ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *National Instruments PXIe-2575* at our website: *Click HERE*

NI PXI/PXIe-2575 Specifications

196 × 1 Relay Multiplexer

このドキュメントには、日本語ページも含まれています。

This document lists specifications for the NI PXI/PXIe-2575 (NI 2575) 196 × 1 multiplexer relay module. All specifications are subject to change without notice. Visit `ni.com/manuals` for the most current specifications.

Topologies..... 1-wire 196 × 1 multiplexer
2-wire 95 × 1 multiplexer
2-wire 98 × 1 multiplexer

Refer to the *NI Switches Help* for detailed topology information.

About These Specifications

Specifications characterize the warranted performance of the instrument under the stated operating conditions.

Typical Specifications are specifications met by the majority of the instrument under the stated operating conditions and are tested at 23 °C. Typical specifications are not warranted.

All voltages are specified in DC, AC_{pk}, or a combination unless otherwise specified.

Clean devices and terminal blocks by brushing off light dust with a soft, nonmetallic brush. Remove other contaminants with a soft, lint-free, dampened cloth. Do not use detergent or chemical solvents. The unit must be completely dry and free from contaminants before returning to service.

Caution Refer to the *Read Me First: Safety and Electromagnetic Compatibility* document for important safety and electromagnetic compatibility information. To obtain a copy of this document online, visit `ni.com/manuals`, and search for the document title.

Caution To ensure the specified EMC performance, operate this product only with shielded cables and accessories.

Caution The protection provided by the NI 2575 can be impaired if it is used in a manner not described in this document.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Input Characteristics

Maximum switching voltage

Channel-to-channel ..... 100 V

Channel-to-ground ..... 100 V, CAT I

Caution This module is rated for Measurement Category I and is intended to carry signal voltages no greater than 100 V. This module can withstand up to 500 V impulse voltage. Do not use this module for connection to signals or for measurements within Categories II, III, or IV. Do not connect to MAINs supply circuits (for example, wall outlets) of 115 or 230 VAC. Refer to the *Read Me First: Safety and Electromagnetic Compatibility* document for more information about measurement categories.

Caution When hazardous voltages (>42.4 V_{pk}/60 VDC) are present on any relay terminal, safety low-voltage (≤42.4 V_{pk}/60 VDC) cannot be connected to any other terminal.

Caution The maximum switching power is limited by the maximum switching current and the maximum voltage, and must not exceed 60 W, 62.5 VA.

Maximum switching power
(per channel) ..... 60 W, 62.5 VA (DC to 60 Hz)

DC isolation resistance ..... >1 GΩ, typical at 25 °C
(between channel and COM terminals)

Maximum total current ..... 1 A
(switching or carry)

Minimum switch load ..... 20 mV/1 mA

Note The NI 2575 is not recommended for 2-wire resistance measurements.

Note Switching inductive loads (for example, motors and solenoids) can produce high voltage transients in excess of the module's rated voltage. Without additional protection, these transients can interfere with module operation and impact relay life. For more information about transient suppression, visit `ni.com/info` and enter the Info Code `relayflyback`.

DC path resistance

Initial ..... <0.5 Ω

End-of-life ..... ≥1 Ω

DC path resistance typically remains low for the life of the relay. At the end of relay life, the path resistance rapidly rises above 1 Ω. Load ratings apply to relays used within the specification before the end of relay life.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Differential thermal EMF

Typical[1] ..... 3 µV

Maximum..... <12 µV

Bandwidth (-3 dB, 50 Ω termination)

1-wire..... >20 MHz

2-wire..... >8 MHz

Channel-to-channel isolation (50 Ω termination)

Each relay in the NI 2575 is shared by two channels. Refer to Table 4 for a list of channel pairings.

1-wire channels in different relays

10 kHz..... >90 dB

100 kHz..... >70 dB

1 MHz..... >50 dB

1-wire channels in the same relay

10 kHz..... >68 dB

100 kHz..... >48 dB

1 MHz..... >28 dB

2-wire channels

10 kHz..... >95 dB

100 kHz..... >75 dB

1 MHz..... >55 dB

Open channel isolation (50 Ω termination)

10 kHz..... >90 dB

100 kHz..... >70 dB

1 MHz..... >50 dB

Dynamic Characteristics

Relay operate time

Typical ..... 1 ms

Maximum..... 3.4 ms

Note Certain applications may require additional time for proper settling. Refer to the *NI Switches Help* for information about including additional settling time.

[1] To ensure the typical thermal EMF, power down all relays and avoid pulsing high currents near the channels you are measuring. For more information about powering down latching relays, refer to the Power Down Latching Relays After Debounce property in NI-SWITCH or the Power Down Latching Relays After Settling property in NI-DAQmx.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Expected relay life

Mechanical ..... 1×10^8 cycles

Electrical

10 VDC,
100 mADC resistive ..... 2.5×10^6 cycles

10 VDC, 1 ADC resistive ..... 1×10^6 cycles

30 VDC, 1 ADC resistive ..... 5×10^5 cycles

60 VDC, 1 ADC resistive ..... 1×10^5 cycles

Note The relays used in the NI 2575 are field replaceable. Refer to the *NI Switches Help* for information about replacing a failed relay.

Trigger Characteristics

Input trigger

Sources ..... PXI trigger lines 0 to 7

Minimum pulse width ..... 150 ns

Note The NI 2575 can recognize trigger pulse widths less than 150 ns by disabling digital filtering. For information about disabling digital filtering, refer to the *NI Switches Help*.

Output trigger

Destinations ..... PXI trigger lines 0 to 7

Pulse width ..... Programmable (1 µs to 62 µs)

Physical Characteristics

Relay type ..... Electromechanical, latching

Relay contact material ..... Silver, gold covered

I/O connector ..... 200 POS LFH Matrix 50, receptacle

Power requirement

PXI ..... 6 W at 5 V, 2.5 W at 3.3 V

PXI Express ..... 7.5 W at 12V, 2.5 W at 3.3 V

Dimensions (L × W × H) ..... 3U, one slot, PXI/cPCI module,
PXIe compatible
21.6 × 2.0 × 13.0 cm
(8.5 × 0.8 × 5.1 in.)

Weight ..... 231 g (8.1 oz)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Environment

Operating temperature ..... 0 °C to 55 °C

Storage temperature ..... -20 °C to 70 °C

Relative humidity ..... 5% to 85%, noncondensing

Pollution Degree 2

Maximum altitude..... 2,000 m

Indoor use only.

Shock and Vibration

Operational Shock ..... 30 g peak, half-sine, 11 ms pulse
(Tested in accordance with IEC 60068-2-27. Test profile developed in accordance with MIL-PRF-28800F.)

Random Vibration

- Operating ..... 5 to 500 Hz, 0.3 g_{rms}
- Nonoperating ..... 5 to 500 Hz, 2.4 g_{rms}

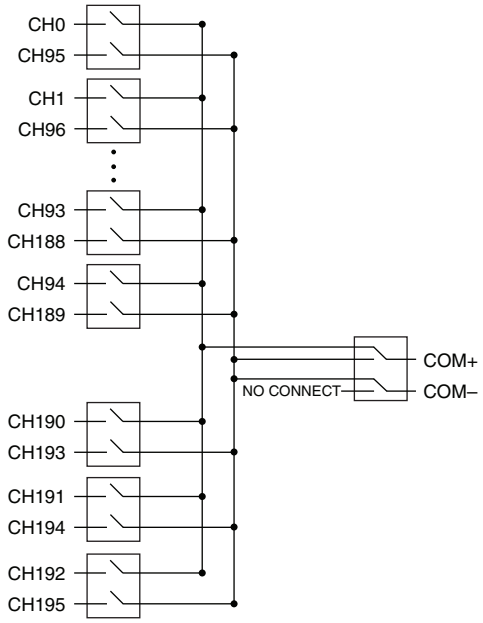
(Tested in accordance with IEC 60068-2-64. Nonoperating test profile exceeds the requirements of MIL-PRF-28800F, Class 3.)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Diagrams

Figure 1 shows the NI 2575 hardware diagram.

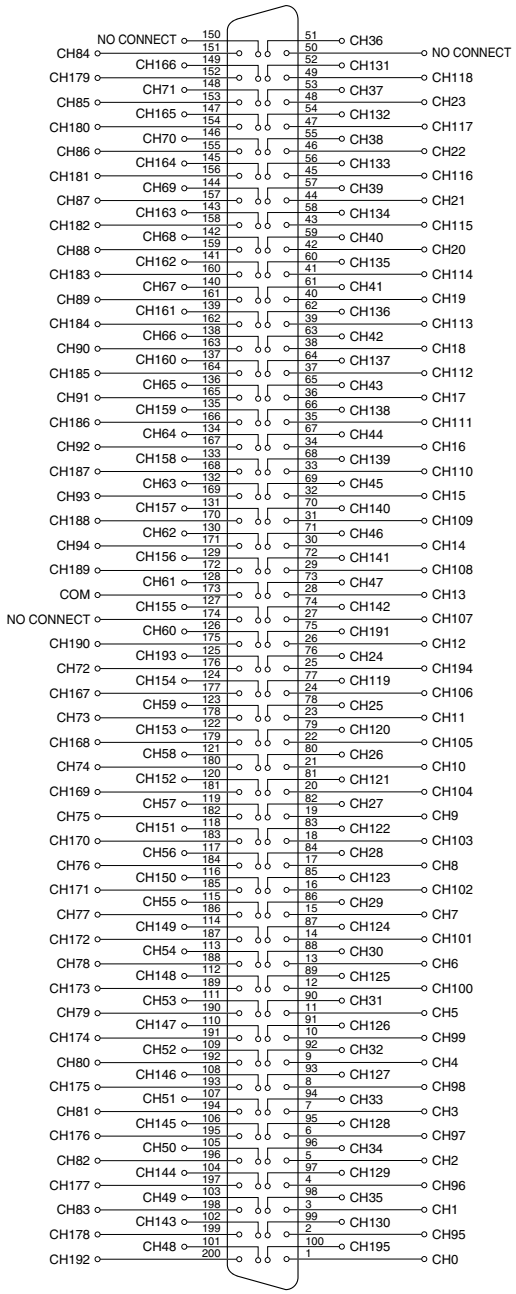
Figure 1. NI 2575 Hardware Diagram



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Figure 2 shows the NI 2575 connector pinout for the 1-wire 196 × 1 topology.

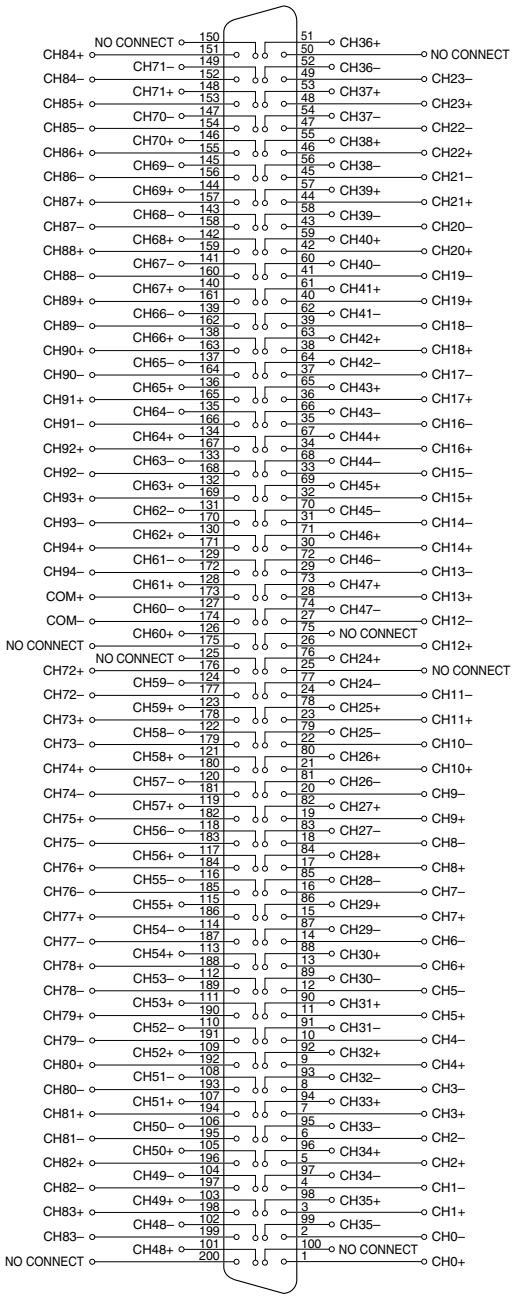
Figure 2. NI 2575 Connector Pinout for the 1-wire 196 × 1 topology



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Figure 3 shows the NI 2575 connector pinout for the 2-wire 95 × 1 topology.

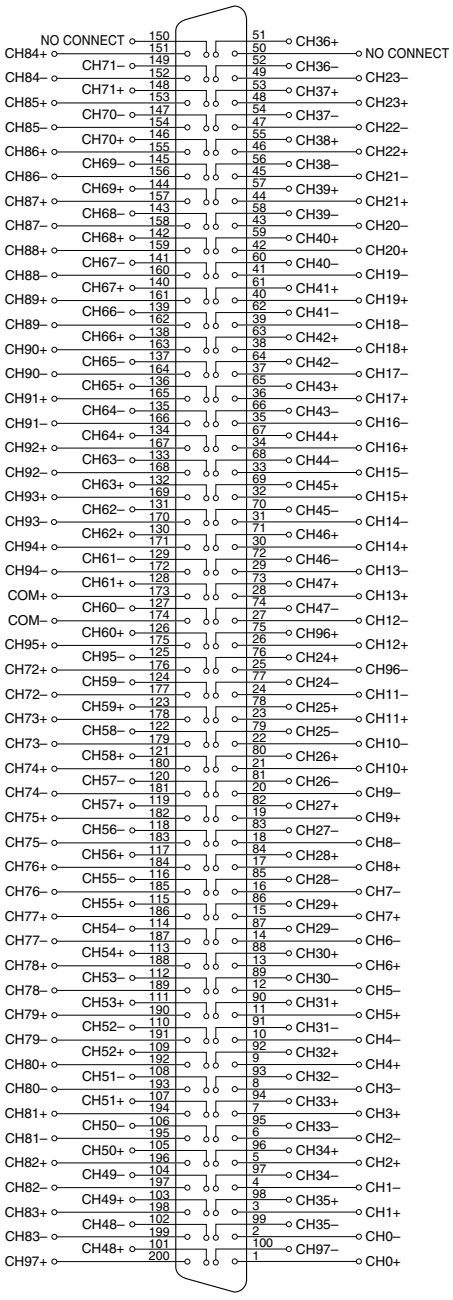
Figure 3. NI 2575 Connector Pinout for the 2-wire 95 × 1 topology



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Figure 4 shows the NI 2575 connector pinout for the 2-wire 98 × 1 topology.

Figure 4. NI 2575 Connector Pinout for the 2-wire 98 × 1 topology



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Note For topology-specific connection information, refer to your device in the *NI Switches Help*.

Accessories

Visit `ni.com` for more information about the following accessories.

Table 1. NI Accessories for the NI 2575

Accessory	Part Number
LFH200 Connector to Bare Wire Switch Cable, 2 m	779038-01
LFH200 to 4 × 50-pin DSUB switch cable (CH-CH Twisted), 1 m	779038-03
NI TBX-50B, 50-pin DSUB screw terminal block	782866-01
Relay replacement kit for G6KU-2F-Y relays	780386-01
Relay replacement kit for IM42PGR relays	782051-01

Note When using either of the LFH200 cables in Table 1 with the NI 2575 in the 2-wire 98 × 1 topology, CH95, CH96, and CH97 will have lower RF performance than the other 95 channels because they are not in twisted pairs in the cable. To avoid using these channels, NI-SWITCH has support for a 2-wire 95 × 1 topology that does not include CH95, CH96, and CH97.

Table 2. Third-Party Accessories for the NI 2575

Accessory	Manufacturer	Part Number
Terminal sticks (four required per module)	Molex	71715-4002
Plug connector subassembly	Molex	71719-3000
Backshell only	Jevons	JDC200B-832
DAK assembly for SCOUT Mass Interconnect, 200-pin LFH, male	MAC Panel	561036
Mass interconnect cable assembly, 20 in.	Virginia Panel	540105010105
Mass interconnect cable assembly, 36 in.	Virginia Panel	540105010205
Mating ITA module* (one required per module)	Virginia Panel	510108131
Mating ITA PC* (198 required per module)	Virginia Panel	720101101
*Additional cover or enclosure required. See the previous safety caution.		

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Caution You *must* install mating connectors according to local safety codes and standards and according to the specifications provided by the connector manufacturer. You are responsible for verifying safety compliance of third-party connectors and their usage according to the relevant standard(s), including UL and CSA in North America and IEC and VDE in Europe.

Table 3. Third-Party Accessories for the SH200LFH-4xDB50F-S Cable

Accessory	Manufacturer	Part Number
VARIOFACE module, with screw connection and 50 position D-Subminiature pin strip	Phoenix Contact	FLK-D50 SUB/S
VARIOFACE module, with screw connection and 50 position D-Subminiature pin strip	Phoenix Contact	FLKM-D50 SUB/S
VARIOFACE module, with screw connection and 50 position D-Subminiature pin strip	Phoenix Contact	FLKMS-D50 SUB/S
VARIOFACE module, with screw connection and 50 position D-Subminiature pin strip, with LED indicators	Phoenix Contact	FLKM-D50 SUB/S/LA

Table 4. NI 2575 Channel Pairs

Channel Pair	Channel Pair	Channel Pair
CH0, CH95	CH33, CH128	CH66, CH161
CH1, CH96	CH34, CH129	CH67, CH162
CH2, CH97	CH35, CH130	CH68, CH163
CH3, CH98	CH36, CH131	CH69, CH164
CH4, CH99	CH37, CH132	CH70, CH165
CH5, CH100	CH38, CH133	CH71, CH166
CH6, CH101	CH39, CH134	CH72, CH167
CH7, CH102	CH40, CH135	CH73, CH168
CH8, CH103	CH41, CH136	CH74, CH169
CH9, CH104	CH42, CH137	CH75, CH170
CH10, CH105	CH43, CH138	CH76, CH171
CH11, CH106	CH44, CH139	CH77, CH172
CH12, CH107	CH45, CH140	CH78, CH173
CH13, CH108	CH46, CH141	CH79, CH174

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Table 4. NI 2575 Channel Pairs (Continued)

Channel Pair	Channel Pair	Channel Pair
CH14, CH109	CH47, CH142	CH80, CH175
CH15, CH110	CH48, CH143	CH81, CH176
CH16, CH111	CH49, CH144	CH82, CH177
CH17, CH112	CH50, CH145	CH83, CH178
CH18, CH113	CH51, CH146	CH84, CH179
CH19, CH114	CH52, CH147	CH85, CH180
CH20, CH115	CH53, CH148	CH86, CH181
CH21, CH116	CH54, CH149	CH87, CH182
CH22, CH117	CH55, CH150	CH88, CH183
CH23, CH118	CH56, CH151	CH89, CH184
CH24, CH119	CH57, CH152	CH90, CH185
CH25, CH120	CH58, CH153	CH91, CH186
CH26, CH121	CH59, CH154	CH92, CH187
CH27, CH122	CH60, CH155	CH93, CH188
CH28, CH123	CH61, CH156	CH94, CH189
CH29, CH124	CH62, CH157	CH190, CH193
CH30, CH125	CH63, CH158	CH191, CH194
CH31, CH126	CH64, CH159	CH192, CH195
CH32, CH127	CH65, CH160	—

Compliance and Certifications

Safety

This product meets the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1, CSA 61010-1

Note For UL and other safety certifications, refer to the product label or the *Online Product Certification* section.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

- EN 61326-1 (IEC 61326-1): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- AS/NZS CISPR 11: Group 1, Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions

Note In the United States (per FCC 47 CFR), Class A equipment is intended for use in commercial, light-industrial, and heavy-industrial locations. In Europe, Canada, Australia and New Zealand (per CISPR 11) Class A equipment is intended for use only in heavy-industrial locations.

Note Group 1 equipment (per CISPR 11) is any industrial, scientific, or medical equipment that does not intentionally generates radio frequency energy for the treatment of material or inspection/analysis purposes.

Note For EMC declarations and certifications, refer to the *Online Product Certification* section.

CE Compliance CE

This product meets the essential requirements of applicable European Directives as follows:

- 2006/95/EC; Low-Voltage Directive (safety)
- 2004/108/EC; Electromagnetic Compatibility Directive (EMC)

Online Product Certification

To obtain product certifications and the Declaration of Conformity (DoC) for this product, visit `ni.com/certification`, search by model number or product line, and click the appropriate link in the Certification column.

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

For additional environmental information, refer to the *Minimize Our Environmental Impact* web page at `ni.com/environment`. This page contains the environmental regulations and directives with which NI complies, as well as other environmental information not included in this document.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Waste Electrical and Electronic Equipment (WEEE)



EU Customers At the end of the product life cycle, all products *must* be sent to a WEEE recycling center. For more information about WEEE recycling centers, National Instruments WEEE initiatives, and compliance with WEEE Directive 2002/96/EC on Waste Electrical and Electronic Equipment, visit `ni.com/environment/weee`.

电子信息产品污染控制管理办法 （中国 RoHS）



中国客户 National Instruments 符合中国电子信息产品中限制使用某些有害物质指令 (RoHS)。关于 National Instruments 中国 RoHS 合规性信息，请登录 `ni.com/environment/rohs_china`。 (For information about China RoHS compliance, go to `ni.com/environment/rohs_china`.)

Refer to the *NI Trademarks and Logo Guidelines* at `ni.com/trademarks` for more information on National Instruments trademarks. Other product and company names mentioned herein are trademarks or trade names of their respective companies. For patents covering National Instruments products/technology, refer to the appropriate location: **Help»Patents** in your software, the `patents.txt` file on your media, or the *National Instruments Patents Notice* at `ni.com/patents`. You can find information about end-user license agreements (EULAs) and third-party legal notices in the readme file for your NI product. Refer to the *Export Compliance Information* at `ni.com/legal/export-compliance` for the National Instruments global trade compliance policy and how to obtain relevant HTS codes, ECCNs, and other import/export data.

© 2004-2013 National Instruments. All rights reserved.

373870N Mar13

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP