PRODUCT HIGHLIGHTS
- 8 Differential Input Channels
- Voltage Inputs or Current Inputs
- Achieves SIL-3 in Redundant Configuration
- -160 dB Common Mode Rejection
- On Card 16-Bit A/D Converter
- Built-in Calibration Channel
- I/O Bus Checking Diagnostics
- LED Card Health Indicator
- Hot Swappable

PRODUCT OVERVIEW
The 8-Channel High-Level Analog Input Card is TUV approved for SIL-2 applications. It is IEC 61131-2 qualified and provides high accuracy analog measurement capability for the 3000 system. Sampling transformers provide field to RTP chassis ground isolation and superior channel-to-channel isolation while achieving outstanding linearity and overall accuracy. A guard band above and below the full-scale signal range allows signals exceeding the specified input signal range to be detected by software. A user defined threshold change of any input channel initiates the logging of a time stamped sequence-of-events (SOE) record with 1 msec resolution.

Very high noise immunity is a characteristic of the card, achieving greater than -160dB of common mode noise rejection. Immunity to noise is further enhanced with a single-pole, low pass input filter.

Analog-to-digital conversion is performed by a 16-bit switched capacitor successive approximation A/D converter. No field adjustments are necessary after initial factory trim. The A/D converter calibration is continually checked by monitoring an internal fixed voltage, which is passed through every active component on the card.

I/O Bus self-test functions are performed for all input data, status and command transfers to and from the analog input card. Each transfer is performed twice (all the data bits in the second transfer are inverted.) Both transfers are then compared to insure that no errors exist in the data path between the analog input card and the processor. I/O bus slot address and control signal contention tests are also performed. Cable detection tests verify that the termination cable is properly connected to the card. Any errors are reported in the card’s status register.

Dual, triple, and quad redundancy support allows the inputs of two, three, or four cards to be connected in parallel to the same input device, without any interference between the cards. When using redundant configurations, the signal validation (input voting) function can be used to validate the inputs received by the node processor. Redundant configurations increase system availability and allows the card to achieve a SIL-3 rating.

The 3007/02-007 High-Level Analog Input card’s “hot swappable” design has backplane interface logic to protect the card from damage, and to prevent control and data signal degradation on the bus, when plugged into a live RTP chassis. A front panel LED indicates overall health status of the card.

RTP is the Best Technology for Your Investment, Here’s Why:
The 3000 is a multi-processor architecture that delivers exceptional Performance and Comprehensive Diagnostics. The results speak for themselves: A Reaction Time of 12 msec, true 1 msec SOE (Analog and Digital), an MTBF of greater than 3000 years, an MTTFS of greater than 4000 years, and a PFDAvg of 5x10^-5. Compare these numbers to any other system.

Built-in Proof Test Diagnostics means it will never be necessary to shut down at the proof test interval. Unlimited online downloads of logic and configuration changes do not require a periodic shut down like other systems. Compare this functionality to any other system.

Net Suite Software: One-time price includes unlimited use of Logic Development, Alarm Manager, Data Archive and Historian, and HMI without hardware or software keys. Compare this functionality and price to all other systems.

Finally, a Safety Instrumented System (SIS) should always take the process it protects to a safe state when it is required to do so, and it should never interfere with the operation of the process at any time. The 3000 does this better than any other system.
**SPECIFICATIONS**

**Module Safety Integrity Level**  
SIL 2

**Electrical Specifications**

**Multiplexer Type:** 8-Channel Solid State Mux with individual channel transformers  
**Scan Rate:** 1000 scans/second  
**Input Signal Range:** ±10V DC  
**Accuracy:**  
- ±0.035% of Full Scale Voltage at +25°C  
- ±0.0006% of Full Scale Voltage/K temperature coefficient  
- ±0.053% of Full Scale Voltage maximum (0°C to +55°C)  
- ±0.038% Full Scale Current at +25°C  
- ±0.0016 Full Scale Current/K temperature coefficient  
- ±0.053% Full Scale Current maximum (0°C to +55°C)  
**Isolation:**  
600 V AC RMS or 400 VDC;  
=1500 V AC @ 50 Hz / 60 Hz for 60 seconds withstand  
Field to RTP chassis ground and Channel to channel  
*Based on Environmental Condition*

**Common Mode**  
**Voltage:** 600 VAC RMS or 400 DC cont.  
**Common Mode Rejection:** -160 dB at 50 Hz / 60 Hz  
**Common Mode Crosstalk:** -150 dB at 50 Hz / 60 Hz  

**Power Requirements**  
+5V DC @ 500 mA  
+15V DC @ 50 mA  
–15V DC @ 25 mA

**Environmental**  
**Standard Operating Temp. Range:** –20°C to +60°C  
**Storage Temperature Range:** –25°C to +85°C  
**Relative Humidity Range:** 10% to 95%, non-condensing  
*Complies with IEC 61131-2*

**Termination Modules**  
- 3099/31-000 Triple Termination Module - 8 Channel Voltage Input  
- 3099/11-000 Triple Termination Module - 8 Channel Current Input  
- 3099/31-100 Single Termination Module - 8 Channel Voltage Input  
- 3099/11-100 Single Termination Module - 8 Channel Current Input  

**Termination Cable** Included with 3007/02-007 Card  
*Consult factory for a complete list of all available terminations*

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**Quad Redundant Input Configuration**

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