



1746sc Isolated-Channel Analog Input Modules

Catalog Nos. 1746sc-INI4i and 1746sc-INI4vi

Product Profile

- Installs and operates exactly like an Allen-Bradley product for full compatibility
- Ideal for demanding analog applications in electrically noisy environments
- Features 750 Vdc channel-to-channel isolation for immunity to: electrical noise, cross-talk between channels and ground loop problems
- Eliminates the need for expensive, resolution- and accuracy-robbing external isolation blocks
- Completely configured by ladder register settings (no DIP switches) for quick and easy replaceability
- Provides several selectable input filters to maximize speed and minimize noise
- Fully auto-calibrating with on-board ambient temperature compensation; no external reference source required

The 1746sc-INI4i monitors four isolated channels of current, while the 1746sc-INI4vi monitors four isolated channels of current *or* voltage (in any combination). In both modules, the voltage and/or current ranges are independently configurable for each channel. These modules provide new, advanced features to make your control systems more dependable and flexible.

Increase System Reliability

Both modules provide 750 Vdc channel-to-channel isolation, which means no electrical noise crosstalk (resulting in a high *usable* resolution—something to consider with a high-performance, 16-bit module). They also provide 750 Vdc field-wiring-to-backplane isolation to protect the processor and rack.

Reduce System Costs

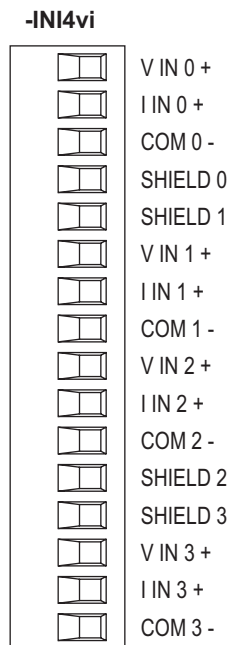
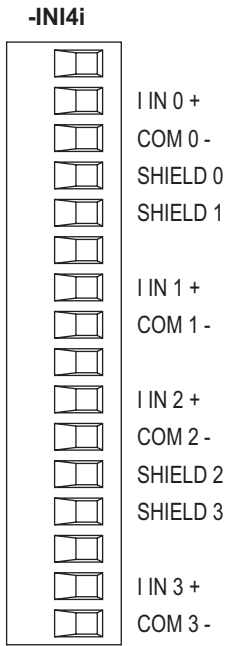
Because isolation is built into these modules, you can improve system accuracy while saving hundreds of dollars on system installation costs. Expensive, external isolation blocks are simply not required. They also provide a single-slot solution for applications requiring up to four, mixed analog inputs so you don't have to buy more I/O than you need.

Get State-of-the-Art Features

These modules incorporate proprietary Allen-Bradley technology so they operate and perform like an Allen-Bradley product. They also provide 16-bits of resolution, user-programmable range setting, auto-calibration, ladder configuration, and programmable filter frequencies.

1746sc-INI4i/vi Specifications

1746sc-INI4i/vi Wiring



Inputs per Module	4 (differential, sinking)
Channels per Common	1
Module Location	1746 I/O chassis—1 slot
Input Current Ranges	4 to 20 mA; 0 to 20 mA
Input Voltage Ranges (-INI4vi only)	-10 to +10 Vdc; 0 to 10 Vdc; 0 to 5 Vdc; 1 to 5 Vdc
Resolution (maximum) Current Voltage (-INI4vi only)	312.8 nA per count 312.8 μ V per count
Advanced Features	4 selectable filter frequencies; full auto-calibration on-board error checking
SLC Communication Formats	16-bit two's complement Scaled engineering units Scaled for PID 1746-NI4 format User-defined proportional counts
Accuracy Current Voltage (-INI4vi only)	0.15% of full scale @ 25 °C 0.25% of full scale @ 60 °C 0.10% of full scale @ 25 °C 0.25% of full scale @ 60 °C
Opto-Electrical Isolation	750 Vdc channel-to-channel 750 Vdc field-wiring-to-backplane
Input Impedance	<250 ohm for current >220 kohm for voltage (-INI4vi only)
Input Overcurrent Protection	70 mA non-continuous
Input Overvoltage Protection	50 VDC, continuous (-INI4vi only)
Common Mode Rejection	99 dB @ 1 kHz, 25°C
Normal Mode Rejection	98/98 dB @ 50/60 Hz
Backplane Current Required	1746sc-INI4i: 440 mA @ 5 V & 0 mA @ 24 V typical 1746sc-INI4vi: 550 mA @ 5 V & 0 mA @ 24 V typical
Thermal Dissipation	3.25 Watts, maximum
Update Time (minimum)	14 ms for 4 current inputs with 500 Hz filters 18 ms for 4 voltage inputs with 500 Hz filters
Step Response Time (typical)	8 ms with 500 Hz filters; 67 ms with 60 Hz filters
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity	0° to 60°C (32° to 140°F) -40° to 85°C (-40° to 185°F) 5 to 95% (non-condensing)
Certifications	UL/CUL (Class I, Div 2, Groups ABCD) and CE
Recommended Cable	Shielded, twisted-pair, Belden 8761



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