



## nanoDAQ-LTM-16

### 16 Channel Digital Pressure Scanner with Manifold Mount

- **16 channel 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 -20 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.**
- **Manifold mount for direct connection to measurement structure.**

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

The nanoDAQ-LTM is now available in 16 channel slim-line package featuring the Souriau 8STA connector making it suitable for motor sport applications.

The nanoDAQ-LTM 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-LTS's sister products; the nanoDAQ and the MicroDaq.

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

For absolute or differential operation, the 17th channel can be configured to be transmitted in an option additional CAN message together with the unit temperature and firmware version.

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-LTM 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-LTM also features a hardware trigger allowing the pressure acquisition to be synchronised to an external TTL pulse.

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

**General**

Ranges Available	1, 2.5, 5, 7, 10, 17 and 35 kPa
Number of channels	16
Maximum Acquisition Speed (measurements / channel / second)	200

**Data Output**

Output formats	CAN and Ethernet (TCP/IP & UDP), IENA
Ethernet Specification	100Mbit TCP/IP or UDP (user configurable)
CAN Specification (DC Powered version only)	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	79 x 31 x 15.2mm
Weight (16 Channel / 32 Channel)	42g
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	Souriau 8STA0-06-9PN

**Environment**

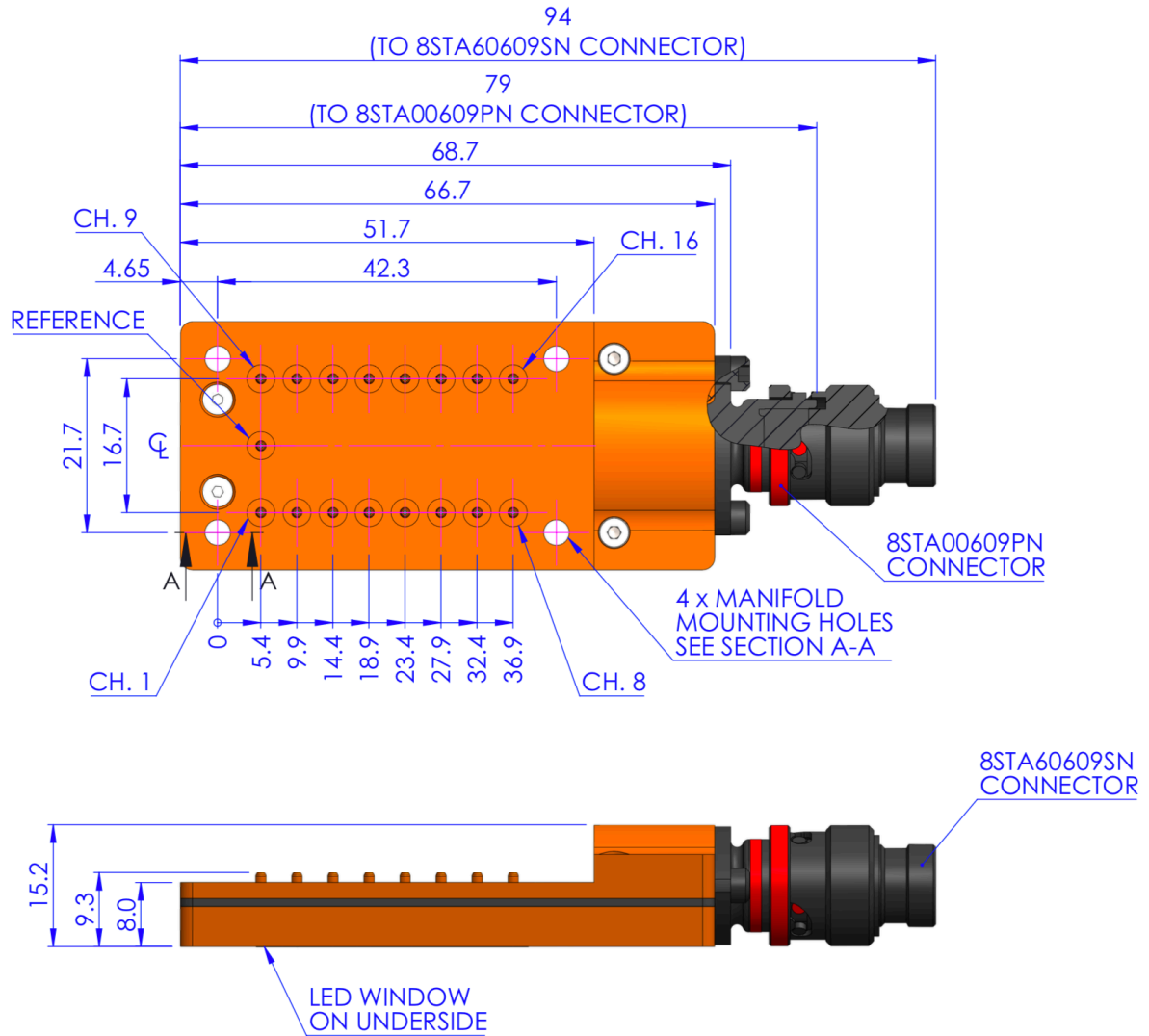
Operating Temperature Range	-20 to +90°C
Compensated Temperature Range	20 to 90°C (optional -20 to +90°C)
Storage Temperature Range	-20 to +90°C
Ambient Pressure	100 mbar abs (52,000 ft) to 2.5 bar abs
Vibration	Engine standard vibration test to DO160E category S, curve W with duration of 1 hr/axis. 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	IEEE 1588 PTPv2
Time Stamping Resolution	1µs
Hardware Trigger	5 V TTL pulse, maximum 400 Hz, minimum 2 Hz

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

Dimensions



CONNECTOR PIN OUT:

1. TX+
2. RX+
3. TRIGGER IN
4. +8-25v SUPPLY
5. 0v
6. CAN H
7. CAN L
8. TX-
9. RX-