

Sensit Wearable

For Wearable Biosensors

The Sensit Wearable reduces the time-to-market for new electrochemistry-based wearable sensors. Wearable, flexible electrochemical sensors, for instance integrated on the epidermis, can be used to measure non-invasively metabolites and electrolytes for various biomedical applications.

Applications include:

- Continuous Glucose Monitoring
- Sweat analysis for athletes
- Molecular biomarkers



Main specifications

- dc-potential range -1.7 V to +2 V
- compliance voltage -2.0 V to +2.3 V
- current ranges 100 nA to 5 mA
- current resolution 0.006% of range (5.5 pA on 100 nA range)
- maximum current ± 3 mA
- potentiostat interface 2x WE, 1x CE, 1x RE
- EIS frequency range 0.016 Hz to 200 kHz
- ac-amplitude range 1 mV to 0.25 V rms, or 0.708 V p-p
- battery life multiple days depending on script
- communication USB-C and Bluetooth 5.0 (LE)
- charging USB-C and wireless

Supported techniques

Voltammetric techniques:

- Linear Sweep Voltammetry
- Cyclic Voltammetry
- Square Wave Voltammetry
- Differential Pulse Voltammetry
- Normal Pulse Voltammetry

The above techniques can also be used for stripping voltammetry

Techniques as a function of time:

- Chronoamperometry
- Pulsed Amperometric Detection
- Open Circuit Potentiometry
- MultiStep Amperometry

Electrochemical Impedance Spectroscopy:

- Scanning or fixed frequency mode

Wearable

The mounting bracket can be attached to an adhesive skin-sensor for measurements in sweat or on the epidermis.



For applications that use a different sensor type or form factor, a small Printed Circuit Board with the mounting bracket can be used to break-out the sensor electrode connections.

In this use-case scenario the Sensit Wearable can be worn by means of a strap with a small pouch.

The Sensit Wearable works with MethodSCRIPT™

The MethodSCRIPT communications protocol gives the user full control over all functionality the Sensit Wearable has to offer and requires no programming skills. The Sensit Wearable can be set in an ultra-low power mode in-between measurements where it consumes 13 uA. This allows the device to gather data over a time window of multiple days or even weeks.

> palmsens.com/methodscript

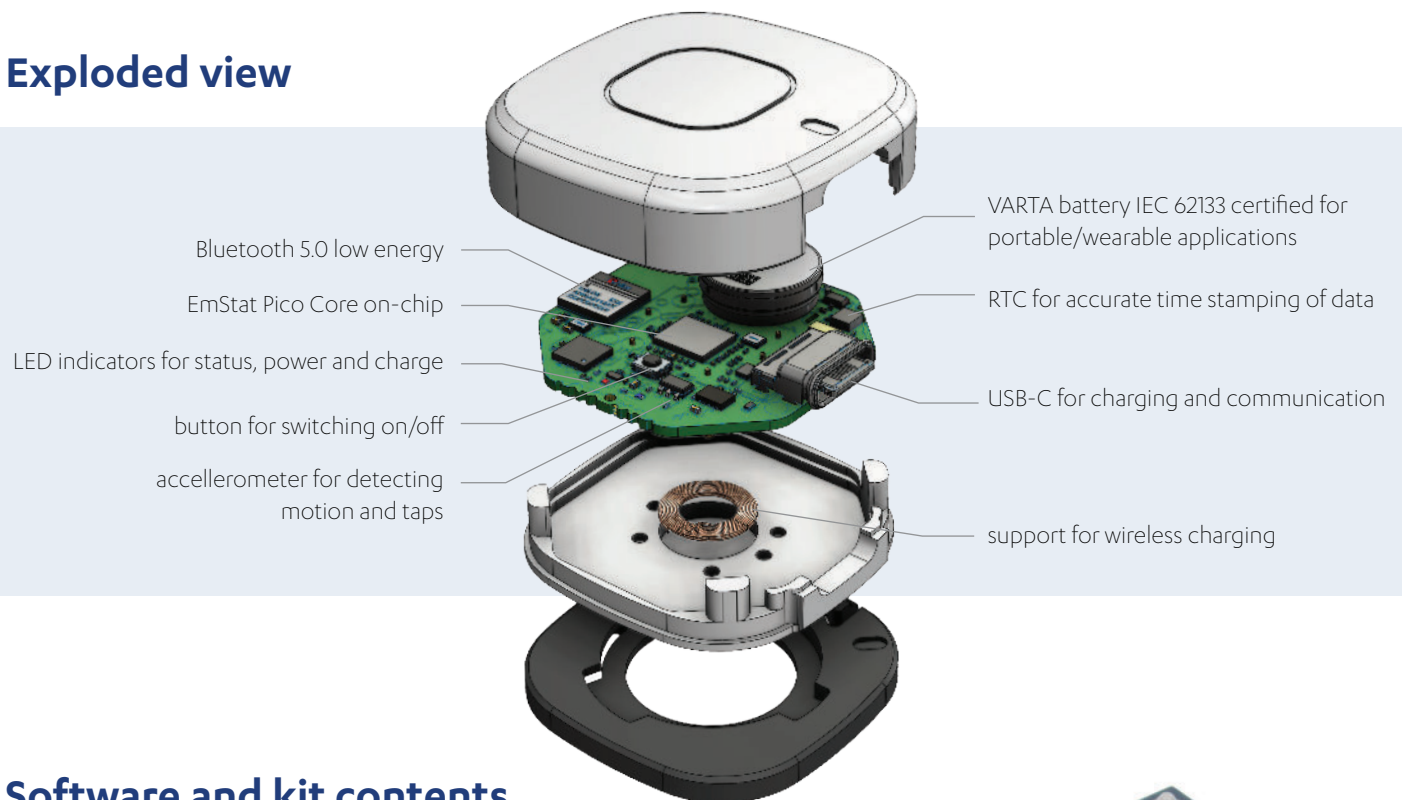
```

var c
var p
set_pgstat_chan 1
set_pgstat_mode 0
set_pgstat_chan 0
set_pgstat_mode 2
set_max_bandwidth 40
set_range_minmax da -500m 500m
set_range ba 590u
set_autoranging ba 59n 590u
set_e -500m
cell_on
meas_loop_lsv p c -500m 500m 10m 100m
  pck_start
  pck_add p
  pck_add c
  pck_end
endloop
on_finished:
cell_off
    
```



Example MethodSCRIPT for running a measurement

Exploded view



Software and kit contents

The Sensit Wearable is shipped with the following items:

- reader in closed and sealed plastic housing
- example skin patches, provided by selected partners
- evaluation board with mounting bracket
- accessories for various wearing options
- Quick Start document
- PSTrace software for Windows and documentation



Evaluation board for breaking out sensor electrodes to a terminal block, cell cable, or common connector for use with Screen-Printed Electrodes.



> palmsens.com/pstrace

The information in this document is preliminary and subject to change. Contact us at info@palmsens.com for more information.