

SPP-400 Digital Trigger Generator

Overview

The NEW Digitimer SPP-400 Trigger Generator is a programmable digitally-controlled, single or two channel trigger source compatible with our range of electrical stimulators.

Like our DG2A Trigger Generator, the SPP-400 is capable of operating in multiple modes, including (i) Free Run (ii) Gated (iii) Single or (iv) Train. However, because the SPP-400 can be used as a single or two channel device, with the output of Channel 1 linked to the input of Channel 2, it can also produce repeating trains or bursts of pulses which would be impossible with a single DG2A.

The SPP-400's digital controls allow users to precisely and reproducibly set the timing and output parameters they require. The SPP-400 also permits storage of up to eight pre-set protocols or configurations to the unit within the Protocol Manager for future recall.



Versatile Trigger & Control Options

The SPP-400 features an input BNC socket which allows external devices to either initiate a protocol of defined duration or start and stop output pulses in response to a voltage input. There are three input mode options:-

- Triggered – Output protocol will initiate on the rising or falling edge of a brief incoming trigger pulse e.g. a digital pulse from a DAQ device. The voltage threshold may be adjusted between -10V and +10V.
- Gated On/Off – Output active while its BNC input receives a voltage exceeding the threshold set on the SPP-400.
- Trigger On, Trigger Off – Toggles the output with successive incoming trigger pulses.

In addition to the BNC input, the SPP-400 features a manual trigger button which can be used in each of the three modes above. The SPP-400 is also compatible with external foot and hand switches and incorporates an optional “de-bounce” control which prevents accidentally multiple triggers when using these types of contact closure switches.

Precision Settings & Between Trial Reproducibility

One limitation of our DG2A Train/Delay Generator is the inability of the user to precisely set timing parameters via the analogue control dials. Also, if the settings are changed between experimental trials, it is a challenge for the user to return the dials to their previous positions, which might impact experimental reproducibility.

With the SPP-400 we have opted to use completely digital controls, and as a result, operators can precisely and reproducibly set the parameters they need for a particular experiment. The addition of the on-board Protocol Manager ensures that the most commonly used protocols are rapidly recalled when the need arises.

SPP-400

Specifications

Hardware

Dimensions (W x H x D) mm: 190 x 98 x 132 (includes controls & feet, excludes power connector)

Material: ABS UL94-V0

Tilt Option: Flat / 18° (Rear feet extend to allow the unit to be angled)

Weight: 678g (excluding AC/DC adapter)

Power: 24V DC, 1A (2.1mm DC Barrel Connector)

Signal Input/Output Connections: 3x BNC

PC Connection: Mini USB-B (currently only for firmware updates)

Controls

Single rotary encoder with push-button action; single push-button for "input"; four button array for navigation, protocol manager and main menu

LED Indicators

Power – Tri-colour LED (green, blue or red); Input – Bi-colour LED (green or red); Output – Bi-colour LED (green or red)

Triggering

Trigger Modes: (i) Triggered (ii) Gated (iii) Toggled

Trigger Edge: Rising or falling edge

Trigger Threshold: $\pm 10V$ (0.1V resolution)

Channel 2 Trigger Source: Direct or Channel 1

Inactive Voltage Level: Ground or adjustable between +10V and -10V

De-bounce: Inactive or Active

Output Parameters

DELAY	Max. Range:	0-999.9s
	Resolution:	10 μ s to 100ms for 0ms to 99.99ms 100 μ s for 100ms to 999.9ms 1ms for 1s to 9.999s 10ms for 10s to 99.9s 100ms for 100s to 999.9s
PULSE COUNT	Max. Range:	0 - 9999 pulses
INTER-PULSE INTERVAL	Max. Range:	0.02ms -999.9s
	Resolution:	10 μ s for 0.02ms to 99.99ms 100 μ s for 100ms to 99.9ms 1ms for 100ms to 9.999s 10ms for 10s to 99.9s 100ms for 100s to 999.9s
PULSE DURATION	Max. Range:	0.01ms -999.9s
	Resolution:	10 μ s for 0.02ms to 99.99ms 100 μ s for 100ms to 99.9ms 1ms for 100ms to 9.999s 10ms for 10s to 99.9s 100ms for 100s to 999.9s
OUTPUT VOLTAGE	Max. Range:	0.00V to +10.00V
	Resolution:	10mV

Digitimer Ltd

37 Hydeway, Welwyn Garden City, Hertfordshire, AL7 3BE, UK

Tel: +44 (0)1707 328347 Fax: +44 (0)1707 373153

E-mail: sales@digitimer.com

Website: www.digitimer.com

SPP-400
Trigger Generator