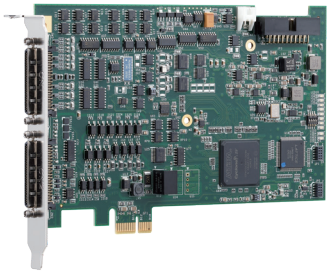
PCIe-9524

4-ch, 24-bit, High Precision Load Cell Input PCI Express Card



Features

- Transducer Inputs for precise measurement
  - 4-ch full-bridge load cell transducer inputs
  - Accuracy up to 1/200,000 counts at full-scale
  - Sensitivity from 1.0 mV/V to 4.0 mV/V
  - 2.5/10 V DC excitation voltage, software selectable
  - Internal 24-bit A/D resolution
- Motion control interface for stepper and hydraulic system control
  - 3-axis Pulse output with OUT/DIR and CW/CCW mode
  - 2-ch, 16-bit analog outputs
  - A-B phase encoder input with 24-bit counter
- General-Purpose Analog Inputs for accurate measurements of LVDT and linear wire potentiometer signals
  - 4-ch analog input with 24-bit resolution
  - Programmable gains of ±1.25 V, ±2.5 V, ±5 V, ±10 V
  - Up to 30 kS/s sampling rate (single channel)

Introduction

The PCIe-9524 is a robust, multi-purpose module designed for turnkey material test systems (MTS). Equipped with four strain gauge-based full-bridge transducer input channels, four general purpose analog input channels, and a 3-axis motion controller, the PCIe-9524 delivers a complete hardware solution for MTS manufacturers.

The PCIe-9524 easily integrates physical quantity measurement and implements software-based close-loop control in a single module package. For transducer measurement, the PCIe-9524 supports sensitivity from 1.0 mV/V to 4.0 mV/V and provides a 1/200000 accuracy of measurement of full scale (with remote sense & auto-zero enabled). These features make the PCIe-9524 suitable for precise measurement in large-scale transducers.

The PCIe-9524 is also equipped with four, 24-bit general purpose analog input channels that allow accurate measurements of the LVDT (Linear Variable Differential Transducer) and linear wire potentiometer signals to achieve a high-resolution of displacement.

With motion control capability and 16-bit DA channels, the PCIe-9524 comes with three stepper/servo motor axes and two channels of hydraulic system control function.

The impressive PCIe-9524 features permit easy implementation of required control or measurement functionalities with just a single module, saving precious development and integration time for MTS manufacturers, CNC machines, and civil testing equipment.

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Ordering Information

- **PCIe-9524**
  4-ch, 24-bits, High Precision Load Cell Input
  PCI Express Card

Accessories

- **DIN-68S-01**
  Termination Board with a 68-pin SCSI-II Connector and DIN-Rail Mounting (without cable)
- **ACL-10568-1**
  68-Pin SCSI-VHDCI Cable, 1M
  (Two sets required for each PCIe-9524)

Software Support

- **Operating Systems**
  Windows 10/11
- **Driver and SDK**
  C/C++, C#, LabVIEW

Specifications

Model	PCIe-9524
Load Cell Transducer Input	
Number of Channels	4
Resolution	24-bit
Sampling Rate	Auto-zero Disabled ● Up to 30 kS/s (single channel) ● Up to 1,638 SPS (multi-channel) Auto-zero Enabled ● Up to 819 SPS (single channel or multi-channel)
Excitation Voltage	2.5 V/10 V DC
Transducer Sensitivity	1.0 mV/V to 4.0 mV/V
Accuracy	1/200000 of full scale (with remote sense & auto-zero enabled)
Pulse Output & Encoder Input	
Number of Axis	3
Pulse Output Mode	OUT/DIR and CW/CCW (26LS31, differential line driver, driving current: up to 20 mA)
Pulse Output Frequency	Max. 500 kHz
Encoder Input	24-bit up/down counter for incremental encoder feedback
General Purpose Analog Input	
Number of Channels	4
Resolution	24-bit
Sampling Rate	30 kS/s (non-multiplexing)
Input Range	±1.25 V, ±2.5 V, ±5 V, ±10 V
Analog Output	
Number of Channels	2
Resolution	16-bit
Update Rate	Up to 5 kS/s
Output Range	±10 V
Driving Capability	5 mA
Isolated Digital Input	
Number of Channels	8
Input Range	0 V to 24 V (non-polarity)
Input Resistance	2.7 KΩ

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Specifications

Isolated Digital Output	
Number of Channels	8
Output Type	Power MOSFET
Sink Current	Up to 300 mA/channel
Hardware Timer Interrupt	
Resolution	32-bit
Base Clock	10 MHz
Interrupt Frequency	10 MHz/N ; N=1~(232-1)
General Specifications	
I/O Connector	Two 68-pin SCSI-VHDCI female
Dimensions	168 mm x 111 mm (not including connectors)
Operation Temperature	0 to 45˚C
Power Requirements	3.3 V @ 2A 12V @ 650mA
5V Power Output Current	ISO5VDD: max. 160 mA ISOPWR: max. 16 mA

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