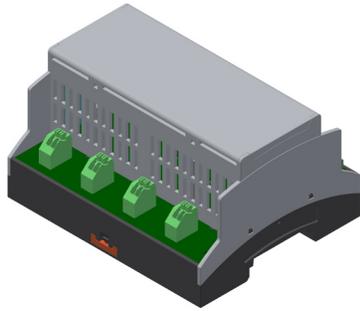


IsoBlock C

Specification Sheet for Verivolt Galvanic-Isolated Module for Sensor Isolation, Fuel-Cell and Battery Monitoring



OVERVIEW

The IsoBlock module has been designed to provide low-cost and high-quality isolated differential voltage measurements along a chain of fuel-cells or batteries. Our innovative modular architecture and isolation techniques allow users to connect multiple IsoBlock modules together serially, facilitating the monitoring of long fuel-cell or battery chains.

Each IsoBlock unit hosts four separate isolated channels, each of which can be connected to separate measurement sources while providing a range of functional coverage up to 30V. The input of each specific IsoBlock channel has its own isolated reference, and can be configured to suit user needs. All processed signals output from the IsoBlock unit are referenced in respect to the ground channel of the user's data acquisition system.

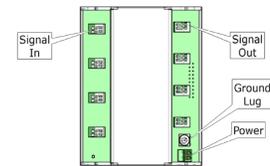
Verivolt designs its IsoBlock modules with consideration for user flexibility, exceptionally high channel-density and low power consumption.

SPECIFICATION

Electrical	
Accuracy	$\pm(0.2\% \text{ of reading} + 0.005\% \text{ range})$ or $\pm(0.1\% \text{ of reading} + 0.005\% \text{ range})$
Bandwidth (-3dB point)	DC – 100kHz (custom up to 1MHz)
Integrated channel noise (Referenced to output)	< 1 mV
Input-Output non-linearity	< 0.04%
Differential input dynamic range per channel	$\pm 2V, \pm 5V, \pm 10V, \pm 15V \pm 30V$
Channel to channel isolation	$\pm 1800V \text{ Working Voltage}$ $\pm 5000V \text{ Surge Voltage}$
Isolation voltage from primary side to secondary side	$\pm 1800V \text{ Working Voltage}$ $\pm 5000V \text{ Surge Voltage}$
Gain temperature drift	$\pm 50 \text{ ppm}/^\circ\text{C}$
Max total phase shift at 60Hz	< 0.05°
Max Input delay	< 2.8 μs
Common mode rejection	108 dB at DC 95 dB at 50kHz
Power Supply Voltage	8V to 28V
Output type	Differential pair
Output Offset Voltage	< $\pm 750\mu\text{V}$
Differential Input impedance	> 2 G Ω
Output impedance	50 Ω
MECHANICAL	
Mounting Type	DIN Rail
Connectivity (Connector for power and signals)	Spring Cage
Outer Dimensions	4.3" x 3.4" x 2.4"
Weight	218 g (7.7 oz)
ENVIRONMENT	
Operating temperature	- 25 to 70 °C
Storage temperature	- 40 to 80 °C

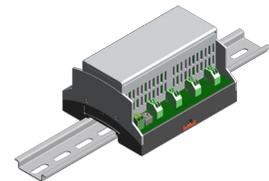
HARDWARE DESCRIPTION

The IsoBlock module is designed to isolate a bank of differential unipolar input signals, while selectively removing their high-voltage common mode. With four discrete channels per IsoBlock module, the device features channel-to-channel isolation as well as a channel-to-ground isolation, rated at 1800V. Each input's dynamic range is set to match one of seven standard values, or may be customized to specification, upon request.



The figure above indicates the input, output and power polarity of the IsoBlock module.

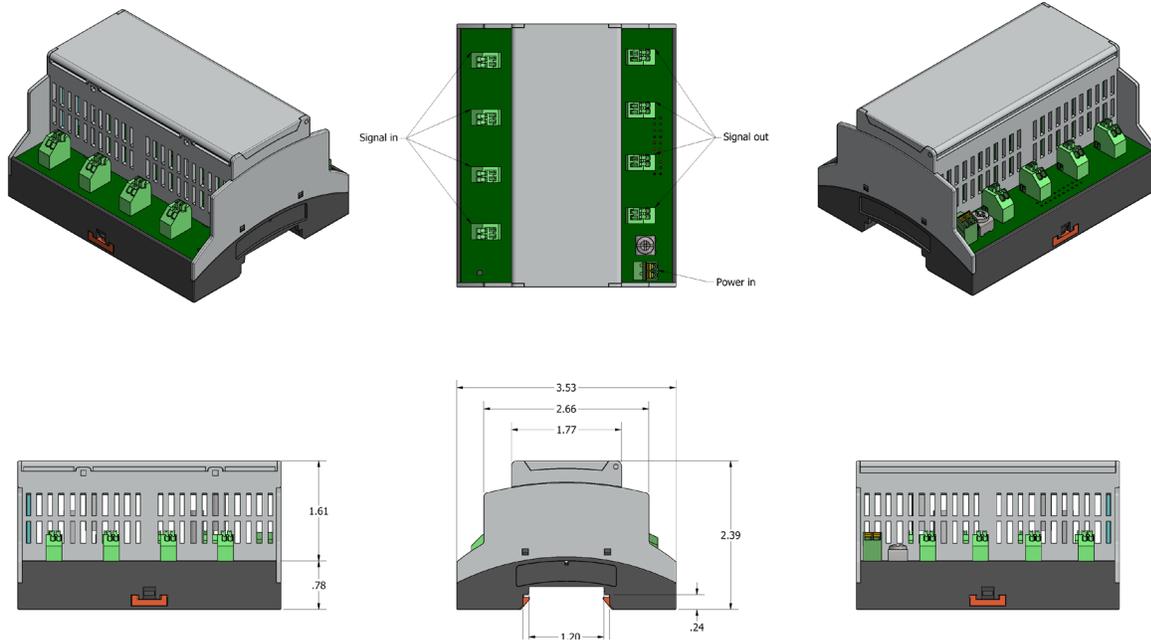
The IsoBlock module is designed to mount on standard NS-35 or NS-32 DIN rails with minimal preparation, providing users an indispensable monitoring utility with unparalleled flexibility.



DIN Rail Mounting the Sensor

Verivolt's IsoBlock variable voltage monitoring module comes pre-assembled with a housing allowing for users to quickly and securely mount the device to industry-standard DIN rail guides. The flexible clip on the reverse of the unit's housing latches to the parallel rails of the DIN, affording the IsoBlock exceptional modularity and ease of deployment within integrated Systems.

MERCHICAL DIMENSIONS



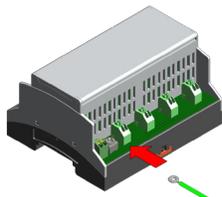
HARDWARE CONFIGURATION

A. Connect ground of sensor to ground of data acquisition (DAQ) system

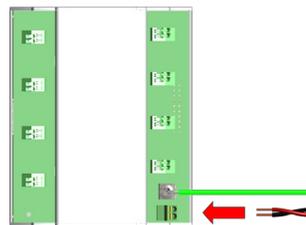
B. Securely connect external power source to primary power unit, with respect to line polarity. For proper functioning the power supply should provide between 8V and 28V with at least .5A of current.

C. 1) Securely of signal source to input of module.
2) Connect the leads from the module output terminals to the inputs of your data acquisition unit.

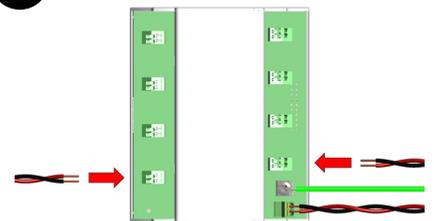
A



B



C



Standards and Certifications



THIS SENSOR IS NOT A SAFETY DEVICE AND IS NOT INTENDED TO BE USED AS A SAFETY DEVICE. This sensor is designed only to detect and read certain data in an electronic manner and perform no use apart from that, specifically no safety-related use. This sensor product does not include self-checking redundant circuitry, and the failure of this sensor product could cause either an energized or de-energized output condition, which could result in death, serious bodily injury, or property damage.