

# AR238

## Recorder of temperature and humidity



AR238/1



AR238/2



AR238/3

### Logger for recording humidity and temperature of air or other neutral gases with LCD

- IP65 degree of protection provided by housing increases reliability of operation through a high resistance against water and dust and condensation within device
- recording measured values and events in a standard text file stored in the internal memory of the recorder or on microSD card in FAT system, with access via the USB port ability to readout files with recorded measurements in spreadsheets such as Microsoft Excel or OpenOffice Calc
- high-quality digital relative humidity and temperature sensor (integrated in the housing or external probe)
- temperature compensation of humidity measurement
- long-term high stability of the measurements
- battery power supply, with the battery replaced by the user
- LCD display showing the measured values, messages and errors
- low and high value alerts, in-band and out-of-band alert, LED indicators
- operation with a new battery up to 5 years (depending on the mode and working conditions)
- option of moving archive and configuration data on microSD card
- available protection against unauthorized data copying and modification
- internal real time clock with a battery backup power supply
- included software to adjust the device parameters and produce graphical or textual representation of recorded data
- included free software ARSoft-WZ3 for Windows enabling archiving, and presentation graphics or text measurements
- parameter configuration via USB and ARsoft-CFG computer program (Windows XP / Vista / 7/8/10) or from configuration saved on microSD card
- checksum to detect unauthorized changes in the archiv
- uniquely identifying multiple recorders of the same type by assigning unique identifier (ID) to each of them
- programmable measurement period, start and end point of recording and other configuration parameters: measured signal zero adjustment, "COPY" button lock, authorization request for SD/MMC card, disable writing data to SD/MMC card, operation mode of LCD display, alerts, identification number (ID)
- programmable password protection of access to the configuration parameters and archive data from the level of microSD card (requires card authorization or free access)
- protection against improper placement of batteries
- drivers for operating systems: Windows XP/Vista/7/8/10
- possibility to update recorder's firmware
- accessory filter with metal mesh is available to increase sensor protection

#### Contents of the set:

- recorder with a lithium battery 3,6V type AA, (SAFT LS14500)
- 2-meter long USB cable (A4 – miniA4) to connect to a computer
- CD with drivers and software
- user manual
- warranty

#### Available accessories::

- lithium battery 3,6V type AA (R6), 2450mAh
- SD memory card (1GB)
- stabilized AC adapter 5V/150mA
- filter with a metal mesh to protect sensor against dust IP50 (mesh size ~ 25 µm)

## Technical Data

<b>Measuring probe</b>	external in protective cover (ABS, slit width 1mm) or accessory filter with a metal mesh, do not flood sensor with water
<b>Measurement range</b>	
-humidity	0 ÷ 100 %RH
- temperature	-30 ÷ 80 °C
<b>Measurement accuracy</b>	
- humidity	±3 %RH (in range 20 ÷ 80 %RH) ±3 ÷ 5 %RH (in the remaining measurement range)
- temperature	±0,5°C (in range 20 ÷ 30°C) ±0,5 ÷ 1,8°C (in the remaining measurement range)
<b>Measurement resolution</b>	0,1 %RH i 0,1 °C
<b>Hysteresis</b>	±1% RH
<b>Long-lasting stability</b>	<0,5% RH/year
<b>Response time (63%)</b>	humidity typically 8s (at 25 °C and air flow 1m / s) temperature 5 ÷ 30s (depends on capacity and thermal resistance of environment)
<b>Measurement and writing period</b>	programmable from 10s to 24h
<b>Operating environment</b>	air and neutral gases
<b>Communication interface</b>	USB, drivers compatible with Windows 2000/ XP/Vista/7
<b>Storage (non-volatile)</b>	
- interior	4MB FLASH memory, file system FAT12, record up to 75,000 meas.
- exterior	SD/MMC card, FAT16, FAT32, recommended capacity ≤ 1GB i FAT16, max. capacity 2GB
<b>Real-time clock (RTC)</b>	quartz, date (yyyy:mm:dd), time (hh:mm:ss), remembers about leap year
<b>Optical indication</b>	LED diodes: "READ/WRITE", "STATUS", 1 or 2 alerts
<b>LCD display (7 segments)</b>	number of digits: 3, digits height 10 mm
<b>Power</b>	lithium battery 3.6 V type AA (R6), 2450 mAh, (SAFT LS14500)
<b>Working time on new battery (1)</b>	up to 5 years (in ambient temperature 20 ÷ 30 °C)
<b>Nominal operation environment</b>	-20 ÷ 70°C, <100 %RH (non condensing)
<b>Enclosure</b>	industrial, polycarbonate, dimensions 82x80x55 mm
<b>Protection level</b>	IP65 housing, IP40 sensor (sensor does not flood with water), IP50 sensor with filter with metal mesh
<b>Working position</b>	any, sensor cover down when probe is exposed to direct contact with water
<b>Weight</b>	~220g (with battery)

- working time depends on measurement period, whether SD card is used, working mode of LCD display and working temperature:
  - 5 years (measurement period > 10 min., data recorded in internal storage, copying data only via USB, LCD in economic mode, 20÷30 °C)
  - 20 months (measuring period > 10 min, writing to internal memory, data copied only via USB, LCD in continuous mode, 20 ÷ 30 °C)
  - 7 months (measurement period 10 s, internal memory, copying data only via USB, 25 °C)
  - 1.5 years (measurement period > 10 min., data recorded on SD/MMC card, LCD display in economic mode, 20÷30 °C)
  - 4 months (measurement period 10 s, data recorded on SD/MMC card, 20÷30 °C)
- unused card left in card slot also wears out the batteries
- moving the contents of full internal storage (4 MB) to an SD/MMC card takes about 2 min. and uses about 2 mAh of the battery power (tests run on SanDisk and Kingston cards)
- when optional adapter is used, new battery working time may be extended up to about 8 years (20÷30°C)

## How to order

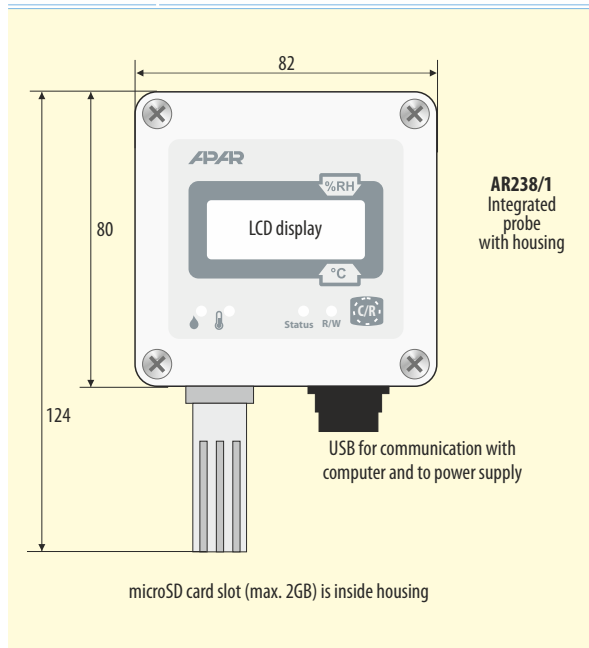
AR238 / □

Type of measuring probe	Code
integrated with housing (standard)	1
external with cable 1,5m	2
external probe in housing with cable 1,5m	3
on stainless steel pipe, length 150 mm	L150
on stainless steel pipe, length 250 mm	L250

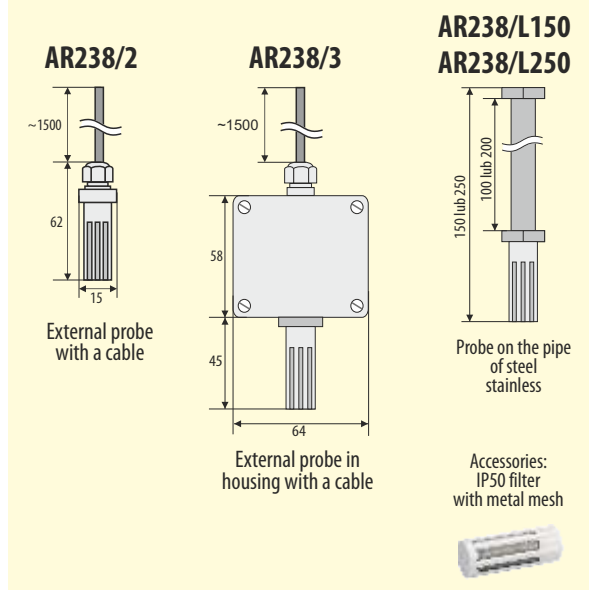
For example: AR238 / 1  
Recorder AR238 with internal probe

## Installation data

<b>Enclosure</b>	industrial IP65, polycarbonate, dimensions 82x80x55 mm sensor protection IP40 - ABS slit width of 1 mm
<b>Mounting</b>	4 holes Ø4,2 mm, spacing 70x50mm, available after removing front cover or hanging on 2 upper openings at the back of housing
<b>Work position</b>	vertical (sensor down)



## External measuring probes



Version 1.0.1  
2016-02-03