nanoDaq-LT

Low Cost Miniature Smart Pressure Scanner

Chell Instruments

- *Intelligent pressure scanner module with engineering unit output.*

- *User selectable absolute or differential measurement*

- *Up to 0.04% FS accuracy output.*

- *Complete with IEEE 1588 PTPv2 time stamping*

- *Thermally compensated from -40 to 90°C*

- *Output over Ethernet (100Mbit TCP / UDP) and CAN.*

- *Rugged enclosure for on-vehicle applications. Sealed to IP67*

- *Fully configurable over Ethernet with embedded web server.*

- *Side port and 'O' ring seal cases available.*

The nanoDaq-LT is a new development by Chell Instruments utilizing the latest technology in digital transducers.

The nanoDaq-LT is a fully configurable smart pressure scanner that will output pressure data in engineering units over Ethernet and CAN. The data output over all interfaces is identical to the nanoDaq-LT's sister products; the nanoDaq and the MicroDaq.

The nanoDaq-LT makes use of 17 absolute transducers which are thermally compensated and conditioned to provide 16 either absolute or 16 differential measurements relative to one reference port.

The user can select a number of operating parameters using the embedded web server. These include; absolute or differential, TCP and UDP setup, data averaging and units, CAN setup and time stamp configuration.

The nanoDaq-LT features a hardware implementation of the IEEE 1588 PTPv2 time stamping protocol which allows the pressure data to be time stamped to a resolution of 1μSecond.

The nanoDaq-LT also features a hardware trigger allowing the pressure acquisition to be synchronised to an external TTL pulse.
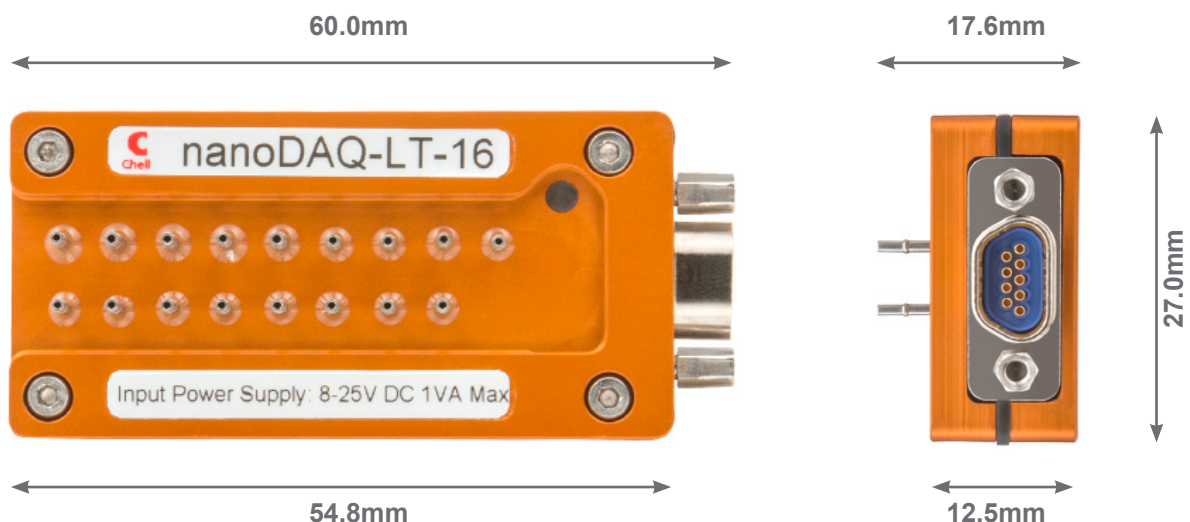
The nanoDaq-LT is contained within a miniature package which is sealed to IP67 enabling it to be used in harsh environments. It is also available with alternative packaging to suit particular applications - please contact Chell for more details.

The transducers within the nanoDaq-LT have a very high proof pressure (50psig, 64.5 psia) which reduces the chances of in-field transducer damage.

Another advantage of the transducer configuration within the nanoDaq-LT is the very low transducer volume ($20mm^3$) - including the reference. This reduces any lag issued when the scanner is used in an environment with a high rate-of-change of the static pressure.

nanoDaq-LT Specifications

Number of channels	16
Data output.	CAN and Ethernet (TCP/IP and UDP)
System accuracy* (Range = 35 kPa / 5 psi)	± 0.1% Full Scale
System accuracy* (Range = 17 kPa / 2.5 psi)	± 0.2% Full Scale
System accuracy* (Range = 7 kPa / 1 psi))	± 0.5% Full Scale
System accuracy* (absolute measurement)	± 0.04% Full Scale
Resolution	16 bit or ±range / 65536
Absolute range	15,000Pa to 115,000Pa (2.2 psia to 16.8 psia)
Proof pressure	50 psig (64.5 psia)
Dimensions (width x depth x height in mm)	59.5 x 27 x 12.5 excluding tubulations
Weight	37g
Enclosure sealing	IP67
Maximum acquisition Speed (measurements / channel / second).	180
Input supply	8-25 VDC
Power consumption	1VA Max
System resolution	16 Bit
Operating temperature range	-40 to+90°C
Storage temperature range	-40 to+90°C
Ethernet specification	Auto-negotiating 100Mbit TCP/IP or UDP (user configurable)
Time stamping	IEEE 1588 PTPv2
CAN specification	2.0 B
Mating connector	9-way micro-miniature 'D' type (suggested mate : Glenair MWDM2L-9PSL - solder cup version)
Pnuematic connections	17 x 1.0mm (0.040") bulged tubulations x 6.5mm long
Internal pneumatic volume (each channel, including reference)	20mm^3 including tubulation

60.0mm

17.6mm

54.8mm

12.5mm

27.0mm

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