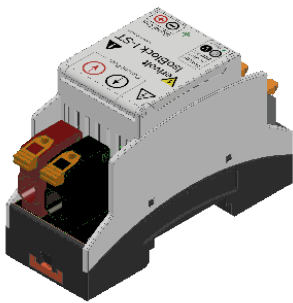


# IsoBlock I-ST-1c

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	$\pm(0.2\% \text{ of reading} + 0.005\% \text{ range})$ or $\pm(0.1\% \text{ of reading} + 0.005\% \text{ range})$
Max total phase shift at 60Hz	$< 0.08^\circ$
Max through delay	5 $\mu s$
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	$\pm 10mA, \pm 20mA, \pm 30mA, 50\pm mA, \pm 100mA, \pm 200mA, \pm 300mA, \pm 500mA, \pm 1A, \pm 2A, \pm 3A, \pm 4A, \pm 5A, \pm 10A, \pm 20A, \pm 30A, \pm 50A, \pm 60A, \pm 70A, \pm 80A$
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	$\pm 50 \text{ ppm}/^\circ C$
Power Supply Voltage	12V to 36V
Output type	Differential pair
Output Offset Voltage	$2\sigma < \pm 500 \mu V$ (typical) $4\sigma < \pm 1 \text{ mV}$ (limit)
Output impedance	20 $\Omega$
Isolation impedance	$> 10 \text{ G}\Omega \parallel 2pF$
Environmental	
Operating temperature	$- 25 \text{ to } 60^\circ C$
Storage temperature	$- 40 \text{ to } 70^\circ C$

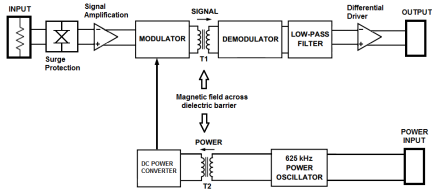
## HARDWARE DESCRIPTION

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.



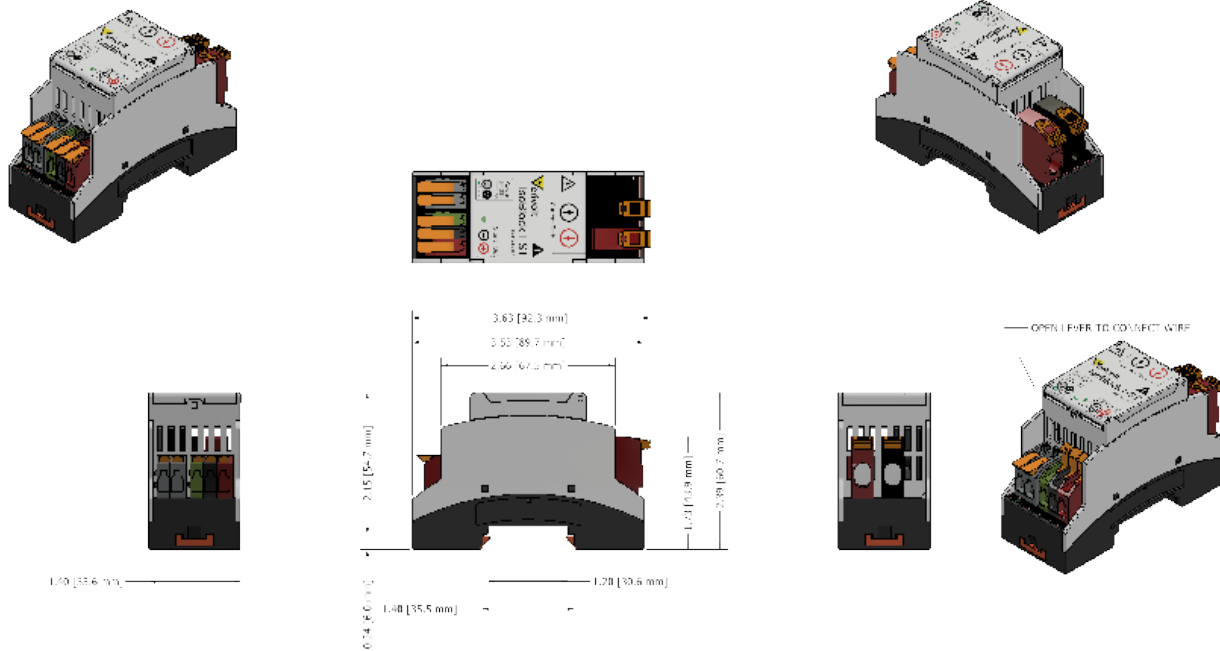
indication of input, output and power of the IsoBlock I-ST

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.

## MERCHANCIAL 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.