

Third-Party Sensor Cable (for Analog Signals) Sensor Data Sheet

SEN 00012023

SPECIFICATIONS

- > **Input voltage Range:** -2.5V to 2.5V
- > **Input impedance:** 0.992M Ω (pure resistive)
- > **Frequency Range:** DC to 1kHz
- > **Voltage Isolation:** 4420VRMS
- > **Transfer gain stability:** +/- 0.005%/ $^{\circ}$ C

FEATURES

- > High compatibility/interoperability
- > Compatible with analog and digital signals
- > Friendly input interface, classic RCA connector
- > High Electrical Isolation >4.4kV

APPLICATIONS

- > Interface with clinic/hospital devices
- > Synchronized acquisition with PLUX sensors and third-party devices
- > Interface with experimental sensors
- > Acquire digital signals, such as time marking pulses, considering +/-2.5V range.

GENERAL DESCRIPTION

The third-party sensor cable allows you to connect an analog/digital signal from any external device to the PLUX HUB. In this way, it is possible to simultaneously acquire the signals offered by the PLUX sensors portfolio and the signals generated by other equipment from other manufacturers, even if these are not medical devices. Since its interface allows signals up to +/-2.5V single-ended, the device easily interfaces with a wide range of third-party devices.



Fig. 1. Third-Party Sensor Cable Adaptor (Analog signals).



Fig. 2. Connection example (Connect to any analog biosignalsplux HUB port).

biosignalsplux
wearable body sensing platform

PLUX – Wireless Biosignals, S.A.
Av. 5 de Outubro, n. 70 – 2.
1050-059 Lisbon, Portugal
hello@pluxbiosignals.com
<https://www.pluxbiosignals.com/>

REV 01 | JULY 2023

© 2023 PLUX

This information is provided "as is," and we make no express or implied warranties whatsoever with respect to functionality, operability, use, fitness for a particular purpose, or infringement of rights. We expressly disclaim any liability whatsoever for any direct, indirect, consequential, incidental, or special damages, including, without limitation, lost revenues, lost profits, losses resulting from business interruption or loss of data, regardless of the form of action or legal theory under which the liability may be asserted, even if advised of the possibility of such damages.

Third-Party Sensor Cable (for Analog Signals) Sensor Data Sheet

SEN 00012023

APPLICATION NOTES

To use the third-party sensor cable, simply connect a cable with your signal using the RCA-type connector available on the device.

Can be connected an unipolar signal with 0 to 2.5V, or a bipolar signal with -2.5 to 2.5V.

TRANSFER FUNCTION

[-2.529, 2.528]

The RCA connector input voltage $V_{in}[V]$ is given by:

$$V_{in}[V] = \frac{V_{REF} \times (Digital_{value} - 2^{n-1})}{G \times 2^n}$$

Where:

V_{REF} : is the voltage reference used in the internal biosignals HUB ADC, 3V.

n : is the biosignals HUB ADC resolution in bits, 16.

G : is the gain used in the third-party sensor electronics, $593.106924 \times 10^{-3}$

$Digital_{value}$: is the value returned by the biosignals HUB ADC

ELECTRICAL INTERFACE

The interface connector is a standard RCA connector, defined by the IEC 60958-3.

Pinout	Electrical Signal	Specification
Center pin	Analog/digital Signal	-2.5V to 2.5V
Chassis	(GND) Return Signal	-

PHYSICAL CHARACTERISTICS

> **Size:** 62.7mm(W) x 31.7mm(D) x 24mm(H)

> **Weight:** 40g

ORDERING GUIDE

Reference	Package Description
SKU: 820201412	Third-Party Sensor Cable (Analog Signals)

PLUX can supply custom cables for use with this device. If you need a cable with a suitable connector for your equipment terminated with an RCA type connector, please contact us, and ask for a quote.