

-90 -80 -70 -60 -50 -40 -30 -20 -10

HealthLab Satellite SAT-21



Technical Data

Designation

SAT-21.40 HealthLab Measuring Satellite, temperature NTC, heart rate, cardiac cycle, breath duration

Power Supply / Consumption

3,3 V DC via Master / 18 mA

Digital Interfaces

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

Climatic Conditions

acc. to DIN EN 60204-1 (05-2010)

Ambient Temperature

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

Humidity / Altitude

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

Dimensions

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

The HealthLab Measuring Satellite SAT-21.40 is a measurement module of the psychophysiological monitoring system HealthLab. In the context of measurements with HealthLab the satellite SAT-21.40 acquires up to four different temperature measuring data from NTC – temperature sensors. The temperature range is designed for measurements of skin temperature. To measure the core body temperature by means of double-temperature sensor, two channels each are combined. The body core temperature (TC_79 – left sensor connector) is calculated from the detected individual values TI_63 and TO_64. Analogous to this, the temperature value TC_91 (right sensor connector) is determined by means of the channels T_65 und T_69. By default at T_65/T_69 a forehead sensor, at TI_63/TO_64 a chest sensor (sternum sensor) is operated. The pulmonary activity of a proband is recorded by the measuring satellite SAT-21.40 using an elastic chest strap (AWS-01 – resistive sensor).

Note: Double-temperature sensors are equipped with individual calibration data. These have to be entered into the parameters of the measuring satellite in accordance with the used sensor!

Ordering Information:

SAT-21.40

Part-No.

E1433

Accessories:

EKG-01 ECG Sensor Cable	E1164
AWS-01 Respiration Sensor (respiration strap)	E1227
VSS-03 Candy-Cable (SAT-SAT connection cable)	E1816
VSMS-10 Master / Satellite Connection Cable	E1276



Additionally to the temperature measurement, the HealthLab Measuring Satellite SAT-21.40 captures measurement data on heart rate, heart cycle duration and breath cycle duration from the proband.

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-21.40, the Address is '12'. 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	Meas. Range Accuracy	Sample Rate (Hz)	Gain	Offset
ECG3	137	electrocardiogram	mV	-10 ... +10 ± 5	4 ... 1.000	150 - 8.000	2048
HR	227	heart rate	bpm	30 ... 300	-	10	0
PSI83	83	stress index (PSI)	-	-320 ... +320	0,5	100	0
RR_84	84	heart cycle duration	ms	200 ... 2.000	-	1	0
RESP3	138	respiration (strap or breath sensor)	mV	0 ... 250 mV ± 5 %	0,5 ... 125	30 ... 1.500	2048
ATM85	85	breath cycle duration	s	1 ... 30 ± 0,01	-	100	-
ISP86	86	breathe in duration	s	1 ... 10 ± 0,01	-	100	-
TI_63	63	temperature sensor (inner double-sensor 1)	°C	0 ... +50 ± 0,05	0,5 ... 125	100	0
TO_64	64	temperature sensor (outer double-sensor 1)	°C	0 ... +50 ± 0,05	0,5 ... 125	100	0
TI_65	65	temperature sensor (inner double-sensor 2)	°C	0 ... +50 ± 0,05	0,5 ... 125	100	0
TO_69	69	temperature sensor (outer double-sensor 2)	°C	0 ... +50 ± 0,05	0,5 ... 125	100	0
TC_79	79	body core temperature (DS 1 TI_63, TO_64)	°C	0 ... +50 ± 0,05	0,5 ... 125	100	0
TC_91	91	body core temperature (DS 2 TI_65, TO_69)	°C	0 ... +50 ± 0,05	0,5 ... 125	100	0

Links zu weiterführenden Dokumenten:

- Hardware: Master HFM-01 → <https://secure.turboj.de/documents/HFM-01.pdf>
- Software: Heally Control → https://secure.turboj.de/documents/Heally5_en.pdf

