

AR236.B - Temperature and humidity recorder

AR232.B - Temperature recorder



- IP65
Protection rate
- Memory up to
104 thousand records
- Clock
- Alarms
- USB
- Bluetooth
- Software
- Data
protection



AR236.B/1



AR232.B/1

Versions with external probes on the cable



AR236.B/2



AR232.B/2

Registration of humidity and/or temperature of air or other neutral gases with display of measurements

- configurable architecture enabling use in many fields and applications
- saving data in a standard text file located in the internal memory of the recorder in the FAT system with the option of reading through the USB interface and available software and editing in any spreadsheet such as Microsoft Excel or OpenOffice Calc
- high quality and accuracy digital relative humidity (%RH) and/or temperature (°C/°F) sensor with a protective filter (measuring probe integrated with the casing or external one on the cable)
- tight casing (IP65 protection level) ensures high operational reliability due to high resistance against penetration of water and dust and harmful condensation of steam inside the device
- portable casing with a handle for easy mounting on vertical and horizontal surfaces (after using an additional table base or other user's solutions)
- two-line readable LCD display with icons and measuring units, showing measured values, operating and memory status of the device, battery level and other diagnostic messages
- the possibility of presenting current measurements (relative humidity and/or temperature), calculated values (dew/frost point [°C/°F] and absolute humidity [g/m³]), measurement statistics (maximum, minimum, average) and clock, available HOLD function (stopping measurements)
- power supply from durable AA lithium battery with easy replacement
- long working time on a new battery - up to 15 years, depending on the recording interval, device operating temperature, presence and method of alarm signalling and Bluetooth Low Energy radio communication status (BLE)
- internal clock with the possibility of precise correction of real time counting
- F button for quick selection of one of the programmed functions: date and time display, memory status, measurement statistics, measured or calculated values, START/STOP button blocking, alarm memory clearing, switching on/off the Bluetooth wireless communication (BLE, optional equipment)
- programmable function of START/STOP button: measurement refresh only, start/stop or pause/resume of recording (with or without HOLD function), presentation of memory status (recording method, number of occupied memory and how long will it be enough for)
- a wide range of ways to start recording (continuous, limited by date and time, periodic daily, only during an alarm or manually controlled with the START/STOP button)
- recording in endless mode (when the memory is full, the oldest archives are deleted) or until the memory is full (registration is stopped), total capacity up to 104/94 thousand (AR232.B/AR236.B) records
- programmable archive file size for endless record (number of records)
- included free software (for Windows 7/8/10) enabling reading and graphical or text presentation of recorded results (ARSOFT-LOG) and configuration and copying of device parameters (ARSOFT-CFG), updates available on the website
- free application for mobile devices to read measurements via the Bluetooth (*MyAmbience* for Android to be downloaded from Google Play and for iOS from the App Store, for SHT31 Smart Gadget from Sensirion)
- the ability to copy archival and configuration files directly via the computer's USB port
- programmable password protection for access against unauthorized reading, copying and modification of archival and configuration data
- the possibility of differentiating archives from many recorders through individual assignment of an identification (ID)
- programmable types of alarms for humidity and temperature (below or above the threshold with hysteresis, inside band or out of band), intensity, alarm memory and time of insensitivity after resetting alarms memory
- alarm signalling with pulsating LED diodes and sounds (built-in low-volume buzzer)
- programmable displayed values (measurement values, calculated values, statistics or clock), recording and alarms options, and other configuration parameters, such as zero calibration of the measured quantity, type of thermometric scale (Celsius [°C] or Fahrenheit [°F]), indications resolution, identification number (ID), BLE interface, etc.
- saving in archives files the data and events, such as measured or calculated values, USB connection/disconnection, start/stop or pause /resume of recording, low battery level, parameter configuration, etc., with order numbers, time stamps and check sum
- temperature compensation of humidity (for AR236.B) and high long-term stability of measurements
- dew/frost point and absolute humidity calculated for constant atmospheric pressure of 1013hPa (AR236.B)
- intuitive operation, easy configuration and clear signalling of device operation states

Content of the set:

- recorder with 3.6V AA lithium battery (e.g. SAFT type LS14500)
- USB cable (A - micro B) for connection to a computer, length 1.5 m
- non-obligatory CD with drivers and software (Windows 7/8/10, also available on the website www.apar.pl in the Download -> Software section)

Available accessories (you can also buy it through the online store apar.sklep.pl):

- 3.6V lithium battery type AA (R6), 2450mAh, (e.g. SAFT type LS14500)
- table base (standing)

Technical Data

Measuring probe (integrated with the casing or on a 1.5 m long cable, do not pour water over it)	AR236.B	sensor SHT31 from Sensirion, ABS cover (gap width 1mm) and stainless steel mesh (mesh size 0.15mm)
	AR232.B	a digital sensor placed in a stainless steel tube
Measuring range for the probe (other than the nominal operating condition, in the table below)		
- humidity (does not apply to AR232.B)	0 ÷ 100 %RH	
- temperature	-30 ÷ 80 °C (for AR236.B and AR232.B/1), -50 ÷ 120 °C (AR232.B/2)	
Measurement accuracy		
- humidity (does not apply to AR232.B)	typically ±2 %RH (maximum ±2,5%RH in the range 0÷90 %RH)	
- temperature	AR236.B	typically ±0.3°C (maximum ±0.4°C)
	AR232.B	±0,5°C in the range -10÷85°C and ±0,5÷2°C in the remaining range
Measuring resolution		
0.1 %RH/°C, for displaying, programmable 0.1 or 1		
Hysteresis (does not apply to AR232.B)		
±0.8 % RH		
Long-term stability (3)		
<0.25% RH/year (does not apply to AR232.B)		
Response time (63%)		
8s (airflow required > 3.6 km/h, 1m/s)		
Measurement update period		
5s (on battery power) or 1s (after connecting to the PC's USB port)		
Working environment		
air and neutral gases, dust-free (for AR236.B)		
Communication interface for a computer		
USB (micro B connector), drivers for Windows 7/8/10		
Bluetooth radio interface (optional)		
Bluetooth Low Energy, version 4.2, range (without obstacles) < 9 m		
Data memory (4MB, internal, non-volatile, FLASH type, FAT file system)		
up to 94/104 thousand (AR236.B/AR232.B) records in endless (circular) mode or until memory is full		
Data recording interval (1)		
programmable from 5s to 8 hours, every 5s		
Real time clock (RTC)		
quartz, date (yyyy: mm: dd), time (hh: mm: ss), includes leap years, with the correction of time counting		
Optical and audio signalling		
LCD display, 2 LED red alarm diodes, buzzer (silent)		
LCD display (without backlight)		
2 lines of 4 digits, 7-segment, 8 mm high, signalling icons and measurement units		
Power supply		
3.6V size AA (R6), 2450mAh, e.g. SAFT type LS14500		
Working time of a new battery (2)		
up to 15 years (at 20 ÷ 30°C), battery level indication		
Nominal operating conditions		
-20 ÷ 70°C, <100 %RH (without condensation)		
Casing		
portable, ABS material, light grey color		
Weight		
~150g (with battery and probe integrated with the casing)		
Protection level		
IP65 for housing, IP41 for measuring probe (for AR236.B)		
Operating position		
any position or sensor cover down when the probe is exposed to direct contact with water		

- (1)- registration is always held (pause) during connection to the computer's USB port
- (2)- estimated working time depends on the data recording interval, alarm and Bluetooth (BLE) status and operating temperature:
- up to 15 years (recording interval >30min, alarms and BLE always off, operating temperature 20 ÷ 30°C)
 - at least 8 years (recording interval >25s, alarms and BLE always off, 20 ÷ 30°C)
 - 16 months (recording interval >25s, BLE or alarms every 1s with sound signalling continuously present, 20÷30°C)
 - 22 months (5 s recording interval, alarms and BLE always off, 20÷30°C)
 - 10 months (5 s recording interval, BLE or alarms every 1s with sound signalling continuously present, 20 ÷ 30°C)
 - 6 months (5 s recording interval, BLE and alarms every 1s with sound signalling continuously present, 20÷30°C)
 - for alarms occurring sporadically and with the signaling set every 5s, the above times will be significantly longer
 - at temperatures around -20° C and +70°C, the above times will be shortened by about 25 ÷ 30%
 - it is possible to use a USB power adaptor (AC power adaptor or powerbank, with the battery continuously present and functioning as a back-up power supply), however it may cause disturbances in the device operation due to the reduction of resistance to harmful external factors at the installation site, such as water, dust, surges, etc.
- (3)- for humidity and temperature recorder AR236.B it is recommended to periodically check and/or calibrate the device in accordance with the requirements applicable at the place of use or every 1 year

How to order

AR236.B / /

AR232.B

Type of measuring probe	Code	Bluetooth radio interface*	Code
integrated with the casing (standard)	1	Bluetooth Low Energy (BLE)	BT
on cable 1,5m	2		

* extra paid option

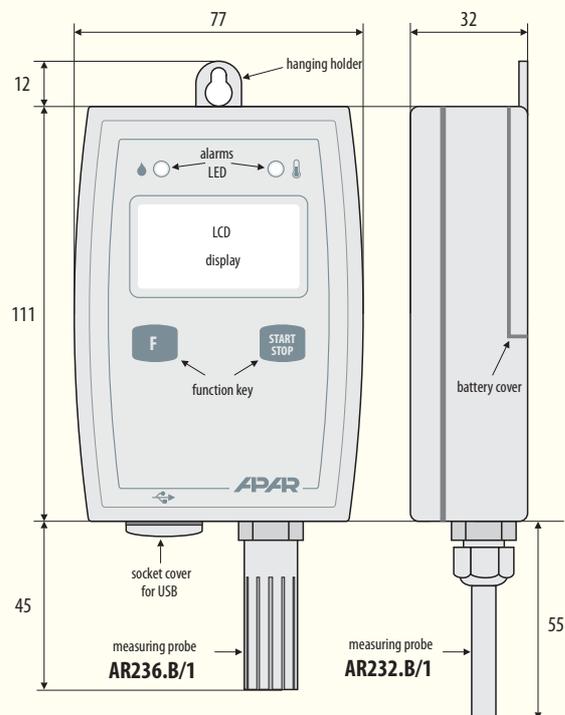
For example: AR236.B / 1

Recorder AR236 with probe integrated with the casing

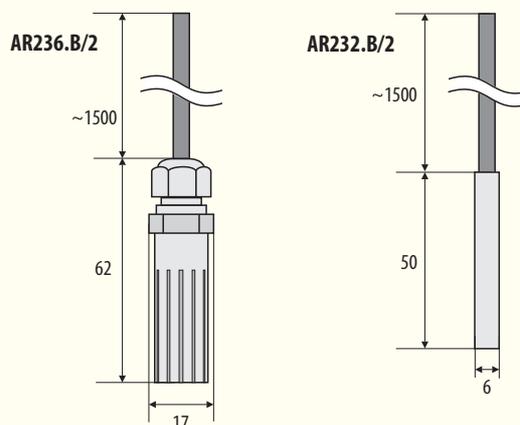
Installation data

Dimensions	77 x 111 x 32 mm (without measuring probe and holder)
Mounting	hanging holder to hang
Material	ABS

casing dimensions in the standard version (integrated measuring probe)



Version with measuring probe on the cable



Dimensions in mm

Calibration Certification

Name and address of the manufacturer: Sensirion AG
Laubisruetistrasse 50
CH-8712 Switzerland

Description: Digital Humidity- and Temperature Sensors

- SHT1x
- SHT2x
- SHT3x
- SHT7x
- SHTC1
- SHTW1
- STS21
- STSC1

The above mentioned products are calibrated to meet the specifications according to the corresponding Sensirion data sheet. Each device is individually tested after its calibration.

Sensirion uses transfer standards for the calibration. These transfer standards are themselves subject to a scheduled calibration procedure. The calibration of the reference itself used for the calibration of the transfer standards is performed by an ISO/IEC 17025 accredited laboratory.

The accreditation body is full member of the International Laboratory Accreditation Cooperation (www.ilac.org). Calibration certificates issued by facilities accredited by a signatory to the ILAC Mutual Recognition Arrangement (MRA) are accepted by all signatories to the ILAC MRA.

This provides traceability of measurement to recognized national standards and to units of measurement realized at the "National Physical Laboratory" (NPL) or other recognized national standards laboratories like "Physikalisch-Technische Bundesanstalt" (PTB) or "National Institute of Standards and Technology" (NIST).

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