



nanoCAT-LTS-32

32 Channel Low Cost Miniature EtherCAT Pressure Scanner

- **32 channel intelligent EtherCAT 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 EtherCAT and CAN.**
- **Rugged enclosure for on-vehicle applications. Sealed to IP67**
- **Fully configurable over Ethernet with embedded web server.**



The nanoCAT-LTS-32 is a new development by Chell Instruments utilizing the latest technology in digital transducers.

The nanoCAT-LTS-32, like its sister product; the nanoCAT-LTR-64, 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-LT 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-LTS-32 makes use of 33 absolute transducers which are thermally compensated and conditioned to provide 32 either absolute or differential measurements relative to the reference port.

The nanoCAT-LTS-32 is contained within a miniature package which is sealed to IP67 enabling it to be used in harsh environments. It features 33 x 1mm (0.040") bulged tubulations for the pneumatic interface.

To reduce the package size, the nanoCAT-LTS-32 features a single connector for both the EtherCAT in and EtherCAT out.

Configuration of the nanoCAT-LTS-32 is carried out by using the embedded web server. When the unit is powered up with a link in place on the connector, it will boot up in Ethernet mode to facilitate configuration. When this link is removed, the nanoCAT-LTS-32 will boot up in EtherCAT mode ready to communicate with an EtherCAT master.

The transducers within the nanoCAT-LTS-32 have a very high proof pressure (50psig, 64.5 psia) which substantially reduces the chances of in-field transducer damage.

nanoCAT-LTS-32 Specifications

Number of channels	32
Data output.	CAN and EtherCAT
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 \pm range / 65536
Absolute range	15,000Pa to 115,000Pa (2.2 psia to 16.8 psia)
Optional extended absolute range	13,700Pa to 152,000Pa (2 psia to 20 psia)
Proof pressure	50 psig (64.5 psia)
Dimensions (width x depth x height in mm)	72.6 x 36 x 14.1 excluding tubulations
Weight (16 / 32 channel)	40g (est)
Enclosure sealing	IP67
Maximum acquisition Speed (measurements / channel / second).	200
Input supply	8-25 VDC
Power consumption	2VA Max (est)
System resolution	16 Bit
Operating temperature range	-40 to+90°C
Storage temperature range	-40 to+90°C
Maximum relative humidity	95% at 50°C (non-condensing)
EtherCAT	EtherCAT slave compliant with EtherCAT Technology Group (ETG) standards
Time stamping	IEEE 1588 PTPv2
Time stamping resolution	1 μ S
CAN specification	2.0 B
Electrical connector	15 way Male Micro-D (Glenair MWDM2L-15PS)
Pneumatic connections	33 x 1mm (0.040") Bulged Tubulations
* Accuracy figure includes nonlinearity, hysteresis, non-repeatability and thermal gain error over the full operating temperature range.	

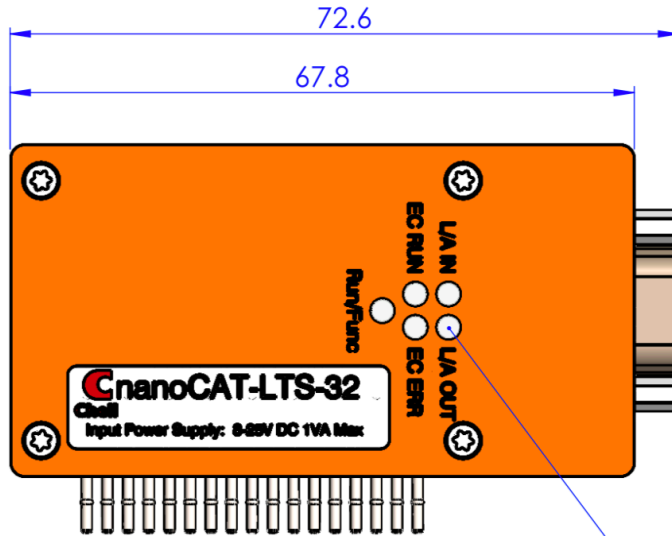
nanoCAT-LTS-32-Connector Details

Input connector – mates with 15-way Male Micro-D connector (Glenair MWDM2L-15PS)

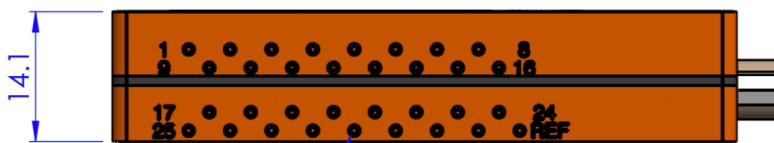
Pin	Name	Name	Pin
1	0V (COM)	+24V SUPPLY	9
2	CAN L	0V (COM)	10
3	CAN H	Mode	11
4	Trigger IN (5V TTL)	EtherCAT1 TX+	12
5	EtherCAT0 TX+	EtherCAT1 TX-	13
6	EtherCAT0 TX-	EtherCAT1 RX+	14
7	EtherCAT0 RX+	EtherCAT1 RX-	15
8	EtherCAT0 RX-		

Leave MODE pin unconnected for default EtherCAT operation.

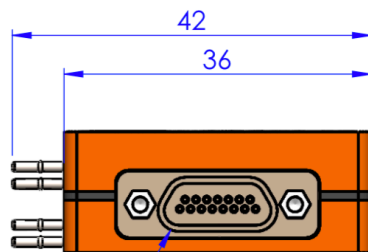
Connect MODE pin to 0V COM to boot device in Ethernet mode on port 0.



- STATUS LED'S
- LINK / ACTIVITY IN
 - LINK / ACTIVITY OUT
 - EC RUN
 - EC ERR
 - RUN/FUNC



32 x PRESSURE CHANNELS
1 x REFERENCE CHANNEL



15 WAY D TYPE
CONNECTOR

