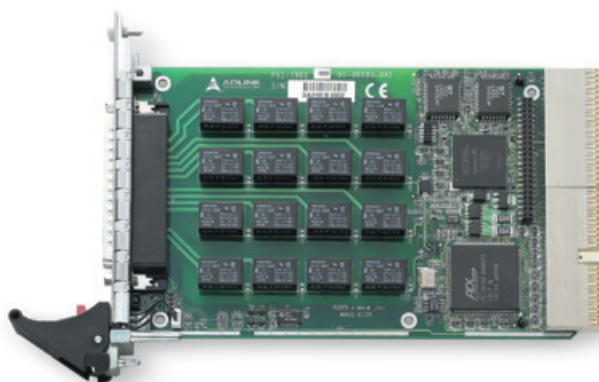


PXI-7901

16-CH General-Purpose SPDT Relay Module

Features

- PXI specifications Rev. 2.2 compliant
- 3U Eurocard form factor, CompactPCI compliant (PICMG 2.0 R3.0)
- PICMG 2.1 R2.0 CompactPCI Hot Swap specifications compliant
- 16-CH SPDT (1 Form C) nonlatching relays
- Switching capacity
 - 3 A switching, 3 A carrying
 - 220 V_{DC}, 250 V_{AC}
- 125 operations per second for full settling
- On-board 1 k-sample scan list for deterministic scanning
- Handshaking signals for external instruments synchronization
- Design for safety-critical applications
 - Hardware emergency shutdown with programmable relay safety status
 - Watchdog timer from 1 ms to 420 s with programmable relay safety status
- 8 auxiliary 3.3 V/TTL digital inputs/outputs with 5 V tolerance
- Multiple modules synchronization through PXI trigger bus and star trigger
- Fully software programmable
- **Operating Systems**
 - Windows 98/NT/2000/XP/2003
- **Recommended Software**
 - VB/VC++/BCB/Delphi
 - DAQBench
- **Driver Support**
 - ADL-SWITCH for Windows



Introduction

ADLINK PXI-7901 is a general-purpose (GP) switch module implementing 16-CH independent single-pole double-throw (SPDT) relays (1 Form C). PXI-7901 can connect one input to one output and be used as signal switching and routing for measurement system or ATE. Thanks to its high switching capacity, PXI-7901 can also be used to turn on or turn off devices such as motors, fans, heaters, and lights.

The contact position of the relays can be changed either by direct software commands or by following the instructions previously stored in the on-board scan list. The scan list advances upon the trigger from external measurement devices, such as a DMM. The scan list could also advance when the scan-delay timer expires. In the PXI-7901, PXI trigger functions are supported and software programmable. Multiple modules can therefore be synchronized without additional field wiring.

Specifications

Relay Characteristics

- Number of channels: 16
- Relay type: SPDT (1 Form C), nonlatching
- Switching capacity
 - Max. switching current: 3 A
 - Max. switching voltage: 220 V_{DC}, 250 V_{AC}
 - Max. switching power: 50 VA, 60 W
 - Max. carrying current: 3 A
- Failure rate*: 10 μA @ 10 mV_{DC}
- Contact resistance: 150 mΩ max.
- Relay set/reset time
 - Operate time: 5 ms max.
 - Release time: 5 ms max.
 - Bounce time: 3 ms max.
- Expected life
 - Mechanical life: 10⁸ operations min.
 - Electrical life : 10⁵ operations min. (0.4 A @ 125 V_{AC}, resistive load)
- Data transfer: Programmed I/O

Auxiliary Digital I/O

- Numbers of channel: 8 inputs/outputs
- Compatibility: 3.3 V/TTL (5 V tolerant)
- **Handshaking Signals**
 - Programmable polarity
 - Logic level: 3.3 V/TTL (5 V tolerant)
 - TRG_IN source: AUX1, PXI trigger bus, PXI star trigger input
 - S_ADV destination: AUX0, PXI trigger bus, PXI star trigger outputs (in the star trigger slot)

Handshaking Signals

- S_ADV destination: AUX0, PXI trigger bus, PXI star trigger outputs (in the star trigger slot)

Safety Functions

- Emergency shutdown
 - Logic level: 3.3 V/TTL (5 V tolerant)
 - Active: logic low

- Watchdog timer
 - Base clock available: 10 MHz, fixed
 - Counter width: 32-bit
- **General Specifications**
 - I/O Connector: 62-pin D-sub male
 - Operating temperature: 0 to 55°C
 - Storage temperature: -20 to 70°C
 - Relative humidity: 5 to 85% noncondensing
 - Power requirements: (when all relays are ON)

| Device | +5 V | +3.3 V |
|----------|--------|--------|
| PXI-7901 | 700 mA | 400 mA |

- Dimensions (not including connectors)
 - 160 mm x 100 mm

Certificate

- EMC/EMI: CE, FCC Class A

Termination Boards

- **TB-6201**
General-Purpose Switch Termination Board with a 62-Pin D-Sub Female Connector



Termination board TB-6201

Pin Assignment

CN1

| | 22. COM0 | |
|----------|-----------------|----------------|
| 43. NO0 | 23. COM1 | 1. NC0 |
| 44. NO1 | 24. COM2 | 2. NC1 |
| 45. NO2 | 25. COM3 | 3. NC2 |
| 46. NO3 | 26. COM4 | 4. NC3 |
| 47. NO4 | 27. COM5 | 5. NC4 |
| 48. NO5 | 28. COM6 | 6. NC5 |
| 49. NO6 | 29. COM7 | 7. NC6 |
| 50. NO7 | 30. COM8 | 8. NC7 |
| 51. NO8 | 31. COM9 | 9. NC8 |
| 52. NO9 | 32. COM10 | 10. NC9 |
| 53. NO10 | 33. COM11 | 11. NC10 |
| 54. NO11 | 34. COM12 | 12. NC11 |
| 55. NO12 | 35. COM13 | 13. NC12 |
| 56. NO13 | 36. COM14 | 14. NC13 |
| 57. NO14 | 37. COM15 | 15. NC14 |
| 58. NO15 | 38. N/C | 16. NC15 |
| 59. N/C | 39. N/C | 17. N/C |
| 60. AUX3 | 40. AUX4 | 18. AUX2/SHDNn |
| 61. AUX6 | 41. +5Vout | 19. AUX5 |
| 62. AUX7 | 42. AUX1/TRG IN | 20. GND |
| | | 21. AUX0/S_ADV |

Ordering Information

- **PXI-7901**
16-CH General-Purpose SPDT Relay Module

* Failure rate indicates the lower limit of switching capacity of a relay contact at a reliability level of 60 %

1
Software Solutions

2
PXI/CompactPCI Platforms

3
PXI-Based Instruments

4
PXI/CompactPCI Modules

5
PCI DAQ Cards

6
PCI DIO Cards

7
PC/104-Plus Products

8
ISA DAS/DIO Cards

9
Wiring Termination Boards

10
Motion Vision & COM

11
Remote I/O Modules

12
Industrial Computers