

# GX3348 SERIES



## 6U PXI MULTI-CHANNEL ANALOG I/O PXI CARD

- Three programmable DC outputs, -20 VDC to +32 VDC
- Available with a 4 x 48 or 4 x 64 relay matrix configuration
- DC measurement capability on each channel
- 500 mA maximum current output
- External source input with switchable amplifier
- Pulse / square wave generator option



## DESCRIPTION

The GX3348 is a multi-channel analog I/O 6U PXI card which provides (3) programmable sources, a ground source connection, a pulse / square wave generator (A version only) and a 4 x 48 or 4 x 64 matrix - allowing the user to route the 3 sources, or ground to any of the 48 or 64 I/O channels. In addition, each I/O channel can be connected to a 16-bit A to D converter, providing DC voltage measurement capability for each channel. The module also offers (8) static digital I/O for controlling / monitoring a UUT's digital signals.

## FEATURES

The 4 inputs to the switch matrix can be connected to the following sources:

- Programmable -20 to +32 VDC source
- External source (with amplifier or bypassed)
- Waveform generator (A version only)
- Ground (0 V)

Each I/O channel also includes DC measurement capability; allowing each input channel to be monitored and facilitating module self-test. Combined maximum output current for all programmable sources is 500 mA. If using the external source inputs, 5 VDC or ground connection, maximum current is limited to 3 A. An onboard EEPROM contains the DAC's and ADC's calibration parameters.

## SOFTWARE

The board is supplied with the GXPDO driver, a software package that includes a virtual instrument panel, and a Windows 32/64-bit DLL driver library and documentation. The virtual panel can be used to interactively program and control the instrument from a window that displays the instrument's current settings and status. In addition, interface files are provided to support access to programming tools and languages such as ATEasy, LabView, LabView/Real-Time, C/C++, Microsoft Visual Basic®, C#, Delphi, and Pascal. An On-Line help file and PDF User's Guide provides documentation that includes instructions for installing, using and programming the board.

## APPLICATIONS

- LRU/SRU avionics testing
- Automotive ECU testing
- Process control systems
- Precision data acquisition
- Automatic Test Equipment (ATE)

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## SPECIFICATIONS

| USER CHANNEL I/O SPECIFICATIONS     |   |
|-------------------------------------|---|
| Number of Channels                  | 48: GX3348, GX3348A (with pulse generator)<br>64: GX3348-64, GX3348A-64 (with pulse generator)  |
| Channel Multiplexer Configuration   | 4 x 48: GX3348, GX3348A,<br>4 x 64: GX3348-64, GX3348A-64   |
| Maximum Current per Channel         | 500 mA  |
| Maximum Source Current              | 500 mA total for all three programmable sources<br>3 A for all other sources  |
| Number of Voltage Rails             | 4   |
| Voltage Rails / Pulse Generator     | -20 to +32 VDC or Ext. Input (with amplifier or bypassed)<br>-20 to +32 VDC or 5 VDC<br>-20 to +32 VDC or Ext. Input<br>Ground (0 V)<br>Rail A: Pulse Generator (Requires firmware version 0x0000AC00 and above.)<br>Applies only to GX3348A and GX3348A-64 modules |
| Number of DACs                      | 3   |
| DAC Resolution                      | 16-bit  |
| Output Accuracy                     | ±0.1% of voltage setting ±20 mV, 1 k load   |
| Slew Rate (DAC or amplifier)        | 6 V/μs (typ); 1 k, 50 pF load   |
| Amplifier Gain                      | 6.6, nominal  |
| Amplifier Bandwidth                 | DC to 10 KHz  |
| Amplifier Output Swing              | -20 to +32 V max.   |
| DAC and Amplifier Output Protection | Short circuit (ground)  |

| Pulse Generator (Rail A only) GX3348A and GX3348A-64 modules only       | Programmable Base voltage range: -20V to +32V<br>Programmable Peak voltage range: -20V to +32V<br>Programmable Delay: 1000 usec to 4294967295 usec<br>Programmable Width: 1000 usec to 4294967295 usec<br>Delay and width resolution: 1 us<br>Period range: 2000 uSec to 4294.9 sec<br>Mode: Continuous, Triggered<br>Base / Peak voltage accuracy: ±0.1% of voltage settings ±20 mV |
|---|--|
| Square Wave Generator (Rail A only) GX3348A and GX3348A-64 modules only | Programmable offset range: -20V to +20V<br>Programmable output: 0 to 20V p-p<br>Programmable period: 2000 uSec to 4294.9 sec<br>Programmable period resolution: 1 usec<br>Programmable duty cycle range: 0.00% to 99.99%, 1000 usec min duty cycle width<br>Mode: Continuous, Triggered<br>Output level accuracy: ±0.1% of voltage setting, ±20mV                                    |
| Measurement Channels  | 48 or 64<br>Measurement range: -20V to +32V<br>Resolution: 16 bits<br>Accuracy: ±20 mV   |
| Digital I/O   | (8) LVTTTL static I/O<br>200 series resistor with diode protection on each I/O   |
| Power ON State  | All channels / rails open  |
| PHYSICAL AND ENVIRONMENTAL  |  |
| Operating Temperature   | GX3348: 0 °C to +55°C<br>GX3348-M: 0 °C to +85°C   |
| Storage Temperature   | GX3348: -20°C to +85°C<br>GX3348-M: -51°C to +85°C   |
| Relative Humidity (operating)   | GX3348: 5% to 85%, temperature range 0°C to 60°C<br>GX3348-M: 5% to 95%, temperature range 0°C to 60°C<br>GX3348, GX3348-M: 5% to 60% for operating temperatures above 60°C  |
| Altitude (operating)  | 4600 meters (max)  |
| Connector   | 78 pin, D-sub, female  |
| Mechanical  | 6U PXI, single slot, hybrid slot compatible  |
| Weight  | 14 oz  |
| CALIBRATION   |  |
| Calibration Interval  | 1 year   |

Note: Specifications are subject to change without notice

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## ORDERING INFORMATION

|                   |  |
|-------------------|--|
| <b>GX3348</b>     | 48 Channel Analog I/O Card                                   |
| <b>GX3348A</b>    | 48 Channel Analog I/O, Pulse Generator Card                  |
| <b>GX3348A-64</b> | 64 Channel Analog I/O, Pulse Generator Card                  |
| <b>GX3348-64</b>  | 64 Channel Analog I/O Card                                   |
| <b>GX3348-64M</b> | 64 Channel Analog I/O Card (Ruggedized & Conformally Coated) |

### ACCESSORY

|                |   |
|----------------|---|
| <b>GT97102</b> | 3 ft Harness, 78-Pin Male Connector on One End, Loose Wired (Numbered) Other End    |
| <b>GT97103</b> | 1 ft Harness, 78-Pin Male Connector on One End, Loose Wired (Numbered) Other End    |
| <b>GT96002</b> | Connector, D-Type 78-Pin Male with Crimp Pins                                       |
| <b>GT97104</b> | 1 foot Harness, 78-Pin Male Connector on Both Ends                                  |
| <b>GT96107</b> | 3 Feet Harness, 78-Pin Male Connector on Both Ends                                  |
| <b>GT96078</b> | 78-Pin Connector to Screw Terminal Interface  |
| <b>GX96105</b> | 6 ft harness, 78 pin male connector on one end, loose wires (numbered) on other end |
| <b>GX96106</b> | 6 ft. Harness, 78 Pin Male Connector on Both Ends                                   |
| <b>GT96110</b> | 5 ft Cable, 78-Pin Male Connector on Both Ends                                      |
| <b>GT97112</b> | 15' Cable, 78-Pin Male Connector on One End, Loose Wired (Numbered) Other End       |
| <b>GT97113</b> | 15 ft Cable, 78-Pin Female Connector on One End, Loose Wired (Numbered) Other End   |

### CALIBRATION

|                       |  |
|-----------------------|--|
| <b>CalEasy-GX3348</b> | CalEasy for the GX3348 (Single User License) with One Year Support and Subscription  |
| <b>CalEasy</b>        | CalEasy License for all Supported Marvin Test Solutions Products (Single User License) with One Year Support and Subscription    |
| <b>CalEasy-2Y</b>     | CalEasy License for all Supported Marvin Test Solutions Products (Single User License) with Two Year Support and Subscription    |
| <b>CalEasy-3Y</b>     | CalEasy License for all Supported Marvin Test Solutions Products (Single User License) with Three Year Support and Subscription  |
| <b>GX3348-CAL</b>     | GX3348 Calibration/Verification Service. Includes pre-verification data (post calibration data provided if applicable)           |
| <b>GX3348-CAL-3</b>   | GX3348 Calibration/Verification Service - 3 years. Includes pre-verification data (post calibration data provided if applicable) |

#### **GX3348-CAL-5**

GX3348 Calibration/Verification Service - 5 years. Includes pre-verification data (post calibration data provided if applicable)

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