

TEMPERATURE LOGGERS



Logger SO141 (SO541, SO841) with USB adapter

- Transport of food or pharmaceuticals
- Food and beverages industry (HACCP)
- Pharmaceutical industry, blood stations, pharmacies
- HVAC (heating, ventilation, air conditioning, cooling)
- Building and energy management
- Research and development, Laboratories (GLP)
- Warehouses
- Technological processes
- Museums, archives, galleries

Loggers are designed for record of temperature or in combination with other signals. Values are stored to a non volatile memory. Data transfer to the PC is performed via serial interface RS232, USB or Ethernet by means of a proper adapter or GSM modem.

Type approval certificate accordingly with EN 12830 - Temperature recorders for transport, storage and distribution of chilled, frozen food.

- included calibration certificate from the manufacturer - Comet
- fast data transfer to the PC (full memory of 32 000 readings for approximately 30s)
- variability of connection to the computer - USB, RS232, Ethernet, GSM modem
- permanent connection to the PC enabled, data is possible to download even during logging
- large dual line display with special symbols, switchable
- optional display of minimum and maximum measured values (reset of min/max memory from PC or by magnet)
- dual level alarm is enabled for each channel, alarm is indicated by blinking of the value on the LCD display or LED
- two alarm modes: instant or with memory (detected alarm is indicated permanently till alarm memory is cleared)
- robust watertight case, easy installation, locking enabled
- low power consumption - battery life up to 7 years, indication of remaining battery life, easy battery replacement
- standard temperature sensor is Pt1000, switchable to Ni1000/6180ppm at range -50 to +150 °C
- with SO841 it is possible to combine temperature measurement with logging of contact state - e.g. door contact
- logging start/stop is enabled in several ways: at certain time and date programmed from computer, by delivered magnet or depending on binary input state (SO841 model)
- also special logging mode is enabled, when logging runs only, if some of measured values are out of adjusted alarm limits
- each logger is possible to describe with text of maximum 32 characters
- each channel is possible to describe with text of maximum 16 characters
- password protection is enabled to prevent unauthorized manipulation with logger

TECHNICAL PARAMETERS

Operating temperature range of loggers RO110x without display:	-40 to +80 °C logger RO110, -30 to +70 °C logger RO110E
Operating temperature range of loggers SOxxx with display:	-30 to +70 °C
Accuracy of the Pt1000 input without probe - loggers SOxxx:	±0.2 °C from -50 do +100 °C ±0.2% from reading from +100 to +260 °C ±0.4% from reading from -90 to -50 °C
Accuracy of temperature measurement of internal sensor:	±0.4 °C (except economy models SO110E, RO110E)
Resolution of the reading:	0.1 °C
Real time clock:	year, leap year, month, day, hour, minute, second
Logging interval:	adjustable from 10s to 24h
Display and alarm refresh:	each 10 s
Total memory capacity:	32000 values in noncyclic logging mode
Logging modes: noncyclic	logging stops after filling the memory
cyclic	after filling memory oldest data is overwritten by new
Dimensions without connectors:	loggers with display 93x64x29mm loggers without display 93x64x26mm
Power:	Lithium battery 3,6V, size AA
Typical battery life:	7 years RO110x, 6 years SO1xx, 5 years SO141, SO841
Battery life in continuous on-line mode with interval 1min:	reduced to 70% of the above lives
Battery life in continuous on-line mode with interval 10s:	1 year
Protection:	IP67- protected against influence of temporary immersion into water



start/stop magnet

COM adapter for communication via RS232 port and USB adapter for communication via USB



Types	LOGGERS WITH DISPLAY	Input signals	Measuring range
	SO110 SINGLE CHANNEL THERMOMETER with internal sensor	1xT	-30 to +70 °C
	SO110E ECONOMY THERMOMETER with internal sensor with measuring accuracy: $\pm 0.6^{\circ}\text{C}$ from -30 to +30 °C and $\pm 0.8^{\circ}\text{C}$ from +30 to +70 °C. NEW !	1xT	-30 to +70 °C
	SO111 SINGLE CHANNEL THERMOMETER for temperature logging from one external probe	1xT	-90 to +260 °C
	SO121 DUAL CHANNEL THERMOMETER for temperature logging from two external probes, including temperature difference between channels	2xT	-90 to +260 °C
	SO122 DUAL CHANNEL THERMOMETER for temperature logging from internal sensor and external probe including temperature difference between channels	2xT	internal -30 to +70 °C external -90 to +260 °C
	SO141 FOUR CHANNEL THERMOMETER for temperature logging from four external probes	4xT	-90 to +260 °C
	SO841 DUAL CHANNEL THERMOMETER- for temperature logging from two external probes, including temperature difference between channels. Additional inputs for two binary signals (e.g. from door contact)	2xT + 2xbinary	-90 to +260 °C
	SO541 DUAL CHANNEL THERMOMETER- for temperature logging from two external probes with two universal voltage inputs 0-5Vdc, accuracy $\pm 0.2\%$ FS NEW !	2xT + 2x0-5Vdc	-90 to +260 °C
Types	LOGGERS WITHOUT DISPLAY	Input signals	Measuring range
	RO110 SINGLE CHANNEL THERMOMETER with internal sensor	1xT	-40 to +80 °C
	RO110E ECONOMY THERMOMETER with internal sensor with measuring accuracy: $\pm 0.6^{\circ}\text{C}$ from -30 to +30 °C and $\pm 0.8^{\circ}\text{C}$ from +30 to +70 °C.	1xT	-30 to +70 °C

External temperature probes are not included. To order RTD probes with Pt1000 sensors see Optional accessory.

No accessory is included. For basic use it is necessary to order at minimum a COM adapter or USB adapter for communication with computer, optionally a start/stop magnet, if needed to control logging the other way than directly from computer. Also connectors for input signals of models SO541 and SO841 is necessary to order.

INCLUDED ACCESSORIES: Traceable calibration certificate from the manufacturer, instruction manual.

Calibration certificate with declared metrological traceability of etalons is based on requirements of EN ISO/IEC 17025 standard.

Battery is also included.

Program enables to control all logger functions and viewing and printing of record in numerical and simple graphic format.

It is possible to export logged values to dbf or txt formats for further analysis.



OPTIONAL ACCESSORY:

- SW100 - CD with free PC program
- LPO02 - COM adapter for communication with the PC via RS232 serial port
- LPO03 - USB adapter for communication with personal computer via USB port
- LPO05 - LAN adapter for communication with the PC via Ethernet, including ac/dc adapter 230Vac/5Vdc.
Exceeding of adjusted limits is alarmed by sending e-mail message or trap.
- LPO04 - start/stop magnet
- MD036 - self adhesive Dual Lock for easy installation
- A4203 - spare Lithium battery 3.6V, no leads, size AA
- for types SO111, SO121, SO122, SO141, SO841 it is necessary to order probes with RTD Pt1000 sensor, equipped with K1321 connectors - there is a symbol /E behind probe name. Recommended is a multipurpose watertight probe Pt1000TG8/E with cable. Please specify the required cable length (1, 2, 5 or 10 meters).
- K1321 - spare female connector for connection of temperature probe and external signal, protection IP67
- F9000 - wall holder secured against unauthorized removal
- LPO06 - GSM adapter for communication of Sxxxx, Rxxxx loggers via GSM
- MP009 - GSM modem Fastrack Supreme, without accessories
- MP009/1 - GSM antenna 3dB for modem Fastrack, right-angled
- MP009/2 - Data cable for setting of GSM modem Fastrack
- MP009/3 - Ac/dc source 230V/12V for powering of GSM modem Fastrack
- SWR004 - optional software for Windows color print, vertical and time zoom of graphs and other functions