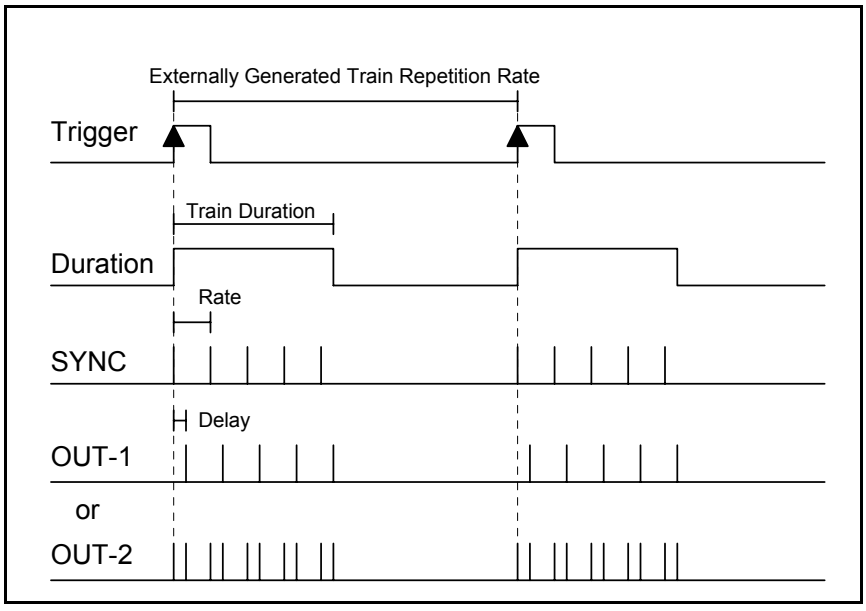
Digitimer
Train/Delay Generator - DG2A

NEUROSPEC
Research Neurosciences

The DG2A is a compact, free-standing, battery powered instrument which can be used to generate trigger pulses required for repetitive stimulation. Also featuring DELAY controls, it is useful for determining nerve or axonal Effective Refractory Period (ERP) through the production of a delayed second pulse.

Various modes allow output pulses to be produced singularly (SINGLE), continuously (FREE-RUN & GATED) or in a burst (TRAIN), with the burst/train duration and pulse frequency determined by the front panel controls. In each of the modes (except FREE-RUN), outputs can be initiated either by the front panel push button, a TTL compatible trigger/gating pulse or a suitable foot switch.

The unit has control of train duration over three full decades, pulse repetition rate (or frequency) within that train over five decades and control of the delayed pulse over three decades. It has two BNC output sockets (i) the SYNC output produces a pulse to trigger recording devices or synchronise other equipment and (ii) the OUT output produces either a delayed version of the same or by toggle switch selection, pairs of delayed and non-delayed pulses (as would be necessary for ERP studies).



The unit is especially suitable for use with our **DS2A** Isolated Constant Voltage and **DS3** Isolated Current Isolated Stimulators which have their own Pulse Duration controls.

A mounting frame (part number **D121-11**) is available so that two units of either **DG2A, DS2A or DS3** can be mounted in 19" rack.

The instrument is powered by an internal 9V battery (PP3 - 6R61 style) and replaces our **DG2** Trigger Generator.

SPECIFICATIONS OF THE DG2A

The unit always produces a pulse to synchronise other equipment at SYNC and a pulse delayed from SYNC by DELAY controls.

Modes

Control:	Four position rotary switch. Movement of this control will immediately terminate any cycle and keep it in a Reset state for about 1 second. This is a useful feature should an exceedingly long cycle be selected by accident.
Functions:	SINGLE - Input signal triggers a single Output pulse. FREE-RUN - Continuous Output pulses as set by REPETITION controls. GATED - Input signal enables unit to produce pulses as set by REPETITION controls. TRAIN - Input signal Triggers unit to produce pulses as set by REPETITION controls for the time as set by the DURATION controls.

Input

Connector:	BNC socket
Levels:	TTL high (>1.5V), TTL low (<0.8V)
Polarity:	Active High (GATE/TRAIN) and Positive edge (SINGLE) or Active Low and Negative edge by Internal Jumper
Internal Jumper:	Enable "Active Low" - allowing for an Input that is Low during its active phase. The front panel provides a check-box ☐ for marking with a waterproof pen when enabled. In Active Low an external contact closure can be used.
Push-button:	Has same function as a valid input signal.
Indicator:	"TOO FAST" Red LED that flashes if a Trigger is received whilst the unit is busy.

DURATION

Total range:	10 ms - 12 seconds in three overlapping ranges
Control:	Single turn control marked 1 - 12s with intermediate integer panel marks
Accuracy:	±1% at '1' and '12' marks, ±5% at intermediate marks
Multiplier:	x0.01 ; x0.1 ; x1
Internal Jumper:	Enable "x10" - giving a 100 ms - 120 s total range. The front panel provides a check-box ☐ for marking with a waterproof pen when enabled.

REPETITION (Frequency)

Total range:	0.01 - 1200 Hz in five overlapping ranges
Control:	Single turn control marked 1 - 12Hz with intermediate integer panel marks
Accuracy:	±1% at '1' and '12' marks, ±5% at intermediate marks
Multiplier:	x0.01 ; x0.1 ; x1 ; x10 ; x100

DELAY

Total range:	1 ms - 1200 ms in three overlapping ranges
Control:	Single turn control marked 1 - 12 ms with intermediate integer panel marks
Accuracy:	±1% at '1' and '12' marks, ±5% at intermediate marks
Multiplier:	x1 ; x10 ; x100
Internal Jumper:	Enable "x10" - giving a 10 ms - 12 s total range. The front panel provides a check-box ☐ for marking with a waterproof pen when enabled.
Indicator:	"TOO LONG" Red LED that flashes if DELAY longer than can be produced for each pulse.

Outputs - SYNC

Connector:	BNC socket
Signal:	Positive going, 200µs pulse, TTL compatible pulse (5V amplitude).

Outputs - OUT

Connector:	BNC socket
Signal:	Positive going, 200µs pulse, TTL compatible pulse (5V amplitude).
Control:	Selection of only the Delayed pulse (upwards) or both the Sync and Delayed pulses.
Indicator:	Amber LED that flashes for each OUT output pulse.
Internal Jumper:	Enable "Active Low" - giving an Output that is Low during its active phase. The front panel provides a check-box ☐ for marking with a waterproof pen when enabled.

Power

Control:	ON/OFF toggle. OFF is down.
Consumption:	<2mA
Internal:	PP3 - (IEC-6LR61) style. Alkaline preferred
Battery Life:	Approximately 250 Hours with Ever Ready 6LF22 or Duracell MN1604

Dimensions

Size:	188 x 110 x 60 mm (w h d)
Weight:	490 grams with battery fitted.

Please note that no accessories, other than a battery, are supplied.

Digitimer reserve the right to alter specifications and price without prior notification.

NEUROSPEC
Research Neurosciences

NEUROSPEC AG
Stansstaderstrasse 10
CH-6370 Stans
Switzerland

www.neurospec.com
info@neurospec.com
Tel +41 41 371 07 04
Fax +41 41 371 07 03