

# HealthLab Satellite SAT-03



The HealthLab Measuring Satellite SAT-03 is a measurement module of the psycho-physiological monitoring system HealthLab. In the context of measurements with HealthLab the satellite SAT-03 acquires a 2-channel electromyogram and - using a respiration strap - the breathing activity of a proband. By means of a serial interface (RS-232) an external oscillometrical blood pressure measuring device (I.E.M. Mobil-O-Graph) is integrated into the HealthLab monitoring-system.

## Technical Data

### Designation

HealthLab Measuring Satellite SAT-03, EMG and breathing activity, implementation of blood pressure measure by ext. device

### Voltage Supply

/ Current Consumption  
3,3 V DC via Master / 30 mA

### Data Capturing

measuring range see Channel Index

### Electromyography EMG

measurement with 2-channel sensor cable with 4 mm snap fasteners, 12 Bit

### Breathing Activity

resistive strain sensor, 12 Bit

### Blood Pressure (oscillometric)

external measuring device via RS-232 interface,

### Digital Interfaces

RS-485 from Master / Satellites to Satellites using four core shielded cable, 460 kbps

### Climatic Conditions

acc. to DIN EN 60204-1 (10-2014)

### Ambient Temperature

operation: -20 ... +55 °C  
transport / storage: -25 ... +60 °C

### Humidity / Altitude

20 ... 90 % RH (without condensing)  
up to 8.000 m

### Dimensions

W / H / D : 46 x 85 x16 mm  
weight : 48 g

## Ordering Information:

## Par No

SAT-030 EMG-Satellite:  
(EMG/breathing/blood press.)

E1159

## External Meas. Device:

ABD-01 I.E.M Mobil-O-Graph:  
(incl. conn.-cable VSABD-05)

E1136  
E1361

## Accessories:

EMG-02 Sensor Cable EMG:

E1247

AWS-01 Breathing Sensor,

Respiration Strap:

E1227

VSS-03 Candy-Cable:

E1816

(SAT-SAT connection cable)

VSMS-10 Connection

E1276

Cable Master / Satellite



The measuring satellites of the HealthLab system can be operated at one Heally Master ( e.g. HFM-01 ) simultaneously with up to six ( note the current requirement! ) additional satellites via the serial system bus ( HealthLab Serial Slave Bus ). Using this bus, the Master provides the Satellites with energy and controls the data exchange. An unique address ( 0 ... 26 ) is assigned to each satellite. By default for the SAT-03, the Address is '3'. This slave address is factory preset but can be modified by the manufacturer in case of need. The HealthLab system is designed as a mobile, autarkic measurement system, but may as well stationary be used, with a permanent connection to the host computer.

For the usage of the HealthLab system, the software package 'HealthLab' is available. It includes the module 'Heally Control', which enables the user to configure the system as well as to display data and to perform measurements. For complex psycho-physiological experiments further software modules are available.

### Channel Index

Channel-Designation	Channel No. ( Identifier )	Signal	Unit	Measuring Range	Resolution	Sample Rate ( Hz )	Gain ( default )	Offset
EMG1	117	EMG channel	mV	$\pm 6,5 \dots \pm 0,12 \text{ mV}$	$3 \dots 0,06 \mu\text{V}$	4 ... 500	300 ... 16000 ( 700 )	2048
EMG2	118	EMG channel	mV	$\pm 6,5 \dots \pm 0,12 \text{ mV}$	$3 \dots 0,06 \mu\text{V}$	4 ... 500	300 ... 16000 ( 700 )	2048
RESP	114	respiration strap	mV	$\pm 20 \text{ mV}$	$10 \mu\text{V}$	1 ... 125	50	2048
ATM3	83	breathing frequency	1/Min.	2 ... 30	1	-	10	0
BSYS	225	blood pressure systolic	mmHg	60 ... 290 mmHg	1	-	1	0
BIAS	226	blood pressure diastolic	mmHg	30 ... 180 mmHg	1	-	1	0



*Note:* The psycho-physiological monitoring system HealthLab is manufactured and delivered in configurations according to customer's request. The HealthLab components are not certified for use in the medical field. Therefore they shall be used solely for research purposes in scientific area.

### Links on further documents:

- Hardware: Master HFM-01 → <https://secure.turboj.de/documents/HFM-01.pdf>
- Software: Heally Control → [https://secure.turboj.de/documents/Heally5\\_en.pdf](https://secure.turboj.de/documents/Heally5_en.pdf)

