

Line Regulation					
Voltage	±0.01%+3mV	±0.01%+3mV	±0.01%+3mV	±0.01%+3mV	±0.01%+3mV
Current	±0.1%+3mA	±0.1%+3mA	±0.1%+3mA	±0.1%+3mA	±0.1%+3mA
Setup Resolution					
Voltage	10mV	10mV	10mV	10mV	10mV
Current	1mA	1mA	1mA	1mA	1mA
Setup Accuracy (25°C to -5°C)					
Voltage	±0.5%+20mV	±0.5%+20mV	±0.5%+30mV	±0.5%+20mV	±0.5%+30mV
Current	±0.5%+5mA	±0.5%+10mA	±0.5%+5mA	±0.5%+20mA	±0.5%+10mA
Ripple (20-20m)					
Voltage	±1mVrms	±2mVrms	±1mVrms	±2mVrms	±1mVrms
Current	±3mVrms	±3mVrms	±3mVrms	±5mVrms	±3mVrms
Temperature Coefficient					
Voltage	±150ppm	±150ppm	±150ppm	±150ppm	±150ppm
Current	±150ppm	±150ppm	±150ppm	±150ppm	±150ppm
Read Back Accuracy					
Voltage	10mV	10mV	10mV	10mV	10mV
Current	1mA	1mA	1mA	1mA	1mA
Read Back Temperature Coefficient					
Voltage	±150ppm	±150ppm	±150ppm	±150ppm	±150ppm
Current	±150ppm	±150ppm	±150ppm	±150ppm	±150ppm
Reaction Time					
Voltage Rise	±100mS	±100mS	±100mS	±100mS	±100mS
Voltage Drop	±100mS (10% rated load)	±100mS (10% rated load)	±100mS (10% rated load)	±100mS (10% rated load)	±100mS (10% rated load)
Interface: Interfaces (for programmable models only): RS232, USB					
RS485 (KA3003PE, KA3005PE, KA6002PE, KA6003PE, KA6005PE & KA3010PE)					
Accessories: User manual and power cord					
Model	Dimensions		Weight		
KA3003DS / KA3003DE KA3003PS / KA3003PE	285x110x165mm		3.6kg		
KA3005DS / KA3005DE KA3005PS / KA3005PE	285x110x165mm		4.3kg		
KA6002/3DS / KA6002/3DE KA6002/3PS / KA6002/3PE	285x110x165mm		4.8kg		
KA3010DS / KA3010DE KA3010PS / KA3010PE	305x110x165mm		8.3kg		
KA6005DS / KA6005DE KA6005PS / KA6005PE	305x110x165mm		8.0kg		

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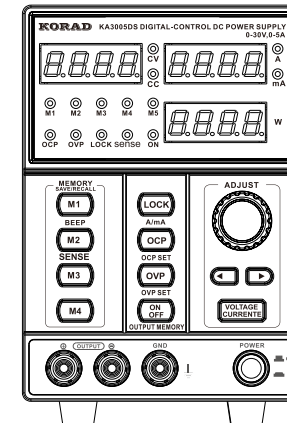
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KORAD

Digital-Control and Programmable
DC Power Supply



Models: KA3003, KA3005, KA6002, KA6003, KA6005 & KA3010




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IMPORTANT SAFETY INFORMATION

Please read these instructions carefully before use and retain for future reference.

The following safety symbols may appear in this manual or on the series:

Symbol	Meaning
	Warning
	Danger - High Voltage
	Earth(Ground) terminal

- Do not block or obstruct the opening to the cooling fan vent.
- Avoid severe impacts or rough handling as it could lead to damage.
- Do not discharge static electricity.
- Do not disassemble unless you are qualified as service personnel.

AC INPUT

- AC input voltage: 110V / 120V / 220V / 230V, 50/60Hz.
- Connect the protective grounding conductor of the AC power cord to an earth ground, in order to avoid electrical shock.

OPERATION ENVIRONMENT

Location	Indoor, no direct sunlight, dust free, almost non-conductive
Relative Humidity	< 80%
Altitude	< 2000m
Temperature	0-40°C

STORAGE ENVIRONMENT

Location	Indoor
Relative Humidity	< 70%
Temperature	-10-70°C

FUSE

Model	110V / 120V	220V / 230V
KA3003DS KA3005DS	T4A / 250V (20x5mm)	T2A / 250V (20x5mm)
KA3003DE KA3005DE	T4A / 250V (20x5mm)	T2A / 250V (20x5mm)
KA3003PS KA3003PE	T4A / 250V (20x5mm)	T2A / 250V (20x5mm)
KA3005PS KA3005PE	T5A / 250V (20x5mm)	T3A / 250V (20x5mm)
KA3010DS KA6005DS	T10A / 250V (20x5mm)	T5A / 250V (20x5mm)
KA3010DE KA6005DE	T10A / 250V (20x5mm)	T5A / 250V (20x5mm)
KA3010PS KA6005PS	T10A / 250V (20x5mm)	T5A / 250V (20x5mm)
KA3010PE KA6005PE	T10A / 250V (20x5mm)	T5A / 250V (20x5mm)
KA6002DS KA6003DS	T5A / 250V (20x5mm)	T3A / 250V (20x5mm)
KA6002DE KA6003DE	T5A / 250V (20x5mm)	T3A / 250V (20x5mm)
KA6002PS KA6003PS	T5A / 250V (20x5mm)	T3A / 250V (20x5mm)
KA6002PE KA6003PE	T5A / 250V (20x5mm)	T3A / 250V (20x5mm)

- Avoid the risk of fire by only replacing the fuse with the specified type and rating.
- Disconnect the power before replacing the fuse.
- Make sure the cause of the fuse blowout is fixed before replacing the fuse.

REMOTE CONTROL

All models can be connected to a computer through interfaces USB/RS232 on the back of the machine and controlled by the remote control.

COM setting

Set up the COM port inside the computer according to the following list:

- Baud rate: 9600
- Parity bit: None
- Data bit: 8
- Stop bit: 1
- Data flow control: None

Functionality Check

- Run this query command via the terminal application, such as MTTY (Multi-threaded TTY).
- This should return the identification information: Manufacturer, model name, serial number, KORAD KA3003PS SN: xxxxxxxx Vx.xx

Entering the Remote Control Model:

- Connect the USB.
- The power supply will automatically connect. After a normal connection, there will be a tweet from the power supply itself.
- The panel keys are locked, so the power supply can only rely on the remote control.

Exiting from the Remote Control Model:

- Close the remote control software.
- Disconnect the USB from the back.
- The power supply disconnects. You will hear a beep, which hints that the remote control is over.
- The power supply automatically comes in the panel control mode.

SPECIFICATIONS

Note: The specifications in the table below have all been tested in temperature ranging from 25°C down to -5°C, and after being warmed up for 20 minutes.

Model	KA3003DS/ KA3003DE/ KA3003PS/ KA3003PE	KA3005DS/ KA3005DE/ KA3005PS/ KA3005PE	KA6002/3DS/ KA6002/3DE/ KA6002/3PS/ KA6002/3PE	KA3010DS/ KA3010DE/ KA3010PS/ KA3010PE	KA6005DS/ KA6005DE/ KA6005PS/ KA6005PE
Voltage Range	0-30V	0-30V	0-60V	0-30V	0-60V
Current Range	0-3A	0-5A	0-2/3A	0-10A	0-5A
Load Regulation					
Voltage Current	±0.01%+2mV ±0.1%+5mA ±0.1%+10mA	±0.01%+2mV ±0.1%+5mA	±0.01%+2mV ±0.1%+5mA	±0.01%+3mV ±0.1%+20mA	±0.01%+2mV ±0.1%+10mA

BEEP ON/OFF

- By default, the beep sound is enabled.
- To turn off the beep, press the OCP (BEEP) key for two seconds.
- A beep sounds, meaning the beep setting will be turned off.
- To enable the beep, press the OCP (BEEP) key for two seconds again.

FRONT PANEL LOCK

Press the LOCK key to lock the front panel key operation. The key LED will turn on.
To unlock, press and hold the LOCK key for two seconds.

OUTPUT SET

Panel Operation

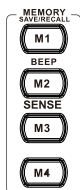
- Connect the load to the front pore,
- Voltage or current adjustment selective button, press for the first time, and then the voltage setting value will blink. At this time, you can adjust the voltage setting value by rotating the adjustment knob. Then press the Voltage/Current button again to make the current setting value bicker, and then to adjust the current setting value through rotating the knob. And the setting blinking time is around 8 seconds. If you want to end the setting blinking, press and hold the button for 0.5 second.
- By default, the voltage and current knob work in coarse mode. In order to activate in fine mode, press the key to choose between coarse or fine mode.
- Turning on the output and pressing the output key will turn on the key LED and display CV or CC mode.

SAVE SETUP

Contents	<p>The following list shows the setup contents:</p> <ul style="list-style-type: none"> • Fine/coarse knob editing mode • Beep on/off • Output voltage/current level • Output on/off (The shutdown memory must be set to make it saved)
Panel Operation	<p>Press one of the four buttons (M1, M2, M3, M4) and the LED light turns on accordingly. After adjusting the value, it is automatically saved, once the LED light stops blinking.</p>

RECALL SETUP

The front panel settings can be recalled from one of the four internal memories.



Press any button of M1 to M4.

For example, the memory of the panel setting is recalled in M1.

After you recall M4, rotate the shuttle knob and then M5 is recalled.

If the memory indicator is lit on the panel of lights, then the current memory is recalled.

Note: When a setting is recalled the output will be automatically turned off.

SERIES LINEUP/MAIN FEATURES

mode	V meter	A meter	Resolution	Current Read Resolution	Exter interface	Rs232 USB and	Rs485
KA3003DS KA3005DS	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	No	No	No
KA3003DE KA3005DE	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	Exter switch and voltage compensation	No	No
KA3003PS KA3005PS	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	No	Yes	No
KA3003PE KA3005PE	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	Exter switch and voltage compensation	Yes	Yes
KA3010DS KA6005DS	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	No	No	No
KA3010DE KA6005DE	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	Exter switch and voltage compensation	No	No
KA3010PS KA6005PS	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	No	Yes	No
KA3010PE KA6005PE	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	Exter switch and voltage compensation	Yes	Yes
KA6002DS KA6003DS	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	No	No	No
KA6002DE KA6003DE	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	Exter switch and voltage compensation	No	No
KA6002PS KA6003PS	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	No	Yes	No
KA6002PE KA6003PE	4 digit	4 digit	10mV/1mA	1mA(C>1A),0.1ma(C<1A)	Exter switch and voltage compensation	Yes	Yes

Main Features:

Low noise: the cooling fan is controlled by the radiator temperature.

High-precision voltage and current output (see parameter table), and maximum resolution 0.1mA of current reading.

Constant Voltage/Constant Current operation

Output ON/OFF control

Voltage, current and power display

Digital panel control

4 pairs of saving/recalling panel settings

Coarse and fine voltage/.current control

Software calibration

Beep output

Keyboard LOCK function

Over-Voltage and Over-Current Protections that can set parameters

Reverse polarity protection

Short circuit protection

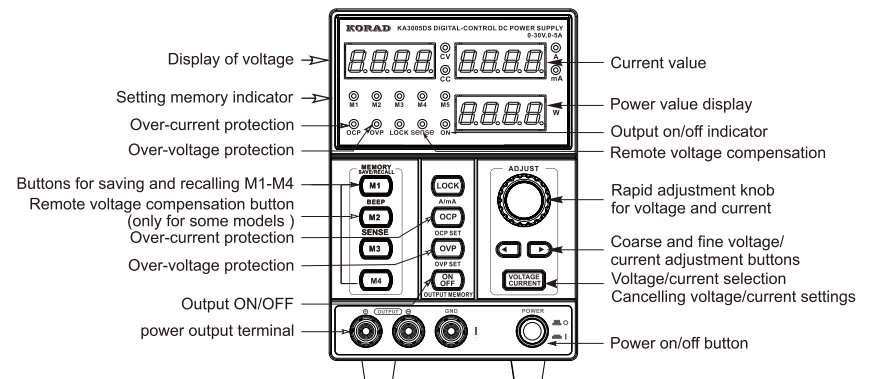
External switch control interface (only for some models)

Output terminal voltage compensation (only for some models)

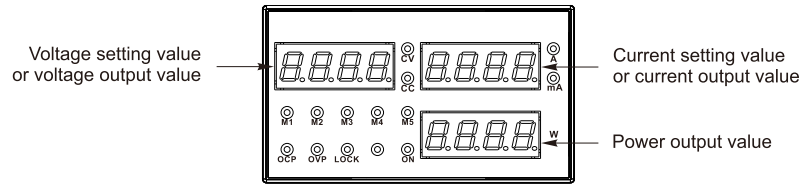
USB/RS232 for remote control (only for some models)

RS485 control interface (only for some models)

FRONT PANEL OVERVIEW



DISPLAY

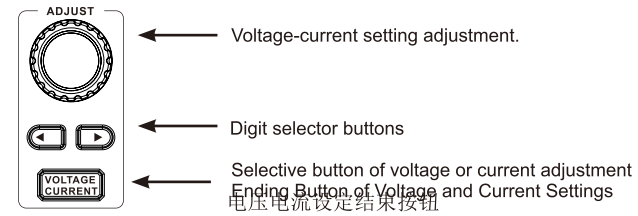
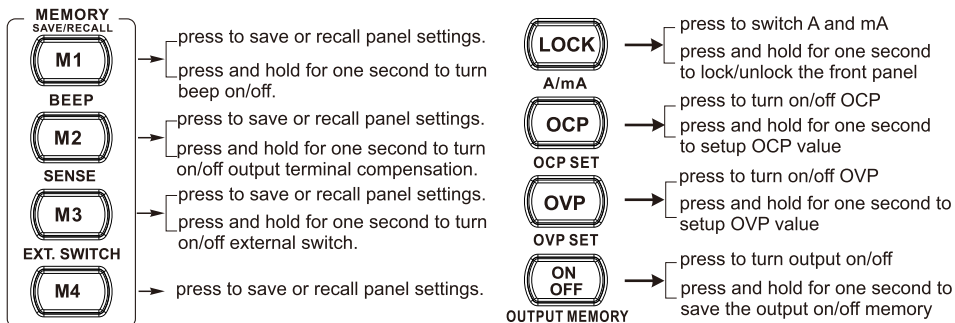


CONDITION INDICATION

	when this light is ON, it means that the output of the power supply is constant current.
	when this light is ON, it means the power output is constant voltage.
	A, this light is always ON, indicating that the unit of the current measurement value is A.
	mA, this light is always ON to indicate that the unit of the current measurement is mA.
	When this light is always ON, it means that OCP is turned on, and when this light is flashing, it means OCP parameter setting.
	OVP, when this light is always ON, it means that OVP is turned on, and when this light is blinking, it means OCP parameter setting.
	This light is lit to indicate that the output is turned on, and this light is bickering to indicate that the output shutdown memory is turned on.
	SENSE, this lights up to indicate that the output voltage compensation function is enabled.
	LOCK, this light illuminates to indicate that the keyboard is locked.
	M1 – M5, save/recall indicators

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BRIEF INTRODUCTION OF PANEL OPERATION



Rear Panel and Interfaces of Machine and Control Terminal

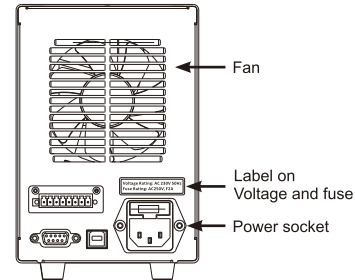
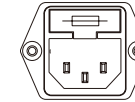


Diagram of Rear Panel



The power cord socket accepts AC values: 115V/230V, 50/60Hz. Please refer to the fuse parameters on the back of the fuse label, in order to replace the fuse with the specified fuse.



Ensure the correct type of fuse is installed prior to powering up.

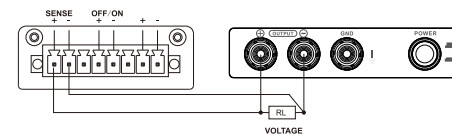
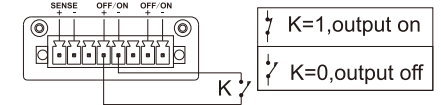
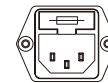


Diagram of Rear Panel



Wiring Diagram of External Switch Control

OPERATION



Connect the AC power cord and select the corresponding AC voltage according to the back label, then connect the AC power cord to the socket on the back panel.

press the power switch to turn the power on. The display initialises, showing the model of the machine and the the setting level, which is recalled from the last use.

press the power switch again to turn the power off.

Output Control and Output Shutdown Memory of Power Supply

Panel Operation

- press , Output will be turned on, the positive and negative terminals will output according voltage and the output indicator light will be lit ON.
- Press and hold for one second, and then the output indicator will be lit ON. At this time, the machine will memorize the output status before shutting down, and the last status will be exactly what the power supply is when you power ON next time.

Note: If there are any of the following conditions, the output will be automatically turned off:

- OVP turns on and then there is unusual voltage on the output terminal which is more than the setting voltage;
- OCP turns on and then there is unusual current on the output terminal which is more than the setting current;
- Recalling other setups from the memory.