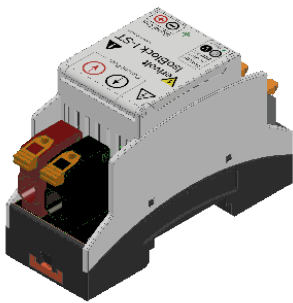


IsoBlock I-ST-1c

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 $\pm 10V$ 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	$\pm(0.2\%$ of reading + 0.005% range) or $\pm(0.1\%$ of reading + 0.005% range)
Max total phase shift at 60Hz	$< 0.08^\circ$
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	$\pm 10mA$, $\pm 20mA$, $\pm 30mA$, $50\pm mA$, $\pm 100mA$, $\pm 200mA$, $\pm 300mA$, $\pm 500mA$, $\pm 1A$, $\pm 2A$, $\pm 3A$, $\pm 4A$, $\pm 5A$, $\pm 10A$, $\pm 20A$, $\pm 30A$, $\pm 50A$, $\pm 60A$, $\pm 70A$, $\pm 80A$, $\pm 90A$, $\pm 100A$
Shunt voltage drop at full scale	50mV
Input-Output non-linearity	$< 0.04\%$
Output voltage	$\pm 10V$, $\pm 5V$
Common mode rejection at 60Hz	112 dB
Gain temperature drift	± 50 ppm/ $^\circ C$
Power Supply Voltage	12V to 36V
Output type	Differential pair
Output Offset Voltage	$2\sigma < \pm 500 \mu V$ (typical) $4\sigma < \pm 1 mV$ (limit)
Output impedance	20 Ω
Isolation impedance	$> 10 G\Omega 2pF$
Environmental	
Operating temperature	$- 25$ to $60^\circ C$
Storage temperature	$- 40$ to $70^\circ C$

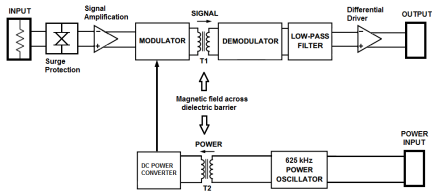
HARDWARE DESCRIPTION

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



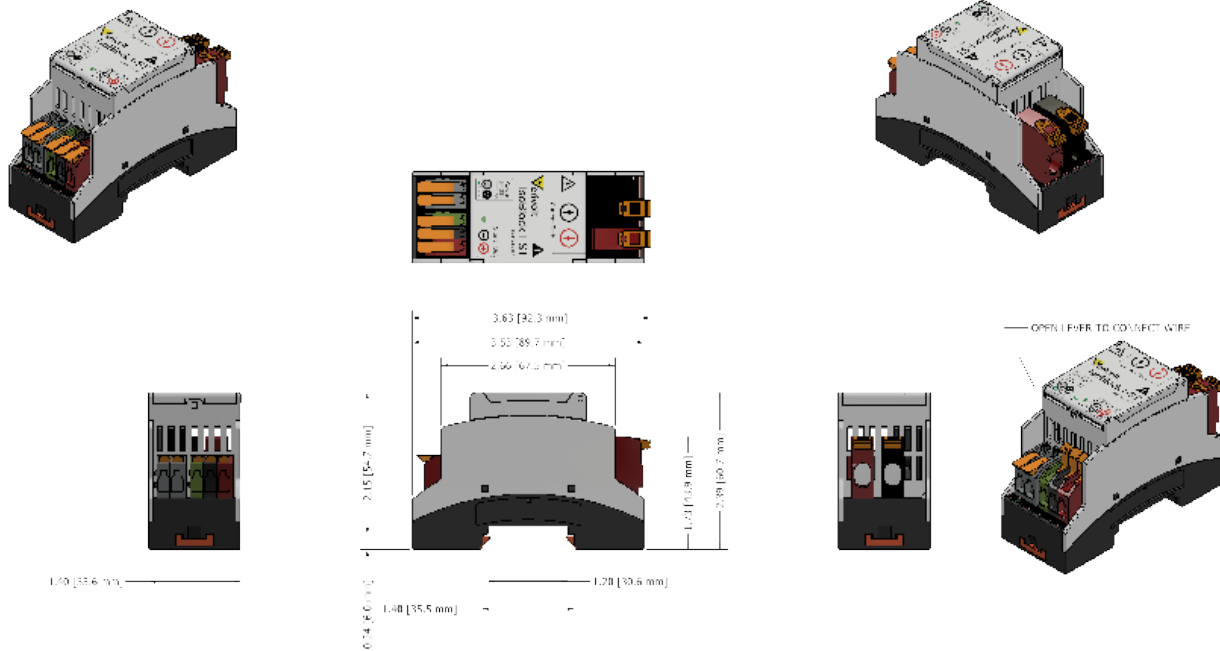
indication of input, output and power of the IsoBlock I-ST

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.

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.

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

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

A

B

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 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.