

7" Square (Hotplate) Magnetic Stirrer

User Manual



LCD Digital 7" Square Hotplate Magnetic Stirrer

LED Digital 7" Square Hotplate Magnetic Stirrer

LCD Digital 7" Square Plate Magnetic Stirrer

Classic 7" Square Plate Magnetic Stirrer

Please read the User Manual carefully before use, and follow all operating and safety instructions!

Technical specifications and outline are subject to change without prior notice.

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Preface

Welcome to the 7" Square Hotplate Magnetic Stirrer". Users should read this Manual carefully, follow the instructions and procedures, and be aware of all the cautions when using this instrument.

Service

When help needed, you can always contact the Service Department of manufacturer for technical support.

Please provide the customer care representative with the following information :

- Serial number (on the rear panel)
- Certification
- Description of problem (i.e., hardware or software)
- Methods and procedures adopted to resolve the problems
- Your contact information




Warranty

This instrument is warranted to be free from defects in materials and workmanship under normal use and service, for a period of 24 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation.

For claims under the warranty please contact your local supplier. You may also send the instrument directly to manufacturer, enclosing the invoice copy and by giving reasons for the claim.

operate the instrument in explosive atmospheres, with hazardous substances or under water.

1. Safety Instructions

	<p>Warning!</p> <ul style="list-style-type: none"> • Read the operating instructions carefully before use. • Ensure that only trained staff works with the instrument. 	<ul style="list-style-type: none"> • Gradually increase the speed, reduce the speed if: <ul style="list-style-type: none"> - Stirring bar breaks away due to high speed - The instrument is not running smoothly, or container moves on the base plate • Temperature must always be set to at least 50°C lower
	<p>Risk of burn!</p> <ul style="list-style-type: none"> • Caution when touch the housing parts and the hotplate which can reach temperature of 550°C. • Pay attention to the residual heat after switching off. 	<ul style="list-style-type: none"> • Be aware of hazards due to: <ul style="list-style-type: none"> - Flammable materials or media with a low boiling temperature - Overfilling of media - Unsafe container
	<p>Protective ground contact!</p> <ul style="list-style-type: none"> • Make sure that socket must be grounded (protective ground contact) before use. 	<ul style="list-style-type: none"> • Process pathogenic materials only in closed vessels.
<ul style="list-style-type: none"> • When working wear personal safety guards to avoid the risk from: <ul style="list-style-type: none"> - Splashing and evaporation of liquids - Release of toxic or combustible gases • Set up the instrument in a spacious are on a stable, clean, non-slip, dry and fireproof surface. Do not 		

7" Square Hotplate Magnetic Stirrer

- When the external temperature sensor needed, the tip of the measuring sensor must be at least 5-10mm from vessel bottom and wall.
- The instrument can only be disconnected from the main power supply by pulling out the main or the connector plug.
- The voltage stated on the label must correspond to the main power supply.
- Ensure that the main power supply cable does not touch the hotplate. Do not cover the device.
- Forbid to put pressure and over heat media on the surface of glass ceramic that can be caused surface broken.
- The instrument may only be opened by experts.
- Keep away from high magnetic field.

2. Proper use

The instrument is designed for mixing and/or heating liquids in schools, laboratories or factories.

- Observe the minimum distances between the devices, between the device and the wall and above the assembly (min. 100 mm)

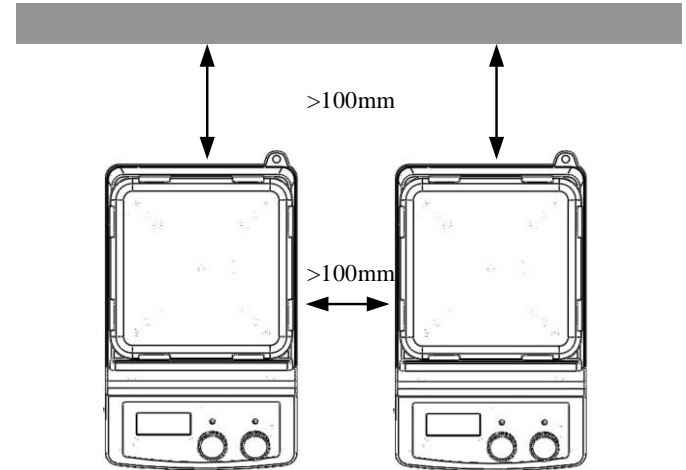


Figure 1

This device is not suitable for using in residential areas or other constraints mentioned in Chapter 1.

3. Inspection

3.1 Receiving Inspection

Unpack the equipment carefully and check for any damages which may have arisen during transport. Please contact manufacturer/supplier for technical support.



Note:

If there is any apparent damage to the system, please do not plug it into the power line.

3.2 Listing of Items

The package includes the following items:

Items	Qty
Main unit	1
Power cable	1
User Manual	1

Table 1

4. Control

4.1 Control elements

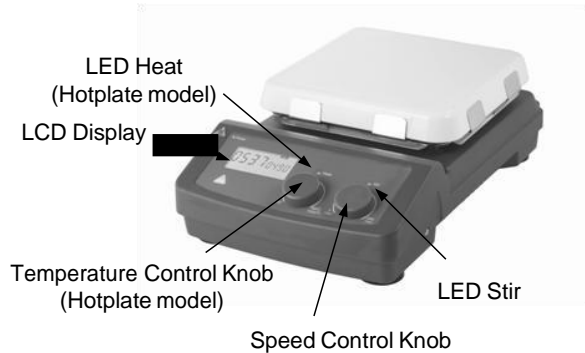


Figure 2 LCD digital model

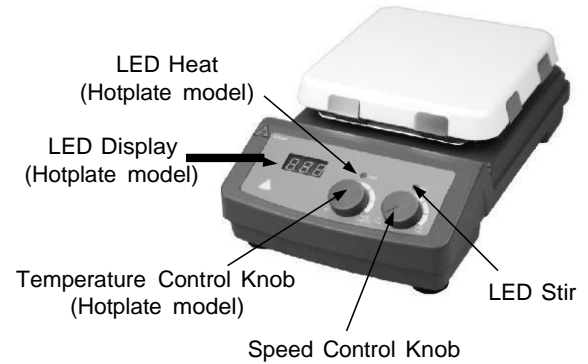


Figure 3 LED digital model

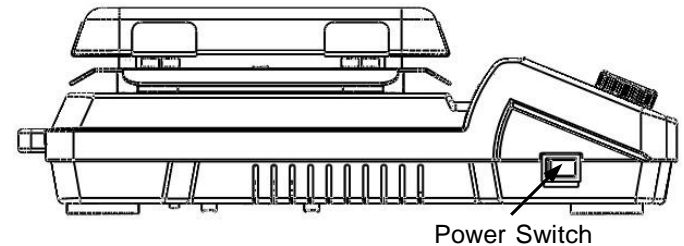


Figure 4

	Items	Descriptions
LCD digital model	Speed control knob Stir	Set the rated rotary speed. The stirring function is switched ON or OFF by pushing the knob.
	Temperature control knob Heat (Hotplate)	Set the rated temperature. The heating function is switched ON or OFF by pushing the knob.
	LCD Display	LCD displays the real working state and all settings.
	LED Heat (Hotplate)	When the heating function is switched ON, the LED Heat is lit.
	LED Stir	When the stirring function is switched ON, the LED Stir is lit.
	Power Switch	Switch ON or OFF the instrument.
LED digital model	Speed control knob Stir	The stirring function is switched ON or OFF by rotating the knob.
	Temperature control knob Heat (Hotplate)	The heating function is switched ON or OFF by rotating the knob.
	LED Display (Hotplate)	If rotate the heating knob, LED displays the temperature setting value and shift to real value in the duration of 5 seconds.
	LED Heat (Hotplate)	When the heating function is switched ON, the LED Heat is lit.
	LED Stir	When the instrument is switched ON, the LED Stir is lit.
	Power Switch	Switch ON or OFF the instrument.

Table 2

4.2 Display

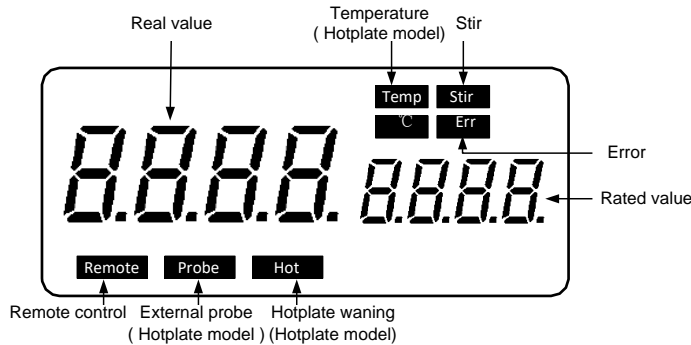


Figure 5 LCD digital model

Remote	Display in case of remote control.
Err	Display in case of error happening.
Rated value/Real value	Display value in case of heating or stirring function switching ON.



Note:

If both heating and stirring functions have been started at the same time, heating function always has higher priority. If in this case speed is changed via the stirring knob, it displays stirring speed and reverses to temperature in the duration of 5 seconds.

Characters	Descriptions
Temp and C	Display temperature when the heating function is switched ON.
Stir	Display stirring state when the stirring function is switched ON.
Hot	Display hot warning if the heating plate temperature is above 50°C after switching OFF the heating function.
Probe	Display when using external probe.



Figure 6 LED digital hotplate model

Display	Descriptions
Display area	When heating function was switched ON, LED displays the temperature setting value and shifts to real value in 5 seconds.
	When the heating function is switched OFF and the hotplate temperature is still above 50°C, LED displays HOT, otherwise LED displays 0.

5. Trial run

- Make sure the required operating voltage and power supply voltage match.
- Ensure the socket must be properly grounded.
- Plug in the power cable, ensure the power is on and begin initializing.
- Add the medium into the vessel with an appropriate stirring bar.
- Place vessel on the work plate.
- Set the target stirring speed and begin.
- Set the target temperature and start heating (hotplate model).
- Stop the heating and stirring functions.

If these operations above are normal, the device is ready to operate. If these operations are not normal, the device may be damaged during transportation, please contact manufacturer/supplier for technical support.



Warning !

Forbid to transfer the vessel when the instrument working.

6. Working with external temperature sensor (Hotplate Model)

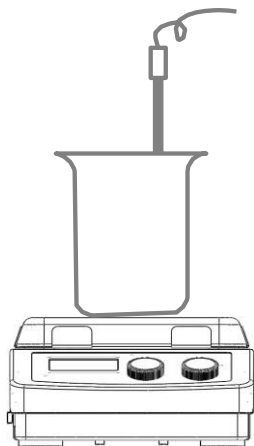


Figure 7

6.1 LCD digital hotplate model

The external temperature sensor PT1000 is manufacture's standard accessory. If the sensor is plugged in, "Probe" will be shown on the LCD digital display to indicate the sensor is operating. The setting value of external temperature sensor and actual temperature are displayed. Safe circuit

controls hotplate temperature. Comparing with the temperature control of the hotplate, the external temperature sensor can control the medium's temperature more precise. The heating function will be stopped automatically under abnormal conditions. Please operate follow the instructions below:

- Switch OFF the instrument.
- Ensure the external temperature sensor is inserted in the media heated.
- Switch ON the instrument and run heating function.

If the heating function does not work, please contact manufacturer/supplier for technical support.

6.2 LED digital hotplate model

The external temperature sensor PT1000 is the manufacture's standard accessory. If the sensor is plugged in and rotate the heating knob, LED displays the temperature setting value and shifts to real value in 5 seconds. Safe circuit controls hotplate temperature. Comparing with the temperature control of the hotplate, the external temperature sensor can control the medium's temperature more precise. The heating function will be stopped automatically under abnormal conditions. Please

operate follow the instructions below:

- Switch OFF the instrument.
- Ensure the external temperature sensor is inserted in the media heated.
- Switch ON the instrument and run heating function.

If the heating function does not work, please contact manufacturer/supplier for technical support.

7. Residual heat warning(HOT)

In order to prevent the risk of burns from the hotplate, digital hotplate model has a residual heat warning function. When the heating function is switched off and the heating plate temperature is still above 50°C, “Hot” will flash to warn that there is a hazard of burns from the hotplate. When the hotplate temperature drops to below 50°C, the unit will automatically switch off. If users want to turn off the LCD or LED screen immediately, just pull out the plug directly. When the power OFF, the residual heat warning function cannot be run.

8. Remote Control (LCD Digital model)

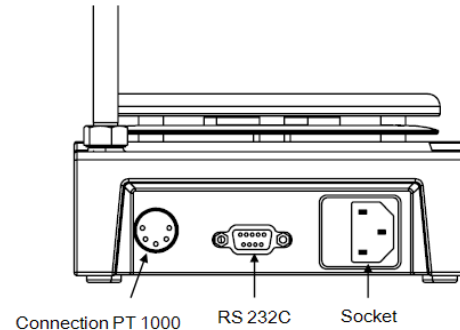


Figure 8

The unit can be controlled from an external PC (using the dedicated software) via the RS232C serial interface fitted to the unit. Data communication from laboratory instrument to computer is only possible on demand of the computer.

- The functions of the interface lines between laboratory instrument and automation system are selected from the specified signals of the EIA-standard RS232C, corresponding with DIN66020 Part 1. The allotment of the bushing can be taken from Figure 8.
- Transmission method: Asynchronous signal

transmission in start-stop-operation.

- Mode of transmission: Fully Duplex. 1 start bit; 7 character bits; 1 parity bit [straight (even)]; 1 stop bit.
- Transmission speed: 9600 bit/s
- Start remote control knob, LCD displays “ Remote ”.



Note:

Forbid to insert or remove the RS232C communication line when switch ON!

9. Faults

- Instruments can't be power ON
- Check whether the power line is unplugged
- Check whether the fuse is broken or loose
- Fault in power ON self test
- Switch OFF the unit, then switch ON and reset the instruments to factory default setting.
- Stir speed cannot reach set point
- Excessive medium viscosity may cause abnormal speed reduction of the motor
- Unit cannot be powered OFF when switched OFF.
- Check if the residual heat warning function is still ON and hotplate temperature is above 50 °C (the LCD/LED screen still work and “Hot” flash).

If these faults are not resolved, please contact manufacturer/supplier.

10. Maintenance and Cleaning

- Proper maintenance can keep instruments working properly and lengthen its lifetime.
- Do not spray cleanser into the instrument when cleaning.
- Unplug the power line when cleaning.
- Only use recommended cleansers:

Dyes	Isopropyl alcohol
Construction materials	Water containing tenside / Isopropyl alcohol
Cosmetics	Water containing tenside / Isopropyl alcohol
Foodstuffs	Water containing tenside
Fuels	Water containing tenside

- Wear the proper protective gloves during cleaning of the instrument.
- Before using other method for cleaning or decontamination, the user must ascertain with the manufacturer that this method will not harm the instrument.

- Send in the case of service the instrument back in the packaging carton. Storage packing is not sufficient for the back dispatch. Use additionally a suitable transportation packing.
- The enamel makes the hotplate easier to care for and more resistant to acids and bases. Because of it, however, the hotplate is also more susceptible to extreme fluctuations in temperature and the force of impact. This can result in cracks forming or the coating flaking off.

**Warning!**

Power OFF when maintenance and cleaning.

11. Associated standards and regulations

Construction in accordance with the following safety standards:

EN 61010-1

UL 3101-1

CAN/CSA C22.2(1010-1)

EN 61010-2-10

Construction in accordance with the following EMC

standards:

EN 61326-1

Associated EU guidelines: EMC-

guidelines: 89/336/EWG Instrument

guidelines: 73/023/EWG

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

12. Specifications

Items	Specifications	
	LCD digital model	LED digital model
Voltage [VAC]	100-120/200-240	
Frequency [Hz]	50/60	
Power [W]	*1050/50	*1030/30
Stirring point position quantity	1	1
Max. stirring quantity (H ₂ O) [l]	20	10
Max. magnetic bar [L×Ø, mm]	80×10	
Motor type	DC brushless motor	Shaded pole motor
Max. power input of motor [W]	18	15
Max. power output of motor [W]	10	1.5
Speed range [rpm]	100-1500	0-1500
Rotary speed display	LCD	Scale
Plate material	Glass ceramic	
Dimensions of workplate (mm)	184×184	
*Heating power [W]	1000	
*Temperature range [°C]	RT-550, increment: 1	RT-550, increment: 5

*Temperature display [°C]	LCD	LED
*Temperature display accuracy [°C]	±0.1	±1
*Control accuracy of heating temperature [°C]	±1(100°C below) ±1%(100°C above)	±10
*The safety temperature of the hotplate [°C]	580	
*Temperature sensor in medium	PT1000	
*Control accuracy of heating temperature with temperature sensor [°C]	±0.2	±0.5
*Residual heat warning	50°C	
Dimensions (mm)	215×360×112	
Weight [kg]	*5.3	*4.5
	4.6	3.8
Permitted ambient temperature [°C]	5-40	
Permitted relative humidity	80%	
Protection class acc. to DIN 60529	IP21	
RS232 interface	Yes	No
*Hotplate model		

Table 3

13. Ordering information

Accessories

18900016	PT1000-A Temperature sensor for digital hotplate model, length of 230mm
18900136	PT1000-B Glass coated temperature sensor for digital hotplate model, length of 230mm
18900017	Support clamp of PT1000
18900002	MS135.2 Red quarter pie, 11 holes, 4 ml reaction vessel, \varnothing 15.2mm, 20mm depth
18900003	MS135.3 Purple quarter pie, 4 holes, 20 ml reaction vessel, \varnothing 28mm, 24mm depth
18900004	MS135.4 Blue quarter pie, 4 holes, 30 ml reaction vessel, \varnothing 28mm, 30mm depth
18900005	MS135.5 Black quarter pie, 4 holes, 40 ml reaction vessel, \varnothing 28mm, 43mm depth
18900048	MS135.6 Green quarter pie, 6 holes, 8ml reaction vessel, \varnothing 17.75mm, 26mm depth
18900049	MS135.7 Golden quarter pie, 4 holes, 16ml reaction vessel, \varnothing 21.6mm, 31.7mm depth

Table 4

7 寸方盘(加热型)磁力搅拌器



使用说明书

LCD 数控加热型 7 寸方盘磁力搅拌器

LED 数显加热型 7 寸方盘磁力搅拌器

LCD 数控型 7 寸方盘磁力搅拌器

标准型 7 寸方盘磁力搅拌器

请仔细阅读说明书并在说明书的操作指导下安全使用本仪器。

外形和性能指标如有变动，概不另行通知。

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前言

欢迎使用《7 寸方盘（加热型）磁力搅拌器使用说明书》。用户在使用本仪器前请应仔细阅读此说明书，了解相关注意事项，并按照说明书中的指导和规范进行操作。

如何获取帮助

如果您在安装和使用的过程中遇到任何问题或需要帮助，请及时与制造商/供货商的售后服务部门取得联系。




请您准备以下资料：

- 产品序列号（仪器铭牌上）
- 质保卡
- 问题现象的描述
- 您为了解决问题所采取的方法及操作步骤
- 您的电话、传真和 Email 地址等联络方式

质量保证

根据制造商的质量保证条款，该仪器在正常使用环境下的保修期为 24 个月，如出现质保条款中的相关问题，请联系当地供货商。您也可以直接把仪器邮递至制造商，请附寄装箱单和问题现象描述说明，发生的运输费用由您承担。

1. 安全事项

	<p>警告!</p> <ul style="list-style-type: none"> 操作仪器前请认真阅读本说明书并遵守安全操作规范。 经过专业培训的人员才能操作本仪器。
	<p>小心烫伤!</p> <ul style="list-style-type: none"> 当触摸仪器底座和加热盘时请注意，本仪器(带加热型)加热盘的最高温度为 550 °C。 仪器关闭后加热盘会有余温，请避免烫伤。
	<p>安全接地保护!</p> <ul style="list-style-type: none"> 为保证安全，使用本仪器前请确认电源插座已良好接地。

- 工作时，请穿戴合适的防护设备，否则可能由于以下事项引发危险：
 - 搅拌液体溅出和蒸汽
 - 释放出的有毒、易燃气体
- 请把仪器置于宽敞通风的区域内使用，并确保工作台面平稳、干净、防滑、干燥及防火。请勿在室外、危险物质环境及水中运行本仪器。

- 缓慢调节转速，出现下列情况时，请调低转速：
 - 仪器运行不稳，容器在加热盘上移动
- 设置温度必须低于样品燃点 50°C。
- 注意避免进行以下危险操作：
 - 搅拌沸点低的易燃样品
 - 搅拌样品过量灌装
 - 使用不安全的容器
- 搅拌致病样品时，必须使用密闭的容器。
- 每次开启仪器之前请确认仪器及其配件未损坏。请使用“配件”章节中列出的标准配件，并依照说明书使用配件，以确保安全。配件务必牢固的连接在仪器上，避免脱离。在装卸配件之前请先断电。
- 外置温度传感器的顶端至少距离容器底部 5-10mm，距容器壁 5-10mm。
- 仪器只能通过拔掉电源插头才能完全断电。
- 请确保使用电源电压跟铭牌要求的一致。
- 确保电源线远离加热盘，不要遮盖仪器。
- 重压下玻璃陶瓷表面可能破碎。切勿将温度过高的液体或固体放置在玻璃陶瓷盘面上，易引起盘面破裂。
- 只有经过专业训练的人员才能打开本仪器。
- 请勿在强磁场区域使用本仪器。

2. 使用范围

本仪器是为学校、实验室和工厂等应用环境设计的，用于对液体进行加热及搅拌，供以下环境使用：

- 海拔不超过 2000 米
- 温度在 0°C 到 40°C
- 安装类型：产品是为了连接室内插座而设计的，电压波动不超过正常值的 $\pm 10\%$
- 仪器间、仪器与墙壁的最小距离为 100mm。

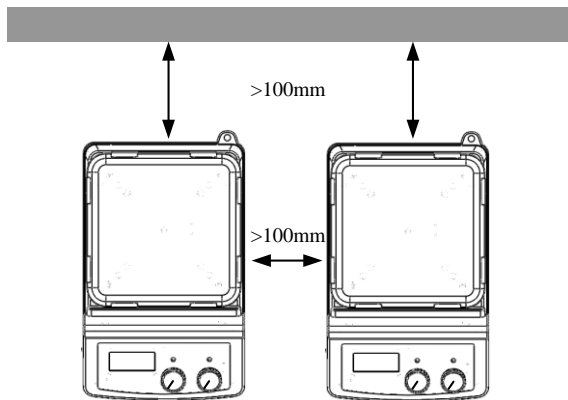


图 1

本仪器不适合在住宅区以及第 1 章中规定的一些限制条件下应用。

3. 检查

3.1 开箱检查

用户如发现任何包装损伤，请在收据上注明。在打开包装后如果发现任何内部损伤，请同时与当地供货商或制造商取得联系。



注意：

如发现仪器上有任何明显的损伤，请不要将其连接到电源。

3.2 装箱清单

名称	数量
主机	1 台

电缆	1 根
使用说明书	1 本

表 1

4. 控制与显示

4.1 控制

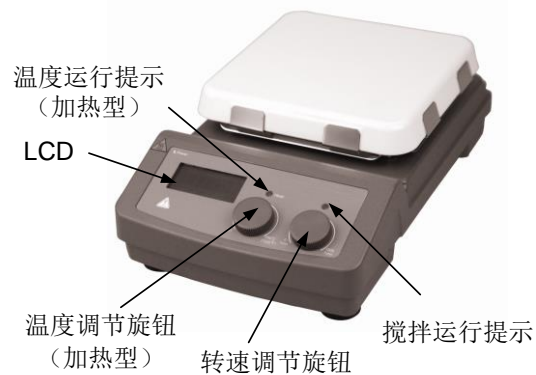


图 2 LCD 数控型

图 4

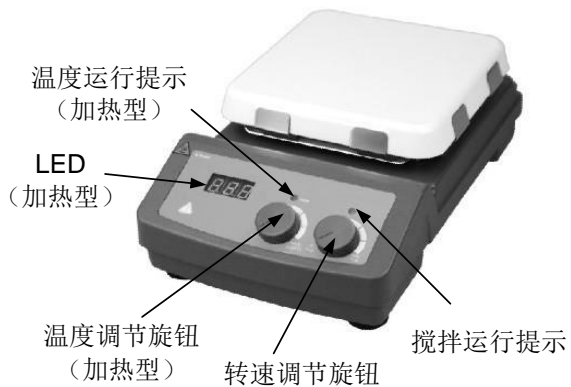
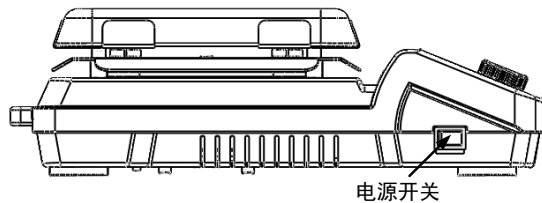


图 3 LED 数显型



	名称	说明
LCD 数控型	转速调节旋钮 Stir	设定 100-1500rpm 范围内的转速，按下旋钮开启、关闭搅拌功能
	温度调节旋钮 Heat (加热型)	设定室温-550℃范围内的控制温度，按下旋钮开启、关闭加热功能
	LCD 显示屏	显示仪器当前工作状态和各项设置
	温度运行指示(加热型)	开启加热功能，“Heat”灯亮
	搅拌运行指示	开启搅拌功能，“Stir”灯亮
	电源开关	打开、关闭仪器主电源
LED 数显型	转速调节旋钮 Stir	设定 0-1500rpm 范围内的转速，旋动旋钮开启、关闭搅拌功能
	温度调节旋钮 Heat (加热型)	设定室温-550℃范围内的控制温度，旋动旋钮开启、关闭加热功能
	LED 显示(加热型)	旋转温度调节旋钮时，LED 显示屏显示控制温度设置值，5 秒后显示控制温度实际值

温度运行指示(加热型)	加热过程中，“Heat”灯闪烁
搅拌运行指示	打开电源后，“Stir”灯点亮
电源开关	打开、关闭仪器主电源

表 2

4.2 显示

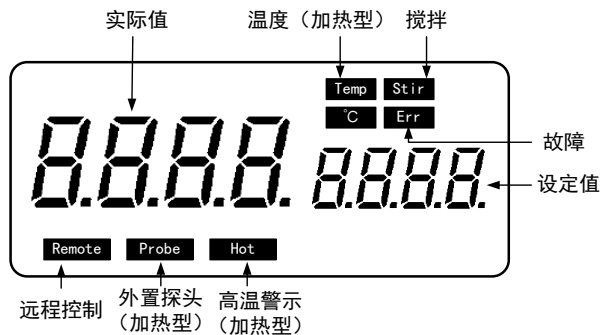


图 5 LCD 数控型

显示	说明
Temp & °C	加热功能开启时显示
Stir	搅拌功能开启时显示
Hot	无论加热功能是否开启，如果加热

	盘的温度高于 50°C，显示高温警示
Probe	插入外置探头时显示
Remote	进行远程控制时显示
Err	仪器发生故障时显示
设定值/实际值	加热功能、搅拌功能开启时显示数值



图 6 LED 数显加热型

显示	说明
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显示区	<p>加热功能开启后，旋转温度调节旋钮时，LED 显示屏显示控制温度设置值，5 秒后显示控制温度实际值；关闭加热功能后，如果加热盘温度高于 50℃，显示“Hot”，否则显示“0”。</p>
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5. 操作

- 检查铭牌上指定的工作电压与电网电压是否匹配
- 电源插座要求接地良好
- 打开电源
- 选用合适的搅拌子放入容器中，注入待搅拌样品
- 把容器放到仪器盘面上
- 设置搅拌速度并启动搅拌
- 设置加热温度并启动加热（加热型）
- 关闭搅拌功能
- 关闭加热功能（加热型）

如果上述操作运行正常，说明仪器可以开始正式使用。

如果运行不正常，仪器可能已经在运输过程中损坏，请与制造商/供货商服务中心取得联系。



注意：

仪器运行过程中请不要将容器移走，一旦容器脱离仪器的工作盘表面，再次放置容器前要停止搅拌功能，容器放置好后再次启动搅拌。

6. 外置温度传感器（加热型）

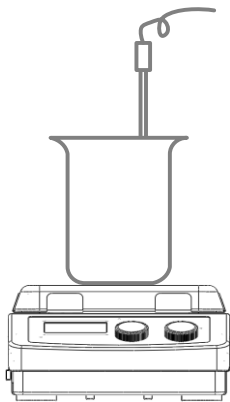


图 7

6.1 LCD 数控加热型

本机使用的外置温度传感器 PT1000，为制造商的标准选配件。接入外置温度传感器，“Probe”字符一直显示，表示外置温度传感器开始工作。液晶屏显示外置温度传感器的设置温度和实际温度，安全检测回路限制加热盘温度。相对于加热盘温控，外置温度传感器可以更精确地控制样品的温度。

外置温度传感器必须放置在被加热样品中，如果检测到异常情况，加热模块会自动关闭，此时请进行如下操作：

- 关闭电源
 - 确保外部温度控制器浸入被加热样品中
 - 打开电源，设置目标温度开启加热功能
- 仪器如果没有恢复正常工作，请联系制造商获取更多建议。

6.2 LED 数显加热型

本机使用的外置温度传感器 PT1000，为制造商的标准选配件。接插外置温度传感器后，旋转温度调节旋钮，LED 显示屏显示外置温度传感器的设置温度，5 秒后显示外置温度传感器的实际温度，安全检测电路限制加热盘温度。相对于加热盘温控，外置温度传感器可以更精确的控制样品温度。

使用外置温度传感器时，要求用户在关机状态下将 PT1000 传感器插入仪器后端的 PT1000 接口，确认传感器可靠连接后开机进行各项操作。

外置温度传感器必须放置在被加热样品中，如果检测到异常情况，加热模块会自动关闭，此时请进行如下操作：

- 关闭电源
 - 确保外部温度控制器浸入被加热样品中
 - 打开电源，设置目标温度开启加热功能
- 仪器如果没有恢复正常工作，请联系制造商获取更多建议。

7. 余热警告（加热型）

为防止加热盘烫伤，加热型具有余热警告功能（Hot）。加热功能关闭后，如果加热盘的温度仍然维持在 50°C 以上，液晶屏上“Hot”字符出现，警告加热盘温度过高，有烫伤危险。

LCD 数控加热型磁力搅拌器在关闭仪器主开关后，液晶屏显示内容持续闪烁，实际值区显示为当前加热盘温度。这时用户仍然可以设置转速等参数，当加热盘温度降到 50°C 以下后，仪器自动断电。如果用户需要立即关闭液晶屏，可以直接拔掉电源插头。主电

源故障或者电源插头拔出的情况下，不能运行余热警告功能。

8. 远程控制（LCD 数控型）

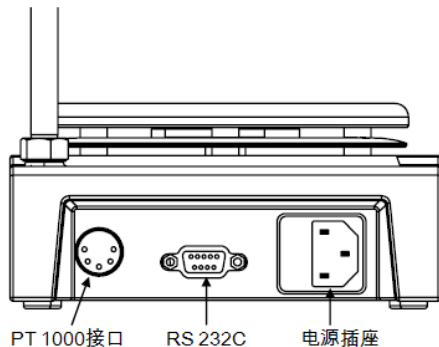


图 8

可以通过 RS232C 连接外部 PC 对仪器进行控制（使用专用软件），仪器到计算机的数据通信只能由计算机主动发出请求。

- 实验室仪器与自动控制系统之间的连接线采用指定的 EIA 标准 RS 232C 通信线，对应的 DIN 66020 Part 1 接口，参考图 8 所示连接线和接口的分配。
- 通信方式：双向异步串行通讯。
- 1 起始位、8 位字符、1 停止位。
- 传输速率：9600 bit/s



注意：

禁止在开机状态下拔插串口线

9. 故障诊断

- 打开电源仪器不启动
 - 请检查电源线是否连接牢靠
 - 请检查电源保险管是否损坏或松动
- 仪器开机自检不正常
 - 请关闭仪器，重新启动。
- 转速无法达到设定值

- 该功能在介质液体粘度过高时可能造成不正常减速
- 关闭仪器电源时仪器不断电
 - 加热盘温度高于 50℃，余热警告功能开启

如果故障没有排除，请联系制造商/供货商。

10. 维护和清理

正确地使用和维护仪器，使其处于良好的工作状态，可以延长仪器的使用寿命。常规工作中请保持仪器干燥与洁净，迅速除去溢出液体，使用非研磨清洁剂清理外表面，在所有表面干燥之前请不要连接电源。如果液体或者潮湿固体进入仪器内部，请迅速断开电源不再使用，联系制造商/供货商获得更多建议。

- 保持仪器整洁，切勿使清洗溶液流入机内。
- 维护和清理之前必须断电，请使用我们推荐的方法清理仪器。祛除方法：

染料	异丙醇
建筑材料	含活性剂的水溶液/异丙醇
化妆品	含活性剂的水溶液/异丙醇

食物	含活性剂的水溶液
燃油	含活性剂的水溶液

- 上表没有列出的材料，可以咨询制造商。在采用其他清理方法之前，用户必须与制造商确认该方法不会损坏仪器。清理仪器时，请戴上合适的防护手套。
- 送修仪器前必须清理，避免危险物质的污染，请把仪器放回原始包装箱发送。
- 当产品长期不用时，请将仪器断电存放，并置于干燥、洁净、常温、平稳的环境。

11. 相关标准

仪器结构符合以下安全标准

EN 61010-1

UL 3101-1

CAN/CSA C22.2(1010-1)

EN 61010-2-10

仪器结构符合以下电磁兼容标准

EN 61326-1

符合以下欧盟标准

EMC 标准： 89/336/EWG

机械设计标准： 73/023/EWG



警告！

在进行任何维护或检查步骤前请先拔下电源线。

12. 技术参数

项目	参数	
	LCD 数显型	LED 数显型
电压 [VAC]	100-120/200-240	
频率 [Hz]	50 / 60	
功率 [W]	*1050 50	*1030 30
搅拌点位数量	1	1
最大搅拌量(H ₂ O) [L]	20	10
搅拌子最大长度 [L×Ø,mm]	80×10	80×10
电机类型	直流无刷电机	罩极电机
电机输入功率 [W]	18	15
电机输出功率 [W]	10	1.5
速度范围 [rpm]	100-1500	0 -1500
转速显示	LCD	刻度
转速显示分辨率[rpm]	1	—
加热盘材质	玻璃陶瓷	
加热盘尺寸 [mm]	184×184	
*热输出功率 [W]	1000	
*加热温度范围 [°C]	室温- 550 步进: 1	室温- 550 步进: 5

*温度显示	LCD	LED
*温度显示分辨率 [°C]	±0.1	±1
*工作盘控温精度 [°C]	±1(100°C以下)/ ±1%(100°C以上)	
*安全温度 [°C]	580	
*外置温度传感器	PT1000	
*外置温度传感器控温精度 [°C]	±0.2	±0.5
*余热警告功能	50°C报警线	
外形尺寸 [WxDxH ,mm]	215X360X112	
重量 [kg]	*5.3 4.6	*4.5 3.8
允许环境温度 [°C]	5 - 40	
允许相对湿度	80%	
DIN EN60529 保护方式	IP21	

*加热型

表 3

13. 订货信息

产品编号 附件	描述
18900016	PT1000-A 数显加热型磁力搅拌器 专用外置温度探头，长度230mm
18900136	PT1000-B 玻璃套外置温度探头， 适用于数显加热型磁力搅拌器，长 度230mm
18900017	温度探头支撑组件，适用于PT1000
18900002	MS 135.2 红色1/4圆，4ml 反应管。 11孔，孔径：Ø15.2mm，孔深： 20mm
18900003	MS 135.3 紫色1/4圆，20ml 反应 管。4孔，孔径：Ø28mm，孔深： 24mm
18900004	MS 135.4 蓝色1/4圆，30ml 反应 管。4孔，孔径：Ø28mm，孔深： 30mm
18900005	MS 135.5 黑色1/4圆，40ml 反应 管。4孔，孔径：Ø28mm，孔深： 43mm

18900048	MS 135.6 绿色1/4圆，8ml 反应管。 6孔，孔径：Ø17.75mm，孔深： 26mm
18900049	MS 135.7 金色1/4圆，16ml 反应 管。4孔，孔径：Ø21.6mm，孔 深：31.7mm

*主机最后四位产品编号由制造商提供。

