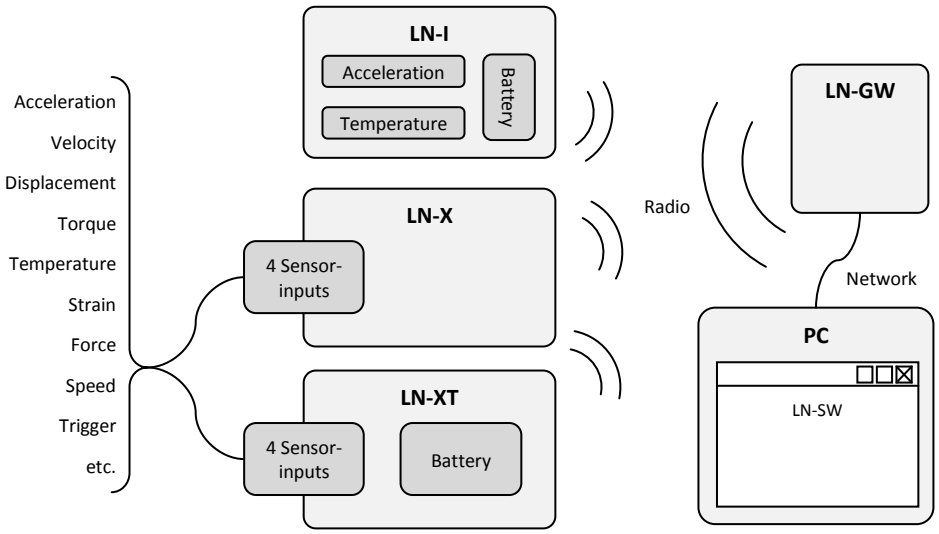
TEDIASENS LOGGING NODES

Wireless measurement systems

Self-sufficient long-term monitoring of measures

draft product information

System overview



TEDIASENS systems are used for wireless measuring data transmission and data logging for industrial and geostationary applications. In addition to the TEDIASENS systems type SN-I and SN-X, used for synchronous data logging typically for short measurement times with online evaluation, there are now LOGGING NODE systems available for long-term monitoring with radio connection.

LOGGING NODE measurement systems are used for different measures depending on the type of internal and external sensors. The measured data can be monitored and recorded continuously or periodically over a period of several years. Selected measured data, alarms and preprocessed signals are transmitted to the gateway via radio which provides the data within the network.

Compared to other measurement systems LOGGING NODES provides the following advantages:

- Easy Installation
- Connection via radio
- Power supply with battery possible
- No or low cabling effort
- Operation without gateway possible

Application areas

LOGGING NODE systems are used wherever measures have to be monitored in the long-term.

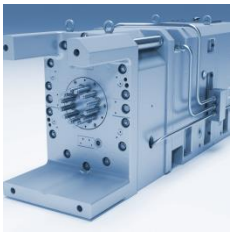
Machine monitoring

LOGGING NODES allow an easy long-term condition monitoring of existing machines with minimal intervention. Thus, maintenance can be planned better and unexpected failures can be avoided.

LOGGING NODES are used for example in manufacturing or energy production.

LOGGING NODE systems measure vibration and other dynamic parameters of machines periodically or continuously over a long time period. Based on this characteristic signals are calculated to provide information about the machine state over time.

- Bearings
- Gears
- Turbines
- Pumps
- Blowers
- Electric motors & generators
- Combustion engines




Monitoring of structures

LOGGING NODE systems are used in different application areas for monitoring structures:

- Measurement of vibrations
- Detection of changes in the building structure
- Detection of critical Situations

LOGGING NODES are operated fully independently and without external power supply. The sensors are monitored continuously. In the case of exceeding user defined threshold values, measurement values will be stored and alarms can be triggered.

- Bridges
- Dams
- Towers
- Tunnels
- Railway structures
- Cultural heritage
- Power plants
- Industrial plants




Types of Nodes

The LOGGING NODE product portfolio includes various node types, each designed for different usage scenarios.

LN-I: LOGGING NODE with internal sensors

- Periodic monitoring in adjustable time intervals
- Integrated sensors:
- Piezo acceleration sensor (0,3 Hz – 10 kHz)
- Position sensor
- Temperature sensor
- Internal battery for operating times of 2 – 10 years
- Vibration trigger to trigger measurement cycles
- Memory for up to 4 million measurement values
- Very compact dimensions: 50 x 50 x 20 mm³

LN-X: LOGGING NODE with external sensors

- Continuous monitoring of sensor signals
- Triggering of measurements by trigger events and threshold violations
- Pre-trigger: recording of signal development before trigger event possible
- Internal temperature sensor
- Up to 4 inputs for external sensors
- Flexibility though input modules for different sensor interfaces
- Compact dimensions: 100 x 100 x 20 mm³

LN-XT: LOGGING NODE with external sensors and power supply

As LN-X, but additionally:

- Internal battery to power the measurement node and connected sensors
  - Battery life depending on sensors: 1 – 3 years
- Optional internal sensors possible:
  - Geophone
  - Acceleration sensor
  - Tilt sensor
- Optional modules possible:
  - Cellular radio connection
  - GPS for time synchronization
- Solid industrial-standard housing made of die-cast aluminium
- Dimensions: 220 x 120 x 80 mm³

Logging Node comparison

	TEDIASENS LN-I	TEDIASENS LN-X	TEDIASENS LN-XT
Type of monitoring	periodically	continuously	
Integrated sensors	acceleration piezoelectric, position, temperature	temperature	temperature, (optional: geophone, acceleration, piezoelectric / MEMS, tilt
External measurement channels	-	Up to 4	
Interfaces external channels		0…5 V, ±5 V, 0…10 V, 4-20 mA, R-measurement bridge, digital	
Data acquisition		≤40 kHz, 16-Bit	
Memory	Up to 4 million measurement values	Up to 4 billion measurement values (microSD card)	
Mesurement trigger	Schedule, vibration, radio*	Schedule, exceeding of thesholds, radio	
Radio interface		2,4 GHz IEEE 802.15.4	
Power supply	Internal battery	10-30 V	Internal battery
Security type	IP54, auf Anfrage bis IP67	IP53 / IP54	IP67
Dimensions	50 x 50 x 20 mm³	100 x 100 x 80 mm³	220 x 120 x 80 mm³

Other components

LN-GW: Gateway für LOGGING NODES

- Management of radio network
- Storage of measured values
- Top hat rail mounting
- Network connection: Ethernet / WLAN / cellular possible

LN-R: Repeater für LOGGING NODES radio interface

- Extension of radio range
- Creation of subnetworks

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