

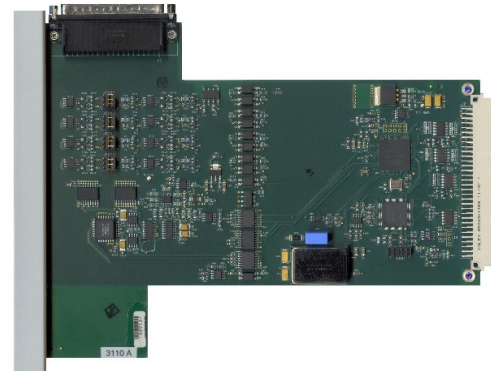


# 8-Channel RTD Analog Input Card

3110-R1

## PRODUCT HIGHLIGHTS

- 8 RTD Input Channels
- Hot Swappable
- Configurable Redundancy  
Single, Dual, Triple
- Supports 100 Ohm platinum
- Supports 3-wire and 4-wire inputs



3110-R1 8-Channel RTD Input Card

## Product Overview

The 8 Channel RTD input card can be installed into any RTP3000 TAS family chassis and provide temperature measurements from field devices such as temperature sensors or transmitters.

The configurable redundancy of the 3110-R1 RTD Card reduces costs as the redundant inputs are configured to your availability, integrity and system cost requirements. The flexible architecture allows redundant inputs to be on different cards. Those cards may be placed in the same chassis or in different chassis.

An available user-friendly redundant termination module simplifies the field wiring. A single sensor may be wired in parallel to redundant cards or multiple sensors may be wired to multiple cards and voted.

Advanced voting algorithms are selectable for redundant inputs without requiring additional programming in logic. All inputs are read by the chassis processors and then presented to the logic solving processors to be voted independently. Select one of 12 advanced voting algorithms. The status of the input is evaluated first then the selected algorithm is applied to produce the logical result for use as the process tag. Any faulted inputs are annunciated.

The 8 channel RTD card supports 100 Ohm platinum RTD types and can provide temperature measurements of +850 °C to -200 °C. You may connect the card to either 3-wire or 4-wire instruments. An on-card jumper setting is used to determine the configuration. When connected to a 4-wire instrument, the 3110-R1 RTD card supports 4 input channels.

### **RTP is the Best Technology for Your Investment,** Here's why:

The 3000 TAS 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 MBTF of greater than 50000 years an MTTFS of greater than 60000 years, and a PFDavg of  $5 \times 10^{-5}$ . **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.**

NetSuite 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 the time. **The 3000 TAS does this better than any other system.**

## Specifications

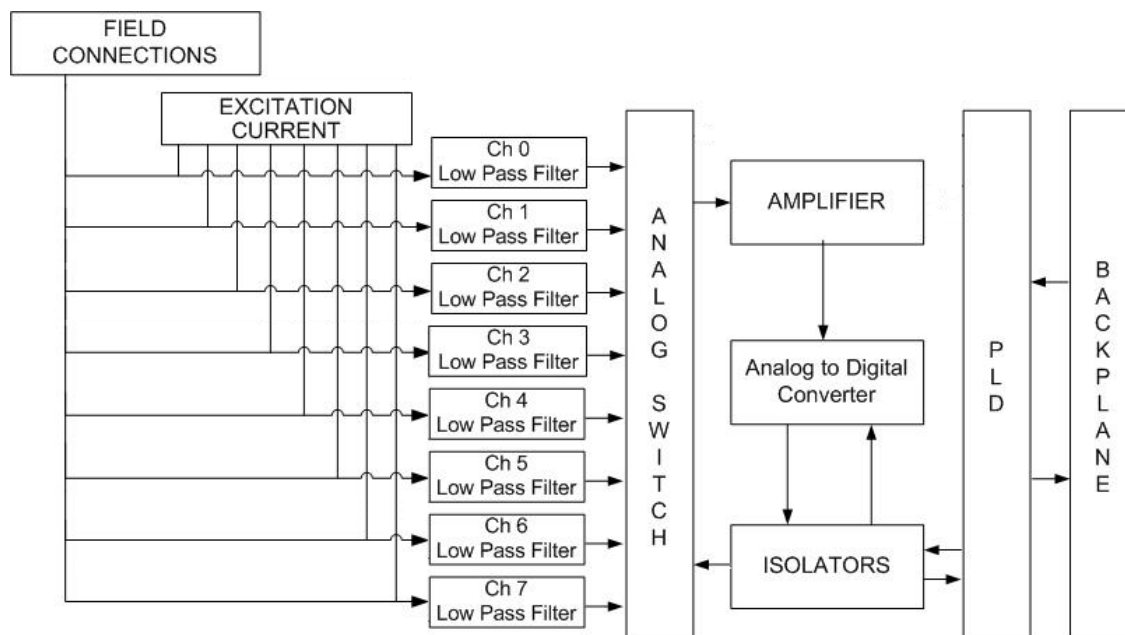
Number of Channels	8 when 3-wire configuration 4 when 4-wire configuration
RTD Type	100 $\Omega$ Platinum
Full Scale Value	160 mV
Input Signal Guard Band	160mV to 161.618mV
Max Input Source Impedance	1000 $\Omega$ maximum including cables
Analog input error (maximum error at 25 °C)	+/-0.030% full scale value (+/-0.120 Ohms)
Analog input error (temperature coefficient)	+/-0.0010 full scale value/°C (+/-0.004 Ohms/ °C)
Maximum error over temperature range (0 to 55 °C)	+/-0.060% full scale value (+/-0.240 Ohms)
Digital resolution	15 bits
Type of input	Single ended
Scan Rate	200 sample sets per second
Input filter characteristics - order	First order
Input filter characteristics – transition frequency	-3dB @ 2.0 KHz
Type of protection	Digital isolators (magnetic)
Isolation	500V Channel to RTP BUS
Common points between channels	All channels common to excitation return
Non-linearity	+/-0.025 % of full scale value
Repeatability at fixed temperature after 10 second stabilization time	+/-0.030 % of full scale value
Backplane Power	5VDC @ 300 mA 24VDC @ 250 mA

## Environmental Specification

Operating Temperature Range	-20°C to +60°C
Storage Temperature Range	-25°C to +85°C
Relative Humidity Range	10% to 95%, non-condensing

## Termination Module

3099/31-100	Single RTD Termination Module
3099/34-000	Triple Redundant RTD Termination Module



Trademark acknowledgments: RTP is a registered trademark of RTP Corp. All other product or service names mentioned herein are trademarks of their respective owners. Specifications and information are subject to change without notice. Contact RTP Corp. office for the latest specifications.

All information, data graphics and statements in this document are proprietary intellectual property of RTP Corp. unless otherwise indicated and are to be considered RTP Corp. confidential. This intellectual property is made available solely for the direct use of the potential or licensed RTP Corp. customers in their application of RTP Corp. products, and any other use or distribution is expressly prohibited. If you have received this publication in error, immediately delete, discard or return to RTP Corp.