

# SLI1

## Single bus intelligent temperature data logging devices Operating Manual



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# I. Introduction

SLI1 series of data logging devices model name have been renamed SLIT3 series.

SLI1 series of single-bus intelligent temperature data logging devices, with the U.S. DALLAS line field bus technology, low temperature conditions to achieve the practical online instrument monitoring program can be widely used in real-time temperature monitoring of a variety of data acquisition applications.

SLI1 series of single-bus temperature detection apparatus can be intelligent digital temperature sensor DS1820 series of products for temperature data collection, display, alarm settings, data transmission, so that the temperature detection system for high circuit reliability, low cost and simple wiring structure. Traditional temperature measurement system as an ideal alternative, and its small size, measuring point and more flexible networking features. With wireless or GPRS and field a single bus transfer (1-wire) technology, the DS1820 will spread throughout the node via a wired or wireless means to link up with the monitoring center, to reduce energy consumption, promote safe production purposes.

The instrument can be applied: (1) SMT industrial temperature data monitoring (2) Electronic Equipment Factory of the temperature data monitoring (3) cold storage temperature monitoring (4) storage temperature monitoring (5) pharmaceutical GMP monitoring system (6) Environmental temperature monitoring (7) telecommunications room monitoring (8) Power Plant / Power Plant (9) Power Plant / Power Plant (10) Temperature Monitoring (11) beer production process temperature detection.

For ease of engineering network use, the instrument provides a secondary communication protocol developed to support the secondary development. Users simply according to our protocol can use any serial communication software to query and set equipment data.

## Second, the technical parameters

Support sensor	SLST1,DS18B20
Display temperature range	-55℃~+125℃
Display resolution	0.1℃
Temperature measurement accuracy	0.5℃
Temperature rate	850ms / point
Channels	Can be accessed by 1-24 points (see instrument identification, limit of single-bus sensors)
Alarm settings	Set the alarm limit line
Baud Rate	19200 (other baud rate can be customized)
Communication port	RS232 (optional CAN, RS485)
Power supply	DC 5V 2A
Power Consumption	2W

Weight	270 grams
Storage temperature	-40 - 85℃
Operating environment:	-40 - 85℃ -40℃ ~ +85℃
Support the bus cable length	≤200M
Hole Size	67×67mm
Dimensions:	72×72×75mm <sup>3</sup>

## Third, the typical program

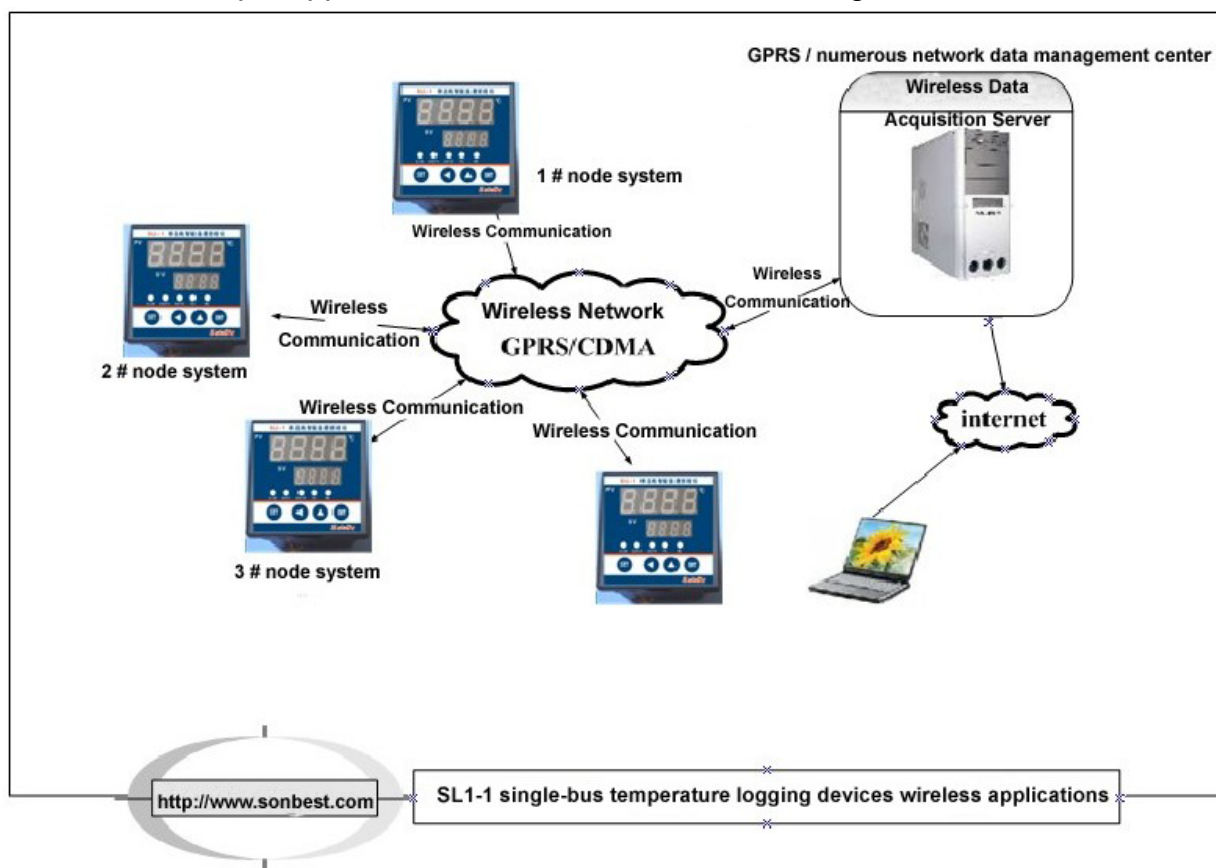
The most simple applications

SLI1 instruments directly through the RS232 interface with a computer or laptop connection (optional RS232-USB converter) will be the scene data directly to a computer for display, analysis and storage.

Program shown above, SLI1 will live through a single bus interface bus. DS1B20 chip temperature sensor can also be matching my company SLST series stainless steel of various protective packaging of digital temperature sensor. Instrument which can be accessed on the bus 6 sensors (to be expanded, customizable, extendable to a maximum of 250 points). And each temperature sensor is received by way of parallel bus. See wiring instructions.

Wireless applications

Wireless applications is an extension of the simplest applications. Wiring the scene, with the most simple applications the same. Instrument through RS232 interface



with GRPS / CDMA or other wireless device, you can set up the wireless network. Field data will be sent to the server or data collection centers, to achieve real-time online monitoring of field data.

## Fourth, the interface shows

Right picture shows the wiring behind the instrument panel, the panel on the pins defined as shown on the right:

Pin Number	Definition	Help
1	+5V	Power supply is positive, use the 5V power supply
2	GND	Then the power negative
3	CANH	No function of the instrument temporarily
4	CANL	No function of the instrument temporarily
5	Normally open	Relay output normally open
6	Public	Relay output common pin
7	NC	Relay output normally closed
8	VCC	Positive power supply bus, the normal output value of 5V, not be less than 3.7V
9	DQ1	Access to bus signals
10	DQ2	New sensor reading pin serial number identification
11	GND	Negative power supply bus
12	RX	RS232 standard serial port 2 pin connection
13	TX	3 pin RS232 standard serial port connection
14	GND	5 pin standard serial port RS232 connection

## Power

The instrument input is DC 5V, supplied power for the 5V 2A. Use, please check the voltage and polarity and then access equipment. 1 is a positive power supply input voltage range :4.8-5 .5 V

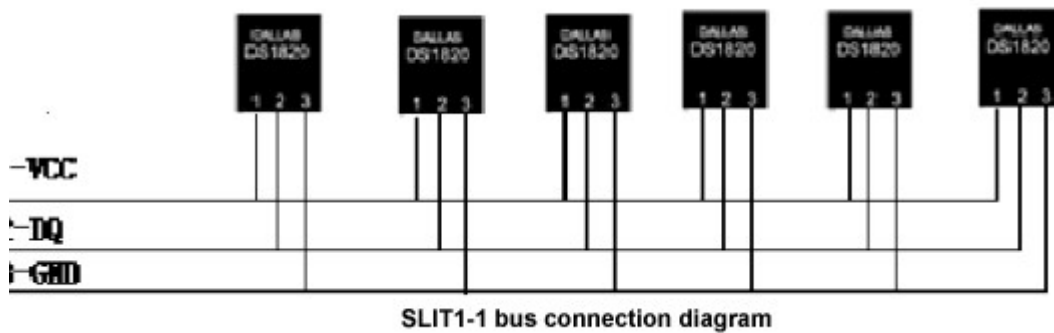
## RS232 Interface

RS232 interface is a standard serial interface, the pin is defined as follows: 2 foot-RX 3 Foot-TX 5 foot-GND, the serial interface can be connected directly to your computer, but also with other instruments with the serial communication settings for connection, use of non-cross-RS232 data cable.

Instruments on the back of pin

Bus Interface

Three wire bus interface, this interface can be accessed by a maximum of 200 meters the bus, the instrument can be connected up to standard six single-bus temperature sensor wiring as follows:



Bus interface has three pins, the pin is defined as follows:

8 feet - the power is (VCC), this pin is the voltage output pin voltage is 5V

9 feet - the signal line (DQ), single bus signal line

11 feet - the power of negative (GND)

## Sensor test interface

<Sensor test interface> is mainly used for reading the sensor into the new access ID, the new sensor in the bus access, please access <sensor test interface> read the serial number. And then access the bus. The new sensor read mode of operation, see instructions.

Test interface is:

8 feet - the power is (VCC), this pin is the voltage output pin voltage is 5V

10 feet - the signal line (DQ), the new sensor signal access to the foot

11 feet - the power of negative (GND)



## Display Panel

Instrument uses two rows of four LED display, as shown, the upper display temperature data, the lower channel number display sensor. To cycle through display, the user can close or open the corresponding button to set the channel.

## Keyboard

Instrument set the four keys are:



- "Settings button>, press the button to enter the settings into the state.



- <Up button> This button is mainly used to switch the channel number, or set the alarm temperature increase by 10 increments the alarm temperature.



- <To the left> this key principal in the set alarm temperature increase by 1 increment value or set the alarm temperature channel is shown.



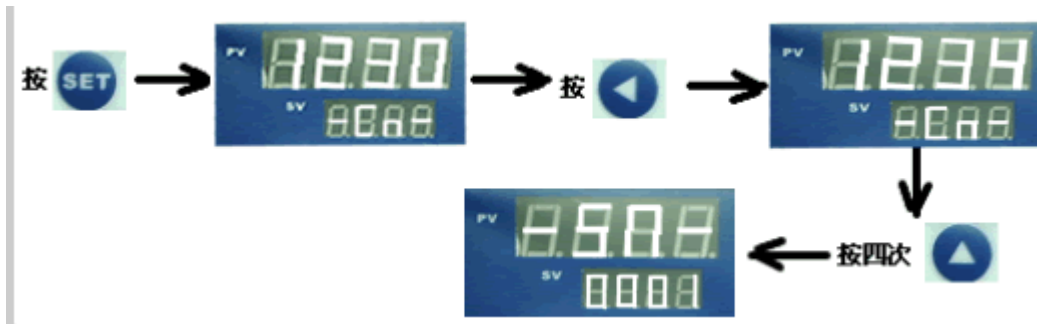
-



- <ENT> Canceled after confirmation settings, enter the normal display state.



Equipment to set up five indicators, which ALM is warning light, OUT1, OUT2 for the alarm output indicator, the instrument is no such standard function. When working properly, OUT1 to Always, and OUT2 off. SNG1, SNG2 for communications status indicator, when the serial port with data exchange, SNG2 be indicator flashes. But only for RS485 or CAN SNG2 equipment, used to indicate the appropriate communication status.



## Fifth. Instructions

To prevent misuse, the system set a password access. As shown above, is to enter the setting state of the whole process, while the upper value of the digital value to the password value is displayed, the instrument will automatically set to the appropriate state.

### 1. Read into the new sensor (set password is 1234)

The instrument before use, ensure that access to the serial number of the sensors on the bus have been stored in the instrument. Otherwise, the system will not recognize. The new sensor read the steps below:

1) define the correct access to the sensor then the sensor pin test interface. Please note that the sensor test interface marked VCC, DQ, GND, this pin is set with a single sensor device bus-one correspondence, can not take the wrong.

2) enter the set state and set (set password is 1344)

Pressed as following:

<SET> Key press, click <up button>, and then looked <LEFT>, when the last row of the digital control, display value reaches 1344, that reads the serial number into the state, this time on the row of display - SN-, the next row of display 0001, which is the lower channel number 000x.

Read the serial number into the state, which can be <up arrow> to switch channels. For example, I hope that the new access to the sensor 2, channel display, just click <up button>, the lower display shows "0002", the press <SET> key, this time to wait for a few seconds, when the last row Show "-PS-", it said, has successfully test interface access to the channel 2 sensor reading. When the remains of other new sensor reading, the need to replace <sensor test interface> on the sensor, switch <up arrow> to select the channel number, press <SET>, until

the upper display when the "-PS-" time. After reading the serial number, according to <ENT> key to exit setting mode.

## 2. To set the alarm limit value (set password is 1244)

The instrument can be alarm values for each sensor set, when any one sensor temperature exceeds the upper limit set, the instrument that will alarm. Set as follows:

The same with the above setup, when the row is "1244", the instrument that is immediately set into the alarm state, this time on the display shows "0050", that is not set off the channel, the system default limit alarm value of 50 degrees. Lower display shows "0001" character, the last one that is channel number, through <LEFT> to set the alarm value (the value cycle, when more than 125, it will automatically become 0, so that you can set the low The following alarm 50), by <up the value> to switch round after round. When all the alarm settings are finished, click <ENT> to identify and enter into the normal display state.

## 3. Sets the channel is displayed (set password is 1254)

Although the instruments to support six sensors, but the actual use of only 2 or less then 6 months, we can not access this feature off the sensor channel.

We at <SET>, through <the left "(press 2 the next)," up arrow "(by 4 down) switch, when the display shows" 1254 ", the channel is set to enter the state, this time on the row Show "-ON-" or "-OFF", available at this time <up arrow> to switch channels, use <to the right> to set on or off. When set up, according to <ENT> to identify and enter into the normal display state.

## Sixth. Selection Guide

No.	Channels	Model	Remarks
1	1 点	SLI1-1/1	Single instrument, without identifying the sensor serial number
2	6 点	SLI1-1/6	6 meters, bus, run-time automatic identification
3	12 点	SLI1-1/12	12 meters, bus, run-time automatic identification
4	20 点	SLI1-1/20	20 points meter, bus, run-time automatic identification
5	24 点	SLI1-1/24	24-point instrument, bus, run-time automatic identification

Other non-standard number of channels can be customized according to user requirements



## Seventh, random list

No.	Name	Type	Quantity	Remarks
1	Intelligent temperature data circuit tester	SLI1-1	1	
2	Monolithic Power	DC5V 2A	1	
3	Serial Line		1	
4	Manual (certificate)		1	



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