DATA SHEET

LinearDimensions SEMICONDUCTOR

**LNDSP16-3a/b**

# *Portable Three Terminal Heart Rate Monitor with AGC, Fast Capture & Diagnostic Quality Filters*

## GENERAL DESCRIPTION

The LNDSP16 is a diagnostic quality heart rate monitor with unique features making it uniquely suited for portable heart rate aquisition in dynamic environments.

The LNDSP16 is capable of acquiring heart rate from the arm only, using three (3) electrode leads. The device includes a high gain instrumentation amplifier with extremely low offset (<20uV) with a termination scheme offering 123db of common mode rejection. The device includes an automatic gain control (AGC) feature, time constant accelerator, and dynamic common mode drive to enable fast capture of the baseline and heart rate waveform. The LNDSP16-3b includes an interface to an accelerometer allowing capture of heart rate images during movement (patents pending).

The LNDSP16-3a/b operates from 5V, but draws extremely low current, making it ideal for portable device operation. The device also utilizes high order Bessel filters which have been shown to be least disruptive to diagnostic results, as well as advanced Hilbert & STC transform identification algorithms capable of dealing with HRV.

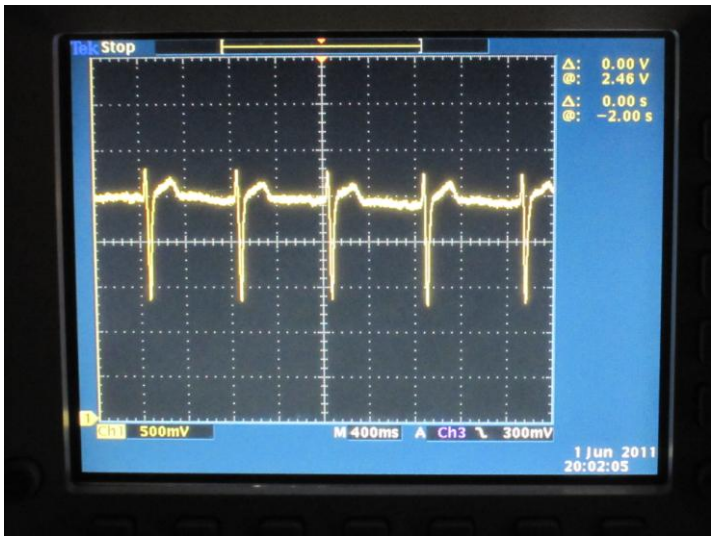


Figure 1 – 3-Electrode Heart Rate Waveform from the Arm

## FEATURES

- Three Electrode Interface
- Low Power for Portable Applications
- Capable of Arm Only Acquisition
- <20uV Total Input Offset Error
- 123db CMRR Termination
- Automatic Signal Acquisition:
  - Automatic Gain Control (AGC)
  - Time Constant Accelerator for Quick Baseline Recapture
  - Common Mode Driver Terminal
  - AC Only Feedback
- Diagnostic Quality Filters
- Advanced Capture Algorithms
- 50/60 Hz Interference Elimination
- Optional Accelerometer & Algorithms Diagnostic Capture During Movement

## APPLICATIONS

- Portable Heart Rate Equipment
- Portable Fitness & Wellness Products
- Non-Critical Diagnostics

## PIN DESCRIPTION

| Pin Number | Description |
|---|---|
| 1 | Postive Electrode ($V_{PE}$) |
| 2 | CM Electrode ($V_{CM}$) |
| 3 | Negative Electrode ($V_{NE}$) |
| 4 | Ground (GND) |
| 5 | Supply Voltage ($V_{DD}$) |