TECHNICAL DATA SHEET

VXI Instruments
the test solutions provider

PXD731x/PXD70xx
High Voltage Waveform Digitizer Family



PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- High input voltage range with up to 500 V_{pp}
- 100 MS/s with 16 Bit resolution
- Fully isolated design with up to two independent channels
- Multiple instrument and channel synchronization possibilities
- Built-in timer/counter engine for high speed timer/counter
- Built-in DVM function for high precision measurement

Product Information

High Voltage, High Resolution Waverform Digitizer

The PXD731x High Voltage Waveform Digitizer family features up to two 100 MS/s simultaneously sampled input channels with 16 Bit resolution, input voltages up to ±250 V and a bandwidth up to 50 MHz.
Every digitizer channel has its own 2 MB memory which allows up to 1 million samples. Data can be acquired before and after the trigger event with a programmable sample counter, that controls the number of data points.

All PXD731x High Voltage Waveform Digitizer family devices have a high common mode rejection ratio (CMRR).

A great amount of trigger capabilities results in multiple instrument and channel synchronization possibilities.

Highest input voltage range allows easy measurement

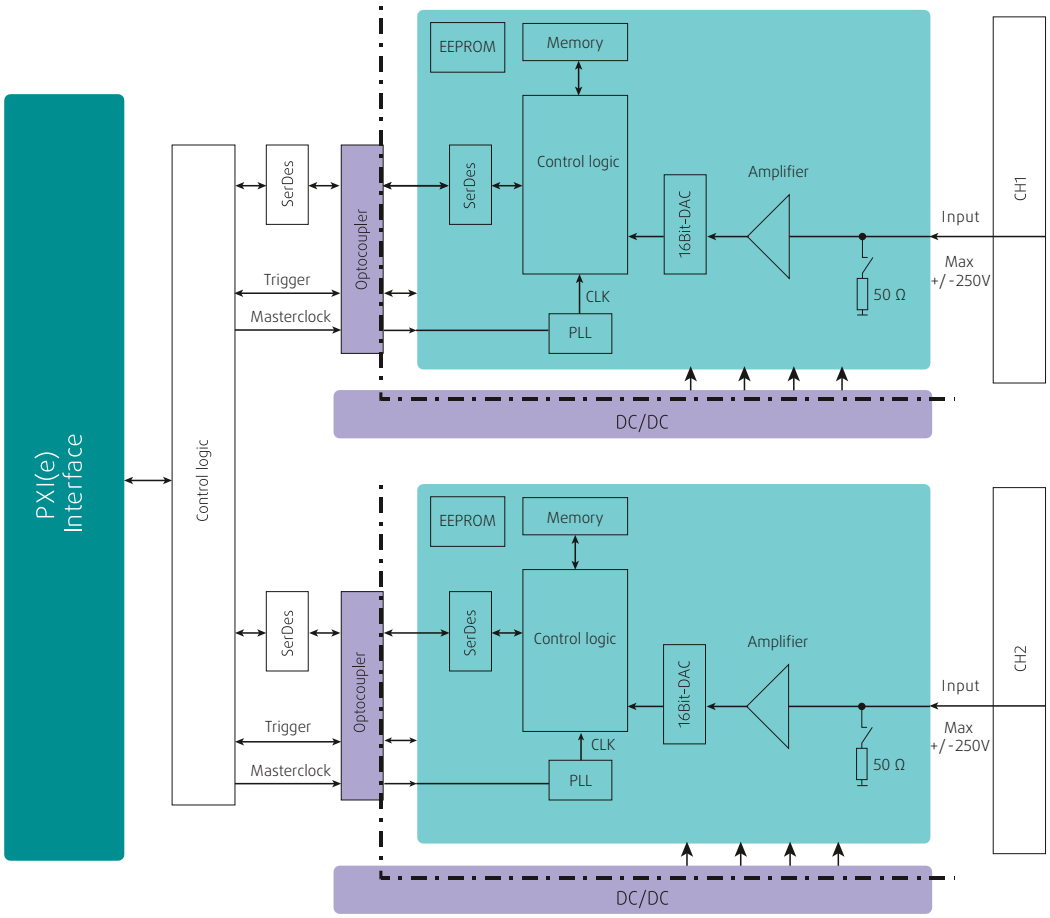
The maximum voltage for each signal input is ±250 V. This allows high voltage signals to be measured without additional signal conditioning.

High throughput design for many applications

The digitizers of the PXD731x family are designed for high throughput testing.
This design guarantees highest quality measurements and is ideal for a wide range of application areas including automotive, communications, scientific applications, military/ aerospace and consumer electronics.

Available with 1 and 2 channels

The single channel device PXD7313 High Voltage Waveform Digitizer uses only one PXI-slot (3U). The dual channel device PXD7314 High Voltage Waveform Digitizer needs two PXI-slots (3U).



General Specification

General	Specification	Comment
Module size	1 slot, 3U 2 slots, 3U	PXD7xx3 PXD7xx4
Module weight	<0.4 kg <0.6 kg	PXD7xx3 PXD7xx4
Front connector type	BNC (isolated)	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation output to PE	250 V CAT I, Pollution Degree 2	

Acquisition

Acquisition	Specification	Comment
Maximum sample rate	100 MS/s | 40 MS/s | 20 MS/s	See ordering information
Bandwidth Range 250mV, 500mV Range 1V, 2V, 4V All other ranges	 >30 MHz >50 MHz >15 MHz	 0.5 V_{pp} input signal; no filter 2 V_{pp} input signal; no filter 20 V_{pp} input signal; no filter
Vertical resolution	16 Bit	
Sampling times	10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1µs, 2µs, 5µs, 10µs, 20µs, 50µs, 100µs, 200µs, 500µs, 1ms, 2ms, 5ms, 10ms, 20ms, 50ms, 100ms, 200ms, 500ms, 1s, 2s, 5s, 10s	Software selectable
Input impedance	1 MΩ // <20 pF, 50 Ω	Software selectable
Maximum input voltage	1 MΩ: f < 40 kHz: 250 V_p 40 kHz < f < 1 MHz: $10^7 V_p$ / f 1 MHz < f < 50 MHz: 10 V_p 50 Ω: 5 V_p	Input voltage may not exceed selected input voltage range
Input ranges	50 Ω: 250 mV, 500 mV, 1 V, 2 V, 4 V 1 MΩ: 250 mV, 500 mV, 1 V, 2 V, 4 V, 8 V, 16 V, 32 V, 64 V, 128 V, 250 V	
DC accuracy[1]	250 mV, 500 mV: 0.3% of input +2 mV others: 0.2% of input + 0.1% of full scale	
Filter	30 kHz, 100 kHz, 300 kHz, 1 MHz, 20 MHz	Software selectable
Waveform memory	2 MB, 1 MS	

Digital Voltmeter

DVM	Specification	Comment
DC accuracy[2]	250mV, 500mV: 0.3% of input +0.5mV others: 0.2% of input + 0.025% of full scale	With auto offset correction
Measurement time	1 ... 500 ms	1 ... 500 ms

[1] DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s and active 30 kHz filter.
[2] DC accuracy specified with measurement time of 100ms.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Time Base	Specification	Comment
Accuracy	1 ppm	In operating temperature range
Aging per year	1 ppm	

Trigger System

Trigger System	Specification	Comment
Input from		
Internal function module	One function module can trigger itself and the other module	
Software	Via software command	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Output to the other module	For example marker-bit
PXI trigger	Output each channels trigger to PXI trigger 0 ... 7	
Level resolution	16 Bit	
Level accuracy	0.6% + 0.3%	±(of programmed value + of full range)
Trigger delay	0 ... 10 s	Programmable delay, 10 ns resolution
Trigger slope	Positive or negative	
Trigger hysteresis	0 ... 100% of signal range	Programmable via software
Pre-Trigger	0 ... 100% of full record length	Trigger is armed after all pre-samples are captured; post-samples are captured after trigger
Post-Trigger	0 ... 100% of full record length	Number of samples captured after trigger event

Timer/Counter

T/C Measurement Modes	Specification
Frequency	
Counter width	40 Bit
Range	0.1 Hz ... 10 MHz
Minimum pulse width	50 ns
Period	
Resolution	10 ns
Accuracy[1,2]	±10 ns
Range	50 ns ... 10 s
Time interval and pulse width	
Resolution	10 ns
Accuracy[1,2]	±10 ns
Range	50 ns ... 10 s

T/C Measurement Modes	Specification
Rise and fall time	
Resolution	10 ns
Accuracy[2]	±10 ns
Range	50 ns ... 10 s
Totalize (edge count)	
Minimum pulse width	50 ns
Range	0 ... 2^{40}-1

Ordering Information

Ordering Information	Comment
PXD7313	100 MS/s, 1 channel
PXD7314	100 MS/s, 2 channel
PXD7023	40 MS/s, 1 channel

Ordering Information	Comment
PXD7024	40 MS/s, 2 channel
PXD7013	20 MS/s, 1 channel
PXD7014	20 MS/s, 2 channel

VX Instruments GmbH
Phone: +49 871 93 15 55-0
E-Mail: sales@vxinstruments.com

Revision Date: 2026-10-26