

TEMPERATURE DATA LOGGERS

Temperature recorders for the transport, storage and distribution of chilled, frozen, deep-frozen/quick-frozen items.

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

Advantages:

- included traceable calibration certificate
- fast data transfer to the PC – full memory of 32 000 readings in 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
- 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
- models S0841 and S0842 are able 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 magnet or depending on binary input state (S0841 & S0842 models)
- also special logging mode is enabled when logging runs only, if some of measured values are out of adjusted alarm limits
- each logger can describe with text - maximum of 32 characters
- each channel can describe with text - maximum of 16 characters
- password protection is enabled to prevent unauthorised manipulation with logger



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Start/stop magnet



USB adapter for communication



COM adapter for communication via RS232

Common technical parameters:

Operating temperature range models R0110 no display	-30 to +80°C, -40 to +80°C
Operating temperatures range models S0xxx with display	-30 to +70°C
Accuracy of temperature measurement – internal sensor	±0.4°C (not valid for economy loggers S0110E and R0110E)
Accuracy of Pt1000 temperature input without probe	±0.2°C from -50 to 100°C ±0.2% from reading from +100 to 260°C ±0.4% from reading from -90 to -50°C
Resolution	0.1°C
Real time clock	year, leap year, month, day, hour, minute, second
Logging interval	every 10s
Total memory capacity	32 000 values in non-cyclic mode
Date logging modes	non-cyclic – logging stops after filling the memory cyclic – after filling memory oldest data is overwritten by new data
Dimensions without connectors	loggers with display 93x64x29mm loggers without display 93x64x26mm
Power	lithium battery 3.6V size AA
Typical battery life	7 years R0110, 6 years S0xxx
Protection of loggers with internal sensors	IP67, protected against influence of temporary immersion into water

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MODEL	LOGGERS WITH DISPLAY	MEASURED SIGNALS	MEASURING RANGE
S0110	Single channel thermometer with internal sensor	1 x T	-30 to +70°C
S0110E	Economy single channel thermometer with internal sensor. 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	1 x T	-30 to +70°C
S0111	Single channel thermometer for recording from one external probe	1 x T	-90 to +260°C
S0121	Dual channel thermometer for recording from two external probes	2 x T	-90 to +260°C
S0122	Dual channel thermometer for recording from one internal sensor and one external probe	2 x T	external -90 to +260°C internal -30 to +70°C
S0141	Four channel thermometer for recording from four external probes	4 x T	-90 to +260°C
S0541	Dual channel thermometer for recording from two external probes. Additional two universal inputs 0 to 5Vdc. Accuracy $\pm 0.2\%$ FS.	2 x T 2 x 0-5V	-90 to +260°C
S0841	Dual channel thermometer for recording from two external probes. Additional inputs for two binary signals e.g. from door contact.	2 x T 2 x contact	-90 to +260°C
S0842	Three channel thermometer for recording from three external probes. Additional input for one binary signal e.g. from door contact.	3 x T 1 x contact	-90 to +260°C
LOGGERS WITHOUT DISPLAY			
R0110	Single channel thermometer with internal sensor	1 x T	-40 to +80°C
R0110E	Economy single channel thermometer with internal sensor. 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	1 x T	-30 to +70°C

No accessory or temperature probes are included. For thermometer basic use it is necessary to order USB adapter or COM adapter for communication with computer, optionally start/stop magnet, if needed to control logging the other way than directly from computer. Also connector(s) for external signals for S0541, S0841, S0842 loggers are necessary.

Included accessories:

Traceable calibration certificate from the manufacturer with declared metrological traceability of etalons is based on requirements of EN ISO/IEC 17025 standard. It is possible to download a free basic program for Windows at anytime. The program enables control of all logger functions and viewing as well as printing of records in numerical and simple graphic format.

Optional accessories:

- **SWR004** - optional software for Windows - colour printing, vertical and horizontal zooming of graphs and other functions
- **SWR007** - program package Database Logger Program for working with data from loggers. The program enables the following functions:
 - To set locally the GSM modem via RS232 link by means of QMS2901 cable.
 - To view selected channels from logger together with selected channels of loggers.
 - Measurement from different devices is possible to combine in one table or graph.
 - To choose any time interval for analysis.
 - Printing, exporting to PDF- table and graph.
- Other freeware needed for system operation: database server MySQL
- **SW100** - CD with free Windows program
- **LP002** - COM adapter for communication with the PC via serial RS232 link
- **LP003** - USB adapter for communication with the PC via USB port
- **LP004** - start/stop magnet
- **LP005** - LAN adapter - external converter for communication with the PC via Ethernet, including ac/dc adapter 100 to 240Vac/5Vdc.
- **MD036** - self adhesive Dual Lock for easy installation
- **A4203** - spare Lithium battery 3.6V size AA
- **K1321** - female connector for connection of S0541 logger voltage signal 0-5V, S0841, S0842 logger binary signal, protection IP67
- **F9000** - wall holder secured against unauthorized removal
- For models S0xx1 and S0xx2 it is necessary to order temperature probes with RTD Pt1000 sensors equipped with female K1321 connectors - there is a symbol/E behind probe name.



LP005 - LAN adapter



Thermometer R0110, R0110E



F9000 - wall holder



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