

DY-XJY01A 温场测试仪
DY-XJY01A Temperature and Humidity Testing System
Manual

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书

泰安德美机电设备有限公司

Tai'an DEMEI Electrical Equipment Co., Ltd.

一、产品介绍

DY-XJY01A 温场测试仪是一适用于各种加热（干燥）设备的温场温度测量、记录的检测设备，该设备主要依据 JJF1101-2003、GB9452-88、JB/T5502-91、JB/T9509-1999，其准确度及分辨力等性能指标均高于标准要求。可针对如马付炉、恒温、恒湿干燥箱、电热干燥箱、恒温房等温场设备进行检测，对于高温灭菌设备可同时计算 F0 值。

普通版设备以笔记本电脑及数据采集器为主体，操作软件功能完善、简单明了，人机界面通俗易懂，多页面 WINDOWS 显示，设有数据采样图示、实时数据列表及温度变化曲线，完成自动检测、数据处理、检测报告，为用户提供很大的方便。

液晶版设备自带蓝色液晶和按键，用户可以不带笔记本电脑，独立在现场运作。操作简单并可以存储多组校准数据，存储的数据由操作软件读出以保存到电脑或打印报告等。

数据采集器测温元件可选择 Pt100 热电阻或 K 型热电偶，同时进行多达十六个不同温点的测量、记录。

二、性能特点

1、普通版设备利用笔记本电脑（移动 PC）作人机界面，再配以专用操作软件，直观、形象，显示、记录的信息量大，并可以扩展用途。

2、液晶版设备可以独立使用，并存储信息，操作简单。

3、信号采集器可接受各种热电偶及热电阻信号，适应性强。

4、外配测温元件可选 K 型等多种热电偶和 Pt100 等多种热电阻；

A：四线 Pt100 热电阻，测温范围 0~250℃，引线长度为 4m，耐温可达 250℃

B：K 型热电偶，测温范围 0~1100℃，电偶长度为 4m，另带补偿导线。

5、整套装置置于手提箱内，方便携带，现场操作简单。

6、软件可以对温度传感器或湿度传感器的精度进行多段线性修正，适应各种环境需要。

7、软件集成 ITS-90 国际温标，方便用户查询。

8、软件集成各种国家及部颁标准规程，方便用户查询。

9、**推荐开机顺序：接好传感器→插上电源线→打开电源开关→插上通信线；关机顺序反之。**

三、技术指标

型 号	测温范围(℃)	精确度(℃)	分辨力(℃)
TC E 型	0~1000	0.5	0.01
K 型	0~1100	0.5	0.01
J 型	0-1200	0.5	0.01
N 型	0-1300	0.5	0.01
S 型	0~1600	1.0	0.01

B 型	0-1800	1.0	0.01
R 型	0-1700	1.0	0.01
RTD Pt100	-50~250	0.2	0.01
Cu50	-50~150	0.5	0.01
Cu100	-50~150	0.5	0.01

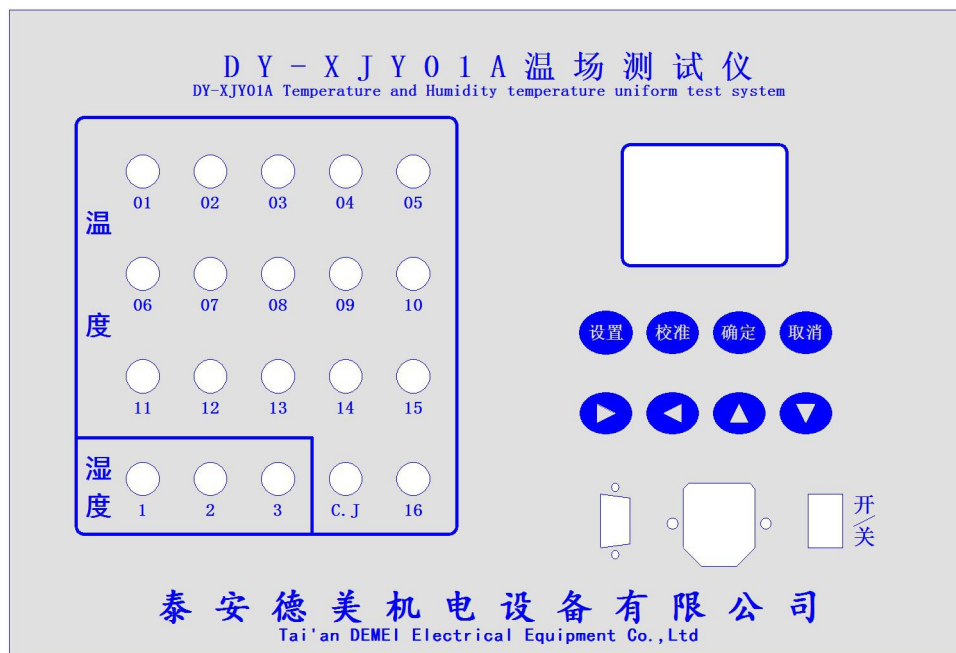
注：其它型号热电偶、热电阻可根据需要另行选择。

四、工作原理

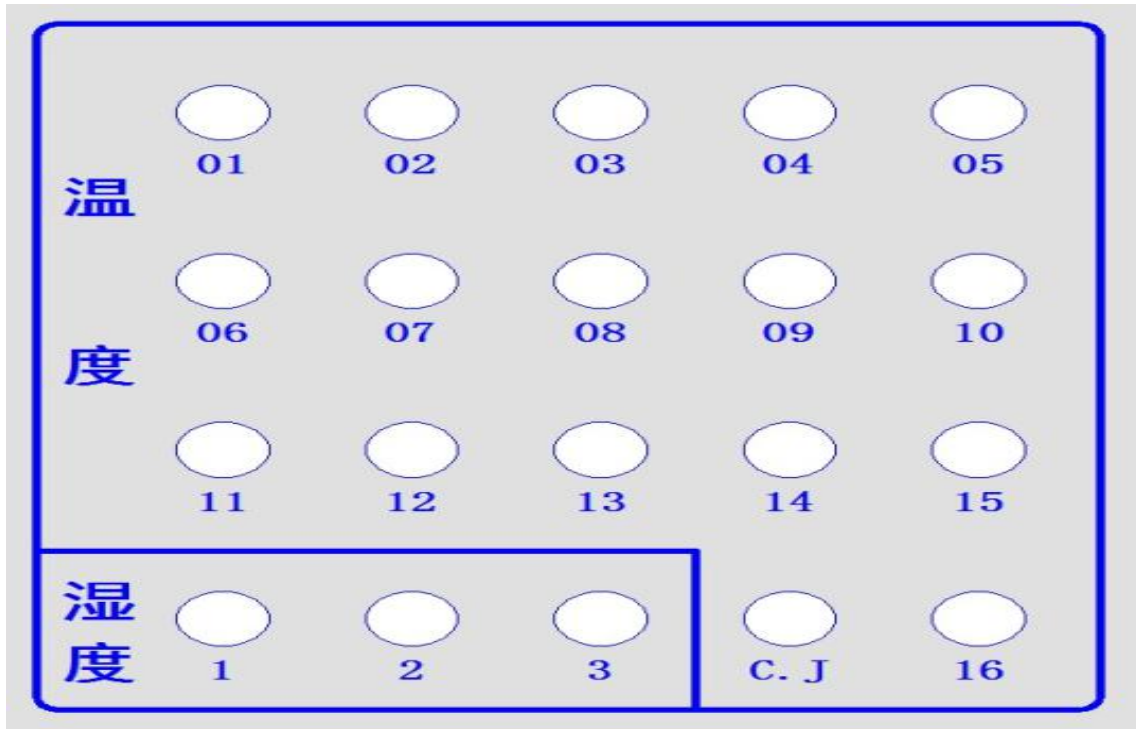
整套设备采用温度传感器（热电阻或热电偶）将温场温度信号转换为电信号，再由数据采集器将所得到的电信号转换成数字信号传递给笔记本电脑（移动 PC），通过软件系统分析处理数据，最后由笔记本电脑显示出当前温场分布、数据记录、各点温度变化曲线及设备检测报告等。灭菌参考用的 F0 值是根据所有测点温度平均值由 $F_0 = \Delta T \sum 10^{\exp((T-121)/10)}$ 计算出来的，单位是分。

五、普通版设备面板介绍

1、面板示意图如下所示（采集器接线板）



2、传感器接线示意图



3、接口介绍

- 设备电源插座 “220V”
- 串行口 “RS-232”
- 电源开关 “开/关”
- 保险丝座 “FUSE”

面板上有 28 个传感器接口

六、液晶版设备面板示意图：



七、液晶版设备操作说明：

1、开机后使用上下键改变参数和左右方向键设置编号，传感器类型，个数，校准次数，日期，标称温度湿度等参数。其中编号为本次校准存储的位置，设备可存储 50 组校准数据。

2、设置完成后按“校准”键显示测量的几个通道的温度或湿度。可使用上下键查看各路温度湿度。其中 T0, H0 为本次校准用户输入的被检设备温度或湿度示值。

3、再按“校准”开始校准。每次开始记录温度或湿度数据前需要用户输入设备示值，按“确定”键确认输入完成。

4、当完成校准后，设备将本组校准的所有数据自动保存到用户指定的存储位置。储存的数据连接计算机和设备后，由计算机软件中“记录”按钮左边的下拉框读出，随后用户可以单击“记录”按钮生成文件，单击“报告”生成报告文件，以保存到电脑或打印。

5、用户亦可使用计算机和串口线与设备连接通信，在计算机上操作控制设备的校准工作。**只有显示在设置参数页时，才可以与计算机通信。在测量页或校准过程中禁止与计算机通信。**

八、软件操作说明

1、计算机与设备之间通过串口线或者 USB-232 转换线连接。启动软件后软件自动查找与采集器的通信端口，如果未找到软件标题栏则显示“---演示版”，请检查通信线或采集器电源情况或更换串口设置重试，或者重新安装 USB-232 驱动程序再试。

2、软件主窗口分 3 个部分显示：左边显示设置部分，中间是实时数据部分，右边为校准信息部分。

3、校准前请设置好传感器类型，个数等，采集器接好传感器，即可开始校准。

4、传感器的 3D 分布示意图是供用户放置传感器位置参考，用户注意必须将第一路温度传感器和第一路湿度传感器放到设备的中心点。

5、示意图有 15 点可以放置传感器，用灰色圆圈表示。红色传感器表示温度传感器，蓝色表示湿度传感器。

6、设置传感器位置时，先单击不想放置的位置，再单击要放置的位置。有两个或两个以上的湿度传感器时要设置湿度传感器的位置，必须先选“设置湿度传感器位置”打钩，否则将设置温度传感器位置。

7、所有设置做好后，用户点“校准”开始。根据规范要读 15 次数据，每次读温度或湿度前要求用户输入设备示值。

8、每次校准时间间隔在校准开始前或取消后可以设置，当“快速校准”打钩后每次读数据将不再等待。

9、校准完毕后点“记录”计算校准结果，并生成校准记录文件。

10、记录文件生成后点“证书”生成校准报告。

11、生成记录文件或证书文件前必须输入本次测试编号，文件根据编号命名。

12、生成记录文件前允许修改仪器示值，不允许为空或非数值。

13、点击菜单中“公司主页”可以链接到本公司网站。

14、菜单“校准记录”查看记录文件夹。

15、菜单“校准证书”查看报告文件夹。

16、菜单“分度表”查看各种传感器温度到阻值或电压值的转换。

17、菜单“校准规范”打开校准规范 PDF 文件。

18、点击“测量”可以查看采集器的实时数据。

19、湿度传感器类型请选择“0-1V”

九、服务承诺书

1、公司产品三个月内出现质量问题，持保修卡包换；产品质量免费保修一年，一年后产品终生保修，免收人工费用只收取产品维修材料费。

2 若产品出现较大问题时，您可将仪器发回我公司，公司在 5 个工作日之内维修正常并发回。

DY-XJY01A Temperature and Humidity Testing System

Manual

Introduction

DY-XJY01 Temperature and Humidity Testing System is used for temperature measuring and recording of various heating (drying) equipment. This equipment mainly based on JJF1101-2003, GB9452-88, JB/T5502-91, JB/T9509-1999 standard. Its accuracy and resolution and other performance indicators were higher than standard requirements. It can be used to measure many temperature ground equipments, such as Ma Fulu, constant temperature and humidity drying oven, electric drying oven, constant temperature house, F0 value can be calculated for high temperature sterilization equipment.

The normal edition device has computer and data acquisition system as the main body, it has an operating software features of simple and clear to use, and user-friendly man-machine interface; multi page windows display; a data sampling icons; real-time data list and temperature change curve; completely automatic detection; data processing and generate testing report.

The LCD device comes with LCD and keys, users can operate it without computer. It is easy to operate and can store multiple calibrating data and then stored to computer or print testing report.

The temperature measurement element can choose Pt100 thermal resistance or K type thermocouple, and can proceed as many as sixteen different temperature measurement which recording at the same time.

Product Characters

1, The ordinary version of the device using a computer and dedicated operating software for human-computer interface.

2, LCD device has the feature of easy to operate ; store information and used

independently.

3, Signal collector can adapt in different environment and in the meantime receive a variety of thermocouple and thermal resistance signal.

4, The temperature measurement element can choose Pt100 thermal resistance or K type thermocouple;

A: Four line Pt100 thermal resistance, temperature range of 0~250 degrees Celsius, wire length is 4m, temperature resistance of up to 250

B:K type thermocouple, the temperature range of 0~1100 DEG Celsius, galvanic length is 4m, with the additional wire.

5, The whole set of devices placed in the suitcase which is easy to carry and operate.

6, This software can carrying multi-linear correction for the accuracy of temperature sensor or humidity sensor, to adapt to a variety of environmental needs.

7, This software integrate ITS-90 international thermal scale.

8, This software integrate various national standard.

9, Recommended boot order; connect the sensor ,plug in the power line, open the power switch, connect the communication line; turn off the device in the order of vice

Performance

	Model	Range(°C)	accuracy(°C)	resolution(°C)
TC	E Model	0~1000	0.5	0.01
	K Model	0~1100	0.5	0.01
	J Model	0-1200	0.5	0.01
	N Model	0-1300	0.5	0.01
	S Model	0~1600	1.0	0.01
	B Model	0-1800	1.0	0.01
	R Model	0-1700	1.0	0.01

RTD Pt100	-50~250	0.2	0.01
Cu50	-50~150	0.5	0.01
Cu100	-50~150	0.5	0.01

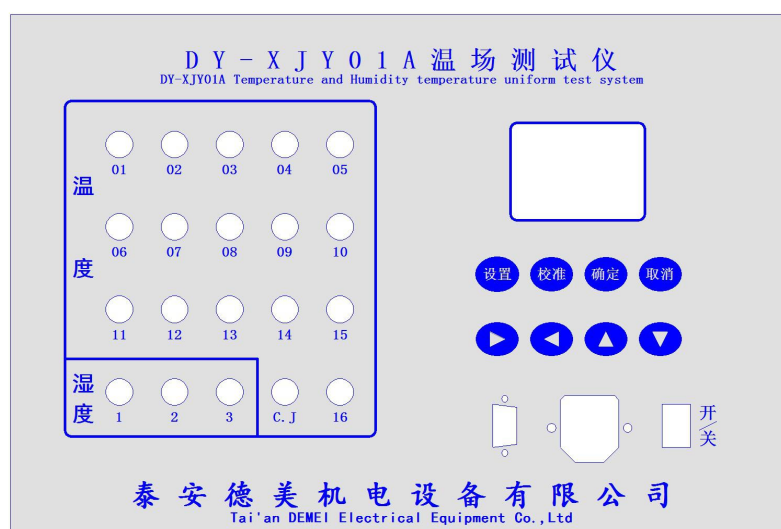
Note: Other types of thermocouple, thermal resistance can be further choose according to need

Working principle

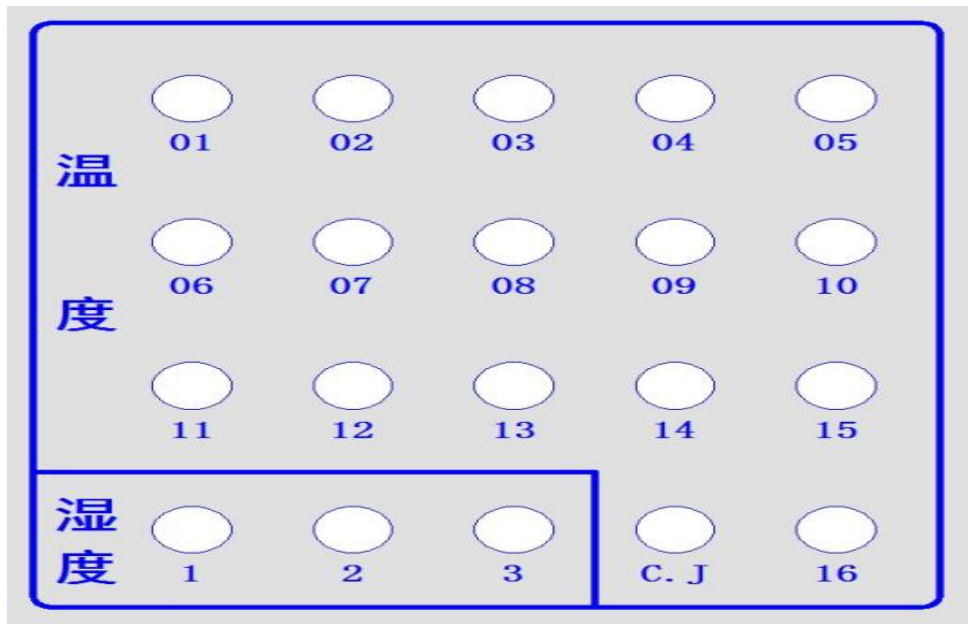
The equipment use temperature sensor (thermal resistance or thermocouple) to convert the temperature signal into electrical signal, again by the data collector to convert electrical signal into digital signal and transmitted to PC. Then computer analysis and process the datas, and show the distribution of temperature field, record data, the temperature change curve and gave test report. The reference sterilization F0 value is calculated according to the measured average temperature $F0 = \Delta T \sum 10^{\exp((T-121)/10)}$ min.

General version of the device panel

1、 device panel (Collector terminal)



2、 Schematic diagram of sensor wiring



3、Interface introduction

Device power supply socket “220V”

Serial port “RS-232”

Power switch “On/Off”

fuse “FUZE”

The panel has 28 Sensor interfaces

Schematic diagram of LCD device panel :



LCD device panel operating introduction:

1, After powering up, use up and down keys to change the parameters and the left and right keys to set number, sensor type, sensors numbers, calibration frequency, date, nominal

temperature and humidity and other parameters. Where the number is the storage location of the calibration data, the device can store 50 sets of calibration data.

2, After setting, press "calibrate" button to display the measurement of several channels of temperature or humidity. Use up and down key to view the various temperature and humidity. Where H0, T0 are user input value of temperature and humidity of the tested equipment .

3, And then press the "calibrate" key again to start calibrating. Users must input the tested equipment display value before each calibrating process, press the "OK" key to finish inputting.

4, After calibrating, the device will automatically save all the data to the user specified storage location. After connecting computer, in the computer software, the drop-down box on the left of the "record" button to read data out into computer, then the user can click the record button to generate the file, click the "report" generate report file, then save to computer or print.

5, Users can also use the computer and serial lines to communicate with device, and then operating in computer and carrying out the calibrating process. The device only can communicate with computer in parameters setting interface. Communicating with computer is prohibited in the process of calibrating.

software operation introduction

1, This device communicate with computer by serial line or USB-232 line. After launch, software automatic start searching and acquisition communication port, if there is no title bar with "- demo version", please check the communication line or collector power or changing the serial port setting and retry, or reinstall USB-232 driver, and try again.

2, The software main window is divided into 3 parts: the left display settings, the middle part is real time data, the right part of the calibration information.

3, Before calibrating, please set the type and numbers of sensors, and connect the collector with sensors.

4, The 3D distribution of the sensor is a reference for the user to place the sensor, the first temperature sensor and the first humidity sensor must be placed in the center of the tested device.

5, Schematic diagram has 15 points where the sensors could be placed, displayed with gray circles. The red sensor indicates the temperature sensor, and the blue indicates the humidity sensor.

6, When setting the sensor location, click the location you do not want to place, and then click to place of the location you want be. You must check “set humidity sensor position” when there are two or more than two humidity sensor to place, or the the temperature sensor position is set.

7, Click “calibrate” button to start calibrating. 15 times of reading data is required according to the specification, the tested device display value must be input before each process.

8, Calibrating time interval value can be set before starting calibrating or canceling, when checked "fast calibration" box, the device will no longer waiting after reading sensors data.

9, After calibrating, press "record" button to calculate the calibration results, and generate calibration records.

10, Press "certificate" to generate calibrating report.

11, The test Number must be input before generating a record file or certificate, the file is named after the test Number.

12, The tested device display value could be changed before generating recording file, the

display value must be numbered and must not be null.

13, Click "the company's home page" menu to show the company's website.

14, Click "record" menu to view record folder.

15, Click "calibrating certificate" to view the report folder.

16, Click "reference table" to check sensor's resistance value and voltage value relationship.

17, Click "calibration specification" to open calibration specification PDF file.

18, Click "measurement" to view the real-time calibrating data.

19, Humidity sensor type, please select "0-1V"

Service commitment

If have quality problem of its own within three months, please bring the warranty card and change a new one. Product quality free warranty for one year and also lifetime warranty, free labor costs charged only product repair materials.

If the product has a large problem, you can send the device back to company, we will repair it and send back within 5 working days.