

### SS31L NONINVASIVE CARDIAC OUTPUT SENSOR

**NOTE:** The SS31L was discontinued in December of 2018. Use current offering SS31LA. Contact BIOPAC for details.

The SS31L records the thoracic impedance parameters associated with Cardiac Output measurements. The SS31L incorporates a precision high-frequency current source, which injects a very small ( $400\mu\text{A rms}$ ) current through the measurement tissue volume defined by the placement of a set of current source electrodes. A separate set of monitoring electrodes then measures the voltage developed across the tissue volume. Because the current is constant, the voltage measured is proportional to the characteristics of the biological impedance of the tissue volume. The SS31L outputs impedance ( $Z$ ) and derivative of impedance ( $dZ$ ) in real time. Best used with BIOPAC's EL506 Bioimpedance strip electrode.

- Use the SS31L to measure changes in Cardiac Output under a variety of conditions: laying down, sitting up, standing up, and post-exercise.
- Use on stationary subjects; the SS31L is sensitive to motion artifact.
- See BSL *PRO* Lesson **H21 Impedance Cardiography** for sample SS31L setup and data.

#### Specifications

Outputs:

Impedance ( $Z$ )	(50 mV = 100 $\delta$ )
Derivative Impedance ( $dZ$ )	(5 mV = 2 $\delta$ /sec)
Operational Frequency:	100 KHz sine wave
Current Level:	400 $\mu\text{A}$ (rms)

Bandwidth: (can limit in BSL *PRO* software)

$Z$ :	DC . 100 Hz
$dZ$ :	DC . 100 Hz

Dimensions: 14 cm (long) x 9.1 cm (wide) x 2.9 cm (high)

Weight: 400 grams

Electrode clip connects to standard snap electrode (EL506 recommended)

