

Canary-Zero™ for Size Sensitive Applications

Canary-Zero™ provides a gas detection module similar to that found in the Canary-One™, but minimizes volume by redesigning the electronics and replacing the display with color LEDs to indicate high/low concentration or all clear. Figure 1 shows the complete integrated gas module compared to a penny.

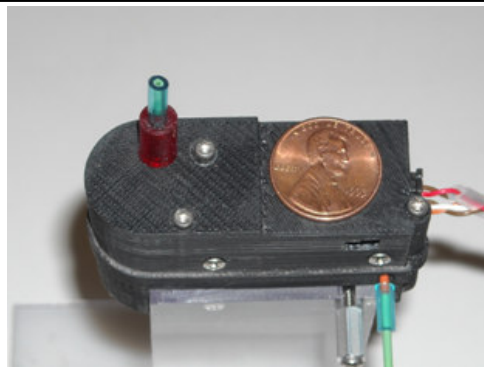


Figure 1. Canary-Zero

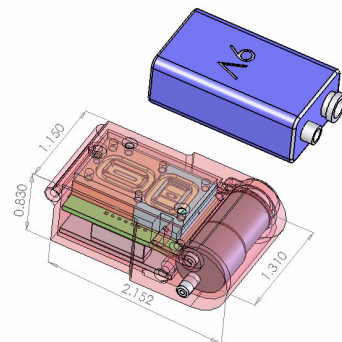


Figure 2. Canary-Zero visible diagram

As shown in figure 2 and 3, Canary-Zero™ combines two microfabricated components: a micro chemical preconcentrator and a SAW microbalance detector. A designer chemical coating on the preconcentrator collects target analytes and ignores interfering chemicals. Canary-Zero™ cycles every 16 seconds, reporting on the identification and concentration of nerve or blister agents in air. The system self cleans after each analysis.

The compact size of this device system makes it an ideal choice for deployment where size is an issue; for instance,

- Within a protective suit to monitor resistance to contamination
- UAV or UGV sensor payloads.
- Mass deployment in HVAC systems.

Gas module is available for OEM applications.

Representative Data

Figure 4 shows the sensor output for 10 ppmv of methyl salicylate (MeS). While one can notice a change in the baseline when MeS is introduced, actual detection occurs during the firing of the preconcentrator.

Features and Specifications:

- Dimensions: 60x45x25 mm
- Weight: 45 g
- Power: Uses external 6V, 250mA power.
- Computer interface: Standard RS-232 port
- Display: Hi/Lo/Clear color LEDs or buzzer (optional)
- 16 second analysis cycle for nerve and blister agents
- Ambient air is the carrier gas, no need for specialty gases.

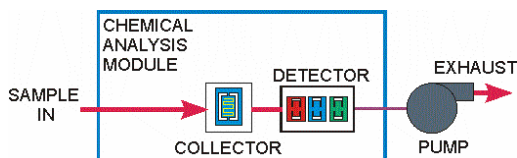


Figure 3. Canary-Zero™ Components

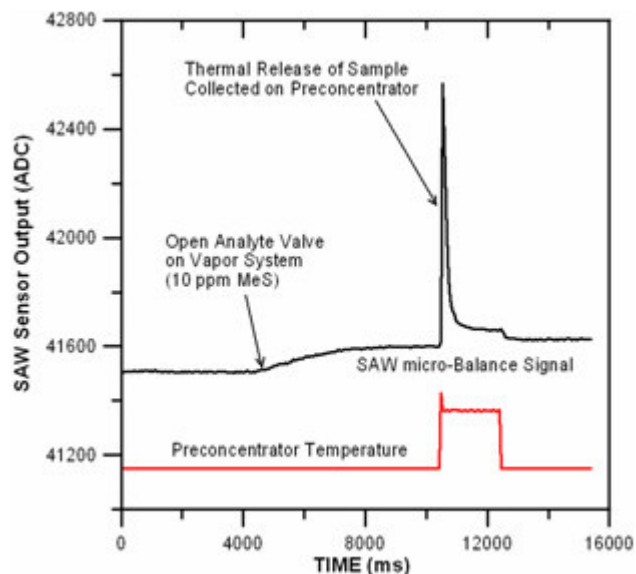


Figure 4. Detection of 10 ppmv methyl salicylate. Red line is preconcentrator power, black line is SAW response.