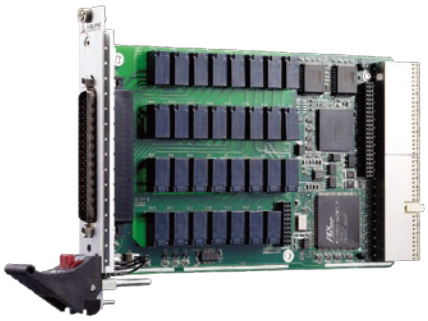
PXI-7921

24-CH 2-Wire Multiplexer Module



Introduction

ADLINK's PXI-7921 is a relay multiplexer which consists of 24 2-wire relays (DPDT, 2 Form C). As a multiplexer, the PXI-7921 provides 48x1 1-wire, 24x1 2-wire and 12x1 4-wire configurations. Users could choose one of the configurations by software. The PXI-7921 typically connects one instrument, such as a DMM, a digitizer or a signal source, with many points which need measurement or excitation.

The contact position of the relays can be changed either by direct software commands or by following the instructions previously stored in the onboard 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-7921, PXI trigger functions are supported and software programmable. Multiple modules can therefore be synchronized without additional field wiring.

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**
- **24-CH DPDT (2 Form C) non-latching relays**
- **Switching capacity**
  - **2 A switching, 2 A carrying**
  - **220 VDC, 125 VAC**
- **Onboard 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**
- **Multiple modules synchronization through PXI trigger bus and star trigger**
- **Fully software programmable**

Operating Systems

- Windows 7/10 x64/x86

Driver and SDK

- VB/VC++
- LabVIEW

Specifications

Source Wire	Multiplexer
1-wire	One 48x1
2-wire	One 24x1, Two 12x1, Four 6x1
4-wire	One 12x1

Relay Characteristics

- Number of channels: 24 (2-wire)
- Relay type: DPDT (2 Form C), non-latching
- Switching capacity
  - · Max. switching current: 2 A
  - · Max. switching voltage: 220 VDC, 125 VAC
  - · Max. switching power: 60 W
  - · Max. carrying current: 2 A
- Contact resistance: 100 mΩ max.
- Relay set/reset time
  - · Operate time: 4 ms max.
  - · Release time: 4 ms max.
- Expected life
  - · Mechanical life: 10^8 operations min.
  - · Electrical life : $5x10^5$ operations min.
    (1 A @ 30 VDC, resistive load)
- Data transfer: programmed I/O

Handshaking Signals

- Programmable polarity
- Logic level: 3.3 V/TTL (5 V tolerant)
- TRG_IN source: PXI trigger bus, PXI star trigger input
- S_ADV destination: PXI trigger bus

Safety Functions

- Emergency shutdown
  - · Logic level: 3.3 V/TTL (5 V tolerant)
  - · Active with 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°C to 55°C
- Storage temperature: -20°C to 70°C
- Relative humidity: 5% to 85% non-condensing
- Power requirements: (when all relays are ON)

Device	+5 V	+3.3 V
PXI-7921	1 A	400 mA

Certifications

- EMC/EMI: CE, FCC Class A

Ordering Information

■ **PXI-7921**
24-CH 2-Wire Multiplexer Module

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

Terminal Boards & Cables

■ TB-6221-01
Multiplexer Switch Terminal Board with One 62-Pin D-Sub Female Connector

■ ACL-10262
62-pin D-sub male/female cable, 1 M

(For more information about mating cables, please refer to P4-28.)

Pin Assignment

CN1

	22. +5Vout	
43. COM2+	23. CH8+	1. CH0+
44. COM2-	24. CH8-	2. CH0-
45. COM3+	25. CH9+	3. CH1+
46. COM3-	26. CH9-	4. CH1-
47. CH18+	27. CH10+	5. CH2+
48. CH18-	28. CH10-	6. CH2-
49. CH19+	29. CH11+	7. CH3+
50. CH19-	30. CH11-	8. CH3-
51. CH20+	31. CH12+	9. CH4+
52. CH20-	32. CH12-	10. CH4-
53. CH21+	33. CH13+	11. CH5+
54. CH21-	34. CH13-	12. CH5-
55. CH22+	35. CH14+	13. COM0+
56. CH22-	36. CH14-	14. COM0-
57. CH23+	37. CH15+	15. COM1+
58. CH23-	38. CH15-	16. COM1-
59. 1WireloRef	39. CH16+	17. CH6+
60. TRG_IN	40. CH16-	18. CH6-
61. S_ADV	41. CH17+	19. CH7+
62. SHDNn	42. CH17-	20. CH7-
		21. GND