AR233
Recorder of temperature and standard signals

APAR

Recorder with universal and analogue thermometric input, with internal temperature measurement

- 1 universal measurement input (thermoresistance, thermocouple, and analog) and and integrated digital temperature sensor
- data recording in a standard text file located in the internal memory of the recorder or on an SD/MMC card in the FAT system, with the possibility to read through the USB interface
- portable housing suitable for wall installation
- battery power supply with the possibility that the user changes the battery
- long operation time with a new battery (up to 5 years, depending on the recording interval, the presence of an SD card, and the operating temperature of the device)
- possibility to transfer archived and configuration data on an SD card
- available protection against unauthorized data copying and modification
- internal real time clock with a battery backup power supply
- free software included that enables configuration of the parameters of the device and presentation of the recorded results in a graphic form or as text; possibility to update from a website
- long-term high stability of the measurements
- parameter configuration methods:
  - via USB interface and software (Windows 7/8/10)
  - using a configuration file stored on an SD/MMC card
- checksum to detect unauthorized changes in the archive
- uniquely identifying multiple recorders of the same type by assigning unique identifier (ID) to each of them
- programmable type of input, range of indications, recording interval, start and end of recording, and other configuration parameters, such as zero and sensitivity calibration, SD/MMC card options, and identificationnumber (ID)
- possibility to prevent unauthorized change of the recorder's parameters from the SD/MMC card and transfer of archived data from the internal memory onto an SD/MMC card (authorization of the card or free access is required)
- protection against incorrect battery polarity
- possibility to update the recorder's software
- high temperature stability of measurements, accuracy, and immunity to interferences

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 (Windows 2000/XP/Vista/7/8)
- user manual
- warranty

Available accessories:
- lithium battery 3,6V type AA (R6), 2450mAh
- SD memory card (2 GB)
- SD/MMC card reader
- stabilized AC adapter 5V/150mA

Technical data

Universal input (programmable): measurement range

- Pt100 (RTD, 3- or 2-wire)	-200	÷	850	℃
- Ni100 (RTD, 3- or 2-wire)	-50	÷	170	℃
- thermocouple J	-40	÷	800	℃
- thermocouple K	-40	÷	1200	℃
- thermocouple S	-40	÷	1600	℃
- thermocouple B	300	÷	1800	℃
- thermocouple R	-40	÷	1600	℃
- thermocouple T	-25	÷	350	℃
- thermocouple E	-25	÷	680	℃
- thermocouple N	-35	÷	1300	℃
- current signal (Rwe = 110Ω)	0/4	÷	20	mA
- voltage signal (Rwe = 110 kΩ)	0	÷	10	V
- voltage signal (Rwe > 2 MΩ)	0	÷	60	mV
- resistance (3- or 2-wire)	0	÷	700	Ω

Lead resistance (RTD, Ω)	Rd < 25 Ω (for each line)

Processing errors (at ambient temperature 25°C):

- basic	- for RTD, mA, V, mVΩ	0,1 % measuring range ± 1 digit
	- for thermocouple	0,2 % measuring range ± 1 digit
- additional for thermocouples		<2 ℃ (cold ends temperature)
- additional from ambient temp. changes		< 0,005 % input range /℃

Built-in temperature sensor (measurement range: -20 ÷ 70 ℃)	Accuracy: ±0,5℃ (in range -10 ÷ 70℃) ±0,5 ÷ 1,7℃ (in remaining range)
Measurement resolution	0,1 ℃
Measurement and writing period	programmable from 10s to 24h.
Communication interface	USB (to communicate with computer), drivers compatible with Windows 2000/ XP/Vista/7

Storage (non-volatile)

- interior	4MB FLASH memory, file system FAT12, record up to 80,000 meas.
- external (connector with ejector)	SD/MMC card, FAT16, FAT32. recommended capacity ≤ 1GB, FAT16, max. capacity 2GB

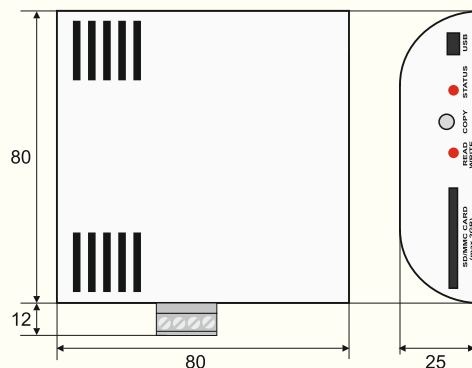|	
Real-time clock (RTC)	quartz, remembers about leap year
Optical indication	2 LED diodes: „READ/WRITE", "STATUS"
Power	lithium battery 3.6 V type AA (R6), 2450 mAh, (SAFT LS14500
Working time on new battery (1)	up to 5 years (in ambient temperature 20 ÷ 30 ℃)
Nominal operation environment	-20 ÷ 70℃, <100 %RH (non condesing)
Working environment	air and neutral, dust-free gases
Enclosure	on-wall, material ABS UL94-V0, white, IP20
Enclosure dimensions	80 x 80 x 25 mm
Working position	any
Weight	~80g (with battery)
Electromagnetic compatibility (EMC)	immunity: acc. to PN-EN 61000-6-2:2002(U)
	emission: acc. to PN-EN 61000-6-3:2002(U)

(1)
- working time depends on measuring period, whether SD/MMC card is used and the ambient temperature:
  - 5 years (measurement period> 10 min, write to internal memory, data copied only via USB, 20÷30℃
  - 8 months (measurement period 10s, internal memory, data copied only via USB, 20÷30℃
  - 1.5 years (measurement period> 10 min, recording on an SD/MMC card, 20÷30℃
  - 5 months (measuring period 10 s, recording on an SD/MMC card, 20÷30℃
- 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℃)
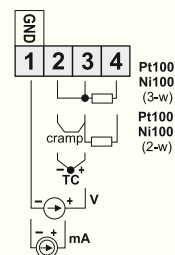
Installation data

Dimensions	80x80x25 mm
Mounting	4 screw M3
Material	ABS UL94-V0

Electrical connection

How to order
AR233

www.apar.pl

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