



16-Channel Analog Output Card Current/Voltage

3236/3237

PRODUCT HIGHLIGHTS

- Compatible with all RTP3000 TAS systems (SIS, DCS, PLC)
- Cost Effective
- HART Capable
- Voltage Output Option – ± 10 V
- Current Output Option – 4 to 20 mA
- 16-Bit Digital to Analog Conversion

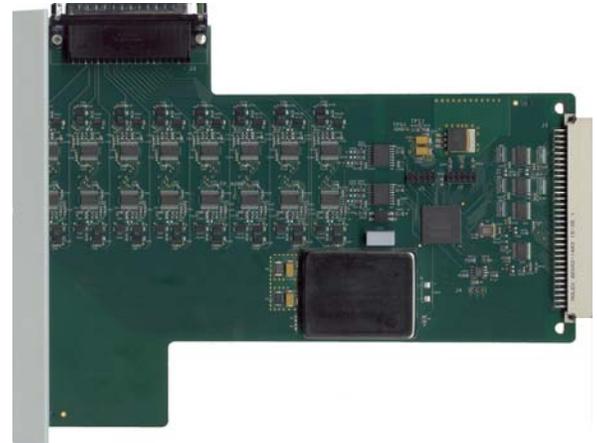
Product Overview

The 3236 and 3237 Analog Output Cards have been designed to provide 16 channels of high resolution, precision analog output signals. The cards are best suited for DCS or PLC applications. They can also be used for non-critical, non-SIL rated signals within a safety application. The 16-Channel Analog Output cards can be installed into any 3000TAS family chassis and provide setpoint control to connected actuators, valves, solenoids, or other suitable analog devices.

The output channels of the 3236 can be configured to provide a sourcing current signal of 4-20 mA. The 3237 output channels can provide voltage signal of ± 10 VDC. I/O bus checking diagnostics, card address tests and configuration tests, are performed each time the chassis processor accesses the card. All data and control transfers are performed twice, once using the actual data and then using inverted data. Both versions of the data are compared to verify that all I/O bus data bits are functioning properly on the backplane. I/O bus slot address and control signal contention tests are also performed.

The 3236 16-Channel Analog Output card can be used to perform partial stroke testing of valves. When used in a current output configuration, it can be wired in parallel to the 3018 HART card.

Each card includes a five foot termination cable. You may choose to use the RTP field termination module or existing terminal blocks.



3236 16-Channel Analog Output Card

When using existing terminal blocks, the 16 Channel Analog Output card can be ordered with a termination cable that includes a connector on one end to mate to the card and stripped wires on the other end to mate to the existing field termination assembly.

Should a card need replaced, it can be done while the system is running. Simply disable the card from within NetArrays, remove the cable attached to the card, replace the card, attach the cable to the card, and enable the card within NetArrays. A front panel LED indicates if the card is online or offline.

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 5×10^{-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

3236 - Current Configuration

Output Signals	Sourcing - 4 to +20 mA
Full Scale Value	20 mA
Analog output error (maximum error at 25 °C)	+/-0.160% of full scale value
Analog output error (temperature coefficient)	+/-0.012% of full scale value/°C
Maximum error over full temperature range	+/-0.580% of full scale value
Digital resolution	16 bits
Settling time to within maximum error for full-range change	Less than 1 ms
Slew Rate	0.04 mA/μsec (typical);
Type of protection	Digital isolators (magnetic)
Isolation	Channel to RTP ground and external power supply 500VDC max No channel to channel isolation.
Backplane Power	5VDC @ 300mA 24VDC @ 350mA
Voltage Compliance Range For Current Output	+13 Volts
Common points between channels	All channels share an isolated common ground.
Load resistance range	100 Ohm minimum, 600 Ohms maximum
Maximum inductive load	50 mH
Crosstalk between channels at 50 Hz	d.c. -71 dB a.c. -71 dB
Non-linearity	+/-0.160% of full scale value
Repeatability at fixed temperature after specified stabilization time	+/-0.160% of full scale value
Output Protection	Outputs may be shorted to 0V indefinitely.
Hardware Watchdog timer	.6 to 1.5 seconds
Programmable Watchdog timer	150 msec

3237 - Voltage Configuration

Output Signals	Bipolar: ±10Vdc
Full Scale Value	10 V
Analog output error (maximum error at 25 °C)	+/-0.065% of full scale value
Analog output error (temperature coefficient)	+/-0.003% of full scale value/°C
Maximum error over full temperature range	+/-0.170% of full scale value
Digital resolution	16 bits
Settling time to within maximum error for full-range change	Less than 1ms
Slew Rate	0.02 V/μsec (typical, resistive load)
Type of protection	Digital isolators (magnetic)
Isolation	Channel to RTP ground and external power supply 500VDC max No channel to channel isolation.
Backplane Power	5VDC @ 300mA 24VDC @ 350mA
Common points between channels	All channels share an isolated common ground.
Load resistance range	2K Ohms minimum, reference to Signal Return
Maximum capacitive load	0.01 uF
Crosstalk between channels at 50 Hz	d.c. -72 dB a.c. -72 dB
Non-linearity	+/-0.065% of full scale value

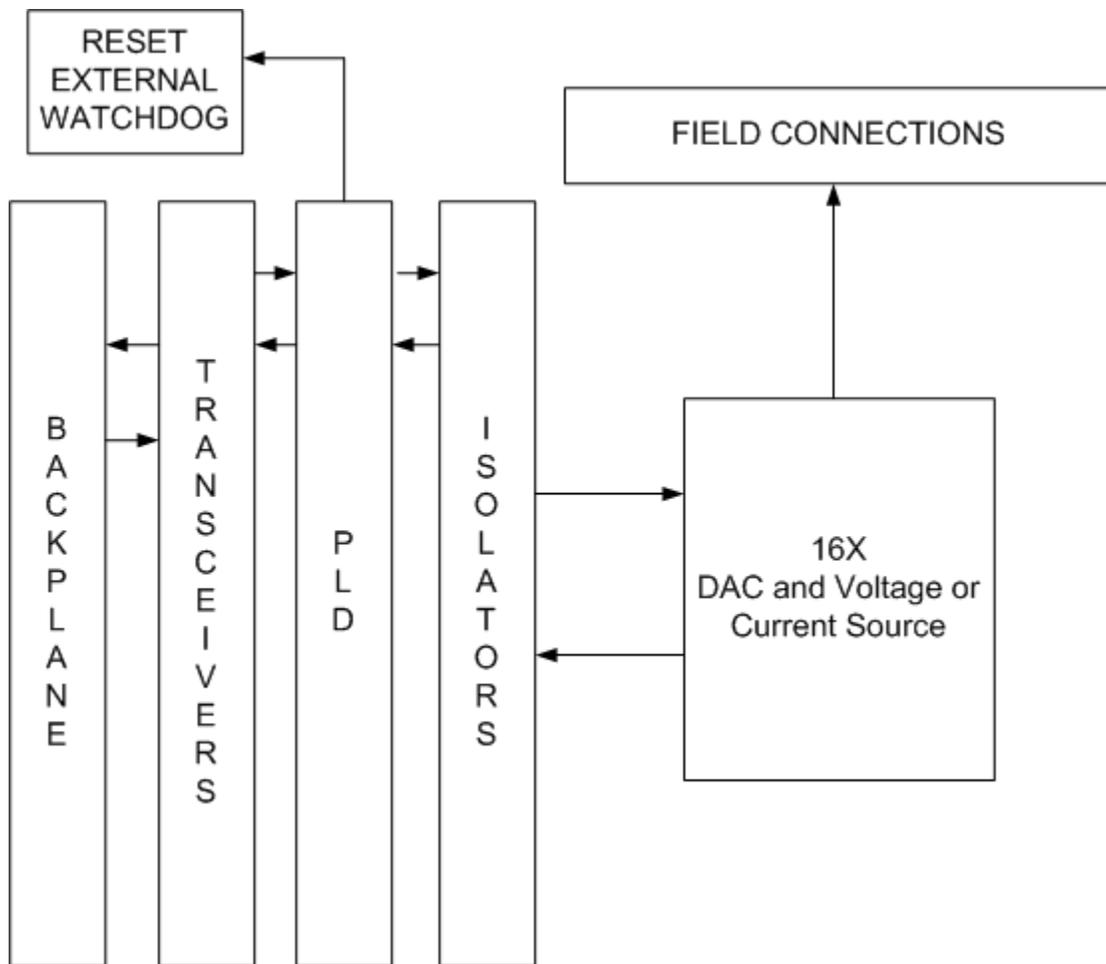
Repeatability at fixed temperature after specified stabilization time	+/-0.065% of full scale value
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Hardware Watchdog timer	.6 to 1.5 seconds
Programmable Watchdog timer	150 msec

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

3099/22-100	Single Termination Module – 16 Ch Current Analog Output
3099/60-100	Single Termination Module – 16 Ch Voltage Analog Output



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