

# HealthLab Satellite SAT-20.02



## Technical Data

### Designation

HealthLab Measuring Satellite SAT-20.02,  
2 channels RS-232, 2 channels serial TTL

### Voltage Supply

/ Current Consumption

3,3 V DC via Master / 28 mA

### Digital Interfaces

2x serial interface RS-232 for blood pressure measuring & breathing gas analysis

2x serial interface TTL level for continuously blood pressure measurement and impedance cardiography / stroke volume

RS-485 Heally-Bus from Master / Satellite to Satellite 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 : 40 g

The HealthLab Measuring Satellite SAT-20.02 is a measurement module of the psycho-physiological monitoring system HealthLab. In the context of measurements with HealthLab, up to 4 external measuring devices for the measurement of blood pressure (oscillometric and continuously), for impedance cardiography and for respiration analysis can be connected to the SAT-20.02. The external devices transfer their measuring values to the SAT-20.02 using serial interfaces. The SAT-20.02 bundles the in this way gathered data and prepares it for storage in the HealthLab system.



*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.

### Ordering Information:

SAT-20.02 Interface	E1459
Satellite:	

### Accessories:

ABD-02 Long-Term Blood Pressure Measuring Device	E1460
CNAP Module for continuously Blood Pressure Meas.	E1638
Ergospirometry Device Set	VV0056
VSS-03 Candy Cable (SAT-SAT connection cable)	E1816
VSMS-10 Connection Cable Master / Satellite	E1276



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-20.02, the Address is '13'. 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	Gain	Offset
Measuring values from CNAP - Module ( <i>CNAP module version 5 required – information on version is located at the bottom of the device</i> )							
• blood pressure:							
CNAP	80	blood pressure ( <i>analogue value continuous</i> )	mmHg	0 ... 511	100	64	0
CDIAS	229	blood pressure, diastolic	mmHg	0 ... 511	-	64	0
CSYS	228	blood pressure, systolic	mmHg	0 ... 511	-	64	0
CMEAN	311	mean blood pressure	mmHg	0 ... 511	-	64	0
• pulse pressure - variation:							
CPVR	309	CNAP pulse pressure variance ( <i>relative</i> )	%	0,2 ... 40	-	100	0
CPPVA	310	CNAP pulse pressure variance ( <i>absolute</i> )	mmHg	0 ... 511	-	64	0
• haemodynamic:							
CCO	87	cardiac output	ml/s	0 ... 100	-	6	0
CSV	82	stroke volume	ml	0 ... 500	-	10	0
CSRV	81	vascular resistance	dyne <sub>5</sub> /cm	0 ... 9.999	-	1	0
CSVV	308	stroke volume - variance	%	0 ... 40	-	100	0
measuring values from Mobil-O-Graph:							
BDIAS	226	blood pressure, diastolic	mmHg	0 ... 300	-	1	0
BSYS	225	blood pressure, systolic	mmHg	0 ... 300	-	1	0
measuring values from CareFusion Oxycon Mobile Analyser:							
CO2	230	CO <sub>2</sub> - concentration	%	0 ... 100	100	100	0
O2	231	O <sub>2</sub> - concentration	%	0 ... 100	100	100	0
VOL	232	breathing volume	ml	0 ... 3.000	100	10	0

### 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)