INSTRUMENTATION RACK CABINET

VZERO engineering solutions

The basic IRC solution offers 32 channels, configured as follows:
- **16 differential, ±10 V analog inputs**
- **8 extensiometric channels in the range ±100 mV**
- **8 general purpose Wheatstone based sensors inputs in the range ±100 mV to ±10 V**

APPLICATIONS

- **Structural testing**
- **Automotive. Passive Safety testing**
- **Aerospace**
- **Research centres**

KEY FEATURES

- **Measurements of the most common sensors used in the industrial environment**
- **Signal conditioning and acquisition of any kind of transducer**
- **Analog anti-aliasing pre-filtering**
- **PXI Scalable architecture**
- **Multi-core Embedded Controller**
- **Easy synchronization with other control systems, sharing the master clock**
- **T-zero reference time input available**
- **Transducer Electronic Data Sheet (TEDS)**
- **Simultaneous sampling of analog channels**
- **Post-processing tools and fully customized report generators available under request**
- **Flexible and versatile**
- **Compact and robust design**

Instrumentation Rack

PXI Chassis
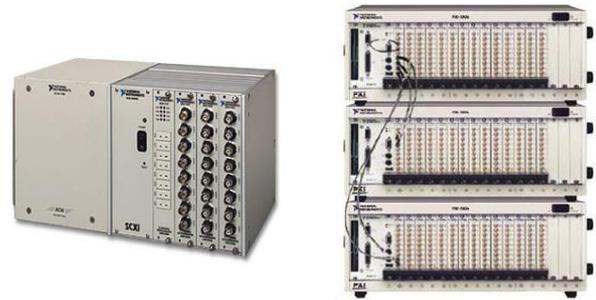
Symbol	Description
	Full-bridge strain gages
	Half-bridge strain gages
	Quarter-bridge strain gages
	Inductive full-bridge
	Inductive half-bridge
	LVDT
	Voltage
	Current (± 20 mA)
	Potentiometers
	PT100 resistance thermometer
	Thermocouples

Applications

CE
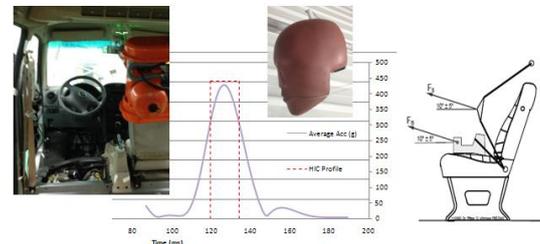
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PXI Controller

- Intel Core i7-3610QE quad-core processor (2.3 GHz (base), 3.3 (single-core Turbo Boost))
- Up to 8 GB/s system bandwidth
- 250 GB SATA (7200 rpm) hard drive
- 1 x 4 GB DIMM RAM memory, scalable to 16 GB
- Two 10/100/1000BASE-TX Ethernet ports
- GPIB (IEEE 488 Controller)
- PXI Express Trigger Bus Input / Output

Accelerometer inputs

- AC/DC coupling software selectable
- 24 bit resolution delta sigma ADC
- 114 dB dynamic range
- Sampling rate up to 204.8 kS/s
- Maximum input voltage ± 10 V
- IEPE 4 mA accelerometers
- TEDS supported
- Channel input impedance with IEPE >250 kΩ at 1 kHz

Wheatstone based sensors inputs

- Quarter, half and full bridge inputs
- Input range configurable:

  $V_{exc} \leq 2.5$ V .... ±100 mV/V
  $V_{exc} \geq 2.75$ V .... ±25 mV/V

- Simultaneous sampling
- Maximum sampling rate 25.6 kS/s
- 24 bit resolution ADC converter
- Bridge excitation (V_{exc}) 0.625 to 10 V software configurable
- Bridge completion 120 Ω, 350 Ω, and 1 kΩ software configurable
- Shunt calibration
- Bandwidth 11500 Hz
- Anti-aliasing filtering
- TEDS supported

Synchronization

- PXIe System Timing Slot for tight synchronization across each chassis
- Internal 100 MHz clock shared by all the modules in the same PXI chassis
- 10 MHz external clock can be imported from other PXI platform and connected with a TNC cable to the acquisition chassis. On detection of this external clock, the chassis automatically phase-locks its internal clocks to this signal and distributes the synchronized internal clock to all the modules
- A copy of the internal 10 MHz clock is driven by an independent buffer to an output connector, available for synchronizing other chassis

High level voltage inputs

- Quarter, half and full bridge inputs
- Input range configurable: ±0.1 V, ±0.2 V, ±0.5 V, ±1 V, ±2 V, ±5 V, ±10 V
- Maximum sampling rate 1 MS/s
- 16 bit resolution ADC converter
- DC input coupling
- 100 dB CMMR
- Input impedance >10 GΩ in parallel with 100 pF
- Shunt calibration
- Bandwidth 1.7 MHz
- Anti-aliasing filtering
- TEDS supported

Triggering

- Up to eight trigger lines to synchronize the operation of several different PXI peripheral modules
- One module can control carefully timed sequences of operations performed on other modules in the system. Modules can pass triggers to one another, allowing precisely timed responses to asynchronous external events

Power supply

- 230 Vac 50-60 Hz power input
- 1 kVA UPS integrated to guarantee the integrity of data

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