

Blood Pressure Reader (SEN) Sensor Data Sheet

BPR 10012018

SPECIFICATIONS

- > **Measurement method:** Pulse scanning
- > **Range:** 20-280mmHg
- > **Accuracy:** ± 3 mmHg
- > **Type:** Wrist cuff
- > **Cuff Circumference:** 135-195mm
- > **Battery Type:** 2 AAA batteries

FEATURES

- > Systolic & diastolic blood pressure (mmHg)
- > Heart rate extraction
- > Independent channels for blood pressure & heart rate
- > Automatic pressurization, decompression & air discharge
- > Built-in LCD display
- > Standalone device capability
- > Internal memory for up to 60 readings (standalone use only)

APPLICATIONS

- > Life sciences studies
- > Physiology studies
- > Psychophysiology
- > Sports research
- > Biomechanics
- > Ergonomics

GENERAL DESCRIPTION

This user-friendly upper arm cuff-based blood pressure monitor measures systolic & diastolic blood pressure levels (in mmHg) with ± 3 mmHg accuracy. The built-in colour LCD display displays all measured blood pressure values and additional heart rate information (bpm) and allows this sensor to be used both as standalone device or as biosignalsplux sensor within our [OpenSignals \(r\) evolution software](#).

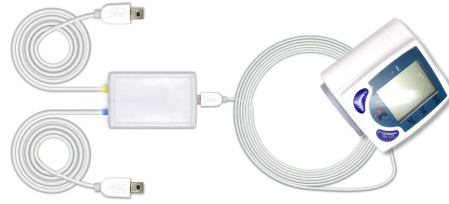


Fig. 1. User-friendly upper arm cuff-based blood pressure monitor.

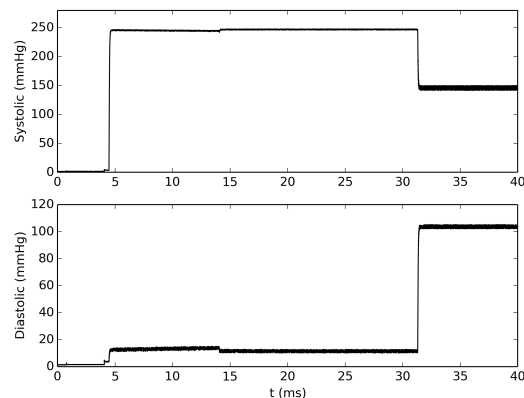


Fig. 2. Typical raw BPR data (acquired with biosignals).

biosignalsplux
wearable body sensing platForm

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APPLICATION NOTES

This sensor is designed to measure blood pressure levels at the wrist. Place the sensor at the wrist of the user (ideally the left wrist) such that both the sensor's display and the hand palm are facing towards him/her. Please do also check the instructions provided on the cuff for optimal results.

This sensor is not powered by the biosignalsplux hub and requires 2 AAA batteries which are not included.

TRANSFER FUNCTION

[20mmHg, 280mmHg]

$$SYS(mmHg) = 0.25 \times 2^{10-n} \times ADC - 0.8$$

$$DIA(mmHg) = 0.25 \times 2^{10-n} \times ADC - 0.8$$

SYS(mmHg) – Systolic blood pressure in mmHg
DIA(mmHg) – Diastolic blood pressure in mmHg
ADC – Value sampled from the channel
n – Number of bits of the channel¹

PHYSICAL CHARACTERISTICS

- > **Sensor Size (W x L x H):** 72x70x32mm
- > **Weight (standalone):** 125g
- > **Weight (with adapter):** 140g
- > **Cable length (BPR to Adapter):** 90cm
- > **Cables length (Adapter to biosignalsplux):** 95cm

ORDERING GUIDE

Reference	Package Description
SENSADV-BPR	Blood Pressure Reader (dual channel sensor for individual systolic & diastolic signals)

ORDERING GUIDE

This sensor is an adaptation of the 3rd party *CK101 Wrist Blood Pressure Monitor* which provides compatibility with biosignalsplux devices. It can be used both as standalone device or as biosignalsplux sensor.

¹ The number of bits for each channel depends on the resolution of the Analog-to-Digital Converter (ADC); in biosignalsplux the default is 16-bit resolution ($n = 16$), although 12-bit ($n = 12$) and 8-bit ($n = 8$) may also be found.