PeakTech P 6181 Programmable Linear Laboratory Power Supply User Manual

Contents

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Product Information

The Programmable Linear Laboratory Power Supply is a versatile device designed for various laboratory applications. It complies with the requirements of the following European Union Directives for CE conformity: 2014/30/EU (Electromagnetic Compatibility), 2014/35/EU (Low Voltage), 2011/65/EU (RoHS). The power supply features three separate outputs, allowing for simultaneous operation of multiple devices. It offers high resolution and accuracy, ensuring precise control over voltage and current levels. The residual ripple is limited to 0.01% + 3mV, guaranteeing a stable power output.

With four working modes – separate, parallel, serial, and plus-minus – the power supply provides flexibility in configuring different circuit setups. It also supports up to 100 sequence steps that can be programmed for automated operations. The device comes with a 3.9-inch TFT display with a resolution of 480×320 pixels, providing a clear interface for monitoring and adjusting settings. It offers multiple interfaces including USB 2.0 (Device + Host), RS232, and LAN, enabling convenient connectivity and control.

Product Usage Instructions

Safety Instructions

This product complies with the requirements of the following European Union Directives for CE conformity: 2014/30/EU (Electromagnetic Compatibility), 2014/35/EU (Low Voltage), 2011/65/EU (RoHS). To ensure the operational safety of the device and to avoid serious injuries due to current or voltage flashovers or short circuits, the following safety instructions for operating the device must be observed. Damages caused by non-observance of these instructions are excluded from claims of any kind.

- This device must not be used in high-energy circuits.
- Before connecting the device to a power outlet, ensure that the voltage setting on the device matches the existing mains voltage.

- Connect the device only to sockets with a grounded protective conductor.
- Avoid placing the device on damp or wet surfaces.
- Prior to commissioning, thoroughly check the device, test leads, and other accessories for possible damage or bare/kinked cables and wires. If in doubt, do not carry out any measurements.
- Replace defective fuses only with a fuse that corresponds to the original value. Never short-circuit the fuse or fuse holder.
- Ensure the ventilation slots in the housing are free from obstruction to prevent heat accumulation.
- When cleaning the device, disconnect the power plug from the socket. Clean the device only with a damp, lint-free cloth using commercially available detergents. Avoid any liquid entering the interior of the device to prevent short circuits and device damage.
- This device must not be used in high energy circuits.
- Before connecting the device to a power outlet, check that the voltage setting on the device matches the existing mains voltage
- Connect the device only to sockets with grounded protective conductor
- Do not place the device on a damp or wet surface.
- Check the device, test leads and other accessories for possible damage or bare or kinked cables and wires before commissioning. If in doubt, do not carry out any measurements
- Replace defective fuses only with a fuse corresponding to the original value. Never short-circuit the fuse or fuse holder.
- It is essential to keep the ventilation slots in the housing free (if covered, there is a risk of heat accumulation inside the device).
- Do not insert any metal objects through the ventilation slots.
- Do not place any liquids on the device (risk of short circuit if the device tips over).
- Do not operate the device near strong magnetic fields (motors, transformers, etc.)
- Never operate the device if it is not completely closed.
- Use only 4mm safety test cable sets to ensure proper functioning of the device.
- Only carry out measurement work in dry clothing and preferably in rubber shoes or on an insulating mat.
- It is essential to observe the warnings on the device.
- Device must not be operated unattended
- Do not expose the device to extreme temperatures, direct sunlight, extreme humidity or moisture.
- Avoid strong vibration.
- Keep hot soldering guns away from the immediate vicinity of the device.
- Before starting the measuring operation, the device should be stabilized to the ambient temperature (important when transporting from cold to warm rooms and vice versa)
- Clean the housing regularly with a damp cloth and a mild cleaning agent. Do not use any corrosive scouring agents.
- This device is suitable for indoor applications only.
- Avoid any proximity to explosive and flammable substances.
- Opening of the device and maintenance and repair work may only be carried out by qualified service technicians.
- Do not place the device with its front side on the workbench or work surface to avoid damage to the controls.
- Do not make any technical modifications to the device.
- Measuring instruments do not belong in children’s hands-

Usage

- Connect your devices to the separate outputs of the power supply as required for your experiment or application.
- Select the desired working mode (separate, parallel, serial, or plus-minus) based on your circuit configuration needs.
- Use the TFT display to monitor and adjust voltage and current levels using the provided controls.
- If needed, program up to 100 sequence steps to automate your operations.
- Utilize the available interfaces (USB 2.0, RS232, LAN) for connectivity and control of the power supply.

Important Notes

- Do not use the power supply for charging batteries as it may cause serious damage to the device.
- Refer to the safety symbols and labels on the device for additional precautions and warnings.

Cleaning of the device

Before cleaning the device, disconnect the power plug from the socket. Clean the device only with a damp, lint-free cloth. Use only commercially available detergents. When cleaning, make absolutely sure that no liquid gets into the interior of the device. This could lead to a short circuit and destruction of the device.

introduction

The innovative PeakTech 6181 power supply with color TFT display combines the advantages of a linear-controlled laboratory power supply with the remote control options that were previously mostly reserved for switching power supplies. Operation is via the graphical menu navigation and enables uncomplicated control and programming of the many functions. In addition, the device can be completely remote controlled via the enclosed PC software. To double the output voltage or output current values, the two independent channels can be connected in series or parallel. A plus/minus connection of the outputs is also possible.

Features

- three separate outputs
- Residual ripple U: ≤ 0.01% + 3mV
- four working modes: separate, parallel, serial, plus-minus
- up to 100 sequence steps programmable
- High resolution and accuracy
- 3.9″ TFT (480×320 pixels)
- Interfaces: USB 2.0 (Device + Host), RS232 and LAN

Safety symbols

The following symbols may appear in this manual:

Warning:
Indicates that certain conditions or activities may result in life-threatening injuries.

Caution:

Indicates that certain conditions or activities may cause damage to the device. or other objects can lead.

Notes on the device
The following labels may be attached to the device, e.g. together with an explanation: Danger: Injury or endangerment is possible immediately.

Warning: Injury or hazard is likely.
Caution: Potential risk of permanent damage to the device or its peripherals.

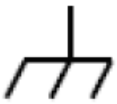
Safety symbols

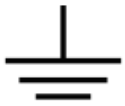
The following symbols may appear both on the device and in these instructions:


Life threatening voltage


See instructions


PE connection


Case grounding point


Ground connection

NOTICE:
Laboratory power supplies are not designed for charging batteries. Such use may cause serious damage to the device, which is excluded from claims of any kind.

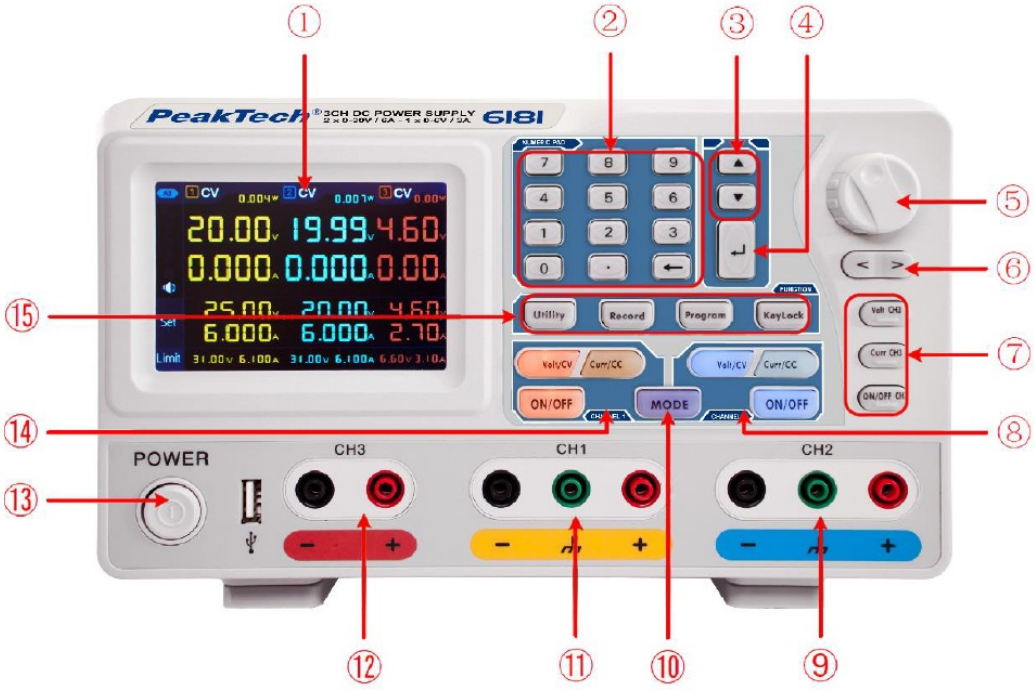
quick start

The following chapter includes:

- Overview of the front and back
  User interface overview
  Initial test of the power supply unit
  Checking the power supply functions
  Checking compliance with the initial values
  Description of the four working modes
  Description of the system menu

Front/rear panel and user interface

front side



Picture: Front panel of the PeakTech 6180

①	**LCD**	Display		
②	**Number field**	Parameter input. Number keys, decimal point and reset key included.		
③	**Up" and "Down" keys**	Selection menu or parameter change		
④	**Enter key**	Selection of a menu item or confirmation of the set parameter		
⑤	**Rotary knob**	Selection of a menu item or confirmation of the set parameter. Pressing the button has the same effect as pressing the Enter key		
⑥	**Keys "to the left " and "to the right**	Selection menu or moving the cursor		
⑦	**Channel 3 Operation**		**Volt/CH3**:	Sets voltage for channel 3
			Curr/CH3	: Sets current for channel 3 activate/deactivate output of channel 3
			ON/OFF:	
⑧	**Channel 2 Operation**	**Blue**	**Volt/CV**	key: Sets the output voltage of channel 2
		Blue	**Curr/CC**	key: Sets the output current of channel 2 key: activate/deactivate output of channel 2
		Blue	**ON/OFF**	
⑨	**Channel 2 connection sockets**	Connection sockets of channel 2 with polarity indication on blue field		

⑩	**Mode button**	Switches between working modes (CH1 & CH2 & CH3), as well as dual channel mode (CH1 & CH2)		
	Channel 1 connection sockets	Connection sockets of channel 1 with polarity indication on yellow field		
	Channel 3 connection sockets	Connection sockets of channel 3 with polarity indication on blue field		
	Power switch	Power switch of the device for switching on/off		
	Channel 1 Operation	**Orange Orange** **Orange**	**Volt/CV**	key: Sets the output voltage of channel 1 key: Sets the output current of channel 1
			Curr/CC	
			ON/OFF	key: activate/deactivate output of channel 1
	Function keys	**Utility**	key: Menu for output mode, settings, info and interfaces	
		Record	button: Save settings, auto record and playback	
		Program	key: Programmable output programs	
		KeyLock	key: Press for 5 sec. to activate key lock. Press again for 5 sec. to deactivate	
		key lock.		

Explanation of the keypad display

ON/OFF button	Key lights up when the channel has been activated
Volt/CV button	Key lights up when the channel is in constant voltage mode
Curr/CC key	Button lights up when the channel is in constant current mode

backside

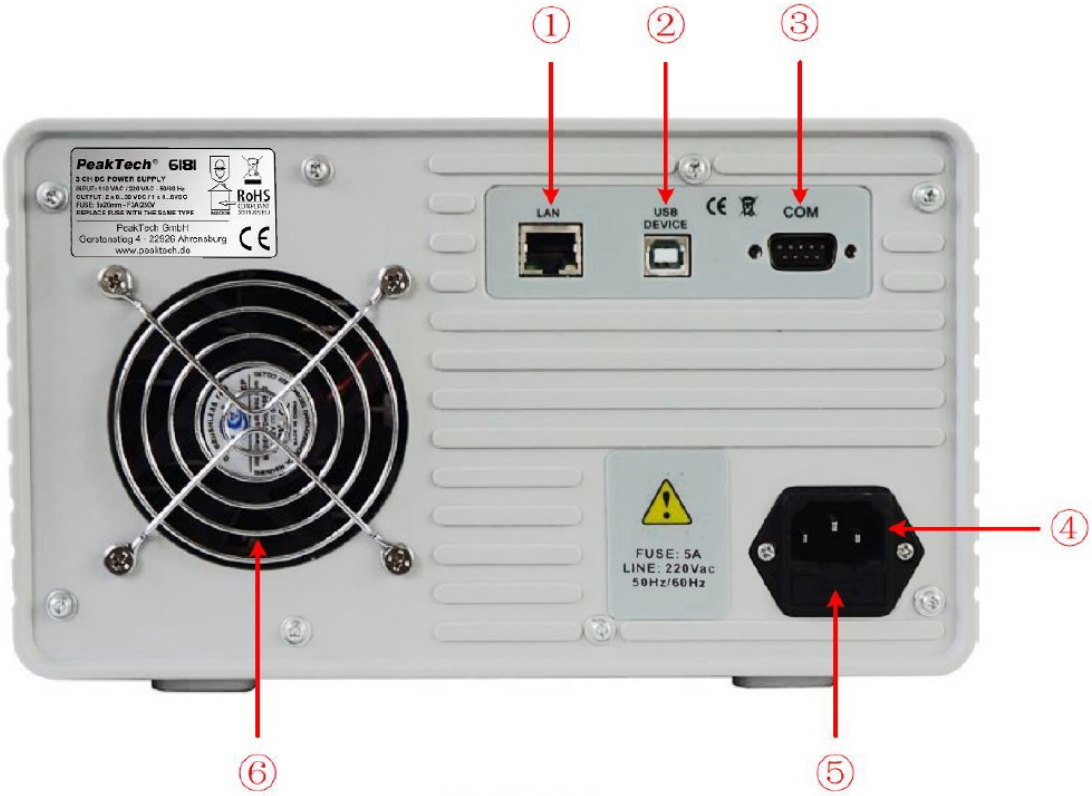


Image: back side

①	**LAN (network) port**	For connection to a local network
②	**USB Device Port**	USB slave port for connecting to a PC
③	**COM Port**	Serial interface
④	**Power input socket**	Power input socket
⑤	**Fuse**	Fuse (tripping characteristic depends on the selected mains voltage)
⑥	**Fan**	Air inlet

User interface

When the output mode is in independent output mode or channel tracking mode, there are two display modes: three-channel mode (CH1 & CH2 & CH3), two-channel mode (CH1 & CH2). Press the Mode button to switch between modes.

Three channel mode

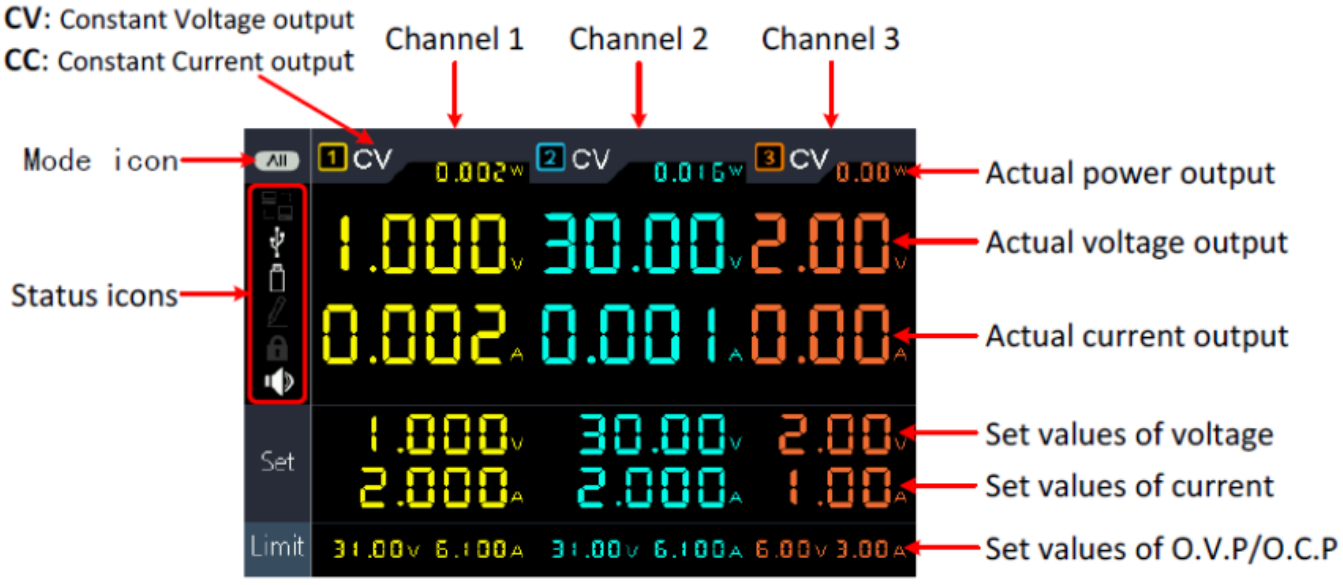


Image: User interface in three-channel mode

Two-channel mode

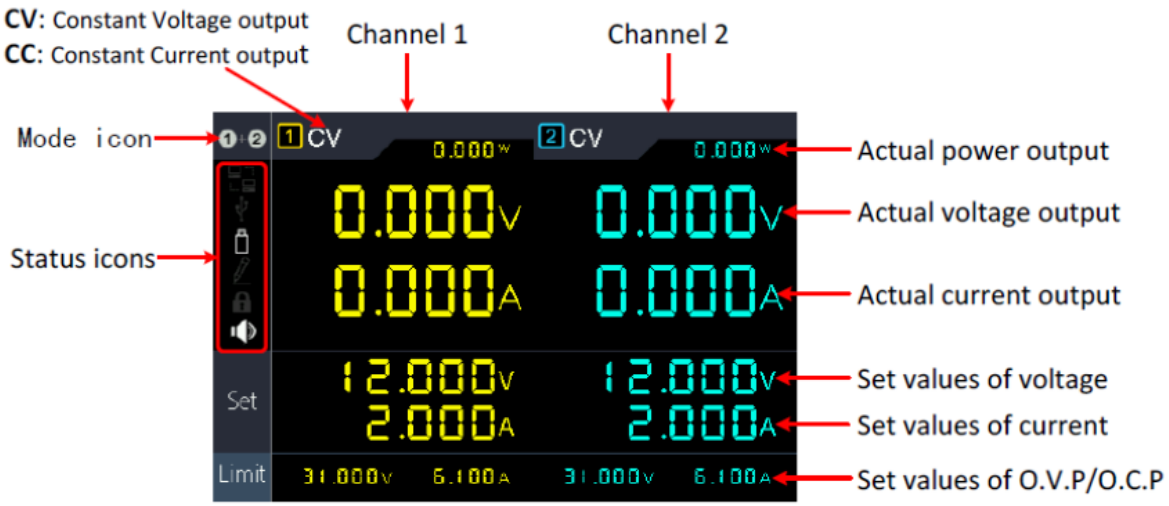
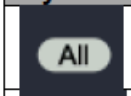
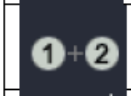


Image: User interface in two-channel mode

Mode icons

Symbol	Description
	Three-channel mode for CH1, CH2 and CH3 is displayed
	Two-channel mode (CH1 & CH2) is displayed
	Parallel output mode enabled
	Serial output mode enabled

Status icons

Symbol	Description
	Connected to LAN (network)
	Connected as slave via USB
	A USB memory is connected to the front USB host socket
	Recording the current output values
	Key lock activated
	Loudspeaker is activated

General inspection

When you receive your new power supply, it is recommended to check the following steps:

1. check for transport damage

   If the packing carton or foam protection is found to have damage, do not discard it until the complete unit and its accessories have been electrically and mechanically tested.
2. check the accessories

The supplied accessories are described in “Appendix A:” of this manual. Please Make sure all listed accessories are present and undamaged, if problems are found please contact your dealer or PeakTech directly.

check the device

If there is physical damage, operational error or a performance problem, please contact your dealer or directly to PeakTech. Please keep the original packaging. Ideally Should the device always be sent in the original packaging to avoid transprot damage.

1. Switch-on control
    1. Connect the device to the power supply using the supplied power cable.
       Attention:
       To avoid electric shock, the device should only be connected to a grounded outlet.
2. Press the power button on the front panel. The keys light up and the screen displays the Loading screen until the device switches to the user interface. This may take a few seconds.

Output control

Checking the output power ensures that the device can reach its rated power and rated output. For the following steps, we recommend that you first read the chapter on switching the channel output on / off and setting the output values.

Voltage output test
The following steps check basic voltage functions without load:

1. If the instrument is not loaded, select a channel and make sure that the current setting for that channel is not set to zero.
2. Turn on the channel output and make sure the channel is in constant voltage (CV) mode.
3. Set various voltage values on this channel; Check if the actual voltage value is displayed and also the actual current value is displayed as near zero.
4. Check that the output voltage can be set from zero to the maximum rated voltage.

Current output test

The following steps check basic power functions with a short circuit across the power supply Issue:

1. Connect an insulated test lead to the (+) and (-) output terminals to create a short circuit. Use a wire diameter sufficient to handle the maximum current.
2. Set the output voltage to the maximum value for this channel.
3. Turn on the channel output. Make sure that the channel you are using is in Constant Current (CC) output mode.
4. Set some different current values on this channel and check if the current value is is displayed close to the set current value and check if the actual voltage value is displayed as close to zero due to the short circuit.
5. Check that the output current can be set from zero to the maximum rated power.
6. Turn off the channel output and remove the short circuit from the output terminals.

operating elements on the front panel

Activating/deactivating the outputs

- Press the orange ON/OFF button to enable/disable output of CH1.
- Press the blue ON/OFF button to enable/disable the output of the CH2.
- The ON/OFF CH3 button to enable/disable the output of the CH3.

Setting the output voltage and current
You can enter the voltages and currents using the number field.

Set output voltage for CH1

- Press the orange Volt/CV key and the first digit of the CH1 voltage display flashes. Two input options are available:
  - Change: Turn the knob to change the value of the highlighted digit. The / keys move the cursor by one digit.
  - Input: Use the number keys to enter the desired value. The old value will be overwritten.
- Press to confirm the entry. Set output voltage for CH2
  - Press the blue key Volt/CV and the first digit of the CH2 voltage display flashes. Carry out the settings as also described for channel CH1.

Set output voltage for CH3

- Press the Volt CH3 key and the first digit of the CH3 voltage display flashes. Carry out the settings as also described for channel CH1.

Set output current for CH1

- Press the orange Curr/CC key and the first digit of the CH1 current display flashes. Two input options are available:
  - Change: Turn the knob to change the value of the highlighted digit. The / keys move the cursor by one digit.
  - Input: Use the number keys to enter the desired value. The old value will be overwritten.
- Press to confirm the entry.

Set output voltage at CH2

- Press the blue Curr/CC key and the first digit of the CH2 current display flashes. Carry out the settings as also described for channel CH1.

Set output voltage at CH3

- Press the Curr CH3 key and the first digit of the CH3 current display flashes. Carry out the settings as also described for channel CH1.

Notice:

If the value you have set is outside the specifications, an “ERROR” appears message and you have to select another value.

Overvoltage and overcurrent protection

If the overvoltage (O.V.P) or overcurrent (O.C.P) protection is activated, the power supply automatically switches off the output as soon as the set limit value has been exceeded. A corresponding warning is shown in the display.

Note:
If the output is deactivated as a result of an error, it must be deactivated after the error has been rectified. be activated manually.

This function can limit the power so as not to exceed the specifications of the connected load.

Setting the overvoltage protection

- O. V. P. set for channel 1
  Press the orange Volt/CV key and the first digit of the CH1 voltage display flashes. Now press the▼ key and the first digit of the CH1 OVP setting flashes.

Two input options are available:

- Change: Turn the knob to change the value of the highlighted digit. The keys move the cursor by one digit.
- Input: Use the number keys to enter the desired value. The old value will be overwritten.
- Press to confirm the entry.
- Set OVP for channel 2
  Press the blue Volt/CV key and the first digit of the CH2 voltage display flashes. Now press the ▼ key and the first digit of the CH1 OVP setting flashes. Carry out the settings as for CH1.
- Set OVP for channel 3
  Press the Volt CH3 key and the first digit of the CH3 voltage display flashes. Now press the ▼ key and the first digit of the CH1 OVP setting flashes. Carry out the settings as for CH1.

Setting the overcurrent protection

- Set O.C.P. for channel 1
  Press the orange Curr/CC key and the first digit of the CH1 current display flashes. Now press the ▼ key and the first digit of the CH1 OCP setting flashes.

Two input options are available:

- Change: Turn the knob to change the value of the highlighted digit. The keys move the cursor by one digit.
- Input: Use the number keys to enter the desired value. The old value will be overwritten.
- Press to confirm the entry.
- Set OVP for channel 2
  Press the blue Curr/CC key and the first digit of the CH2 current display flashes. Now press the ▼ key and the

first digit of the CH1 OCP setting flashes. Perform the settings as for CH1.

- Set OVP for channel 3

  Press the Curr CH3 key and the first digit of the CH3 current display flashes. Now press the ▼ key and the first digit of the CH1 OCP setting flashes. Perform the settings as for CH1.

Programmable output

The programmable output function can preset up to 100 groups of timing parameters. When you turn on the programmable output, the instrument outputs the preset voltage and current in the preset time duration.

Data view

Press the Program key. The Data View menu is selected

1. The Memory submenu is active. Press to switch between Internal and External.
2. Use the ▼ key to switch to the Import submenu. Press the key to import data.
3. Use the ▼ key to switch to the Export submenu. Press the key to export data.
   Note: If external is selected as the storage location, a folder (ODP\Program) will be created on the connected USB memory where the program will be saved as a CSV file for editing.
4. Use the ▼ key and select the Clear Data submenu. Press the key to clear the data.

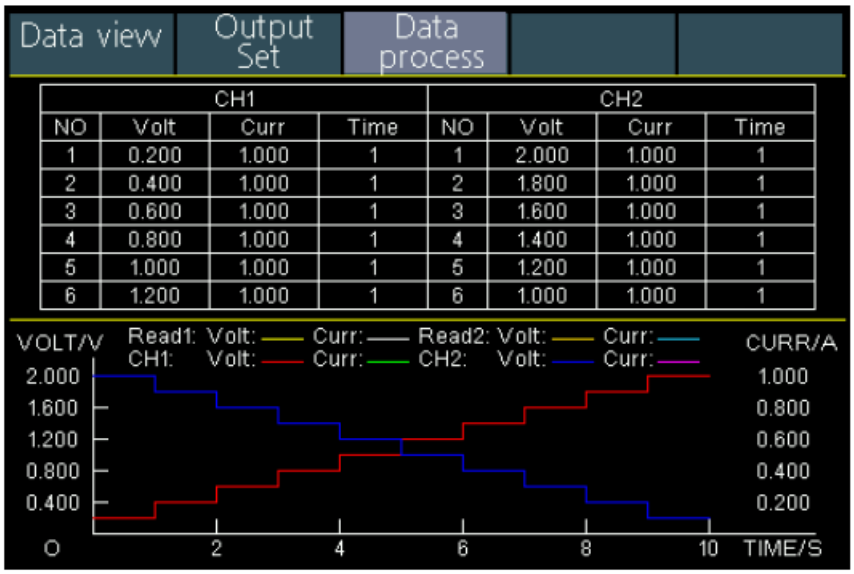
Output settings
Press the Program key and turn the knob to switch to the Output Set menu.

1. The Cycle Mode submenu is active. Press to switch between Order (1x) and Loop.
2. Use the ▼ key to switch to the Start Point submenu. Use the numeric keys to set the value of the start point of the table to run through. Press the key to confirm the entry.
3. Use the ▼ key to switch to the Stop Point submenu. Use the numeric keys to set the value of the endpoint of the table to pass. Press the key to confirm the input.
4. Use the ▼ key to switch to the Start submenu. Use the / keys to switch between CH1, CH2 or ALL. Press the key to confirm the entry.

Data Process
Press the Program key and turn the knob to switch to the Data Process menu. You can set the parameters of CH1 and CH2 including voltage, current and output time. This function allows 100 parameter groups for each channel.

Edit:

1. The Edit submenu is active and shows a short overview of the function keys. **Press the key to switch to the data processing menu:**



2. In the Data Process submenu, press the keys to move the cursor of the selected digit one column to the left or right and the ▲ / ▼ keys to move the cursor one row up and down. Use the number keys to enter the desired value and press the key to confirm.
3. Use the ← Backspace key to switch back a menu.

Graph process is used to configure the graphical display in the data process interface:

1. Press the ▼ key to enter the Graph Process submenu. Now press the key to activate the editing menu.
2. In this menu, the setting and display options are shown as yellow boxes. Select the desired check box with the / keys or press the ▲ / ▼ keys to change the selection line. To activate/deactivate the check boxes for the individual menu items, press the key. If the check box is activated, the corresponding line is displayed in the progress curve and the field is activated in the data processing menu.
3. Use the ← Backspace key to switch back a menu.

Switching the programmable output on and off

In the Data Processing menu:

1. Independent Mode (Normal)
   Press the orange ON/OFF button to turn the programmable output of CH1 on and off. Press the blue ON/OFF button to turn the programmable output of CH2 on and off.
2. Parallel/Series Mode
   Press the orange ON/OFF key to switch the programmable output on and off.

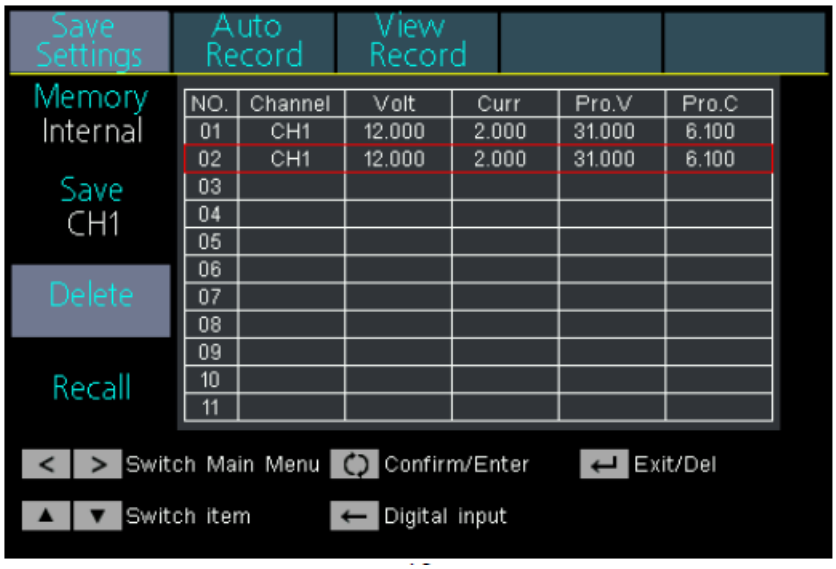
In the Output Set menu:
Press the ▼ key to enter the Start item. Now press the / keys to select the channel (CH1, CH2 or All) and then press the key to activate the data processing menu and output the selected channel.

Notice:
When using the programmable output, pressing the ON/OFF key activates the timer. of the output is reset. If you switch the output on again, the time program starts automatically new from the beginning.

Save settings and Auto Record

Saving settings
You can save, recall and delete current setting parameters. The memory can be set as internal or external (USB flash device). Up to 100 groups of settings can be stored. Press the Record key. The Save Settings menu is displayed.

1. The Memory submenu is active. Press / to switch between Internal and External.
2. Use the ▼ key to switch to the Save submenu. Press / to select the channel (CH1, CH2 or CH3) and then press the button to save the channel settings.
   Note: If external is selected as the storage location, a folder (P6181\Record_Option) is created on the connected USB memory in which the channel setting is saved as a CSV file.
3. Use the ▼ key and select the Delete submenu. Press the key and a red box will be displayed around the saved setting. Press the ▲ / ▼ keys to change the line or / to change the page. Select the desired value and then press the key to delete the record. Use the Backspace key ← to switch back a menu.



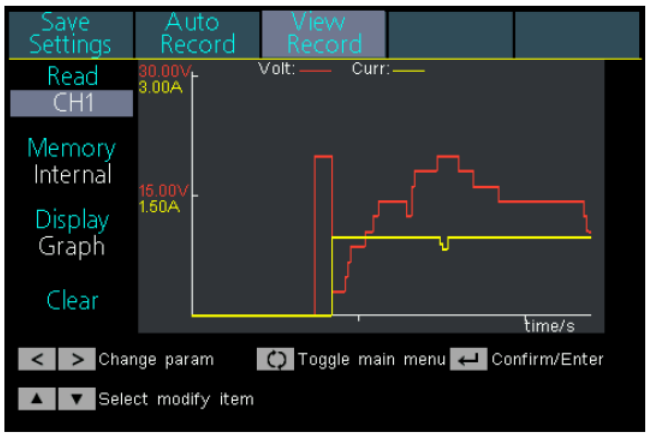
4. Use the ▼ key and select the Recall submenu. Press the key and a red box will be displayed around the saved setting. Press the ▲ / ▼ keys to change the line or / to change the page. Select the desired value, then press the key to access the record. Use the Backspace key ← to switch back one menu.

Auto Record
Press the Record button and select Auto Record via the rotary knob.

1. The Memory submenu is active. Press / to switch between Internal and External.
2. Use the ▼ key to switch to the Interval submenu.use the number keys to set the desired measurement interval and then press the key to confirm the value.
3. Use the ▼ key to switch to the Points submenu.Use the number keys to set the desired number of measurement points and then press the key to confirm the value.
4. Use the ▼ key to switch to the Record Status submenu. Press / to select the channel (CH1, CH2 or CH3) and then press the key to start recording. Press the key again to stop recording. During recording, the symbol is shown in the display.
   Note: If external is selected as the storage location, a folder (P6181\Record_Auto) is created on the connected USB memory, in which the measured values are saved as a CSV file.

View Record
Press the Record button and select View Record via the rotary knob.

1. Use the ▼ key to select into the Memory submenu. Press / to switch between Internal and External. If Internal is selected in the Memory submenu, press the ▲ button to switch to the Read submenu and then press / to switch between CH1, CH2 or CH3. Then press the button to confirm the channel. After successfully reading the data, the measured values will be tabulated and the current value will be highlighted in a red box. Use the / keys to switch between pages. Use the ← Backspace key to switch back one menu. If External is selected in the Memory submenu, press the ▲ key to switch to the Export submenu. Use the / keys to switch between CH1, CH2 or CH3 and then the key to export the selected value to a connected USB memory. A folder (P6181\Record_Auto) is created on the connected USB memory where the measured values are saved as a CSV file.
2. Use the ▼ key to switch to the display submenu. Press the / keys to select the display as Graph or Table.



Graph display

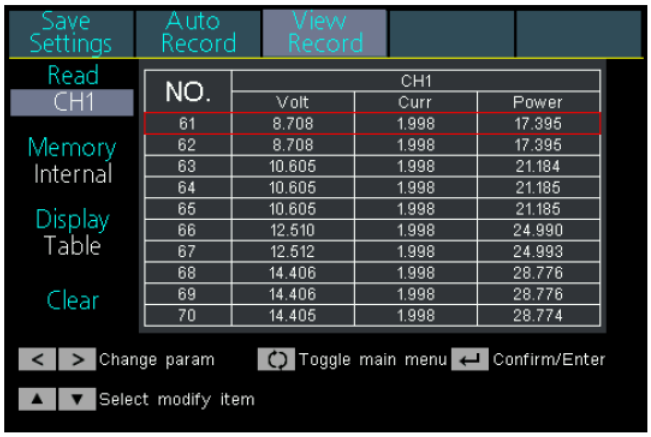


Table display

3. Use the ▼ key to switch to the Clear submenu. Press the key to clear the measured values.

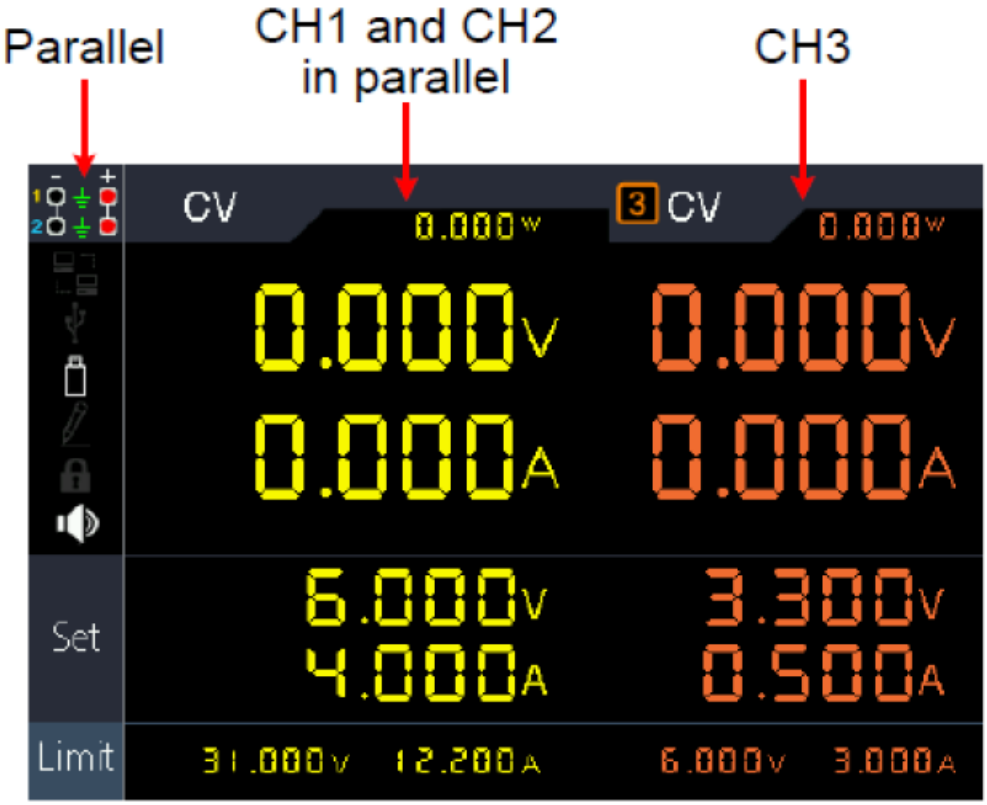
Output mode

The output mode can simplify the parameter input of CH1 and CH2. The output mode setting applies to CH1 and CH2 only, without affecting CH3.

There are four output modes:

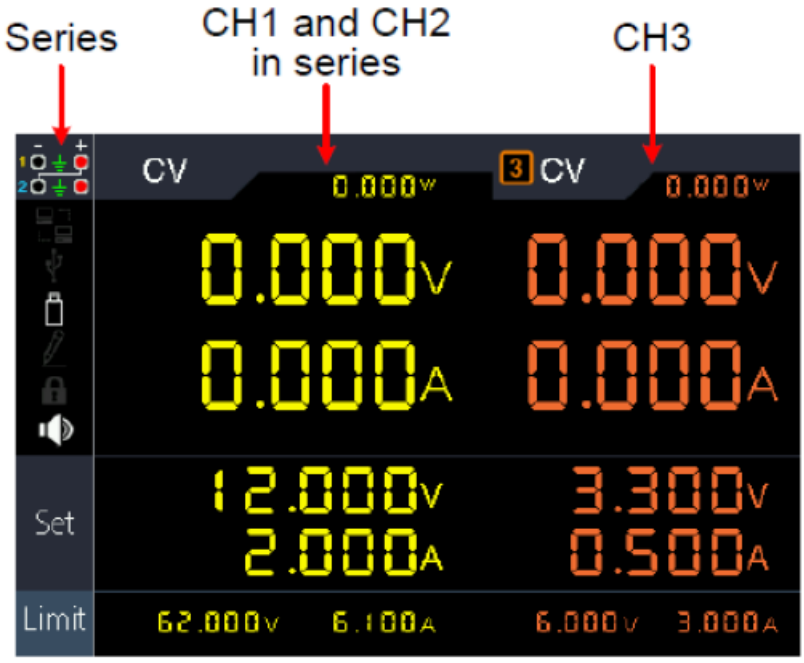
1. Independent Output (Independent Mode)
   The values for each channel can be set independently.
2. Parallel Track (Parallel Mode)
   When CH1 and CH2 are connected in parallel, you can select this mode to simplify parameter input. You only

need to set the parameters of the combined channel. The nominal voltage is the same as for the single channel; the current value is the sum of the current values of CH1 and CH2. Press the orange ON/OFF to turn the combined channel on / off.

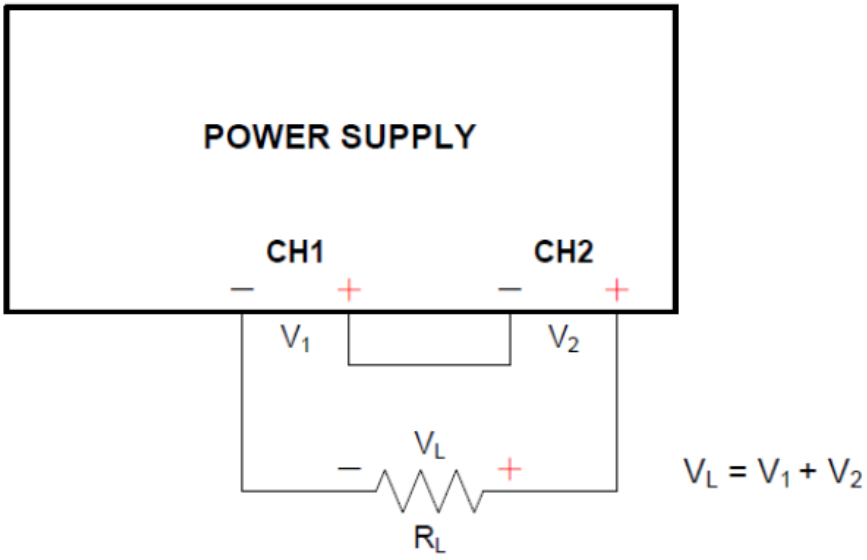


Series Track (Serial Mode)
If CH1 and CH2 are serially connected, you can select this mode to simplify parameter input. You only need to set the parameters of the combined channel. The rated current is the same as for the single channel; the current voltage value is the sum of the output voltages of CH1 and CH2.

Press the orange ON/OFF to turn the combined channel on / off.



The connection method of the serial circuit of CH1 and CH2 is as shown in the Figure described below:



Channel Track (Dependent Mode)
In independent output mode, set the output parameters of CH1 and CH2 and switch to Channel Track mode. When the parameters of one channel are changed, the other channel changes proportionally. For example, in independent output mode, set CH1 voltage to 2V, current to 1A; set CH2 voltage to 4V, current to 2A. When CH1 voltage is set to 6V, CH2 voltage will be set to 12V proportionally after entering “Channel Track” channel tracking mode. If CH1 current is set to 2A, CH2 current will be set proportionally to 4A.

Note: If the setting value is outside the nominal range, it is set to the maximum.

To set the output mode:

1. Press the Utility key. The “Output Mode” menu is activated.
2. Use the ▲ / ▼ keys to select the desired mode and then use the key to select the mode.

Utility (System) settings

Language (Select language)
Press the Utility key. Use the rotary knob to switch to the Utility menu. The Language submenu is activated. Use the / keys to switch through the menu languages.

Brightness (Setting the brightness of the display)
Press the Utility key. Use the rotary knob to switch to the Utility menu. Now press the ▼ key to switch to the Brightness submenu. Use the / keys to cycle through the display brightnesses. 0%, 25%, 50%, 75% and 100% can be selected.

Beeper (set buzzer)
Press the Utility key. Use the rotary knob to switch to the Utility menu. Now press the ▼ key to switch to the Beeper submenu. Use the / keys to switch the integrated buzzer on or off. If the buzzer is active, the corresponding symbol is displayed in the info field. A short info tone is emitted in the event of system messages, e.g. warning messages due to OVP/OCP.

Clock (Set system time)
Press the Utility key. Use the rotary knob to switch to the Utility menu. Now press the ▼ key to switch to the Clock submenu. Use the numeric keypad to fill in the corresponding numeric values and confirm with the key . Use the / keys to advance to the next value.

System Info

Display system information
Press the Utility key, then the rotary knob to switch to the Info submenu. The serial number of the device, the software and hardware versions are displayed.

Default settings
Press the Utility key , then the knob to switch to the Default submenu. Press and the default settings will be accessed. See the following table of PeakTech 6181 default settings.

	Output	**Volt**	**Power**
Output- values	CH1	12.00V	2.000A
	CH2		
	CH3		
	Parallel	12.000V	6.000A
	Serial	36.000V	2.000A

	Output	**Volt**	**Power**
Limit- Setting	CH1	Max. Output +1V	Max. Output +0.1A
	CH2		
	CH3		
	Parallel	Max. Output +1V	2 x Max. Output +0.1A
	Serial	2 x Max. Output +1V	Max. Output +0.1A

Utility	Output mode		Independent mode	
	Brightness		50 %	
	Summer		To	
	Port	Serial	Baud	115200
			Data Bits	8
			Odd-Even	None
			Stop Bits	1
		LAN Settings	IP address	192.168.001.099
			Subnet Mask	255.255.255.000
			Gateway	192.168.001.001
			Port	3000

Record	Save Settings	Location	Internal
		Stores	CH1
	Car Record	Location	Internal
		Interval	1
		Points	1000
		Recording Status	CH1
	View Record	Read	CH1
		Location	Internal
		Display	Graphic

Program	Data View	Location	Internal
	Output Set	Cycle mode	One time
		Starting point	1
		Endpoint	100
	Data Process	Graphics	SET&READ(CH1:VOLT,CURR;CH2:VOLT,CURR)

Update
Press the Utility key and turn the rotary knob until you are in the Info menu. Use the ▼ key to switch to the Update submenu. Now press the to load a firmware update from the connected USB stick, if available.

Port settings

Serial interface
Press the Utility key and turn the knob until you are in the Port Set menu. The Serial menu is active.

1. Press the key to set the value of baud rate. Press the / keys to set the desired baud rate between 1200, 2400, 4800, 9600, 19200, 38400, 57600 or 115200. Default is 115200, make sure the baud rate matches the computer.
2. Use the ▼ key to activate the Data Bits submenu. Press the / keys to switch between 6, 7 or 8.
3. Use the ▼ key to activate the Odd-Even submenu. Press the / keys to switch between None, Odd or Even.
4. Use the ▼ key to activate the Stop Bits submenu. Press the / keys to switch between 1 or 2. Use the ← Backspace key to switch back a menu.

LAN interface
Press the Utility key and turn the knob until you are in the Port Set menu. The Serial menu is active. Use the ▼ key to activate the LAN Set submenu.

1. Press the button to start the edit mode. Set the value of IP address, Subnet Mask, Gateway and Port number. Enter numerical values via the number field and press the keys / keys to move the cursor to the desired position. Use the ▲ / ▼ keys to move the cursor up and down. Use the ← Backspace key to switch back a

menu.
2. Restart the device to apply the settings.

LCD test
The device has a test function of the display. Press the Utility key and turn the knob until you are in the Port Set menu. The Serial menu is active. Use the ▼ key to activate the LCD Test submenu.

1. Press the key to start the test mode.
2. Press the ▲ key to change the color between red, green and blue. Check if the display has strong deviations, errors or spots.
3. Press the key to exit the test mode.

keys test
The device has a test function of the push buttons. Press the Utility key and turn the knob until you are in the Port Set menu. The Serial menu is active. Use the ▼ key to activate the Key Test submenu.

1. Press the key to start the test mode.
2. Each gray box displayed reflects one of the pushbuttons. If you press them, the gray box turns green and you can thus test the function.
3. Press the key to exit the test mode.

troubleshooting

1. **The device has been switched on, but the display remains dark**
    - Check the power supply line to the device
    - Check that the mains voltage selector switch is in the correct position.
    - Check whether the device fuse is still intact.
    - Switch the device back on after performing the above actions.
    - If the problem still exists, contact PeakTech Service.
2. **Initial values behave in an unusual way:**
    - Check whether the voltage has been set to 0V. If so, change the voltage value.
    - Check whether the current has been set to 0A. If so, change the current value.
    - If the timer mode has been selected, check whether one of the sequence steps is set to 0A or 0V. Change this value if necessary.
    - If the problem still exists, contact PeakTech Service.
3. **The USB storage device is not recognized correctly:**
    - Check the storage medium for function with another device, e.g. a PC.
    - External USB hard drives are not supported, only flash memory can be used.
    - Restart the device and insert the USB storage medium again.
    - If the problem still exists, contact PeakTech Service.

technical specifications

The following data is based on a device that has been switched on for at least 30 minutes under the specified ambient conditions.

		Channel 1/Channel 2		Channel 3
DC output specifications	Voltage	Normal/Parallel	0 … 30 V	0 … 6 V
		Serial	0 … 60 V	
	Power	Normal /Serial	0 … 6 A	0 … 3 A
		Parallel	0 … 12 A	
Grid stability	CV	≤0.01% + 3 mV		≤3 mV
	CC	≤0.1% + 3 mA		≤0.1% + 3 mA
Load stability	CV	≤0.01% + 3 mV		≤0.1%+3 mV
	CC	≤0.2% + 3 mA		≤0.2% + 3 mA
Noise / Ripple (20Hz …20MHz)	Vp-p	≤4 mVp-p		≤3 mVp-p
	CV	≤1 mVrms		≤1 mVrms
	CC	≤5 mArms		≤4 mArms
Setting resolution	Voltage	1 mV		1 mV
	Power	1 mA		1 mA
Input accuracy (25°C±5°C within 12 months)	Voltage	≤0.03% + 10 mV		≤0.03% + 10 mV
	Power	≤0.1% + 8 mA		≤0.1% + 5 mA
Readback Resolution	Voltage	1 mV		1 mV
	Power	1 mA		1 mA
Readback Accuracy (25°C±5°C)	Voltage	≤0.03% + 10 mV		≤0.03% + 10 mV
	Power	≤0.1% + 8 mA		≤0.1% + 5 mA
Display				
Technology	4-inch color LCD (Liquid Crystal Display)			
Resolution	480 (horizontal) × 320 (vertical) pixels			

Colors	65536 colors, TFT screen	
Power supply		
Net	Vac ± 10%; AC input 50/60Hz	
Nominal values / fuse	220V	250 V F5A
Other		
Cooling method	Fan cooling (speed load-dependent)	
Interfaces	USB host, USB device, LAN, RS-232	
Dimensions		
Dimensions	250mm×158mm×358mm (W*H*D)	
Weight	Ca.12 kg	

appendix

Appendix A: Accessories

Standard accessories:

- Power cord with the power plug intended for your country
- USB data cable
- CD with “Digit Power Software” and operating instructions

Appendix B: Maintenance and cleaning

General maintenance
Do not store or use the device in direct sunlight for long periods of time.

Caution:
To avoid damage to the device, do not expose it to sprays, liquids or solvents.

Cleaning

Check the condition of the device regularly according to existing environments.

Clean the device as follows:

1. Use dry cloth towels to wipe dust from the device. Do not rub the outer protective layer of the LCD display.
2. Be sure to disconnect the power supply before cleaning! Use damp cloths with a mild detergent. Do not use any corrosive scouring agents to avoid permanent damage such as corrosion to the housing.

Warning:
Before switching on the device after cleaning, make absolutely sure that there are no more water residues on the device. If in doubt, place the device in a dry room for a few hours.

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Documents / Resources

	PeakTech P 6181 Programmable Linear Laboratory Power Supply [pdf] User Manual P 6181 Programmable Linear Laboratory Power Supply, P 6181, Programmable Linear Laboratory Power Supply, Linear Laboratory Power Supply, Laboratory Power Supply, Power Supply

References

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