The nanoDAQ-LTC is a further development of the nanoDAQ-LT series.

The LTC is designed for applications where small size and light weight are a priority. The LTC doesn't sacrifice any of its features and retains its class leading performance.

nanoDAQ-LTC

8 and 16 Channel Ultra Miniature Digital Pressure Scanner

- **8 and 16 channel Intelligent pressure scanner module with CAN engineering unit output**
- **Uses CAN-FD and 'classic' (2.0B) CAN**
- **User selectable absolute or differential measurement.**
- **Up to 0.04% FS accuracy output.**
- **Ultra-miniature design - smallest intelligent pressure scanner available.**
- **Thermally compensated from 0 to 90°C (-20 to 90°C optional)**
- **Light Weight.**
- **Full configuration and output over CAN.**
- **Rugged enclosure for on-vehicle applications. Sealed to IP67**
- **Fully configurable over Ethernet with embedded web server (using optional daughter board).**

The LTC is primarily a CAN device and as such, it can be fully configured over CAN. The LTC can use CAN-FD or 'classic' CAN 2.0B. It retains the ability to add Ethernet communications (via optional daughter board) and therefore access to the inbuilt web server. This functionality is required during the in-depth calibration processes that take place during manufacture.

The LTC is a fully configurable smart pressure scanner that will output absolute or differential pressure data (or in the case of the 8LTC, a mixture of both absolute and differential) in engineering units over CAN.

The 16LTC makes use of 16 absolute transducers which are thermally compensated and conditioned to provide 16 absolute or 15 differential measurements relative to one (selectable) reference port. For the 8LTC, 9 absolute or differential channels are available, the differential measurements being relative to the 9th reference channel.

The nanoDAQ-LTC features some advanced diagnostic information available over CAN. It will broadcast a status message every 500mS containing such information as firmware version, serial number, hardware version, detected CAN errors etc.

The nanoDAQ-LTC is contained within a miniature package which is sealed to IP67 enabling it to be used in harsh environments. The nanoDAQ-LTC is supplied with a flying lead containing two twisted pairs. Please see the last page of the data sheet for cable and sleeving details.

Chell Instruments Ltd.
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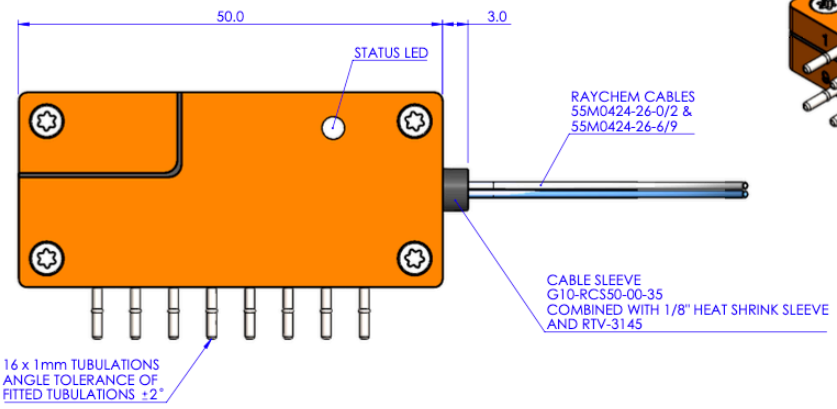
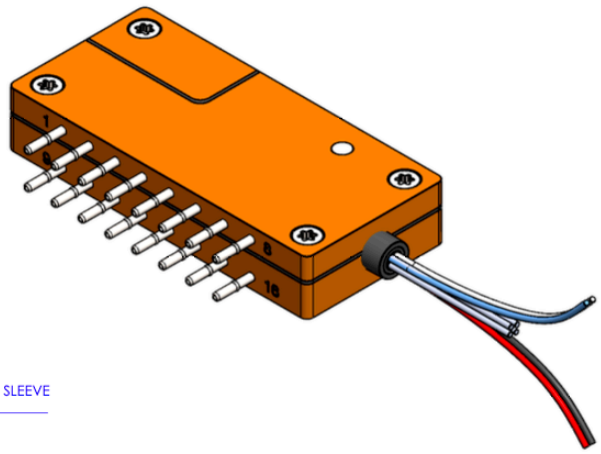
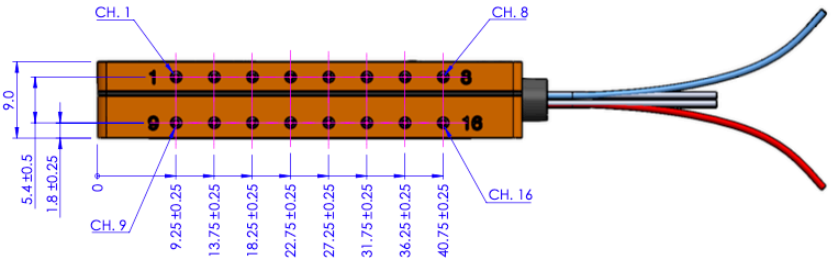
	nanoDAQ-LTC-8	nanoDAQ-LTC-16
General		
Ranges Available	See below	
Number of channels	9 absolute, 8 differential	16 absolute, 15 differential
Maximum Acquisition Speed (measurements / channel / second)	200	
Data Output		
Output formats	CAN and Ethernet (via optional daughter board)	
Ethernet Specification	100Mbit TCP/IP or UDP (user configurable)	
CAN Specification (DC Powered version only)	'Classic' 2.0B and CAN-FD (user configurable)	
Performance		
Absolute Ranges		
Standard (range code = 01)	0 to 1310.72 mbar (0.02mbar per bit) : accuracy 0.04% FS*	
Optional [1] (range code = 02)	150 mbar to 1200mbar : accuracy 0.04% FS*	
Optional [2] (range code = 03)	130 mbar to 1600mbar : accuracy 0.04% FS*	
Optional [3] (range code = 04)	600mbar to 1100mbar : accuracy 0.04% FS*	
NOTE : The absolute range can be customised to the users requirements by using the web server interface.		
Differential Ranges		
Range = 35 kPa / 5 psi for range codes 1 and 3	accuracy ± 0.1% Full Scale*	
Range = 14 kPa / 2 psi for range codes 2 and 4	accuracy ± 0.2% Full Scale*	
Proof Pressure (all ranges)	50 psig (64.5 psia)	
Output Resolution	16 bit or ±range / 65536	
System Resolution	24 bit	
Mechanical		
Dimensions	34.1 x 32.5 x 9 excluding tubulations	50 x 23 x 9 excluding tubulations
Weight (16 Channel / 32 Channel)	15g (excluding cable and sleeving)	17g (excluding cable and sleeving)
Enclosure Sealing	IP67	
Measurement ports	9 x 1.0 or 1.6mm tubulations	16 x 1.0 mm (0.04") tubulations
Power Supply		
Input supply	8-25 VDC	
Power consumption	1VA Max (55 to 60mA at 12 VDC)	1VA Max (56 to 68mA at 12 VDC)
Electrical termination	See part number section	
Environment		
Operating Temperature Range	-20 to +90°C	
Compensated Temperature Range	0 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)	

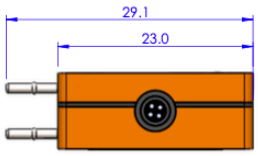
*** Accuracy figure includes non-linearity, hysteresis, non-repeatability and thermal gain error over the full operating temperature range.**

nanoDAQ-LTC-16 Dimensions



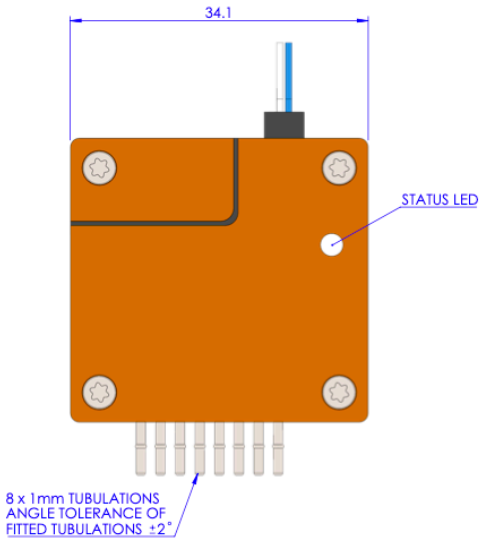


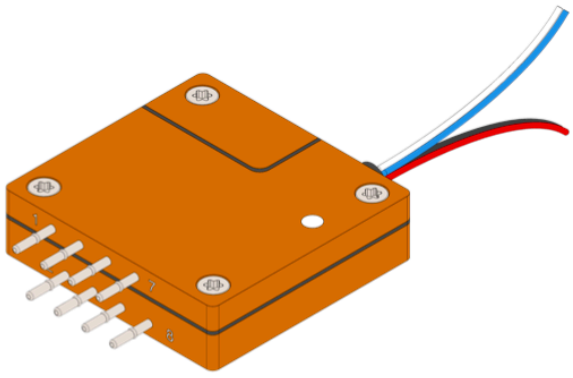


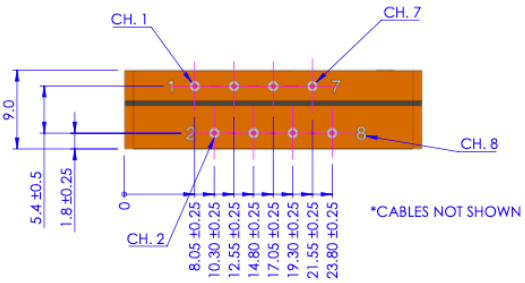


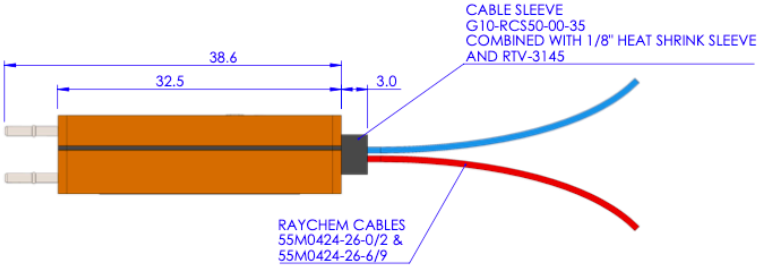
WIRING DETAILS	
RED	V SUPPLY (+)
BLACK	V COM (-)
WHITE	CAN HIGH
BLUE	CAN LOW

nanoDAQ-LTC-8 Dimensions









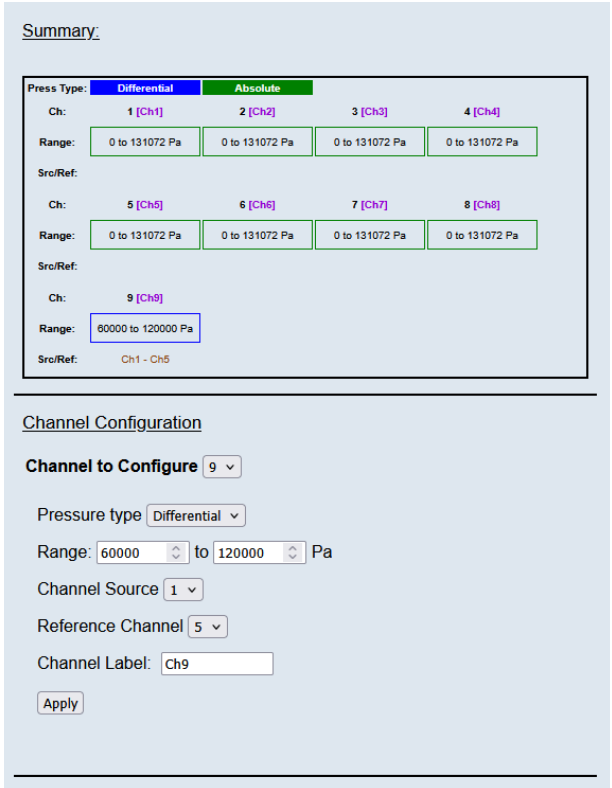
Mixed Absolute and Differential Ranges

The 8 channel LTC is available with code that allows the user to mix absolute and differential measurements on one scanner. The user has the ability to configure each channel to be asbsolute or differential to another reference channel. All 9 channels on the 8LTC can be configured this way.

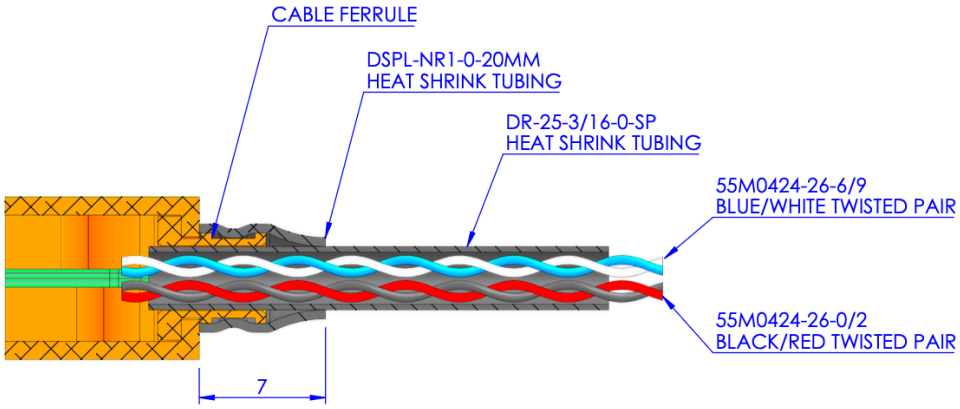
The minimum and maximum scaling values can be set for each absolute and differential channel up to the maximum absolute pressure as defined in the AA range code.

This configuration can be carried out with the on-baord web server (via the optional Ethernet daughter board) or via CAN command.

All 9 channels on the 8LTC can be configured this way giving a maximum of 9 absolute channels, 8 differential or a mixture of the two.



Cable Exit Detail



Part Number:

8LTC -AABBCCDDEEFF - 8 channels (9 with reference)

16LTC -AABBCCDDEEFF- 16 channels

AA = Range
01 = 1310.72 mbar (0.02mb/bit)
02 = 150 mbar to 1200mbar
03 = 130 mbar to 1600mbar
04 = 600mbar to 1100mbar
05 = Mixed to 1200mbar (8LTC only)
06 = Mixed to 1600mbar (8LTC only)
07 = Mixed to 1100mbar (8LTC only)

BB = Calibrated Temperature Range
01 = 0 to 90°C
02 = -20 to 90°C

CC = Tubulation size
01 = 1mm
02 = 1.6mm (8LTC only)

DD = Cable Type
01 = 55MO424-26 (500mm)
02 = User supplied

EE = Sleeving Type
01 = DR-25-3/16-0-SP (Fuel resistant) (480mm)
02 = User supplied / specified
03 = none

FF = Heat Shrink / Boot Type
01 = DSPL-NR1-0-20MM (7mm)
02 = User supplied / specified
03 = none