



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

The nanoCAT-LTR is a fully configurable smart pressure scanner that will output pressure data in engineering units over EtherCAT and CAN.

The use of EtherCAT gives the user the following advantages:

[1] Increased bandwidth. EtherCAT is many times more efficient than Ethernet making the acquisition of high speed data from multiple units much more straight forward.

[2] Non-vendor specific protocol. As the nanoCAT-LTR adheres to the EtherCAT standard, no special code needs to be written in order to interface with it.

[3] Integrated time stamping. The EtherCAT protocol includes a distributed clock that time stamps the data to within $\pm 20\mu\text{s}$

[4] Network topology independent. EtherCAT is insensitive to network topology and the units are designed to be daisy-chained in loop or star configuration.

The nanoCAT-LTR makes use of 66 absolute transducers which are thermally compensated and conditioned to provide 64 either absolute or differential measurements relative to one reference port per bank of 32 channels. The user can configure the nanoCAT-LTR-64 to use one reference port for each 32 channels, one for all 64 channels or the average of both references for all 64 channels.

The nanoCAT-LTR can be configured over Ethernet by using its embedded web server. To boot the nanoCAT-LTR in Ethernet mode, a link plug is connected to the EtherCAT out connector when the nanoCAT-LTR is powered on. When the link is removed and the nanoCAT-LTR re-started, it will boot into its default EtherCAT mode.

The nanoCAT-LTR is contained within a miniature package which is sealed to IP67 enabling it to be used in harsh environments. It features two removable top plates than can be ordered with straight or angled (at 60°) 1mm (0.040") tubulations

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

nanoCAT-LTR-64

64 Channel EtherCAT Pressure Scanner

- 64 channel intelligent EtherCAT pressure scanner module with engineering unit output.
- User selectable absolute or differential measurement
- Up to 0.04% FS accuracy output.
- Thermally compensated from -20 to 90°C
- Output over EtherCAT and CAN.
- Rugged enclosure for on-vehicle applications. Sealed to IP67
- Fully configurable over Ethernet with embedded web server.
- Manifold mount with optional tubing plates (straight and angled tube versions available).

General

Ranges Available	1, 2.5, 5, 7, 10, 17 and 35 kPa
Number of channels	64
Maximum Acquisition Speed (measurements / channel / second)	200

Data Output

Output formats	CAN and EtherCAT
EtherCAT	EtherCAT slave compliant with EtherCAT Technology Group (ETG) standards
CAN Specification	2.0B

Performance

Differential Ranges	
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
Absolute Ranges	
15 to 115 kPa (2.2 to 16.8 psia) for differential ranges ≤ 35 kPa (5psi)	0.04% FS
13 to 160 kPa (1.885 to 23.2 psia) for differential ranges = 55 kPa (8psi)	0.04% FS
Reference pressure range	13 kPa to 160 kPa (1.89 psia to 23.2 psia)
Line pressure effect	Negligible
Proof Pressure (all ranges)	50 psig (64.5 psia)
Output Resolution	16 bit or ±range / 65536
System Resolution	24 bit

Mechanical

Dimensions	77 x 50.9 x 14.9mm
Weight (16 Channel / 32 Channel)	90g (115g with 2 x tubing plates)
Enclosure Sealing	IP67
Measurement ports	66 x 1.0 mm (0.04") bulged tubulations

Power Supply

Input supply	8-25 VDC
Power consumption	1VA Max
Electrical Connector	2 x Souriau 8STA0-06-9PN

Environment

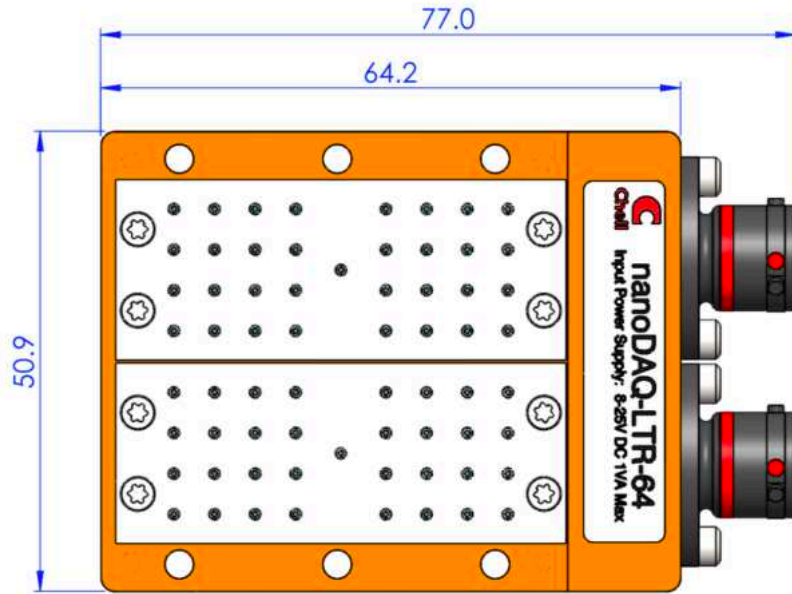
Operating Temperature Range	-20 to +90°C
Compensated Temperature Range	20 to 90°C (optional -20 to +90°C)
Storage Temperature Range	-20 to +90°C
Ambient Pressure	100 mbar abs (52,000 ft) to 2.5 bar abs
Vibration	Engine standard vibration test to DO160E category S, curve W with duration of 1 hr/axis. Fan blade (20 g 2 kHz)
Shock	Fan blade out to DO160F section 7 (40g 11 m/s)
Maximum relative humidity	95% at 50°C (non-condensing)

Timing / Data Synchronisation

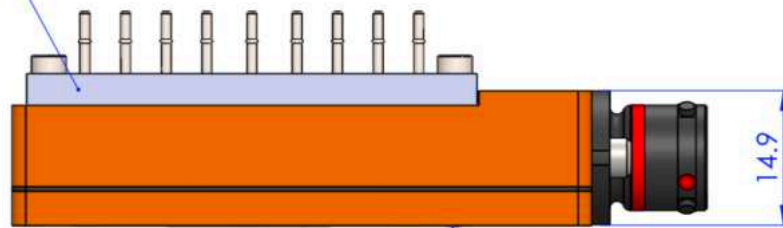
Time Stamping	EtherCAT
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* Accuracy figure includes nonlinearity, hysteresis, non-repeatability and thermal gain error over the full operating temperature range.

Dimensions



2 x REMOVABLE MANIFOLDS



- STATUS LEDS
- LINK / ACTIVITY IN
- LINK / ACTIVITY OUT
- STATUS
- RUN
- FUNC

