

SMART ACOUSTIC SENSOR



Soft dB

Sound and Vibration Experts

ACOUSTICS & OVERPRESSURE MEASUREMENT

A WORLD FIRST

The only sensor that measures both acoustics and overpressure simultaneously. Powered by Soft dB's unique and cutting-edge technology (patent pending). One device, as opposed to two, equates to half the maintenance and half the cost; the perfect solution for mines and blasting activities.



CLASS 1 SOUND LEVEL METER

Only the Best

Designed to meet and exceed the highest standards in acoustic performance. Class 1 certification pending.



AUTOMATED SENSOR CHECK

Stop Worrying About the Quality of Your Data

Verify the precision of acoustics and overpressure remotely with an automated sensor check. No site visits, no wasted time. Ensure full confidence in the quality of your data.

1/3 OCTAVE FROM 6 HZ TO 20 KHZ

Need to Measure Wind Farms? Now You Can

Class 1 requires 20 Hz to 20 kHz? That's cute. The capabilities of the SAS can go far beyond this. With infrasound included, no extra sensor is needed, giving you native dBG metrics. Because the reality is, serious monitoring shouldn't just stop where the standard does.

SIMPLIFIED LAB CALIBRATIONS

Easy Maintenance

Our sensor is smart. All signal processing and calibration certificates are embedded within the sensor. This means that for every lab certification, only the sensor is required for calibration, not the entire station. Easy maintenance saves you time, complexity, and money.

LONG-TERM MONITORING AND SHORT-TERM MEASUREMENTS

One Sound Level Meter for Both Short-Term and Permanent Environmental Use

The SAS is a universal sensor designed for both short-term measurements and long-term environmental monitoring. Simply connect your SAS into a computer for short-term sound level measurements, or straight into any Soft dB monitoring station for long-term monitoring. Universally economical and versatile, meeting any project requirement.

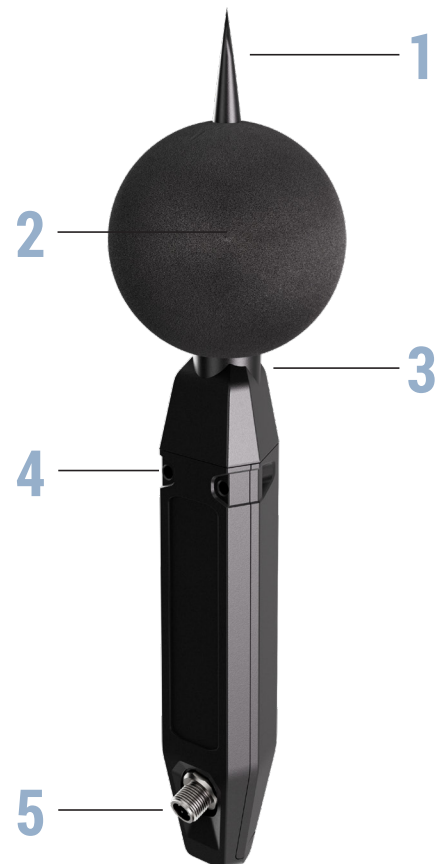


MECHANICAL HIGHLIGHTS

BUILT FOR LONG-TERM ENVIRONMENTAL MONITORING

The SAS is strategically designed to allow for easy onsite deployment, deliver high-quality data, and withstand harsh environmental conditions.

- 1** Bird spike (optionally removable for short-term use)
- 2** Wind screen & full microphone environmental protection
- 3** Top cover secured with magnetic attachment for easy field maintenance
- 4** Simplified installation with 5 anchor points
- 5** M12 connector for digital signal transmission (up to 100 meters of cable)



THE SAS

SMART ACOUSTIC SENSOR IS A PRECISE, RUGGED AND VERSATILE EMBEDDED SOUND LEVEL METER

Easy Field Deployment

- Single sensor for Sound Level Meter (SLM) and Blast Overpressure (OPL)
- Automatic Sensor Check with GRAS Syscheck2
- Rugged and Compact Form-Factor
- Digital communication avoiding electrical interferences
- Up-To 100m cable length
- Embedded field-calibration record and calibration certificate
- All-weather protection

Sound Level Meter (SLM)

- Complies to IEC 61672/ANSI S1.4 Class 1
- 48kHz, 24-bit signal processing
- 117 dB total dynamic range
- Leq, Lmax, Lmin, Lpeak, and SEL in A, C, Z, and G weightings
- 10 Percentiles (LN%) for selected weighting (A, C, Z, or G)
- LAFtm5 (TaktMaximal) for impulsive content
- 1/3 Octave (6.3Hz to 20kHz)
- FFT spectrum
- Simultaneous recording of data and time signal
- Infrasound 1/3 octave and G weighting for windfarm noise monitoring

Overpressure Level Meter (OPL)

- Complies to ISEE and AS 2187.2
- 1.5kHz, 24-bit signal processing
- Simultaneous recording of data and time signal
- Time signal with adaptative dynamic compression



TECHNICAL SHEET

COMPONENTS

PRODUCT CODE	
SASK-00004	Smart Acoustic Sensor with 50 mV/Pa microphone
SASK-00002	Smart Acoustic Sensor with 50 mV/Pa microphone with Syscheck
SASK-00003	Smart Acoustic Sensor with 12.6 mV/Pa microphone
INCLUDED COMPONENTS	
SASA-00004	Replacement Windscreen for SAS
SASA-00002	Replacement Birdspike
SASA-00006	SLM Certificate for SAS
SASA-00007	OPL Certificate for SAS
RECOMMENDED ACCESSORIES	
PCAB-00006	M12 Cable, 4-Conductor, Female-Male, 10m (can be daisy-chained up to 100m)
PCAB-00112	USB-to-RS485 Adapter
PCAL-00012	SLM Calibrator, Class 1
QUIN-00145	Dielectric grease for cable connections

GENERAL SPECIFICATIONS

INPUT	
Dynamic Range	Low-Range: 2.0 Vpk, High-Range: 8.0 Vpk
Conditioning	IEPE, 4mA
TEDS support	YES
SAMPLING	
Rate	48 kHz
Resolution	24-bit
COMMUNICATION	
Protocol	RS-485 Half-Duplex, 3Mbps
Connector	M12, 4-Conductor, Male
ENVIRONMENTAL	
Operating Temperature	-40 °C to 50 °C
Storage Temperature	-50 °C to 70 °C
Certified to	IP54 in vertical position (rain protected)
POWER	
Power	0.6 W
Operating Voltage	5 V
PHYSICAL	
Height (with bird-spike)	312 mm (12-9/32")
Width (without windscreen)	41 mm (1-5/8")
Width (with windscreen)	80 mm (3-5/32")
Weight	350g (0.77lb)
Mounting	¼-20 threaded hole (1X bottom, 2X side) and 2x 4.9 mm pass-through holes for #8 screws

TECHNICAL SHEET

DYNAMIC SPECIFICATIONS

MICROPHONE	SASK-00001	SASK-00002	SASK-00003 ¹
Sensitivity (mV/Pa)	50.0	50.0	12.6
Syscheck2	NO	YES	NO
SLM DYNAMIC RANGE (LOW – HIGH RANGE)			
Peak Maximum Level (dBZpk)	125-137		137-149
Under-Range Level (dBA)	30-42		42-54
Electrical Noise Level (dBA)	20-32		32-44
Total Noise Level (dBA)	22-32		34-44
OPL DYNAMIC RANGE (LOW – HIGH RANGE)			
Peak Maximum Level (dBZpk)	125-137		137-149
Under-Range Level (dBZpk)	100-100		100-100
Total Noise Level (dBZpk)	90-90		90-90
Electrical Noise Level (dBZpk)	55-55		67-67

1: SASK-00003 IS MAINLY INTENDED FOR SHOOTING RANGES OR HIGH AIRBLAST OVERPRESSURE APPLICATIONS.

OVERPRESSURE SPECIFICATIONS

SOUND LEVEL METER	
Sampling Rate	1.5 kHz
Frequency Range	1.6 Hz – 315 Hz (-3dB)
Frequency compensation	Low Shelf filter (individually calibrated)
Environmental compensation	Temperature (ref. 23°C)
Standards	ISEE (2022), AS 2187.2 (2006)
Certificate	Embedded Calibration Certificate in Non-Volatile Memory
LIVE DATA	
Interval	85.3 ms
Measured Metrics	Lpeak
Metrics Resolution	0.01 dB
TIME SIGNAL	
Sampling	1.5 kHz
Compression	8-bit adaptative dynamic compression
LIVE DATA & TIME SIGNAL BUFFER	
Duration	5 min.
AVERAGE RECORDS	
Interval	User defined (minimum 1s, 85.3ms resolution)
Measured Metrics	Lpeak
Metrics Resolution	0.01dB

TECHNICAL SHEET

SOUND LEVEL METER SPECIFICATIONS

SOUND LEVEL METER	
Sampling Rate	48 kHz
Frequency Range	0.5 Hz - 21 kHz (-3 dB, 10 Hz high-pass filter disabled)
Frequency compensation	Pressure, 0° Free-Field, 90° Free-Field, Random Incidence, Windscreen effect (individually calibrated)
Environmental compensation	Temperature (ref. 23°C)
Standards	IEC 61672-1/ ANSI S1.4-1 (2013) Class 1, ANSI S1.43 (2007) Type 1, IEC 60651 (1979), Amd.1(1993-02), Amd.2(2000-10) Type 1
Certificate	Embedded Calibration Certificate in Non-Volatile Memory
SPECTRUM	
Standards	IEC 61260-1/ ANSI S1.11-1 (2014) Class 1
Averaging	Linear (Leq)
1/3 Octave Spectrum	6.3 Hz to 20 kHz
FFT Spectrum	512 lines on 6 bandwidths (24, 12, 6.0, 3.0, 1.5, or 0.75 kHz), Hanning window, 66% overlap
LIVE DATA	
Interval	85.3 ms
Measured Metrics	Leq, SEL, Lpeak (A, C, Z, and G) Lmax, Lmin, (Fast or Slow, A, C, Z and G) SPL History (8 values, 10.7ms interval) (Fast or Slow; A, C, Z or G) Spectra (1/3 Octave and FFT)
Metrics Resolution	0.01 dB
TIME-SIGNAL	
Sampling	48 kHz, 24 kHz or 12 kHz
Compression	24-bit, 16-bit, 8-bit or 4-bit adaptative dynamic compression
LIVE DATA & TIME SIGNAL BUFFER	
Duration	2.5 s to 20 s depending on Time-Signal settings
AVERAGE DATA	
Interval	User defined (minimum 1s, 85.3ms resolution)
Measured Metrics	Leq, SEL, Lpeak (A, C, Z and G) Lmax, Lmin, (Fast or Slow, A, C, Z and G) SPL Percentiles (1%, 2%, 5%, 8%, 10%, 25%, 50%, 90%, 95% and 99%) (Fast or Slow; A, C, Z or G) TaktMaximal (LAFTm5) Spectra (1/3 Octave and FFT)
Metrics Resolution	0.01 dB



30 years
of setting the standard
in acoustics & vibration

Soft dB