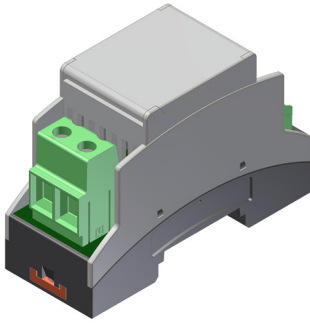


# IsoBlock I-ST

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 1500V 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.

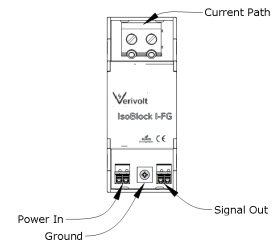
The compact form factor of the IsoBlock I-ST module allows users to setup high channel density monitoring systems, making it ideal for deployed and portable systems.

## SPECIFICATION

IsoBlock I-ST	External Shunt	5A	10A	30A	40A	50A	80A
<b>Bandwidth (-3dB point)</b>	DC - 1MHz						
<b>Integrated sensor noise (Referenced to output)</b>	<2mV rms						
<b>Conversion Factor</b>	N/A	2000 V/A	1000 mV/A	333.33 mV/A	250 mV/A	200 mV/A	125 mV/A
<b>Input dynamic range</b>	N/A	10A	20A	60A	80A	100A	160A

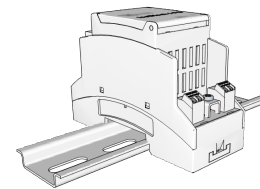
## HARDWARE DESCRIPTION

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

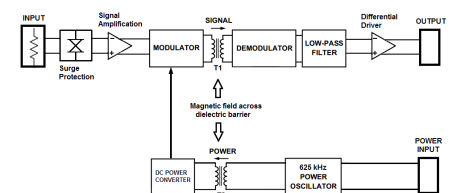
The IsoBlock module is designed to mount on standard NS-35 or NS-32 DIN rails with minimal preparation, providing users ease of use and flexibility.



Installation on DIN rail

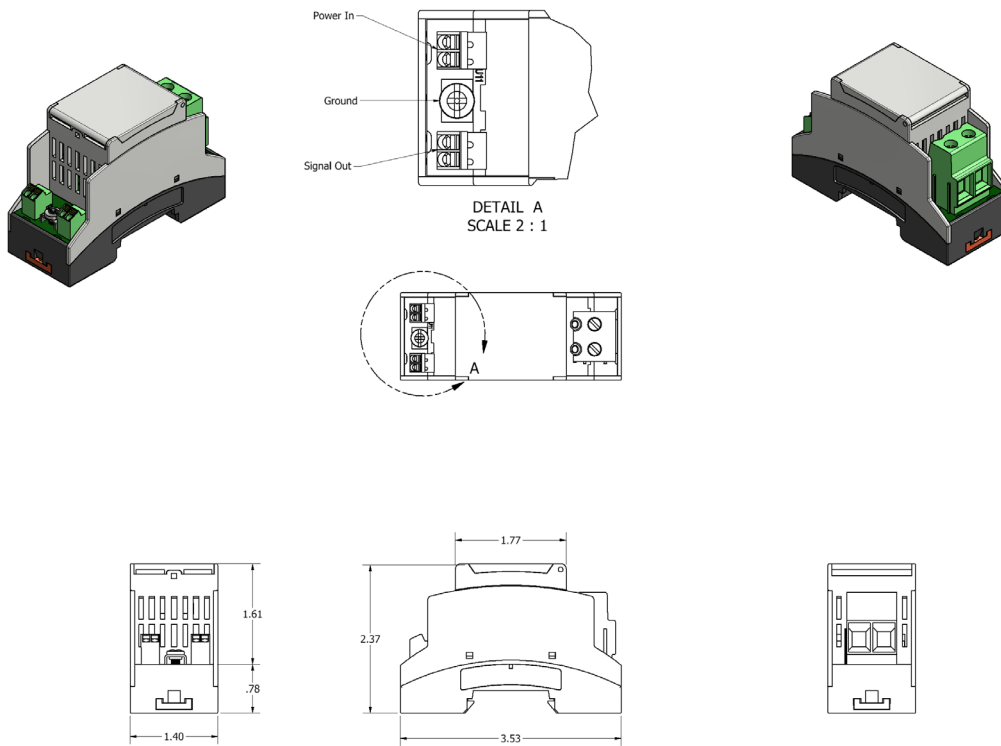
Electrical	
Accuracy (percentage of reading)	$\pm 0.2\%$ , 0.1% option
Max total phase shift at 60Hz	< 0.05°
Max Input delay	< 5 $\mu$ s
Isolation voltage from primary side to secondary side	> $\pm 2000V$
Withstanding common mode surge voltage	$\pm 5000V$
Thermal drift gain	< $\pm 0.01\%$ / °C
Mechanical	
Mounting Type	DIN Rail
Outer Dimensions	3.5" x 2.5" x 1.5"
Weight	205 g (7.2 oz)

Performance	
Input-Output non-linearity	< 280 ppm/A
Output voltage	$\pm 10V$ , $\pm 5V$ Custom
Gain temperature drift	$\pm 50$ ppm/°C
Power Supply Voltage	8V to 28V
Output type	Differential signal
Output Offset Voltage	< $\pm 500\mu V$
Output impedance	100 $\Omega$
Common mode impedance	> 2 G $\Omega$    4pF
Differential Input impedance	> 1 M $\Omega$
Environmental	
Operating temperature	- 25 to 65 °C
Storage temperature	- 40 to 70 °C



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 0.2A of continuous current and 0.4A 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 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.