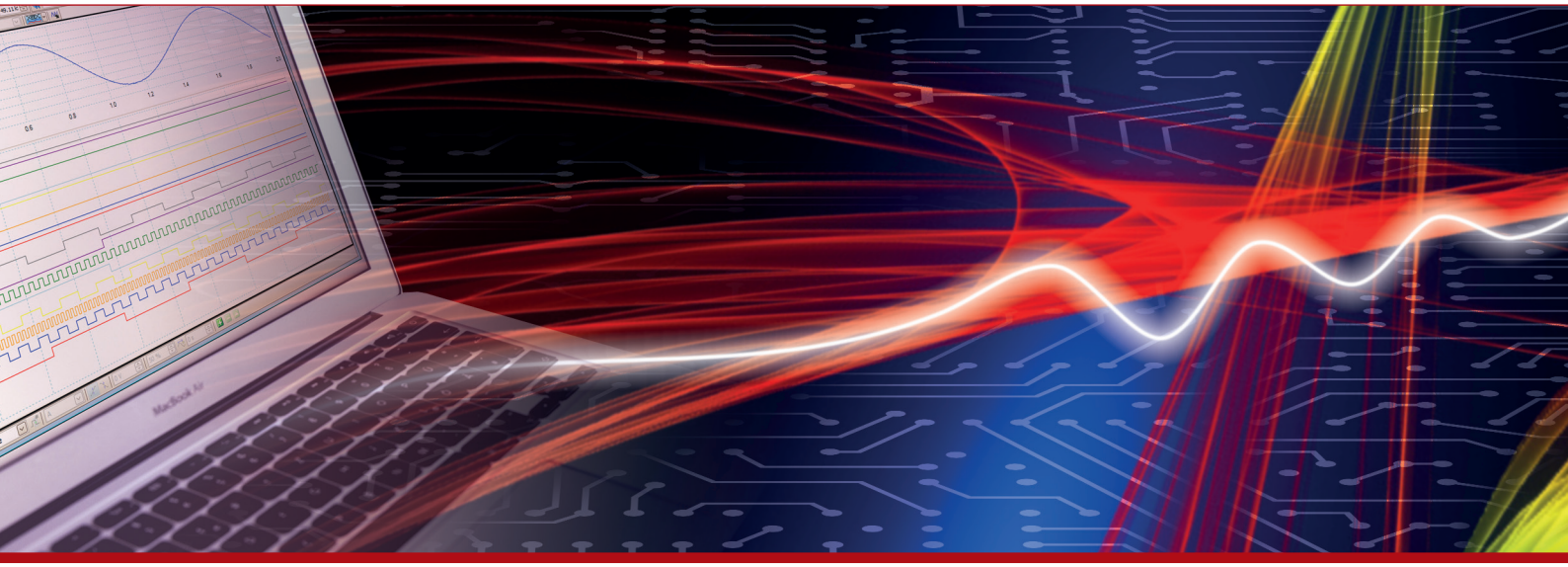
Product Datasheet - Technical Specifications



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PeakTech®

Prüf- und Messtechnik

Spitzentechnologie, die überzeugt

PeakTech® 6145

Bedienungsanleitung /
Operation manual

Stabilisiertes Doppel-Labornetzgerät /
Regulated Double Laboratory Power Supply

1. Safety Precautions

This product complies with the requirements of the following European Community Directives: 2004/108/EC (Electromagnetic Compatibility) and 2006/95/EC (Low Voltage) as amended by 2004/22/EC (CE-Marking).

To ensure safe operation of the equipment and eliminate the danger of serious injury due to short-circuits (arcing), the following safety precautions must be observed.

Damages resulting from failure to observe these safety precautions are exempt from any legal claims whatever.

* Do not use this instrument for high-energy industrial installation measurement.
* Prior to connection of the equipment to the mains, check that the available mains voltage corresponds to the voltage setting of the equipment.
* Connect the mains plug of the equipment only to a mains outlet with earth connection.
* Do not place the equipment on damp or wet surfaces.
* Replace a defective fuse only with a fuse of the original rating. Never short-circuit fuse or fuse holding.
* Disconnect test leads or probe from the measuring circuit before switching modes or functions.
* Do not cover the ventilation slots of the cabinet to ensure that air is able to circulate freely inside.
* Do not insert metal objects into the equipment by way of the ventilation slots.
* Do not place water-filled containers on the equipment (danger of short-circuit in case of knockover of the container)
* Check test leads and probes for faulty insulation or bare wires before connection to the equipment.
* Please use only 4mm-safety test leads to ensure immaculate function.
* To avoid electric shock, do not operate this product in wet or damp conditions. Conduct measuring works only in dry clothing and rubber shoes, i. e. on isolating mats.
* Never touch the tips of the test leads or probe.
* Comply with the warning labels and other info on the equipment.
* The measurement instrument is not to be to operated unattended.
* Always start with the highest measuring range when measuring unknown values.
* Do not subject the equipment to direct sunlight or extreme temperatures, humidity or dampness.
* Do not subject the equipment to shocks or strong vibrations.
* Do not operate the equipment near strong magnetic fields (motors, transformers etc.).
* Keep hot soldering irons or guns away from the equipment.
* Allow the equipment to stabilize at room temperature before taking up measurement (important for exact measurements).
* Do not input values over the maximum range of each measurement to avoid damages of the meter.
* Periodically wipe the cabinet with a damp cloth and mid detergent. Do not use abrasives or solvents.
* The meter is suitable for indoor use only
* Do not operate the meter before the cabinet has been closed and screwed safely as terminal can carry voltage.
* Do not store the meter in a place of explosive, inflammable substances.
* Do not modify the equipment in any way
* Do not place the equipment face-down on any table or work bench to prevent damaging the controls at the front.
* Opening the equipment and service – and repair work must only be performed by qualified service personnel
* -**Measuring instruments don't belong to children hands.-**

Cleaning the cabinet

Prior to cleaning the cabinet, withdraw the mains plug from the power outlet.
Clean only with a damp, soft cloth and a commercially available mild household cleanser. Ensure that no water gets inside the equipment to prevent possible shorts and damage to the equipment.

Introduction

The model ***PeakTech***® 6145 regulated power supply has two ways adjustable output. The two adjustable outputs can also be selected for constant voltage or constant currant, designed in high stability and performance circuit. In constant voltage state, the output voltage can be arbitrarily from 0 V on the nominal range; and in the state of constant current, the output current can be adjustable from 0 A on the nominal range. The two outputs can be connected in parallel or in series, while the master used for voltage or current adjustment. The maximum output voltage in series is double of independent's, and the maximum output current in parallel is double too.
There are volt and Amp meters (or 3 digit LCD) for indicating each of the two outputs with high accuracy. The one fixed way output 5 V voltage. Due to the single chip integrated regulator, this output has good stability and ripple factor, and has reliable overload protection to protect the unit against being damaged whenever overload or short circuit.
The unit features in small size, good performance, novel appearance and etc, it is the ideal power supply unit for science investigation, college, factory, electronic appliance maintenance and etc.

Permanent operations

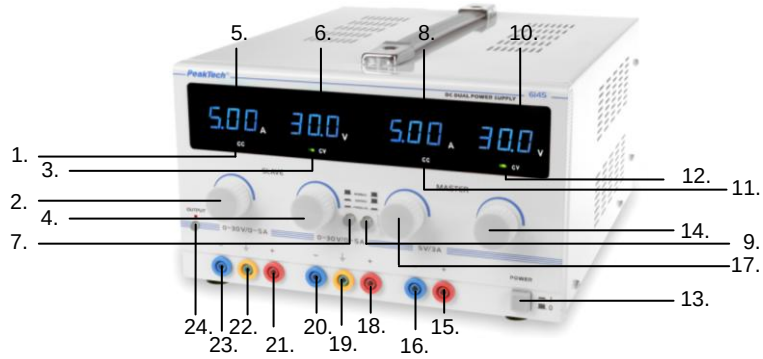
The power supply provides 2 adjustable outputs for a maximum current of 5 A DC, which can be connected in series or parallel, that means a maximum output of 10 A in parallel.
To extend the operational life span of the power supply, we recommend you to limit the working time under full load to eight hours.

2. Technical Data

Input voltage:	115/230 V AC, 50/60 Hz ± 10% (switchable)
Output voltage:	2 x 0 ... 30 V DC (adjustable)
Output current:	2 x 0 ... 5 A DC (adjustable)
Source regulation:	Two adjustable outputs: 1 x 10^{-4} + 3 mV 2 x 10^{-3} + 3 mA
Fixed output	10 mV
Load regulation	Two adjustable outputs: ≤ 1 x 10^{-4} + 2 mV (I ≤ 3 A) ≤ 1 x 10^{-4} + 5 mV (I > 3 A) ≤ 2 x 10^{-3} + 3 mA (I ≤ 3 A) ≤ 2 x 10^{-3} + 5 mA (I > 3 A)
Fixed output:	10 mV
Ripple and noise:	Two adjustable outputs: CV ≤ 0,5 mV rms (I ≤ 3 A) CV ≤ 1,0 mV rms (I > 3 A) CC < 3 mA rms
Fixed output	10 mV
Protection:	current limit
Indication accuracy	Volt-indication: LED ± 0,2% + 2 digits Amp-Indication: LED ± 1% + 2 digits
Mains voltage	115 V AC; 60 Hz/230 V AC; 50 Hz
dimensions (W x H x D)	265 x 170 x 355 mm
weight	11 kg
Accessories	power cable, operation manual,

3. Operation

3.1. Controls and description



1. Slave constant-current indicator or two-ways parallel state indication: the LED illuminates when the slave output is in current-regulated state or the two adjustable outputs is in parallel.
2. Slave constant current adjustment: adjusting slave output current value (adjusting the current-limit protection point).
3. Slave constant-voltage indicator: the LED illuminates when the slave output is in voltage-regulated state.
4. Slave constant voltage adjustment: adjusting slave output voltage.
5. Amp display: indicating slave output current by analog meter or LCD.
6. Volt display: indicating slave output voltage by analog meter or LCD.
7. Control switch: for selecting the two adjustable outputs independent, series, parallel.
8. Amp display: indicating master output current by analog meter or LCD.
9 Control switch: for selecting the two adjustable outputs independent, series, parallel.
10. Volt display: indicating master output voltage by analog meter or LCD.
11. Master constant-current indicator: the LED illuminates when the master output is in current-regulated state.
12. Mater constant-voltage indicator: the LED illuminates when the master output is in voltage-regulated state.
13. Power switch: the unit is "ON" when this button switch is depressed, while CV LED (3) (12) or CC LED (1) (11) illuminating.
14. Master constant voltage adjustment: adjusting master output voltage.
15. Fixed 5V output Terminal (+): connecting the positive terminal of load.
16. Fixed 5V output Terminal (-): connecting the negative terminal of load.
17. Master constant current adjustment: adjusting master output current value (adjusting the current-limit protection point).
18. Master output Terminal (+): connecting the positive terminal load.
19. Case ground: connecting the case to ground.
20. Master output terminal (-): connecting the negative terminal of load.
21. Slave output terminal (+): connecting the positive terminal of load.
22. Case ground: connecting the case to ground.
23. Slave output terminal (-): connecting the negative terminal of load.
24. Output-switch: output voltage ON/OFF

3.2. Operating method

Press output-button (24.) to enable or disable the outputs. If is also possible to turn off the outputs easily and the connected test circuits are quickly without tension.

3.2.1. Independence use of two adjustable output.

1. Set (7.) and (9.) switch to spring out position.

2. When the adjustable output is used as CV output, first should rotate clockwise the CC adjustment (2.) and (17.) to maximum, then turn on power switch (13.), adjust CV adjustment (4.) and (14.) till output voltage reach required voltage value, at this time, the CC state indicator (1.) and (11.) go out the CV state indicator (3.) and (12.) light on.

3. Used as CC output, after turning on power switch (13), first rotate clockwise the CV adjustment (4.) and (14.) to maximum, while rotate counter clockwise the CC adjustment (2.) and (17.) to minimum, connect the required load, again adjust clockwise adjustment (2.) and (17.) till output current reach the required current value. At this time, the CV state indicator (3.) and (12.) go out and the CC state indicator (1.) and (11.) light on.

4. Used as the CV output, in general the CC adjustment (2.) and (17.) should be set to maximum, but for this unit, the current-limiting protection point can also be set arbitrarily. Setting procedure: turn on power, rotate counter clockwise the CC adjustment (2.) and (17.) to minimum, then make the positive and negative output terminal in short connection and rotate clockwise the CC adjustment (2.) and (17.) till output current equal to the required current-limiting protection point, so the current-limiting protection point is well set.

3.2.2. Series using of the two adjustable outputs.

1. Switch (9.) is set to spring out and press in switch (7.). At this time, turn the master voltage adjustment (14.) and the slave out voltage tracks, strictly the master output voltage, and the output voltage can be up to double of independent's maximum voltage, 60 V (voltage between terminal (18.) and (23.)).

2. Before the series connecting, it must be examined if the negative terminal of both master and slave output are connected to case grounded terminal, if they are, must be disconnected, otherwise, short-circuit will be caused in the slave output when the two outputs are connected in series.

3. When the two outputs are in series, the voltage is controlled by master output, but current adjustment to two outputs is still independent. Therefore, attention should be paid to the position of the CC adjustment (2.) and (17.). For example, knob (2.) is at the position of counter clockwise to end or current of slave output excesses current-limiting protection point, at this time, the voltage of slave output will not track the voltage of master. So knob (2.) should be rotated clockwise to maximum then the two output are in series.

4. By series connection, it there is power output, proper leads corresponding to output power should be used to short connect the negative terminal of master output with positive terminal of slave output reliably. Since it is shorted by a switch inside the unit, current will pass on the shorted switch when there is power output. This will affect the reliability of the unit.

3.2.3. Parallel using of the two adjustable outputs.

1. Press in switch (7.) as well as switch (9.), at this time, the two output are in parallel, adjust voltage adjustment (14.) of master output, the voltage of two ways keep same, and slave output CC indicator (1.) lights on.

2. When the two outputs are in parallel, the CC adjustment (2.) of slave output does not work. When used as CC supply, simply adjust the CC adjustment (17.) of master output, at this time, output current of both master and slave output are controlled by it and are same, output current is up to double (10 A) of independent's maximum current.

3. While the two outputs in parallel, proper leads corresponding to output power be used to short reliably the two positive terminal and the two negative terminals of master slave output separately, so as to make load connected reliably with the two parallel outputs. It the load is only connected to one of output terminal, unbalance may becaused to current of the two outputs, this may also damage the series/parallel switch.

   The LED displays is in three digits. To get more accurate measuring value, you should calibrate by external circuit with precision measuring instrument.

4. Caution!

5 V output has reliable protection for current-limit and short. The two adjustable outputs have current-limit protection. As there is controlling circuit for regulating transistor's power loss in the circuit, when short-circuit occurs, the power loss on large power transistors is not very high, it can't cause any damage to the unit. But there is still power loss when short-circuit, in order to reduce aging and energy consumption, so this situation should be find as soon as possible and turn off power, then exclude the faults.
When operating is finished, put it in a dry place of good ventilation, and keep it clean. If it is not in use for a long period, pull off the power supply plug for storage.
For maintenance, input voltage must be cut off.

This manual is according the latest technical knowing. Technical alterations reserved.

We herewith confirm that the units are calibrated by the factory according to the specifications as per the technical specifications.

We recommend to calibrate the unit again, after 1 year.