

SV600 Acoustic Imager

Detect, locate and visualize the unheard and unseen

Visualize the unheard and the unseen with the power of acoustic imaging. The SV600 Fixed Acoustic Imager enables users to detect, locate and visualize air and gas leaks or changes in mechanical sound signatures across their process and equipment in real-time before they become costly problems.

By using an array of sophisticated sound sensors and powerful SoundMap™ technology, the SV600 translates the sounds that it hears into a visual representation so that you can quickly locate problem areas. This provides facilities with further insights into product quality or safety concerns, as well as the ability to quickly detect changes across compressors, pumps, pipes, conveyors and more.

In addition to 24/7 remote monitoring, the SV600 integrates into factory systems seamlessly and user-defined alarms can be established to alert users when sound signatures have changed, even in the parts of your facility that are hard to reach.

By serving as an early warning system, facilities can continuously monitor equipment to optimize performance, perform preventative maintenance or detect mechanical anomalies, such as bearing wear, well before a failure occurs to keep your processes up and running.



SV600 Fixed Acoustic Imager

Process and Asset Monitoring

Detect, locate and visualize sound signature changes across your process and equipment:

- **Monitor equipment changes in real-time** – The SV600 continuously monitors your process for air and gas leaks, steam or vibrations and visually records any anomalies such as bearing failures or drive system failures, alerting users to areas of concern immediately.
- **Prevent unscheduled maintenance** – Sound signatures are measurable well before any change in temperature can be detected. The SV600 can be used to find sound signature changes early on so facilities can schedule preventative maintenance and optimize performance before a failure occurs.
- **Capture data from inaccessible locations** – The SV600 can be mounted close to any equipment or asset, to any area of the production line or where human access is restricted or dangerous.
- **Continuous learning/improvement** – The SV600 can identify sound events, both relevant and irrelevant, and using a sophisticated algorithm, filters out bad sound events over time - improving users' overall detection rates.
- **Reduce power consumption** – By quickly detecting and fixing air leaks, you can reduce your consumption of compressed air and energy to help save your facility money. Faulty, inefficient drive systems need to work harder, consuming additional power to stay operational.

On-Site Safety

Improve safety by continuously monitoring assets located in inaccessible areas, detecting new sound events in a critical factory location, or finding and visualizing escaping gases from fixed equipment.

- **Minimize human intervention** – Improve workers' safety overall with a fully integrated, automated solution.
- **Monitor assets and workspaces 24/7** – Continuously monitor assets in hazardous or inaccessible locations at a safe distance, receive immediate alarms for new sound events or detect escaping gases from fixed equipment.
- **Reduce noise exposure** – The SV600 includes user-programmable alarms for sound level (dB) and frequency (kHz) to help facilities better meet national and international standards and ensure workers are not exposed to dangerous noise and sound levels.

Inspections

Detect, locate and visualize sound signature changes across product inspection and quality control processes:

- **Intelligent leak detection** – Using factory integration and real-time alarm features, the SV600 can automate acoustic detection on the production line and immediately notify your team of any quality issues or product rejects, improving productivity.
- **Minimize operator intervention** – As a fixed, automated solution that integrates with your process, the SV600 eliminates the need for the constant operator intervention required of handheld sniffers, soap and water tests, manual audible methods or portable acoustic devices.
- **Capture data from inaccessible locations** – The SV600 can be mounted close to any equipment or asset, to any area of the production line or conveyor belt, or where human access is restricted or dangerous.
- **Automate product inspections** – The SV600 can be fully integrated with the factory system, supporting improved automation and efficiency and allowing users to automate their product inspections. With a fully digitized process, data can be recorded and archived to enable improved product traceability.

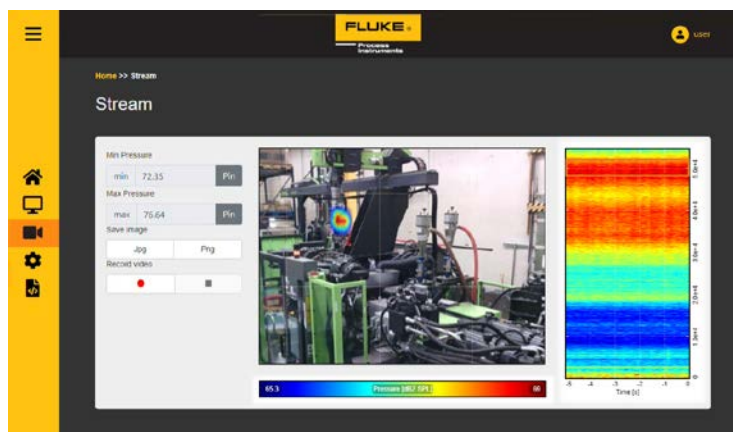
Front View

Integrated visual light camera (fixed lens)

64-Digital MEMs microphones placed in a Sunflower array



Ease of installation via RJ45 connector or M12 8 Pin connection and Vesa 10 mounting



Spot What You've Been Missing

The SV600 can also be used as a payload for Boston Dynamics' agile mobile robot Spot®.

Spot takes inspection to the next level. Designed to go where other robots can't go and to perform a broad number of tasks, Spot traverses unstructured terrain to automate industrial inspections, monitor remote or hazardous environments and provide situational awareness in remote settings.

The robot can also be reconfigured for various use cases to increase efficiency and greatly reduce safety risks. With the SV600 payload Spot will now be able to automate air and gas leak detection and identify mechanical sound signatures, all while on the go.



Model Overview

SV600-1

Standard Model plus VIS camera

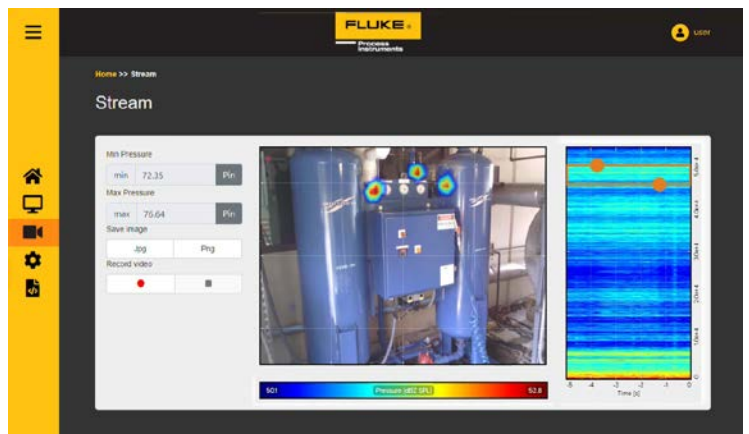
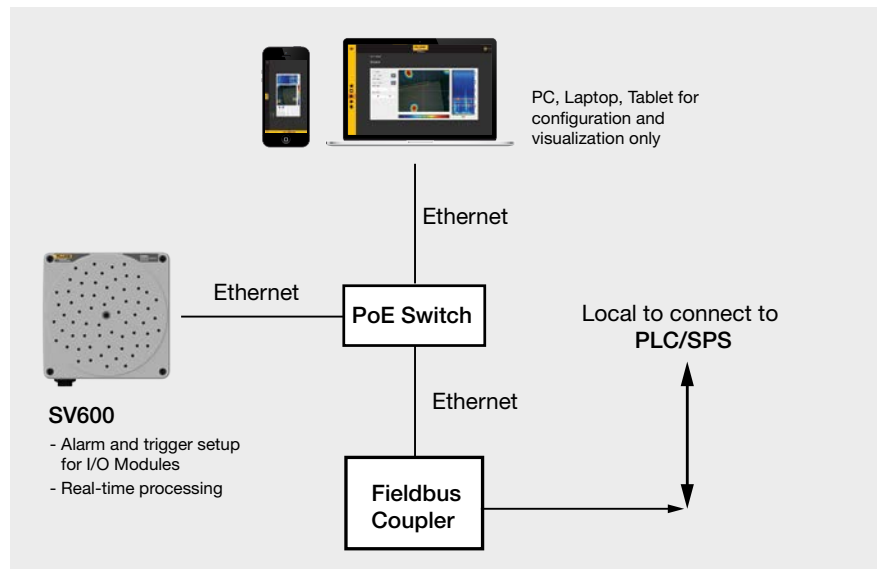
SV600-BD

Payload for Boston Dynamics Spot® Robot

Includes:

- SV600-1 Sonic Viewer
- Protective Metal Frame to mount on Spot
- Connection Cable to Spot

System Setup



Specifications

SV600

Physical Properties

Dimensions (LxWxD)	170 x 170 x 65 mm (6.69 x 6.69 x 2.56 inch)
Weight	0.85 kg (1.7 lb)
Communication + Power	PoE IEEE 802.3af SV600-1 Connected via RJ45 or M12 8-Pin; IEEE 802.3 Status LED

System Integration

Event Triggering/Alarming	Set alarm levels for sound level (dB) and frequency (kHz) range
Event Actions	Recording to external PC as .csv or .txt file

Camera

Integrated Visible Light	Included with fixed lens
Resolution Video	640 x 480
Camera Field of View	65° ±3°
Camera Resolution	720 p at 30 fps

Microphones

Type	MEMS, Digital Bottom Port
SNR (A-weighted, at 1 kHz)	64 dB for 94 dB SPL @ 1kHz
Sensitivity	-26 dB FS ± 1.5 dB at 1 kHz, 94 dB SPL
Acoustic Overload Point	120 dB SPL at 1 kHz, < 10 % THD

General

Ingress Protection	IP54
Operating Temperatures	-20 °C to 50 °C (4 °F to 122 °F)

Compliance

FCC	Title47.Part 15
EMC	EN55032:2015
	EN61000-4-2:2009
	EN61000-4-3:2006
	EN61000-4-4:2012
	EN61000-4-5:2006
	EN61000-4-6:2009
	EN61010-1:2010

Data Formats

Audio	.wav (audio verification)
Pictures	.jpg, .png
Video (V/V+ models)	.mjpeg, .mp4
Data messages	.json

Fluke Process Instruments