

LAB SOURCES

**BK Precision 4063
RND 320-KA3005D**



BASIC PRINCIPLE

In the SPH electronics lab there are two different supplies available, each with its specific use case.



The DC Supply can supply your projects with power up to 30 V and 5 A. It is used to power anything from a Raspberry Pi to single LED's



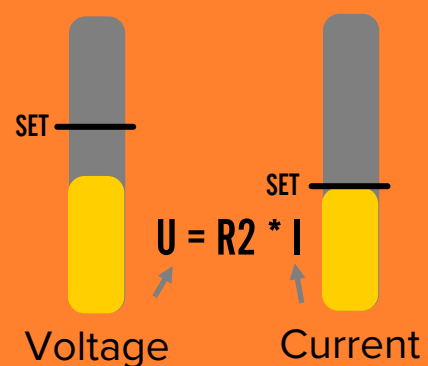
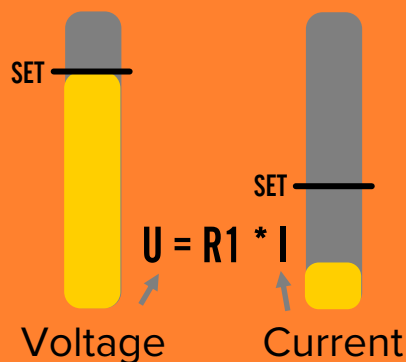
The function generator can produce a variety of periodic and non-periodic functions. And is used to provide you with test signals of all sorts. It is not able to power your circuits, only act as a signal source for them.

DC POWER SUPPLY

The DC power supply basically only has two parameters: The **maximum current** and the **maximum voltage**. Because of this the supply has two modes of operation: Constant current and Constant Voltage. It will always operate in one of the two modes. When attaching a load the supply will ramp up the power until one of the two setpoints is reached.

EXAMPLE:

These two setups are done with the same setpoints but different resistors and operate in different modes. Depending on the output resistance the supply will either be at set voltage or at set current. Ohm's Law applies:



DC POWER SUPPLY



Negative
Positive
Earth

Setting Voltage/Current

Setting the two parameters is fairly easy: Press the “Voltage/Current” button and use the arrow buttons and the dial to set the desired values.

Turning on the output

Before you turn on the output make sure to double check all your connections. Once you’re sure everything is in order press the “Off/On” button.

Protection Features

There is also the option to enable safety protection on both limits. This will simply switch the output off if a limit is reached. To enable these press OCP/OVP (Over Current Protection/ Over Voltage Protection). Especially OCP can be useful to avoid blowing up your devices.

FUNCTION GEN



Connecting

Attach the provided BNC to Banana Jack Cable (see Connectivity Page) to hook up to your circuits. Never use the BNC to directly feed the oscilloscope!

Choosing a Function

Press the button “Waveforms” and use the softkeys to choose from one of the 6 standard waveforms.

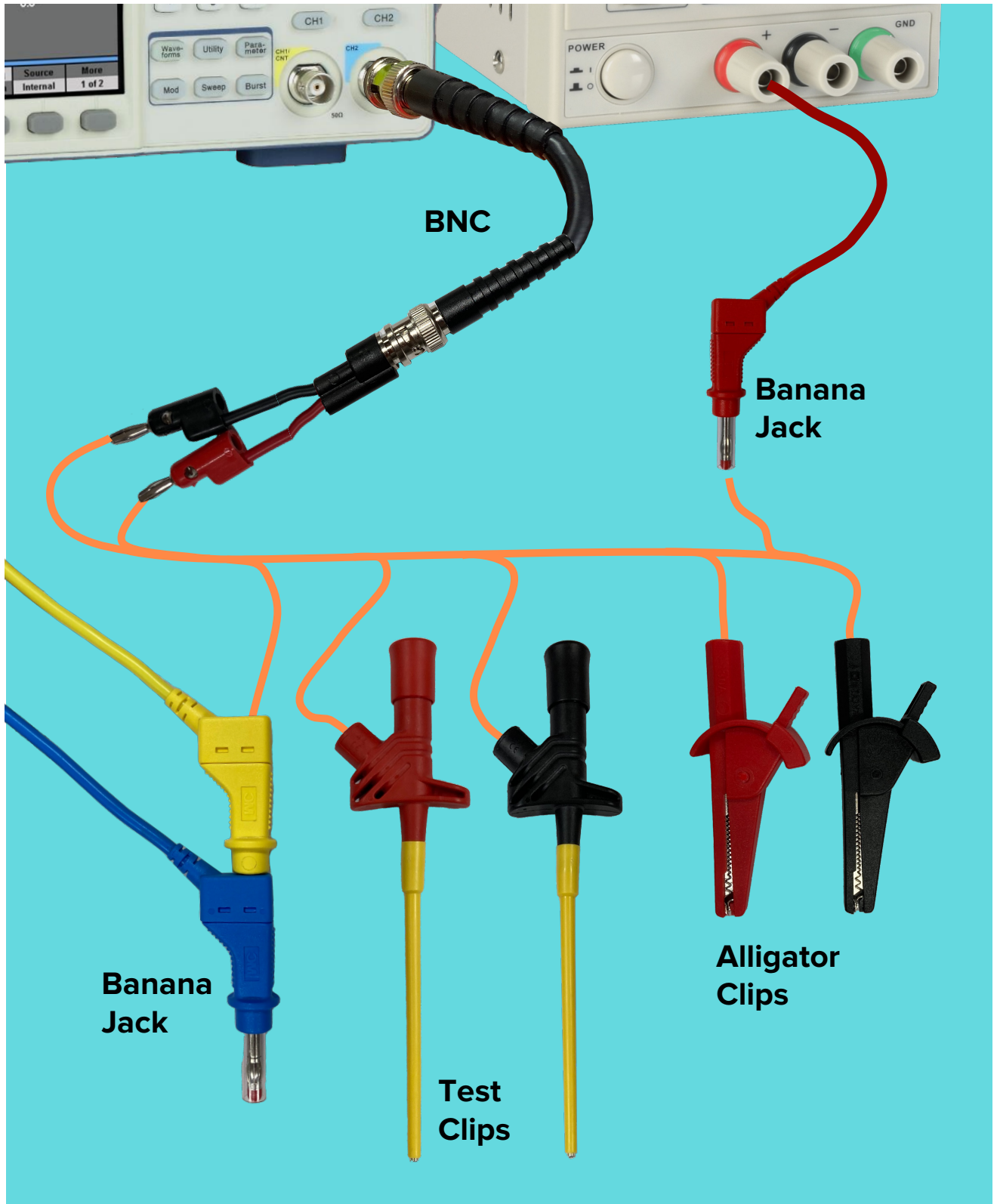
Adjusting the Parameters

Press the “Parameter” button and use the softkeys to access the parameter you want to change. Use the keypad or the knob to set them to the desired value.

Turning on the output

Press the CH1/CH2 button and use the bottom right softkey to enable the output.

CONNECTIVITY



SPECS

Function Generator

- Sine: 1 μ Hz - 80 MHz
- Square: 1 μ Hz - 40 MHz
- Triangle, Ramp: 1 μ Hz - 4 MHz
- Pulse: 1 μ Hz - 20 MHz
- Build-in waveforms: 36
- Vertical resolution: 14 bits
- Sampling rate: 500MSa/s
- Amplitude range (into 50 Ω):
- 1mVpp - 10Vpp < 40MHz
- 1mVpp - 5Vpp < 100MHz
- Offset range (DC):
- +/- 5V into 50 Ω
- +/- 10V into open circuit
- output impedance: 50 Ω or high-Z
- output protection: short-circuit

DC-Power Supply

- Output Power: 150 W
- Max Output Voltage: 30 V
- Max Output Current: 5 A
- Max Ripple & Noise: 2 mV
- Response Time: 100 ms

Manual:



Manual:

