

AM 50-D PRO OVERHEAD STIRRER

USER MANUAL



INDEX

1. SAFETY INSTRUCTIONS.....	3
2. SYSTEM ASSEMBLY	4
3. DISPLAY, POSITIONING AND CONTROL.....	5
4. OPERATION AND SETTINGS	6
4.1 Operation mode settings	6
4.2 Speed, time, forward and reverse rotation	6
4.3 Safety lock settings	6
4.4. Calibrate settings	6
5. MOTOR PROTECTION AND OVERLOAD.....	7
6. INTERFACE AND OUTPUT	7
7. MAINTENANCE.....	8
8. CLEANING	8
9. RELATED REGULATIONS	8
10. TECHNICAL PARAMETERS.....	9
11. DISPOSAL OF ELECTRONIC EQUIPMENT.....	10
12. WARRANTY	10

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1. SAFETY INSTRUCTIONS

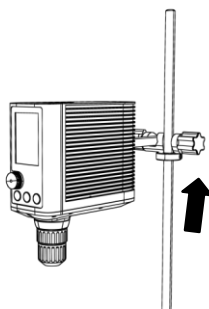
	• Read the instructions carefully before using. • Ensure that only qualified personnel use this tool. • Do not heat highly flammable or highly volatile substances
	• Before use, ensure that the instrument is connected to a grounded socket

During operation, the user must:

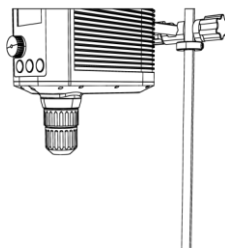
- Avoid the splashing and/or evaporation of liquids.
- Avoid the emission of toxic or combustible gases.
- Place the instrument in a suitable area, on a stable, clean, non-slip, dry and fireproof surface.
- Not use the instrument in explosive atmospheres, containing dangerous substances or under water.
- Gradually increase the stirring speed.
- Ensure the set heating temperature is always at least 25°C lower than the combustion temperature of the heated substance used.
- Pay close attention to the risks of flammable materials or samples with low boiling temperatures, overfilling of samples and unsafe and/or unsuitable containers for heating.
- Use any pathogenic samples only in closed containers.
- Check that the instrument and accessories are in optimal condition before use. Never use damaged components. Optimal safety and operation are guaranteed only if the instrument and accessories described are in good working order.
- Ensure that the accessories are firmly connected to the device.
- Ensure that the instrument can be disconnected by disconnecting it from the power supply or by disconnecting the cable.
- Ensure that the operating voltage indicated on the instrument label corresponds to that of the mains to which is it connected.
- Make sure that the power cable does not touch the heating plate.
- Ensure that the instrument can only be opened by specialised technicians.
- Keep the instrument away from electromagnetic fields.
- Respect the minimum distance between the device and the wall (minimum 10cm).

2. SYSTEM ASSEMBLY

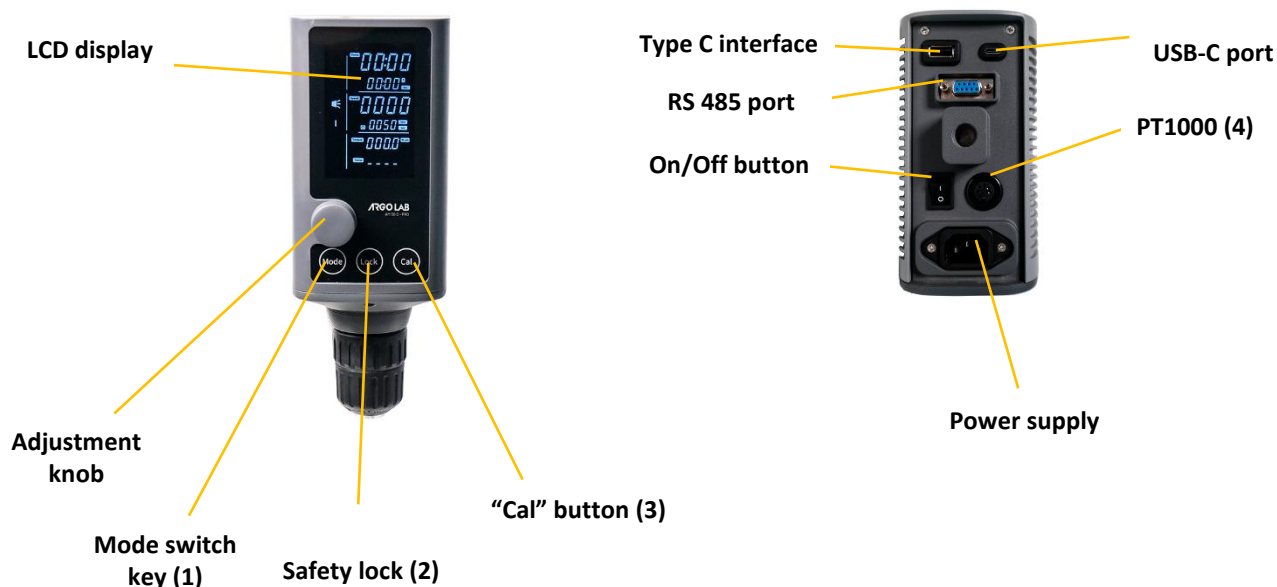
- a. **Install a standard stand set:** Install the standard support set according to the figure below and adjust the height of the host and the distance between the host and the support by rotating the locking handle on the support. The fall off protection can be adjusted up and down, and the locking position should ensure that the stirring paddle will not touch the instrument layout plane when the main engine is attached to this position. Mount the overhead mixer unit on the standard stand set.



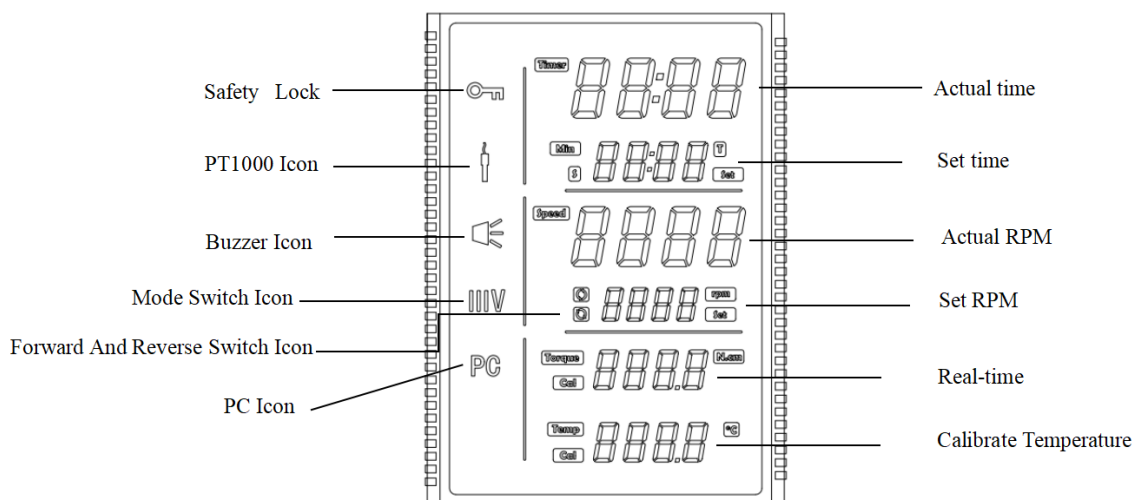
- b. **Install the mixing paddle:** Insert the mixing paddle into the drill chuck hole on top of the mixer engine, adjust the depth of the mixing paddle into the container, hold the drill body with one hand and the mixing slurry spindle with the other, so that the mixing slurry is naturally vertical and in a "relaxed" state, and slowly rotate the drill chuck jacket with the other hand to tighten the mixing slurry



3. DISPLAY, POSITIONING AND CONTROL



1	Press "Mode" to switch between "Set time", "Set speed" and "Set rotation direction".	3	To calibrate the instrument's temperature reading (via the PT1000 probe).
2	Press to lock and prevent any changes to the instrument.	4	PT1000 socket for PT1000 temperature probe.



4. OPERATION AND SETTINGS

4.1 Operation mode settings

Turn on the power switch and click the "Mode" button to adjust the operation mode of the instrument:

- Operation mode I: After the current operation ends or the instrument is turned off, the current speed and time settings will be saved.
- Operation mode II: The current speed and time settings will not be saved after the current operation ends or the instrument is turned off.
- Operation mode III: The machine can be turned off and restarted, that is, the current speed and time settings will be saved after the current operation ends or the instrument is turned off.
- The value can be changed, and the value of restarting after shutdown is the same as that before shutdown.
- Operation mode IV: After the current operation ends or the instrument is turned off, the current speed and time settings will be saved, but the value cannot be changed.

4.2 Speed, time, forward and reverse rotation

After clicking the "Mode" button, the screen time setting will flash. Adjust the required time by rotating the knob. Click the "Mode" button again to enter the speed setting and adjust the required speed by rotating the knob.

For Max. Torque 40/60N.cm: Click the "Mode" button again to enter the forward and reverse settings, select forward or reverse using the knob, click the knob and the instrument will start.

The buzzer will sound three "drops" at the end of the instrument's run.

4.3 Safety lock settings

Pressing the safety lock button "Lock" will put the instrument into the locked state, and the safety lock icon on the screen will light up. At this time, no parameter changes can be made to the instrument. Press the "LOCK" button again to release the safety lock.

4.4. Calibrate settings

Connect the external temperature sensor, press the calibration button and the actual temperature of the instrument will be displayed as well as the user input temperature which will be displayed at the torque position. The user can adjust the corresponding temperature through the knob, after confirming the calibration temperature, click the calibration button to exit the calibration mode.

Attention:

- 1) When the external temperature sensor is not connected, the calibration button function is to clear the torque operation.
- 2) When the external temperature sensor is connected, the calibration function is calibrated only for temperature.
- 3) Temperature calibration only supports single point temperature calibration, and the calibration temperature cannot exceed the detection temperature of the instrument.

5. MOTOR PROTECTION AND OVERLOAD

When the overhead agitator works continuously, the motor will activate the overload protection function through the electronic current limiting safety circuit. When the system torque reaches the limit value, the overload protection starts and the instrument stops automatically.

6. INTERFACE AND OUTPUT

The instrument can be connected to computers through RS485, USB and Type-C interfaces.

RS485 interface:

LCD digital display type overhead electronic stirrer uses special accessories and cables to connect other external devices. The standard 9-pin interface is used to connect the instrument to the PC.

- The connection line between the overhead mixer and the PC uses the specified EIA standard RS485 communication line corresponding to the DIN 66020 interface.
- Transmission mode: bidirectional communication.
- 1 Start bit; 8-bit character; 1 stop bit.
- Transfer rate: 9600 bit/s.
- Data communication of laboratory instruments to the PC can only be requested by the PC.

USB and Type-C interfaces:

Universal serial port (USB and Type-C) systems are used to connect the instruments to computers. Devices that support (USB and Type-C) can be connected to each other during operation (hot swappable) and automatically recognise the connected instrument and its properties.

7. MAINTENANCE

This instrument requires no special maintenance. The instrument will only experience natural wear and tear of spare parts that may cause occasional failure. Proper use and keeping it in good working condition will extend the life of the instrument.

8. CLEANING

- 1) Disconnect the power supply when cleaning the instrument.
- 2) Wear protective gloves when cleaning the instrument.
- 3) Keep the instrument dry and clean during routine work, quickly remove spilt liquids, use a non-abrasive cleaner to clean the external surfaces and do not connect the power supply until all surfaces are dry. If liquid or wet solids get inside the instrument, quickly disconnect it from the power supply and do not use it again, contact the manufacturer/supplier for further advice.
- 4) Keep the instrument tidy and do not allow cleaning solutions to get into the instrument.
- 5) The power must be disconnected before maintenance and cleaning, please use our recommended method to clean the instrument. Removal method:

Material	Cleaning solution
Dye	Isopropanol
Building material	Aqueous solution containing active agent/isopropyl alcohol
Cosmetic products	Aqueous solution containing active agent/isopropyl alcohol
Foods	Aqueous solutions containing active agents
Fuel oil	Aqueous solutions containing active agents

Consult the manufacturer for materials not listed in the above table. Before using any other cleaning method, the user must confirm with the manufacturer that the method will not damage the instrument. Wear suitable protective gloves when cleaning the instrument.

9. RELATED REGULATIONS

The instrument has been manufactured in compliance with the following safety standards:

- EN 61010-1
- UL 3101-1

- CAN/CSA C22.2(1010-1) EN 61010-2-10

The instrument has been manufactured in compliance with the following EMC standards:

- EN 61326-1

European guidelines:

- EMC guidelines: 89/336/EWG
- Machine guidelines: 73/023/EWG

10. TECHNICAL PARAMETERS

Specs	AM 50-D Pro
Max stirring q.ty [H ₂ O]	50 L
Motor type	Brushless DC motor
Speed range	50 - 2200 rpm
Speed display accuracy	±3 rpm
Timer function	0 min – 99h59min
Max torque	60 N*cm
Max viscosity	50000 mPa*s
Rotation type	Forward, reverse, intermittent
Speed and torque display	LCD
Overload protect. display	LCD
External temp. sensor	0 – 100°C (PT1000)
Temperature accuracy	±0,1°C
Chuck range diameter	0,5 – 10 mm
Motor rating input	180 W
Motor rating output	170 W
Power	300 W
Connection	RS 485, Type-C, USB
IP grade	IP21
Voltage	200 – 240 V - 50/60 Hz
Dimensions [WxDxH]	101x270x264 mm
Weight	5,2 Kg
Working conditions	5 – 40°C – Max 80%RH

11.DISPOSAL OF ELECTRONIC EQUIPMENT



Electrical and electronic equipment bearing this symbol cannot be disposed of in public landfills.

In accordance with the WEEE Directive 2012/19/EU, European users of electrical and electronic equipment have the option of returning used equipment to the Distributor or Manufacturer when purchasing new equipment. The illegal disposal of electrical and electronic equipment is punishable by a financial penalty.

12. WARRANTY

- The distributor applies a 24-month warranty, in the case of correct use.
- During the warranty period, the distributor will substitute or repair defective components.
- This warranty covers only electronic parts of the instrument and doesn't apply to damages due to improper use (such as liquid spillage inside of the instrument).