



### Millivolt I/O Modules

The Millivolt Input Modules allow Millivolt level signals, such as bridged strain gages (load cells) to be directly connected to the PLC without external signal processing (transducers, transmitters, etc.) All analog and digital processing of the signal is performed on the module.

	IC695ALG312 Millivolt	HE693ADC409
Product Name	Isolated Thermocouple Input module provides twelve isolated differential thermocouple input channels. Each channel can be individually configured for inputs from: Thermocouple types: J, K, T, E, R, S, B, N, or C and Voltage: $\pm 150\text{mV}$ or $\pm 50\text{mV}$ .	Analog I/O Module, Millivolt Input
Lifecycle Status	Active	Active
Module Type	Strain Gage Input	Millivolt Input
Backplane Support	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1
Range	$\pm 150\text{mV}$ or $\pm 50\text{mV}$	$\pm 25\text{ mV}$ , $\pm 50\text{ mV}$ and $\pm 100\text{ mV}$
Diagnostics	Open wire, Short Circuit, Positive/Negative Rate of Change, High, High-High, Low, Low-Low	N/A
Channel-to-Channel Isolation	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second	N/A
Number of Channels	12	4
Notch Filter	From 2.3 Hz to 28 Hz per channel	N/A
Resolution	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	3 $\mu\text{V}$ , 6 $\mu\text{V}$ , 9 $\mu\text{V}$ (respectively)
Accuracy	$\pm 0.1\%$ of voltage span at 25°C $\pm 0.25\%$ of span over temperature range.	$\pm 0.5\%$
Input Impedance	Voltage: $\geq 500\text{k ohm}$	$> 20\text{ Mohms}$
I/O Required	N/A	4% AI
A/D Conversion Type	Sigma Delta	Integrating
A/D Conversion Time	15 msec @ 28 Hz to 120 msec @ 2.3 Hz	35 Channels/second
Strain Gages Supported	Yes	Bridged (load cells)
Maximum Normal Voltage Input	N/A	100 mV
Maximum Voltage Input	N/A	$\pm 35\text{ V}$
Connector Type	IC694TBBx32, IC694TBSx32 or IC694TBC032. Sold Separately.	Terminal Block (20 screws), included with module.
Internal Power Used	300 mA @ 5 V; 400 mA @ 3.3 V	100 mA @ 5 VDC