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PULSE PHOTOPLETHYSMOGRAM TRANSDUCERS

- TSD200 for MP160/MP150 System
- SS4LA for MP3X and MP45 System

The TSD200/SS4LA consist of a matched infrared emitter and photo diode, which transmits changes in blood density (caused by varying blood pressure) in specific body locations. When the TSD200 is attached to the skin, the infrared light is modulated by blood pulsing through the tissue below. The modulated, reflected light results in small changes in the resistance of the photo resistor, which yields a proportional change in voltage output.

The TSD200/SS4LA includes a shielded 2-meter cable and a stretchable Velcro® strap for easy attachment to the fingers, or it can be taped to other body parts. The TSD200/SS4LA can also be placed on other body locations by employing ADD208 adhesive disks to hold the transducer in place. Use the TSD200C ear clip transducer for easy attachment to the ear.

Place the transducer around the finger and adjust the Velcro® closure to provide only slight tension. Blood density readings can vary considerably depending on transducer location and tension changes.

The TSD200 connects to the PPG100C as follows (See also: PPG100C for a diagram):

TSD200 Lead	PPG100C	
Red connector	VIN+/+VSUP	(may also be black connector with red shrink wrap)
Black connector	GND	
White connector	VIN-/INPUT	(may also be black connector with blue shrink wrap)

The SS4LA plugs directly into the MP3x or MP45.

CALIBRATION

The TSD200/SS4LA does not require calibration.

TSD200C PULSE PHOTOPLETHYSMOGRAM WITH EARCLIP

The photodetector operates via incident photons, from an IR transmitter, impacting an IR detector. The incident photons result in a proportional passage of electrons in the detector. The IR detector operates like a photon-controlled current source. The transducer incorporates an appropriate clipping range, with linearity insured for arbitrarily low levels of reflected light. For the expected magnitude of incident infrared light, the photodetector operates in a linear fashion. Situations have not been encountered where the detector is operating non-linearly (near saturation).

The TSD200C transducer operates with the PPG100C amplifier to record the pulse pressure waveform. The TSD200C consists of a matched infrared emitter and photo diode, which transmits changes in infrared reflectance resulting from varying blood flow. The ergonomic housing design improves contact with the subject and helps reduce motion artifact. The TSD200C is primarily designed for ear attachment and comes with a shielded 2-meter cable and ear clip.

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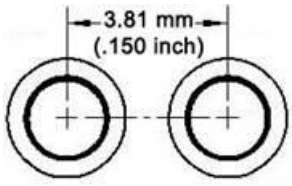
TSD200/200C/SS4LA SPECIFICATIONS

Emitter/Detector Wavelength:	860 nm ± 60 nm
Optical Low Pass Filter Cutoff Wavelength:	800 nm
Note	The operational range of the emitter and detector fall within the wavelength range of 800 nm to 920 nm. The filter is placed over the receiver; the filter of 800 nm is an optical lowpass, so wavelengths longer than 800 nm will pass thru.
Emitter/Detector Spacing:	3.81 mm (.150 inch) ï center to center



Nominal Output:	20 mV (peak-peak)
Power:	6 VDC Excitation @ 5 mA
Sterilizable:	Yes (Contact BIOPAC for details)
Weight:	4.5 g
Dimensions (L x W x H):	16 mm x 17 mm x 8 mm
Attachment:	Velcro strap
Cable:	3 m, shielded (TSD200, SS4LA), 2 m, shielded (TSD200C)
Interface:	PPG100C
TEL100C Compatibility:	SS4A

NOTE THE TSD200A EAR CLIP TRANSDUCER WAS DISCONTINUED IN AUGUST OF 2008.