TEDIASENS

Wireless Metrology

fast, synchronous data acquisition

Q1/2016

ELOVIS

Product Information

The multi channel wireless data acquisition system TEDIASENS offers the following main features:
– recording of signals from several sensors
– synchronous data sampling
– wireless data transmission via WLAN
– power supply by mains or accumulator
– controlable by any analysis software

Applications

TEDIASENS is especially suited for mobile applications in the field of service, machine diagnostics, field and object measurement. By the use of TEDIASENS the following measurement and analysis tasks can be solved easily:
– vibration analysis
– predictive maintenance
– modal and structural testing
– sound-engineering

Sensors to be connected

TEDIASENS is designed for the connection of:
– vibration and acceleration sensors
– speed, force and tension sensors
– microphones and displacement sensors
– pressure, flow and temperature sensors
– light barriers and trigger sensors

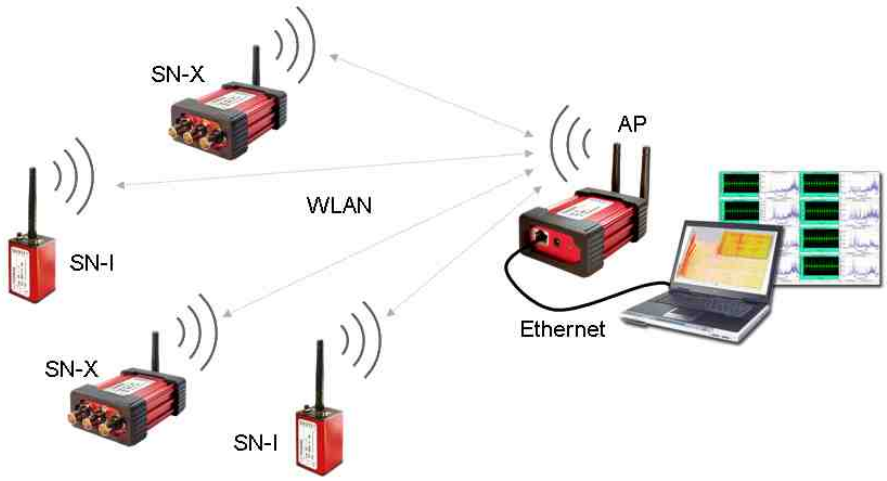
Benefits

Compared to wire-bound data acquisition TEDIASENS offers the following advantages:

Saving of time:
- no cables, thus fast sensor installation
Lower transportation costs:
- equivalent of 1 km cables in your hand luggage
Increase of industrial safety:
- avoid cables and humans in danger areas
Avoidance of production downtimes:
- no downtimes caused by laying cables

The advantage of TEDIASENS compared to conventional wireless data acquisition systems is the combination of the following features:

Synchronous data aquisisition:
- synchronicity between nodes 1 µs (standard deviation)
Multi location, multi channel capability:
- up to 40 nodes, 3 channels each
Minimum size and weight:
- SN-I base area only slightly bigger than standard triaxial acceleration sonsor
Optimum radio range:
- radio range 138 m free field 802.11g
Self sufficient operation:
- accumulator lasts 7-9 h
High dynamic and high sample rate:
- 24 bit at 13 kSmples/s sample rate



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TEDIASENS SN-X — for arbitrary sensors

- 3 analog measurement channels
  - dynamic: 24 bit
  - sample rate: up to 13 kHz
- almost any sensor can be connected
- AC/DC coupling selectable via software
- IEPE (ICP) excitation configurable via software
- input range configurable via software
- powered by mains or accumulator
- accumulator lasts 7-9 h and longer

TEDIASENS SN-I — 3-axis acceleration sensor

- applicable for vibration analysis
- wireless 3-axis industrial acceleration sensor
  - dynamic: 24 bit
  - sample rate: up to 13 kHz
  - range: ± 10 g (± 100)
  - broadband noise: 1 mg (peak-peak)
- powered by mains or accumulator
- accumulator lasts 7-9 h and longer
- screw or magnet mounting available

TEDIASENS Accessories

TEDIASENS USB-AP and AP RUGGED
- access Point for data acquisition

TEDIASENS EXTENSION POWER PACK
- increased battery life

TEDIASENS SN-X-LEMO
- signal input via LEMO plug-in connector

TEDIASENS SN-X-FIX
- mounting accessories for SN-X and SN-I-3ACC

TEDIASENS GUI
- Labview based User Interface Software
- PC/laptop single license

TEDIASENS DRIVER
- Driver DLL to control the system
- DLL and documentation for the implementation in existing measuring software including standard support via telephone or email, for the implementation process (12 h)

Specifications

TEDIASENS SN-X and SN-I			
Parameter	Unit	Value	Remark
Analog Input			
ADC resolution	bit	24	2)
Sample rate	Hz	13000	2)
Jitter	µs	1	standard deviation
3-Channel		simultaneous	
Data Transmission			
Data rate per sensor node	Mbit/s	1	
Sensor nodes per system		≤ 40	3)
Range (isotopic)	m	138	4)free field 802.11g
Power Supply		optional accumulator or mains	
Accumulator technology		Li-Ion	
Accumulator charge	mAh	2600	
Measuring time	h	7-9	3) 4)
Charging voltage	V	4.25-5.5	
Charging time	h	≤ 3	4)
User interface			
Input		1 button	on/off, display state
Display		4 LEDs (red/green/yellow)	WLAN, Accum. state
Antenna connector		RP-SMA	
Power connector		Binder 707 M5x0.5	

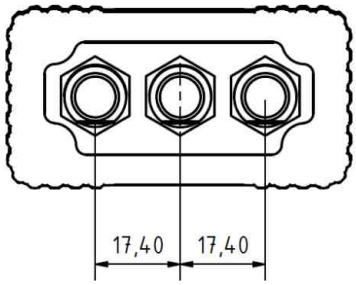
TEDIASENS SN-X			
Connector		BNC	optional others available
IEPE Excitation	V	18	1) 2)
	mA	2	1) 2)
Input Range	V	± 1; ± 10	1) 2)
Bandwidth	Hz	DC/0.4-8600	1) 2) -3dB
SNR_{RMS}	dB	109.5	Broadband
Dimensions	mm^3	114.1 x 63.5 x 30.0	
Weight	g	270	incl. accum., antenna
IP-Class		IP64	optional IP67
Mounting		mounting flanges	optional

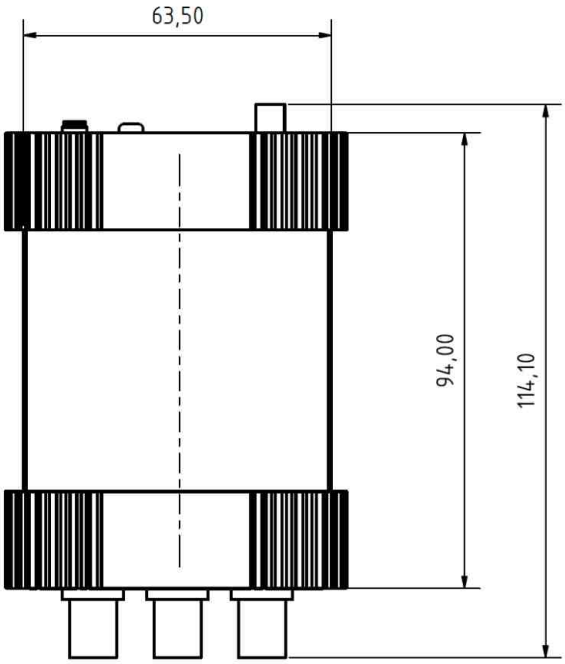
TEDIASENS SN-I			
Range	g	± 10 (± 100)	
Broadbrand noise	mg	1,7	RMS at 13 kS/s
Bandwidth	Hz	DC/1-8000	1) 2) -3dB
Dimensions	mm^3	40 x 40 x 82	
Weight	g	220	
IP-Class		IP67	

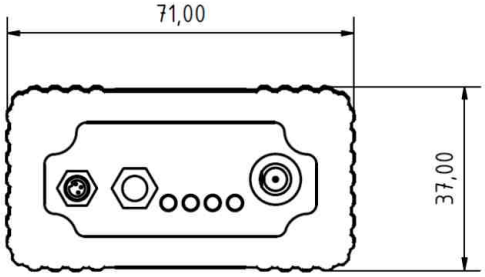
1) Hardware selectable (done by ELOVIS)
2) Software selectable
3) Depending on sample rate, resolution and selected channels
4) Proved by design

Dimensions

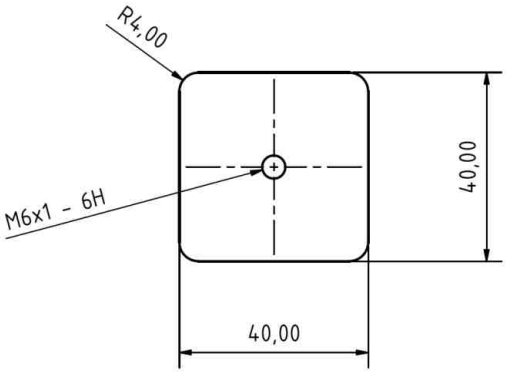
SN-X

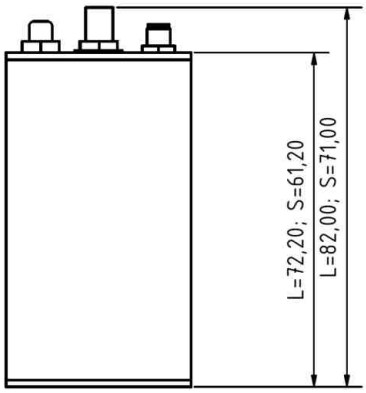






SN-I





all dimensions in mm

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