ZK-900 Series large screen temperature and humidity display

Product introduction：

- The ZK-9000 is a temperature display；
- ZK-9001 Temperature monitor (with communication, NTC sensor)；
- ZK-9002 is a temperature and humidity inspection instrument (with communication, digital sensor)；
- ZK-9003 is a temperature inspection module (with communication, NTC sensor)；
- ZK-9004 is a temperature and humidity inspection module (communication, digital sensor)；
- High precision, high stability temperature and humidity display, large display screen, with a variety of alarm modes, can set the temperature and humidity upper and lower limits, temperature and humidity calibration, single display and inspection two working modes, can use computer software to monitor the equipment, suitable for cold storage temperature and humidity monitoring。

Specification and size：

1、Front panel size：275×185（millimeter）
2、Dimensions of mounting holes：long 92×wide 44（millimeter）
3、Overall size：275×185×32（millimeter）
4、NTC temperature sensor cable length： 10 meter（Probe length included）
5、Digital T/H sensor cable length： 10 meter（Probe length included）

Electrical parameter：

1、Show the range：-40℃~ 99.9℃，0-99%RH
2、Supply voltage：AC220V±10% 50HZ /60HZ Working current：≤80mA
3、precision：±1℃,±2%RH Display resolution：0.1℃，1%RH
4、Sensor type：**1.** NTC sensor**（10KΩ/25℃，B is 3435K）** **2.** Digital sensor**（SHT30）**
5、Alarm output contact capacity：5A/220VAC
6、Operating ambient temperature：-20℃～50℃
7、Working ambient humidity：20%～85% non-condensation
8、Use 485 for communication: A maximum of 15 slave modules are supported. When the slave modules are greater than or equal to 3, an additional 12V power supply is required。

Panel diagram：（ZK-9000、ZK-9001、ZK-9002The three devices have the same appearance, as shown below）

Key operation instruction：

ENT Confirm key: Exit and save

△Key: Set plus

▽Key: Set minus

SET Setting key: Press and hold to access menu options

When the monitor is used as the primary station, press △ or ▽ to quickly switch the temperature of the previous slave station or the next slave station. After entering the view mode, you need to click ENT to exit or wait 15 seconds to exit automatically。

Other notes：

This manual function will show all the functions of the product, if you buy the simplified version of the product, just check the corresponding functions of your product.
The nixie tube normally displays temperature and humidity parameters. If EEE is displayed, the sensor is faulty.
When using the 485 communication to mount other large screens or modules, use the 1 ㎜ cable diameter to shield the communication cable, and the communication distance is not more than 500m, to avoid interference from strong current, magnetic field, and high-frequency lines.

Main function：

Product and function introduction
hardware： Three digit digital tube plus a negative sign for the main display, the lower left corner of the double 0.58 inch digital tube for 485 address display. The dual 0.58 inch digital tube in the lower right corner shows the humidity.
port： Ac 220V power supply; Relay output contact; 1 NTC sensor input; One integrated temperature and humidity sensor port; 1-way 485 communication interface; One 12V power output.
Job description： Used to measure ambient temperature and humidity; Temperature and humidity correction; Set alarm upper and lower limits and alarm output mode; Sensor fault monitoring and alarm; As a master station with 485 communication connected to 1 multiple displays or 485 temperature modules; As the slave station is queried by the master station, one station can query the information of all stations.
Function 1: Temperature and humidity display
You need to set F9 (485 address) to 0, then the large screen display only shows the data read by the local sensor
Function 2: inspection function
The inspection function supports monitor inspection and module inspection.
When the inspection function is used, the 485 address of the large-screen monitor of the primary station must be set to 1
The main station query shows the status of other extension modules and displays, only the local fault relay will alarm
Monitor inspection： Multiple large-screen displays use communication lines for 485 communication connections, with one as the primary station and the other as the secondary station. Example: A total of five large-screen monitors are used, which are A,B,C,D, and E in order. A is the primary site for inspection, and B, C, D, and E are the secondary sites for query. Set the F5 code option for large screen A to 0 (master station) and F5 for B, C, D, E to 1 (slave station). Then the 485 address of the A monitor is set to 1, adjust the 485 address of B, C, D, E, where the address can be defined according to (F9), such as 02,03,04,05 (01

the address of the master station is not available), and then start to display the temperature value of the address in order from the address low to high, while the digital tube in the lower left corner shows the address of the temperature. Press the △ or ▽ key to quickly switch the temperature of the previous slave station or the next slave station. You can set the interval in the code option (F6).

Monitor module inspection： A large screen and multiple T/H modules use communication lines for 485 communication connections. The large screen serves as the master station and the module serves as the slave station. Set the F5 option of the large screen to 0 (master station). Example: For example, connect three temperature and humidity modules (A,B, and C). Set F9 (communication address) of modules A,B, and C to 02,03,04 (the address of the main station 01 is not available), the large-screen display displays the temperature value of the address in a circular sequence from the lowest to the highest, and the digital tube at the lower left corner of the large-screen display displays the temperature address. Press the △ or ▽ key on the large-screen monitor to quickly switch the temperature of the previous slave station or the next slave station. Set the interval in the code option (F6).

User menu：

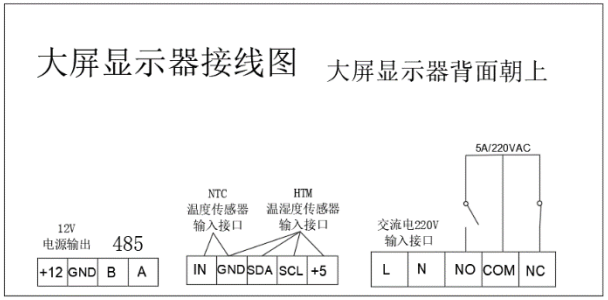
Code option	Feature	Set range	Factory setting	Instructions
F1	Temperature correction	±20℃ Short press to increase or decrease 0.1, long press to adjust continuously	0℃	The displayed temperature is equal to the actual temperature plus the temperature correction.
F2	Upper temperature alarm limit	+99℃ Short press to increase or decrease 0.1, long press to adjust continuously	50	When the displayed temperature is greater than the alarm upper limit, press F4 to alarm
F3	Lower limit of temperature alarm	-40℃ Short press to increase or decrease 0.1, long press to adjust continuously	-20	When the displayed temperature is less than the lower alarm limit, press F4 to alarm
F4	Alarm mode	0= No alarm 1= Blinking alarm 2= Relay alarm	0	0 means no alarm, when set to 1, the main digital tube flashes the temperature value, when set to 2, the relay alarm output.
F5	Select the master/slave station	0= primary station 1= slave station	0	When the value is 0, the primary station can be inspected, and when the value is 1, the secondary station can be queried by the primary station.
F6	Inspection interval	1-5 seconds	3 S	Set the interval between multiple temperature cycles.
F7	Sensor selection	0= Temperature sensor 1= T/H sensor	1	0: indicates an NTC sensor 1: Temperature and humidity is a digital sensor
F8	Humidity correction	±20% Short press to increase or decrease 1, and long press to adjust continuously	0	Displays humidity equal to the actual humidity plus the humidity correction value.
F9	485 Mailing address	1-16	1	Set the mailing address (the address change takes effect when F5 is set to 1).

Keying silence： In F4 alarm mode, after setting F4 to 1 or 2 to trigger the alarm, When alarm, press the SET key to mute the buzzer, flashing alarm and relay alarm state remain unchanged.

User menu Settings： Long press the Set key to enter the parameter view setting interface, the main nixie tube displays F1, continue to press the set key to view the corresponding parameter code of the menu, the value can be modified through the "△" key and "▽" key, after modification, press the "Set key" to save the parameter and view the next code option F2, and so on.

If you press the OK key in the parameter setting state or do not press any key action within 30 seconds, you will exit the parameter setting state.

Large-screen display wiring diagram



Matters needing attention

★Danger：

1、Strictly distinguish the sensor lead, power line and output relay interface, can not be misconnected, the relay can not be overloaded;2、All wiring changes must be made with the power off.

★warn：

This machine is not allowed to be used in water or excessive humid environment, is not allowed to be used in high temperature, strong electromagnetic interference, strong corrosive environment;

★Look out：

1、The supply voltage should be consistent with the voltage marked on the machine, and ensure the stability of the supply voltage;

2、To avoid possible interference, it is recommended that the sensor lead be kept at an appropriate distance from the power line.

ZK-900 Series inspection instrument extension module

Electrical parameter：

1、Show the range：-40℃~ 99.9℃，0-99%RH
2、Supply voltage：DC12V
3、precision：±0.1℃,±1%RH
4、Sensor type：**1.** NTC sensor（**10KΩ/25℃，** B is 3435K） **2.** Digital sensor（**SHT30**）
5、NTC temperature sensor cable length： 10 meter（Probe length included）
6、Digital T/H sensor cable length： 10 meter（Probe length included）
7、Operating ambient temperature：0℃～60℃
8、Working ambient humidity：20%～85% non-condensation

Main function：

ZK-9003 is a temperature inspection extension module (including communication). The ZK-9004 is a temperature and humidity inspection extension module (including communication).
Four-in-one digital display temperature, humidity and other parameters, with large screen display to read the site temperature and humidity parameters
Interface: 1 group power interface; 1 NTC input; One T/H integrated sensor port, one 485 communication

port. Panel diagram：（ZK-9003、ZK-9004 The two devices have the same appearance, as shown below)

User menu：

Code option	Feature	Setting range	Factory setting	Instructions
F1	Temperature correction	±20 ℃ ; Short press to increase or decrease 0.1, long press to adjust continuously	0℃	The displayed temperature is equal to the actual temperature plus the temperature correction.
F2	Upper temperature alarm limit	+99 ℃ ; Short press to increase or decrease 0.1, long press to adjust continuously	50	When the displayed temperature is greater than the upper alarm limit, HHH is displayed
F3	Lower limit of temperature alarm	-40 ℃ ; Short press to increase or decrease 0.1, long press to adjust continuously	-20	LLL is displayed when the displayed temperature is lower than the lower alarm limit
F4	Sensor selection	0= Temperature sensor 1= Integrated temperature and humidity sensor	0	0: indicates an NTC sensor 1: Temperature and humidity is a digital sensor
F5	Humidity correction	Plus or minus 20% Short press to increase or decrease 1, and long press to adjust continuously	0	Displays humidity equal to the actual humidity plus the humidity correction value.
F6	485 address	1-16	1	Set the communication station ID address

Key operation instruction：

△ Key: Set plus
Setting key: Press and hold to access menu options
▽Key: Set minus

User menu Settings： Long press the Set key to enter the parameter setting interface, the main nixie tube displays F1, continue to press the set key to view the corresponding parameter code of the menu, through the "△" key ▽ key can modify the value, after modification, press the "Set key" to save the parameter and view the next code option F2, and so on. Exit the menu after 30 seconds of no operation.
If EEE is displayed, the sensor is faulty. If LLL is displayed, the temperature is lower than the set value. If HHH is displayed, the temperature is higher than the set value.

Inspection instrument extension module wiring diagram

Matters needing attention

★Danger：
1、Strictly distinguish the sensor lead, power line and output relay interface, can not be misconnected, the relay can not be overloaded;
2、All wiring changes must be made with the power off.
★ Warning:
This machine is not allowed to be used in water or excessive humid environment, and is not allowed to be used in high temperature, strong electromagnetic interference, and strong corrosive environment；
★Look out：
1、The supply voltage should be consistent with the voltage marked on the machine, and ensure the stability of the supply voltage;
2、To avoid possible interference, it is recommended that the sensor lead be kept at an appropriate distance from the power line.