PRESENTATION

PRODUCT

Ultra-low power wireless vibration & temperature sensors SVT200-V, SVT30-V and SVT400-V provide true real-time machine condition monitoring continuously 24/7 non-stop. The sensors monitor triaxial acceleration continuously, and switches to 6.4kHz sampling rate automatically if the acceleration exceeds 0.1g in any direction. The sensor acquires a fixed number of samples, calculates velocity RMS and acceleration RMS value, and sends the result plus temperature to Broadsens's wireless gateway.

Attention: Requires to be used with Broadsens's wireless gateways (sold separately)

Wireless vibration & temperature sensor SVT200-V

Parameters	SVT200-V	SVT300-V	SVT400-V
Acceleration range	2g to 8g auto adjusting	2g to 16g auto adjusting	8g to 64g auto adjusting
Selectable sampling rates	6.4kHz in high-speed mode; 3.13Hz in low-speed mode		
Resolution	16 bits digital with auto-range adjustment for maximum sensitivity		
Non-linearity	<0.6% of full scale		
Noise	0.7mg RMS; 130ug/ $\sqrt{}$ Hz density		1.9mg RMS; 300ug/ $\sqrt{}$ Hz density
Sampling modes	Fixed 320 sample points at x, y and z axis in high-speed mode, auto calculation inside the sensor and results transmission		
+/-3dB bandwidth	x,y axis: 0.1 to 3.2kHz; z axis: 0.1 to 1.8 kHz	x,y,z axis: 0.1 to 3.2 kHz;	x,y,z axis: 0.1 to 3.2kHz;
Sensitivity Variation over temperature (%/ºC)	0.01		
Temperature measurement range	-40 - 85 ^{0}C (-40 – 185 ^{0}F)		
Temperature accuracy	-25 to 85^{0}C：±0.3 ^{0}C；-40 to -25^{0}C：±0.4 ^{0}C; No calibration required		
Temperature measurement interval	Every 10s		
Power consumption	2.3 uA idle, 12uA average at low vibration environment, and up to 72uA (worst case) at continuously high vibration environment		
Power supply	14250 replaceable battery, 1200mAh capacity. Can last up to 5 years (depending on the machine running schedule)		
Wireless protocol	2.4GHz proprietary		
Wireless certificates	FCC, IC, CE(EU), TELEC, KCC, NCC, WPC, RCM		
Wireless distance	Up to 300m (900 ft) in open space, line of sight		
Size	Diameter: 34mm (1.34 inch); height:31mm (1.22 inch)		
Metal base material & total weight	Anodized aluminum alloy 6061: 53 g (1.87oz) with battery		
Installation	Epoxy; pad mount (M6); stud mount (M8 to M6); magnet mount		
Environment	Working temperature: -40 - 85 ^{0}C; storage: -55 - 85 ^{0}C; water resistance: IP68 (IP69K optional); Explosive: Ex ia IIC T4 Ga		

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Block diagram
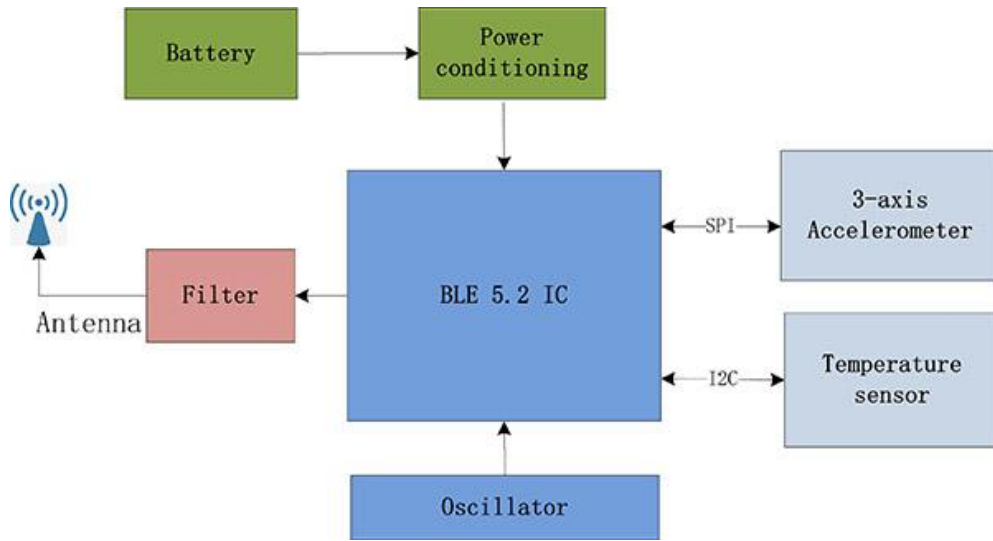
Mechanical drawing

Unit:mm
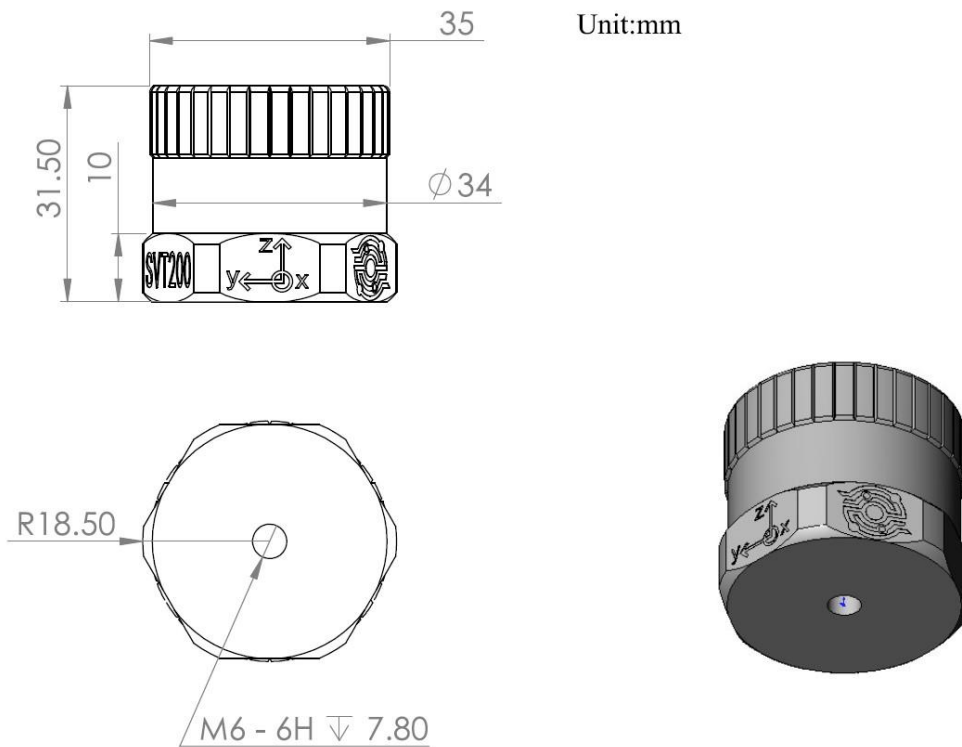
Advantages of true-real time vibration monitoring

SVT-V series sensors are the only compact true real-time wireless vibration sensors that monitor machine condition continuously with 4-5 year battery life typically.

. True Real-Time Monitoring: Continuously monitor vibration and temperature levels, 24/7, with updates as frequently as you need them. No more delayed data or missed warning signs.

. Instant Anomaly Detection: Identify potential problems the moment they occur, enabling immediate action and preventing costly cascading failures.

. Wireless Simplicity: Easy installation with no complex wiring required. Deploy sensors quickly and effortlessly.

SVT-V sensors acquire x, y and z axis data in 16-bit resolution continuously. When the sensor detects a vibration event, it switches to high-speed 6.4kHz sampling rate, takes a fixed amount of data, calculates velocity RMS and acceleration RMS value, and sends the result plus temperature to the wireless gateway. When there is no vibration event, the sensor still switches to high-speed 6.4kHz sampling rate every 10 seconds, calculates the velocity RMS and acceleration RMS value, and sends the result to the wireless gateway.

SVT-V series sensors can be mounted with magnet, pad or stud (single M6 screw hole enclosure), epoxy, screws or wire (requires double screw hole enclosure).

Note: SVT-V series vibration sensors require to be used with Broadsens's wireless gateways.

Application Diagram
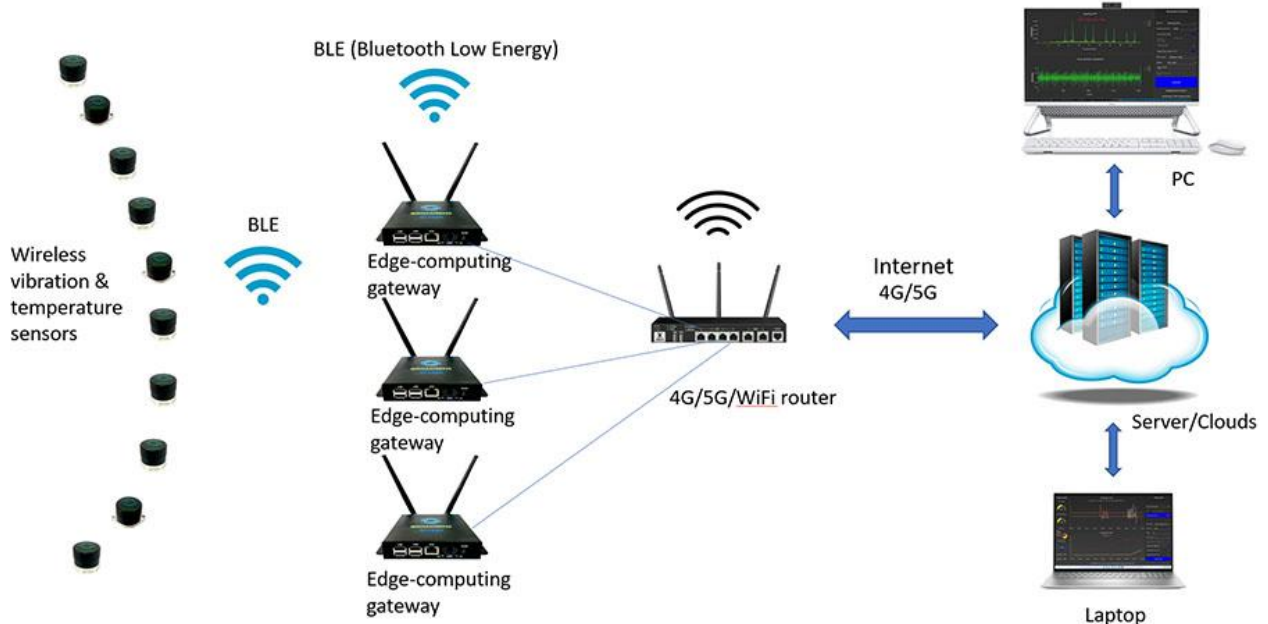
Note:
- Broadsens edge-computing gateway is required to use the sensors
- Vibration analysis software is provided with the gateway with life-time license
- Router and internet are optional to operate the system

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Monitoring Software

BroadVibra Vibration monitoring software at the gateway is based on open-source architecture. It can be accessed with all major web browsers. Database is also included
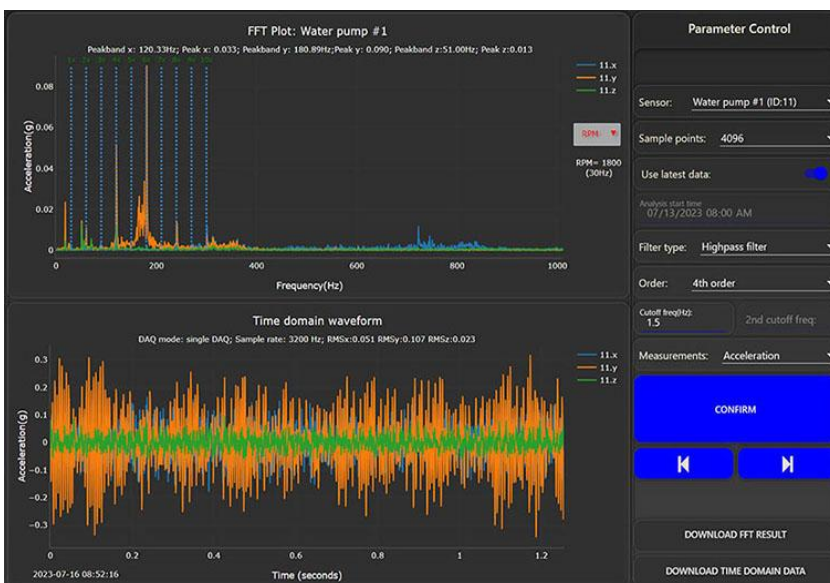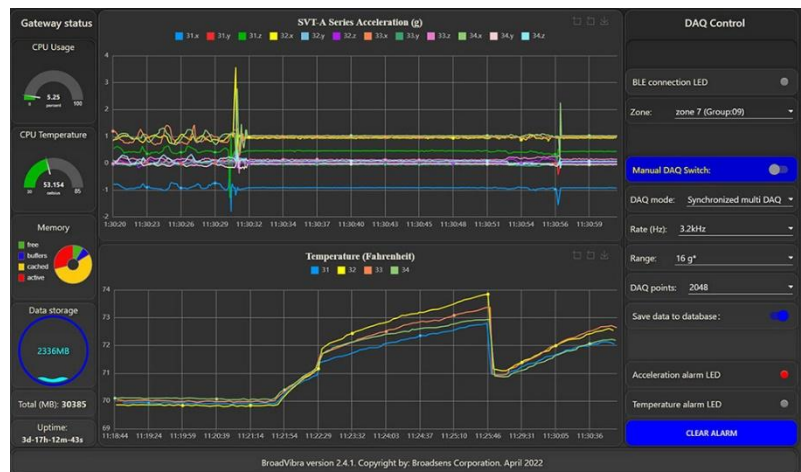
Software advantages

. Real-time monitoring
. Intuitive data visualization
. Alarm & threshold setup
. Scheduled data acquisition
. Time-series database
. Key parameters trend charts
. FFT analysis
. Advanced filtering
. OTA firmware upgrade
. Open source
. Secure transmission

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