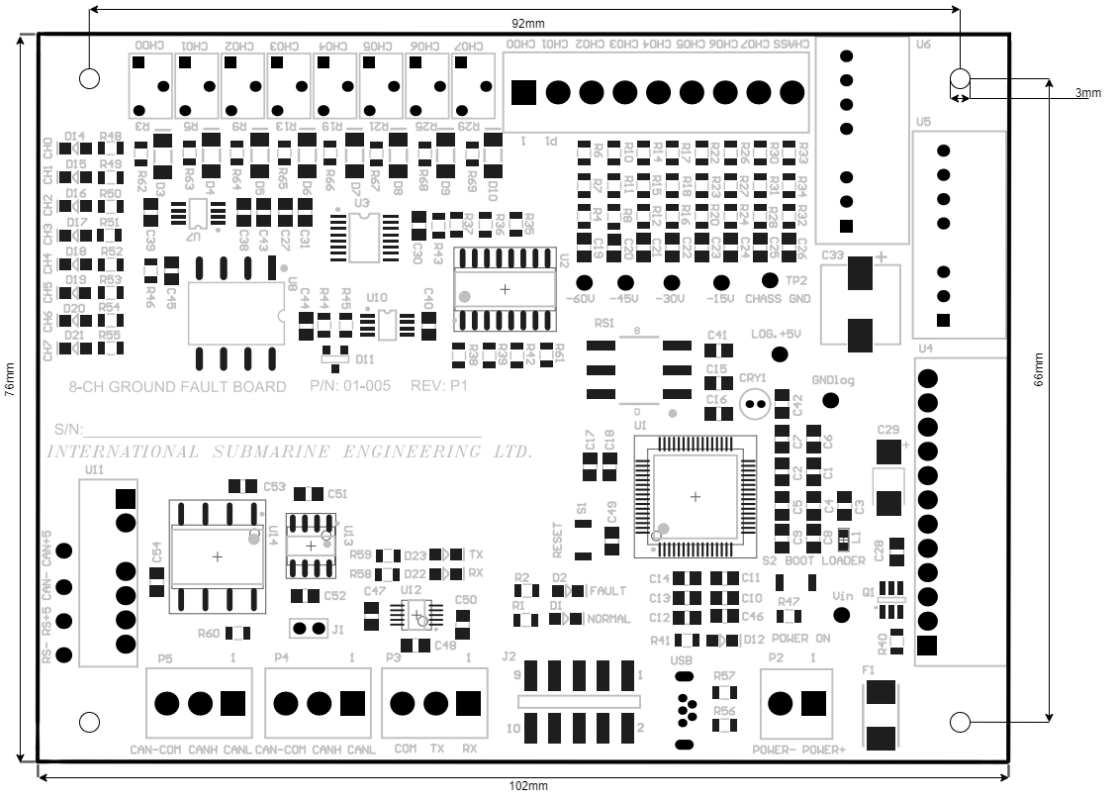
Mechanical Layout and Dimensions



ID	Description
P1	GFM Channel Inputs
J1	CAN Termination Resistor Jumper
P2	Power Input Terminal
P3	RS-232 Terminal
RS1	CAN Address Designator
P4, P5	CAN Bus Terminal
SW1	Reset Switch
SW2	Bootloader Switch (factory use only)
USB	Micro USB Receptacle (factory use only)
J2	JTAG Header (factory use only)
R3, R5, R9, R13, R19, R21, R25, R29	Potentiometers (factory use only)

Terminal P1

P1 terminals are the ground fault monitoring channel inputs.

Terminal	Description
1	Channel 0
2	Channel 1
3	Channel 2
4	Channel 3
5	Channel 4
6	Channel 5
7	Channel 6
8	Channel 7
9	Chassis GND

CAN Bus Terminal P4, P5

Two CAN bus connections are provided for daisy-chaining. A 120Ω termination resistor can be added to the circuit by installing a jumper on J1.

Terminal	Description
1	CAN L
2	CAN H
3	CAN-COM

Serial Terminal P3

The ground fault board provides an isolated RS232 port. Data to and from this port is relayed over the CAN bus. Optionally, this serial port can provide an alternate communication channel.

Terminal	Description
1	Rx
2	Tx
3	COM

Power Terminal P2

The power input includes reverse polarity protection and fusing.

Terminal	Description
1	Supply Input (9-28 VDC)
2	COM (0 VDC)

Designator RS1

Up to 16 devices may operate on the same CAN bus. Each installed device shares a base CAN address with one variable bit to make a unique node identifier. That bit should be configured using switch RS1.

Position	Description
0 - F	CAN Bus Hex Bit ID

Status LEDs

There are 8 LEDs (D14-D21), which activate when the corresponding ground fault channel has been tripped and will remain on while the measured resistance between the chassis and the sense channel remains below 500kΩ.

There are 2 board status LEDs provided. The green LED is used to indicate that the module is gathering data and transmitting sensor readings to the host. The red LED will flash to indicate a CAN bus error or if the module does not receive valid communication data.

USB Port and JTAG Header J2

The USB port and the JTAG header are for factory use only.