

Recorder of temperature and standard signals



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

- 1 universal measurement input (thermoresistance, thermocouple, and analog) 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
- LCD display showing measured values as well as messages and errors
- 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
- lower and upper alarm, in band and out of band, LED signaling
- 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 identification number (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
- 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 °C
- Ni100 (RTD, 3- or 2-wire)	-50 ÷ 170 °C
- thermocouple J	-40 ÷ 800 °C
- thermocouple K	-40 ÷ 1200 °C
- thermocouple S	-40 ÷ 1600 °C
- thermocouple B	300 ÷ 1800 °C
- thermocouple R	-40 ÷ 1600 °C
- thermocouple T	-25 ÷ 350 °C
- thermocouple E	-25 ÷ 680 °C
- thermocouple N	-35 ÷ 1300 °C
- 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 °C (cold ends temperature)
- additional from ambient temp. changes		< 0,005 % input range /°C

Built-in temperature sensor Accuracy: ±0,5°C (in range -10 ÷ 70°C)
(measurement range: -20 ÷ 70 °C)

Measurement resolution 0,1 °C

Measurement and writing period programmable from 10s to 24h

Communication interface USB, 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 display LCD, 3 LED diodes: „READ/WRITE“, „STATUS“, 1 alarm

Display LCD 7-segments, 4 digits, digit height 10mm

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 °C)

Nominal operation environment -20 ÷ 70°C, < 100 %RH (non condensing)

Working environment air and neutral, dust-free gases

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)

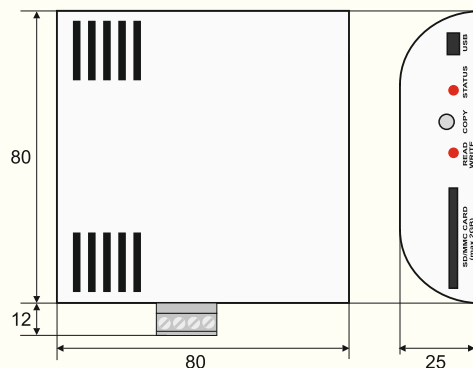
- working time depends on measurement period, whether SD/MMC card is used, working mode of LCD display and working temperature:
 - 5 years (measurement period > 10 min., data recorded in internal storage, copying data only via USB, LCD in economic mode, 20÷30 °C)
 - 20 months (measurement period > 10 min., recording in 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, 20÷30°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)
- 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)

Installation data

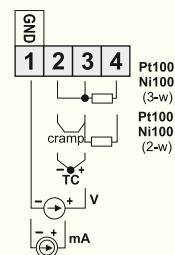
Dimensions 80x80x25 mm

Mounting 4 screw M3

Material ABS UL94-V0



Electrical connection



How to order AR234

Version 2.0.2 2014-08-27