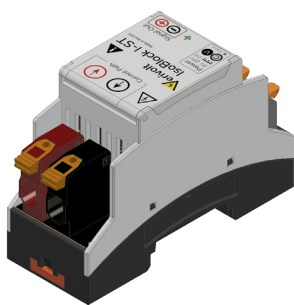


# IsoBlock I-ST

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		Performance	
Accuracy	$\pm(0.2\%$ of reading + 0.005% range) or $\pm(0.1\%$ of reading + 0.005% range)	Input ranges	$\pm 10\text{mA}$ , $\pm 20\text{mA}$ , $\pm 30\text{mA}$ , $50\pm\text{mA}$ , $\pm 100\text{mA}$ , $\pm 200\text{mA}$ , $\pm 300\text{mA}$ , $\pm 500\text{mA}$ , $\pm 1\text{A}$ , $\pm 2\text{A}$ , $\pm 3\text{A}$ , $\pm 4\text{A}$ , $\pm 5\text{A}$ , $\pm 10\text{A}$ , $\pm 20\text{A}$ , $\pm 30\text{A}$ , $\pm 50\text{A}$ , $\pm 60\text{A}$ , $\pm 70\text{A}$ , $\pm 80\text{A}$
Max total phase shift at 60Hz	$< 0.08^\circ$	Shunt voltage drop at full scale	50mV
Max through delay	5 $\mu\text{s}$	Input-Output non-linearity	$< 0.04\%$
Max working voltage across isolation barrier	1500V	Output voltage	$\pm 10\text{V}$ , $\pm 5\text{V}$
Max common-mode transient voltage for 1 minute	5000V	Common mode rejection at 60Hz	112 dB
Mechanical		Gain temperature drift	$\pm 50$ ppm/ $^\circ\text{C}$
Mounting Type	DIN Rail	Power Supply Voltage	12V to 36V
Outer Dimensions	3.5" x 2.5" x 1.5"	Output type	Differential pair
Weight	205 g (7.2 oz)	Output Offset Voltage	$2\sigma < \pm 500 \mu\text{V}$ (typical) $4\sigma < \pm 1 \text{mV}$ (limit)
		Output impedance	20 $\Omega$
		Isolation impedance	$> 10 \text{G}\Omega \parallel 2\text{pF}$
Environmental			
Operating temperature	$- 25$ to $70 \text{ }^\circ\text{C}$		
Storage temperature	$- 40$ to $70 \text{ }^\circ\text{C}$		

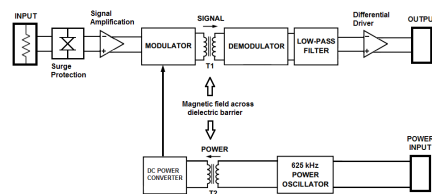
## HARDWARE DESCRIPTION

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.



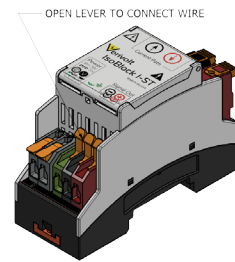
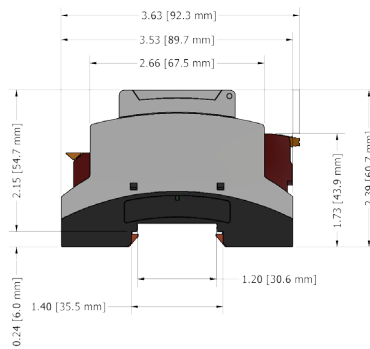
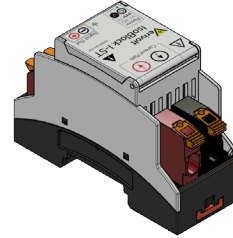
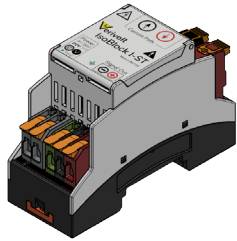
*indication of input, output and power of the IsoBlock I-ST*

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.*

# MERCHANDISE 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 1W 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.