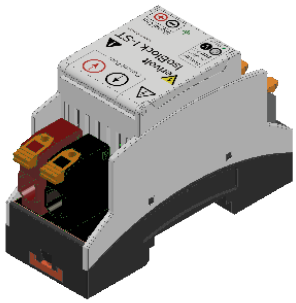
# IsoBlock I-ST-1c

Single-Channel High Performance
Shunt Current Measuring Module



## OVERVIEW

The IsoBlock I-ST is a sensor designed for high-quality isolated current measurements up to 80 Amperes. The IsoBlock I-ST module provides 1400V primary-to-secondary sustained isolation, which allows users to monitor a miscellaneous of currents at different potentials.
The IsoBlock I-ST uses shunt methodology to measure the current flowing through the input conductor. In essence, this technique works by placing a high performance low impedance resistor along the current path (primary), while a galvanic isolation separates primary and secondary sides. The input current is then obtained by amplifying the voltage induced across the shunt resistor. This is followed by an anti-aliasing filter and a conditioning stage to output a ±10V signal.
The compact form factor of the IsoBlock I-ST module allows users to setup high channel density monitoring systems, making it ideal for deployed and portable systems.

## SPECIFICATION

| Electrical | |
|---|---|
| Accuracy | ±(0.2% of reading + 0.005% range) or ±(0.1% of reading + 0.005% range) |
| Max total phase shift at 60Hz | < 0.08° |
| Max through delay | 5 µs |
| Max working voltage across isolation barrier | 1500V |
| Max common-mode transient voltage for 1 minute | 5000V |
| **Mechanical** | |
| Mounting Type | DIN Rail |
| Outer Dimensions | 3.5” x 2.5” x 1.5” |
| Weight | 205 g (7.2 oz) |
| **UL Certification** | |
| **UL 61010-1** | |
| **UL 61010-2-030** | |

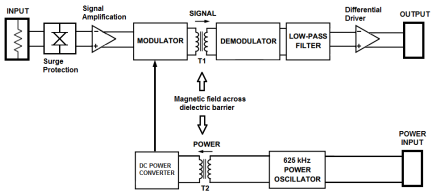
| Performance | |
|---|---|
| Input ranges | ±10mA, ±20mA, ±30mA, 50±mA, ±100mA, ±200mA, ±300mA, ±500mA, ±1A, ±2A, ±3A, ±4A, ±5A, ±10A, ±20A, ±30A, ±50A, ±60A, ±70A, ±80A |
| Shunt voltage drop at full scale | 50mV |
| Input-Output non-linearity | < 0.04% |
| Output voltage | ±10V, ±5V |
| Common mode rejection at 60Hz | 112 dB |
| Gain temperature drift | ±50 ppm/°C |
| Power Supply Voltage | 12V to 36V |
| Output type | Differential pair |
| Output Offset Voltage | 2σ < ±500 µV (typical)<br>4σ < ±1 mV (limit) |
| Output impedance | 20Ω |
| Isolation impedance | > 10 GΩ \|\| 2pF |
| **Environmental** | |
| Operating temperature | – 25 to 60 °C |
| Storage temperature | – 40 to 70 °C |

## HARDWARE DESCRIPTION

The current input connector is located at the top of the module in the figure bellow. A connector that servers to power the unit , output signal and ground the sensor lay along the bottom.


*indication of input, output and power of the IsoBlock I-ST*

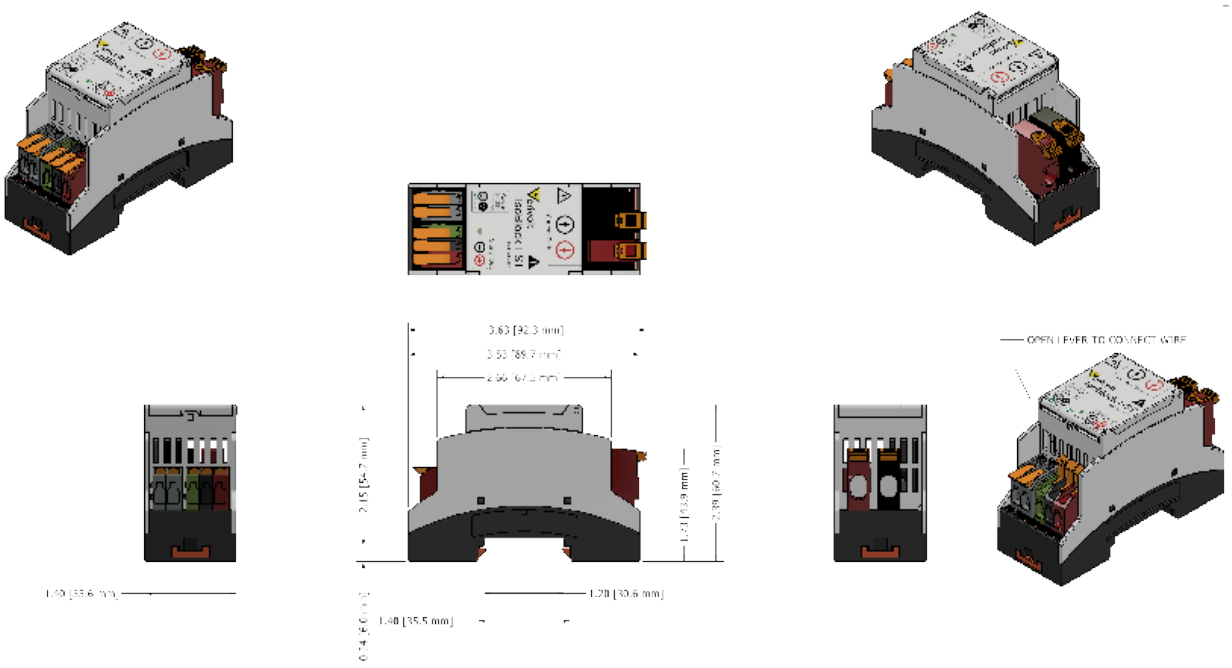
The IsoBlock module is designed to mount on standard NS-35 or NS-32 DIN rails with minimal preparation, providing users ease of use and flexibility.




*IsoBlock I-ST block diagram.*

Verivolt 150 SE 2nd Ave, #1006 Miami FL 33131
(408) 374-8658 | sales@verivolt.com

## MERCHANICAL DIMENSIONS




## HARDWARE CONFIGURATION

A. Connect external power source to power the unit. For proper functioning the power supply should provide a voltage as specified with at least 1.3W continuously and 2W surge during module start-up.

**A**

B. Securely connect one end of a twisted pair to the output terminals, and the other end to the inputs of your data acquisition unit

**B**

C. Pass conductor through aperture and observe orientation for proper signal polarity.

**C**

Standards and Certifications

- CE

⚠ Warning

THIS SENSOR IS NOT A SAFETY DEVICE AND IS NOT INTENDED TO BE USED AS A SUCH. This sensor is designed only to detect and read certain data in an electronic manner and perform no use apart from that, specifically no safetyrelated 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.