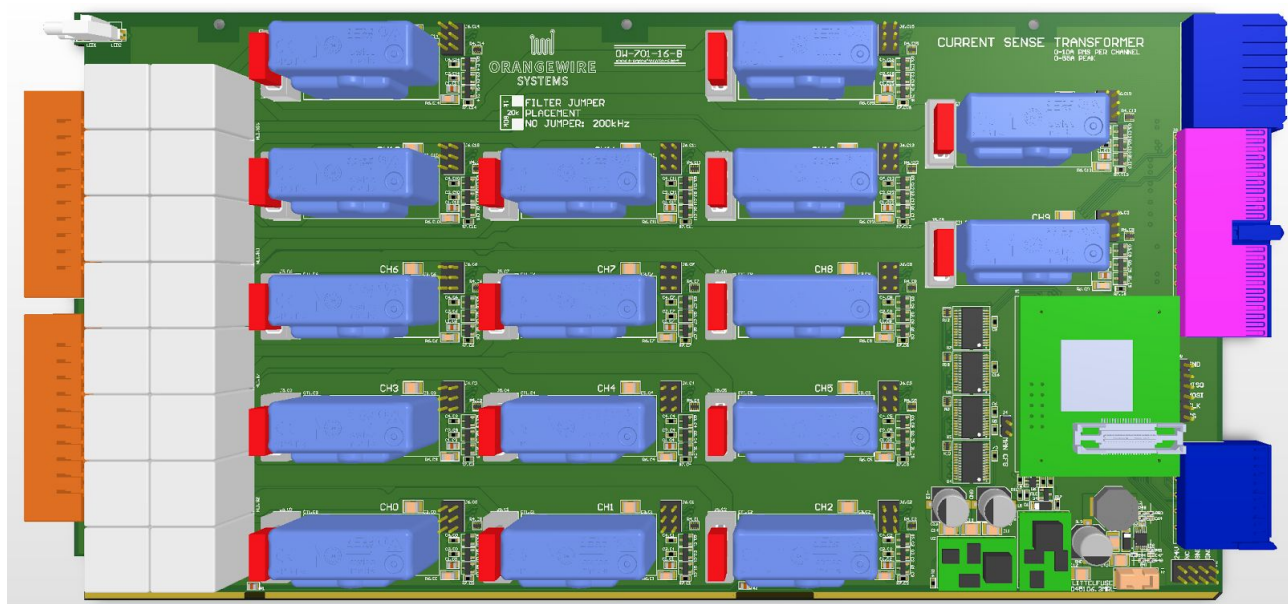


# Operating Instructions

## OW-701-16

### 16 Channel Current Sense



## Overview

The OW-701-16 is a 16-channel bi-directional current measurement card based on Hall-Effect sensors used to measure the current between an electrical source and a load.

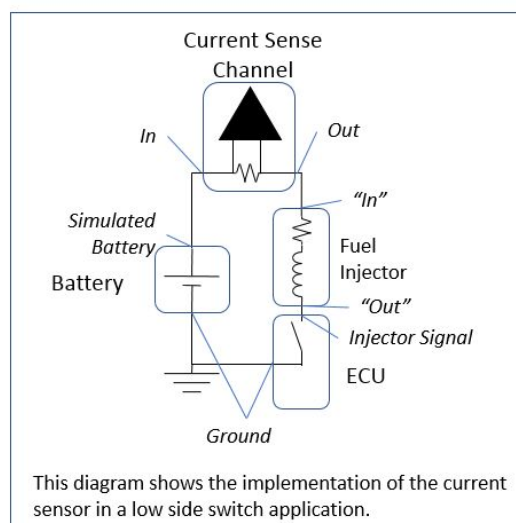
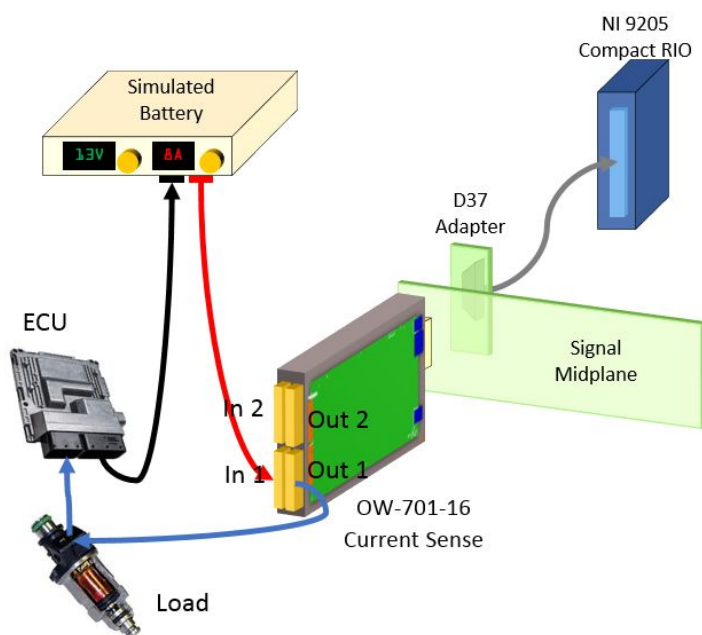
The OW-701-16 is designed for the National Instruments (NI) Switch Load Signal Conditioning (SLSC) system, to be used in Hardware-In-the-Loop (HIL) simulators. This card interfaces NI PXI and Compact-RIO instrumentation devices to prototype or production embedded controllers (ECUs or generically Devices Under Test or DUTs) for the purposes of developing, verifying, and validating ECU software and hardware.

The OW-701-16 installs in the NI SLSC chassis and provides I/O interfacing to the DUT and loads through connectors on the front panel.

The board utilizes LEM current transducers and supports 3 measurement ranges, nominally 17, 27, and 55A. Each channel can be individually configured for measurement range, and has jumper and software selectable low-pass filters to ensure suitable output signals. The OW-701-16 outputs analog signals scaled to -10 to +10V that are fed to real time National Instruments analog modules.

The OW-701-16 can be used to measure currents of DC, AC, and pulsed signals in high or low side applications. It has excellent common mode immunity and provides galvanic isolation of input to output.

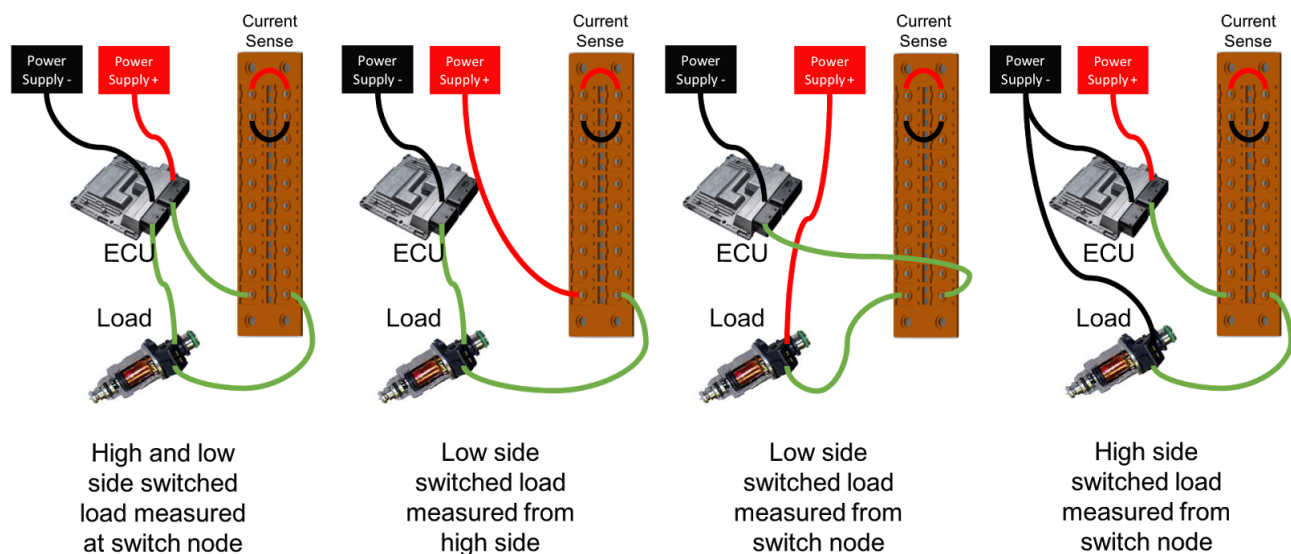
- 16-channel Current Measurement
- For NI SLSC system
- 1 SLCS Slot
- Hall-Effect based sensing
- Channel-selectable configurable measuring ranges
- 17, 27, 55A configurations
- On-board selectable low-pass filters per channel
- Use with NI PXI or CompactRIO



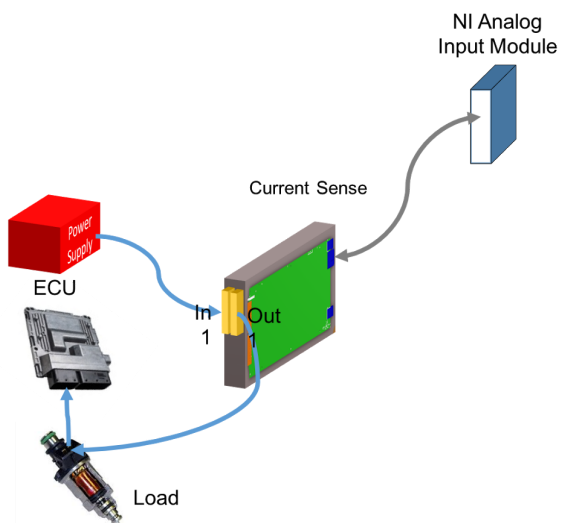
## Application Information

The OW-701-16 can measure high side or low side signals, signals with alternating polarity, and signals with large common mode voltage swings. This makes it ideal for monitoring actuator drive signals, and the operating currents of most devices.

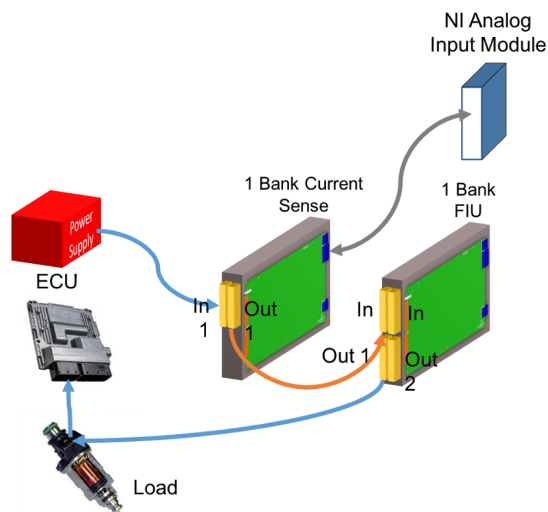
The figures following illustrate usage of the OW-701-16 with dual-side, low-side, and high-side driven loads



Connection Example: Measuring Fuel Injector Current



Connection Example: Measuring Fuel Injector Current with Fault Insertion



## Specifications

Absolute Maximum Ratings	
Current Measurement Range	± 55A
Maximum Current	20A (fused)
Input Signal Voltage	300V

Operating Specifications	
General	
Number of Channels	16
Current Sense Technology	Hall-Effect, LEM LAH 25-NP sensor
Accuracy	± 0.3% (Sensor accuracy)
Input	
Current ( $I_{PN}$ ) Measuring Ranges	18.3, 27.5, 54.9A (Channel-configurable)
Bandwidth	200 kHz
Output	
Voltage Output Range	-10 to +10 V
Output Filter Cutoff Frequencies	1kHz, 20kHz, 80kHz, 200kHz