

SVS Smart Vibration Sensor

The SVS Smart Vibration Sensor is a Precise, Rugged and Versatile Embedded Vibration Meter.

2 Models for a wide range of applications:

- LN for low-noise ($\pm 2g$, $\pm 8g$)
- HR for high-range ($\pm 10g$, $\pm 40g$)

Simultaneous Measurement of:

- User-defined Bandwidth Acceleration;
- User-defined Bandwidth Velocity;
- ISO 8049 Wm Weighted Acceleration;
- DIN 45669 KBFT Weighted Velocity.

Professional Measurements:

- 0.5Hz – 1kHz Frequency Range;
- 2 Dynamic Ranges;
- 2.7kHz Sampling Rate;
- Complies to ISEE, DIN 45669-1 and ISO 8041;
- User-defined Band-Limiting filters;
- Simple Calibration using Earth's Gravitational Field.

Easy field deployment:

- Automatic Sensor Check;
- Rugged and Compact Form-Factor;
- Digital communication avoiding electrical interferences;
- Up-To 100m cable length.



SVS Smart Vibration Sensor

Components

Product Code	
SVS0-00004	SVS smart Vibration Sensor, LN (Low-Noise)
SVS0-00006	SVS smart Vibration Sensor, HR (High-Range)
Recommended Accessories	
PCAB-00006	M12 Cable, 4-Conductor, Female-Male, 10m (can be daisy-chained up to 100m)
PCAB-00112	USB-to-RS485 Adapter
SVS0-00003	Mounting plate for SVS (57mm x 64mm x 19mm) (mounting hardware included)
QUIN-00008	3 spikes 3/8-16 (SVS0-00003 Mounting plate required)
CERT-00005	Calibration Certificate for SVS

Technical Specifications

Vibration Meter	
Standards	ISEE (2022), DIN 45669-1 (2010), ISO 8041 (2005)
Certificate	Embedded Calibration Certificate in Non-Volatile Memory
Sensor Technology	Triaxial MEMS Accelerometer
Sampling Frequency	2.756 kHz
Axis	X (Trans.), Y (Long.), Z (Vert.), Vector-Sum
Measured Metrics	User-defined Bandwidth Acceleration (RMS, Pk, Time-Signal) User-defined Bandwidth Velocity (RMS, Pk, Time-Signal) ISO 8041 Wm Weighted Acceleration (RMS, Pk) DIN 45669 KBFT Weighted Velocity (0.125s Expo. RMS) Earth Gravitational Field (Avg.)
Metrics Period	93ms
Metrics Buffer Length	10s
User-Defined Band Limiting Filters	
Signal Routing	Separate filters for Acceleration and Velocity, does not affect Standard ISO Wm and DIN KBFT
High-Pass Filter Frequencies (Hz)	0.5, 0.63, 0.8, 1.0, 1.25, 1.6, 2.0, 2.5, 3.125, 4.0, 5.0
Low-Pass Filter Frequencies (Hz)	100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000
Method	Electromechanical force injected on sensor
Results	Pass/Fail based on factory calibrated values in sensor memory
Communication	
Protocol	RS-485 Half-Duplex, 3Mbps
Connector	M12, 4-Pin, Male
Environmental	
Operating Temperature	-40°C to 50°C
Storage Temperature	-50°C to 70°C
Complies to	IP68, NEMA 4X,6,6P,12,13
Power	
Power	0.45W
Operating Voltage	5V

Technical Specifications (cont.)

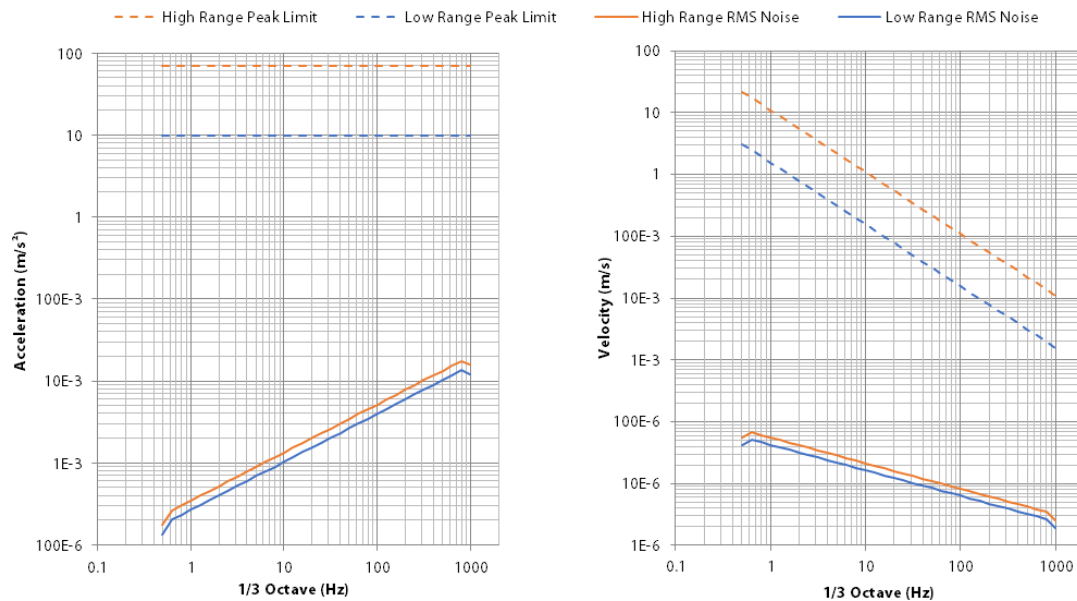
Physical	
Height	35 mm (1 3/8")
Width	57 mm (2 1/4")
Depth (without connector)	64 mm (2 1/2")
Depth (with connector)	78mm (3 1/16")
Weight	175g (6.2oz)
Density	1370kg/m ³ (85.5 lbs/ft ³)
Mounting	2x 4.5mm Through Holes (Accepts M4 or 8-32 machine screws)

Technical Specifications – Model LN (Low Noise)

Dynamic*	Low Range (±2g)			High Range (±8g)		
	X, Y	Z	V Sum	X, Y	Z	V Sum
Peak Maximum Acceleration (m/s ²)	±19.6	±9.81**	±9.81**	±78.4	±68.6**	±68.6**
Wide-band (0.5Hz-1kHz) Acc. Peak Noise (m/s ²)	24.0m	34.0m	48.0m	30.0m	40.0m	58.0m
Wide-band (0.5Hz-1kHz) Acc. RMS Noise (m/s ²)	6.00m	8.50m	12.0m	7.50m	10.0m	14.5m
Wide-band (0.5Hz-1kHz) Vel. Peak Noise (m/s)	220u	400u	500u	400u	440u	720u
Wide-band (0.5Hz-1kHz) Vel. RMS Noise (m/s)	55.0u	100u	125u	100u	110u	180u
ISEE (1.6Hz-315Hz) Vel. Peak Noise (m/s)	120u	240u	300u	200u	260u	380u
ISEE (1.6Hz-315Hz) Vel. RMS Noise (m/s)	30.0u	60.0u	75.0u	50.0u	65.0u	95.0u
DIN (0.8Hz-100Hz) Vel. Peak Noise (m/s)	160u	340u	400u	280u	400u	560u
DIN (0.8Hz-100Hz) Vel. RMS Noise (m/s)	40.0u	85.0u	100u	70.0u	100u	140u
ISO Wm (0.8Hz-100Hz) Acc. Peak Noise (m/s ²)	2.20m	3.60m	4.80m	2.90m	4.00m	5.80m
ISO Wm (0.8Hz-100Hz) Acc. RMS Noise (m/s ²)	550u	900u	1.20m	730u	1.00m	1.45m
DIN KBFT (0.8Hz-100Hz) Vel. RMS Noise (m/s)	30.0u	60.0u	75.0u	45.0u	65.0u	90.0u

* Values in the above table are minimum specifications. Typical peak maximum acceleration is higher and typical vibration noise levels are lower.

** Dynamic range limited by Earth's gravitational field on vertical axis



Technical Specifications – Model HR (High Range)

Dynamic*	Low Range ($\pm 10g$)			High Range ($\pm 40g$)		
	X, Y	Z	V Sum	X, Y	Z	V Sum
Peak Maximum Acceleration (m/s^2)	± 98.1	$\pm 88.3^{**}$	$\pm 88.3^{**}$	± 392	$\pm 383^{**}$	$\pm 383^{**}$
Wide-band (0.5Hz-1kHz) Acc. Peak Noise (m/s^2)	140m		240m	180m		310m
Wide-band (0.5Hz-1kHz) Acc. RMS Noise (m/s^2)	35.0m		60.0m	45.0m		78.0m
Wide-band (0.5Hz-1kHz) Vel. Peak Noise (m/s)	1.20m		2.10m	1.80m		3.10m
Wide-band (0.5Hz-1kHz) Vel. RMS Noise (m/s)	300u		520u	450u		780u
ISEE (1.6Hz-315Hz) Vel. Peak Noise (m/s)	600u		1.00m	1.00m		1.75m
ISEE (1.6Hz-315Hz) Vel. RMS Noise (m/s)	150u		260u	250u		440u
DIN (0.8Hz-100Hz) Vel. Peak Noise (m/s)	1.00m		1.70m	1.20m		2.10m
DIN (0.8Hz-100Hz) Vel. RMS Noise (m/s)	250u		430u	300u		520u
ISO Wm (0.8Hz-100Hz) Acc. Peak Noise (m/s^2)	12.0m		21.0m	16.0m		28.0m
ISO Wm (0.8Hz-100Hz) Acc. RMS Noise (m/s^2)	3.00m		5.20m	4.00m		7.00m
DIN KBFT (0.8Hz-100Hz) Vel. RMS Noise (m/s)	180u		310u	230u		400u

* Values in the above table are minimum specifications. Typical peak maximum acceleration is higher and typical vibration noise levels are lower.

** Dynamic range limited by Earth's gravitational field on vertical axis

