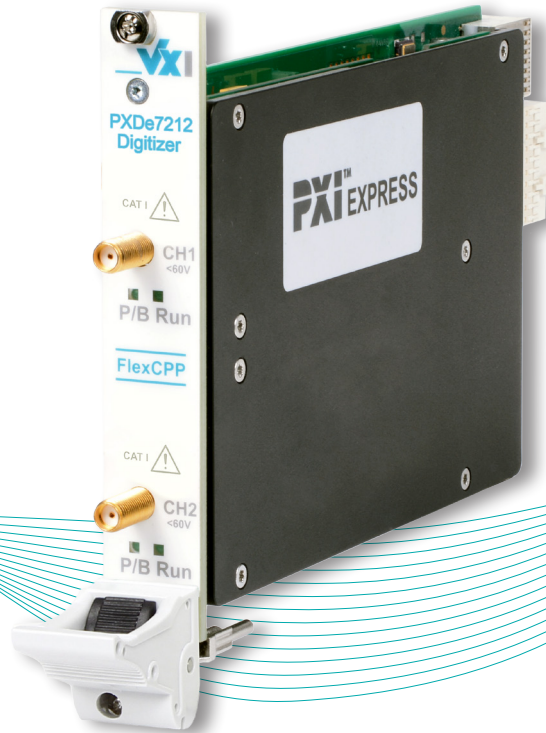


PXD(e)721x High Resolution Waveform Digitizer Family



TECHNICAL DATA SHEET

PXI

Features

VXI

LAN

cPCI

PXIe

GPIB

USB

RS232
485

external
PCIe

- Based on VX Instruments FlexCPeP
- Input voltage up to 120 V_{pp}
- 100 MS/s with 16 Bit resolution
- Available as isolated and non-isolated version
- Up to 100 MHz bandwidth
- Available with PXI or PXIExpress interface
- Multiple instrument and channel synchronization possibilities
- Built-in DVM function for high precision measurement (option DVM)
- Built-in timer/counter engine for high speed timer/counter (option T/C)

Product Information

Flexible Configurable PXIe Platform

This family of Waveform Digitizers is based on the "Flexible Configurable PXIe Platform" (FlexCPeP). This platform allows many variations of customer configured digitizers.

High speed, high resolution Waveform Digitizer

The PXD(e)721x High Resolution Digitizer Family features up to two 100 MS/s simultaneously sampled input channels with 16 Bit resolution, input voltages up to ± 60 V and a bandwidth of 50 MHz (100 MHz with option DBW).

Every digitizer channel has its own 2 MB memory which allows up to 1 million samples. Depending on the amount of channels and the isolated option, the digitizers are built into a compact 3U PXI device for 1 or 2 slots. All isolated devices have a high common mode rejection ratio (CMRR).

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

Data can be acquired before and after the trigger event with a programmable sample counter, that controls the number of data points.

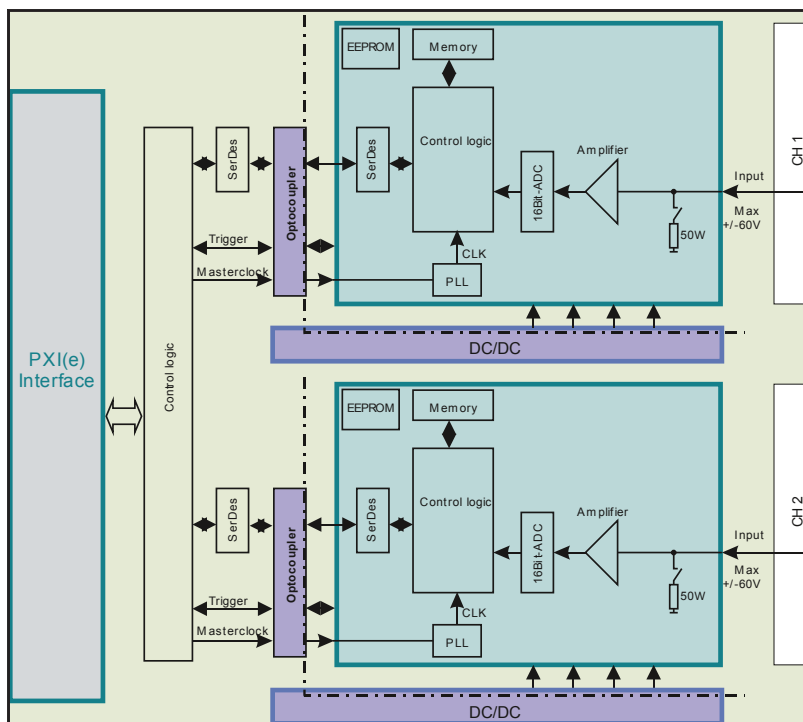
High input voltage range allows easy measurement

The maximum voltage for each signal input is ± 60 V. This allows high voltage signals to be measured without additional signal conditioning.

High throughput design for many applications

The PXD(e)721x Digitizer Family is designed for high throughput testing. Multiple measurements in combination with the memory segmenting feature (option MEMSEG) results in additional test time improvement.

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.



| Ordering Option | Comment |
|-----------------|--|
| PXDe721x | PXIExpress interface |
| PXD721x | PXI interface |
| Option DVM | Digital Voltmeter |
| Option T/C | Timer/counter |
| Option TCXO | Temperature compensated crystal oscillator |
| Option DBW | Double bandwidth |
| Option MEMSEG | Memory segmenting |

| General | Specification | Comment |
|---------------------------|-------------------------------|--|
| Module size | 1 slot, 3U 2 slots, 3U | PXD(e)7211, PXD(e)7212, PXD(e)7213 PXD(e)7214 |
| Module weight | <0.7 kg | |
| Front connector type | SMA | |
| 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 input to PE | 60V CAT I, Pollution Degree 2 | |

| Acquisition | Specification | Comment |
|--------------------------|--|---|
| Maximum sample rate | 100 MS/s | |
| Bandwidth | 50 MHz, 100 MHz with option DBW | 2 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 |
| Input coupling | DC | |
| 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, 60 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 | |

| Time Base | Specification | Comment |
|----------------|--------------------------------|--------------------------------|
| Accuracy | 50 ppm, 1 ppm with option TCXO | In operating temperature range |
| Aging per year | 5 ppm, 1 ppm with option TCXO | |

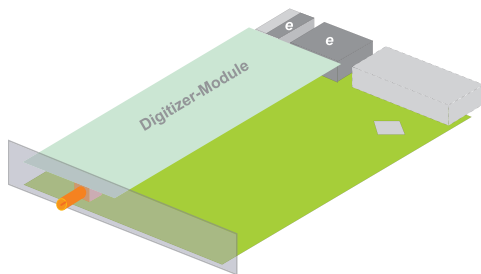
| DVM and Timer/Counter | Specification | Comment |
|-----------------------|---------------|--|
| DVM Averaging | 500 ms | |
| T/C counter width | 40 Bit | Rise/fall time and frequency measurement |

¹ DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s.

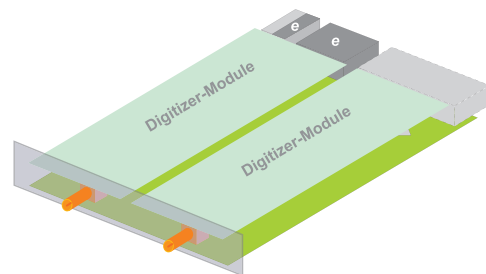
Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

| 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...10s | Programmable delay, 10ns 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 |

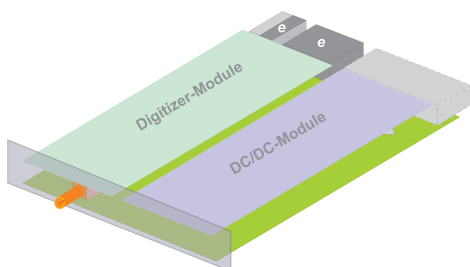
| PXI Capabilities | Specification | Comment |
|-------------------------------|---------------|---|
| PXI 10 MHz usage | Possible | Then time base accuracy depends on PXI rack |
| PXI trigger usage | Possible | PXI trigger 0...7; input and output |
| PXI star trigger usage | Possible | Input only |



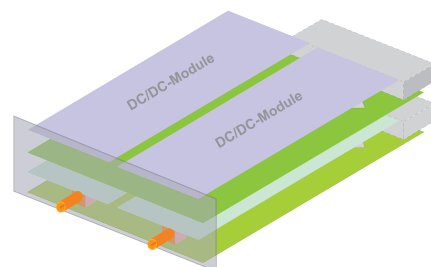
PXD(e)7211
1 channel non-isolated digitizer in 1 slot



PXD(e)7212
2 channel non-isolated digitizer in 1 slot



PXD(e)7213
1 channel isolated digitizer in 1 slot



PXD(e)7214
2 channel isolated digitizer in 2 slots