

# Constant Current High Voltage Stimulator, Model DS7A

For Percutaneous Stimulation of Nerve and Muscle Tissue



The Digitimer High Voltage Stimulator model DS7A provides constant current high voltage pulses of brief duration for percutaneous stimulation during investigation of the electrical activity of nerve and muscle tissue. The output current is continuously variable over the range 0 to 100 milli-Amps, from a source voltage continuously variable from less than 100 Volts to 400 Volts, to meet the requirements of human pathological cases. Short pulse durations have been made available to minimise any discomfort to the subject. The pulse duration can be varied from 50 microseconds to 2 milli-seconds in six steps and a specially designed isolated output stage maintains a square (current) pulse shape while minimising stimulus artefacts. The instrument is mounted in a non-conductive, free standing case and is mains powered. For higher voltages, the Digitimer stimulator model D185 is suggested.

The DS7AH option, allowing currents up to 1A with a maximum pulse duration limit of 200 micro-seconds, is also available. This model is offered to overcome the difficulties of stimulating deep peripheral nerves, or large muscles such as the quadriceps, with large area electrodes.

The stimulator requires a TTL trigger pulse input and triggers on the positive edge (negative edge can be factory set). Alternatively a foot switch may be connected to a socket on the rear panel or the front panel push button pressed. A TTL compatible trigger output is provided at a BNC socket on the rear panel.

## SPECIFICATIONS

### OUTPUT

#### Current

Selected by 10 turn dial and x1 / x10 switch

#### DS7AH

Dial reading 0.00 to 9.99 (00.0 to 99.9) giving 0 to 9.99mA for x1 setting (0 to 99.9mA for x1) and 0 to 99.9mA for x10 setting (0 to 999mA for x10)

#### Pulse Duration

50, 100, 200, 500, 1000, 2000µs (50, 100, 200µs only)

#### Compliance

Continuously variable from 100V to 400V

#### On/Off – Reset

On is up

Off disables output and open circuit terminals. Fault trip is also reset " centres

#### Connections

4mm shrouded, touchproof sockets (red and black) on 3/4

#### Protection

The DS7A/DS7AH is internally protected to limit the output energy (Duration x Current x Repetition). A separate sheet is available showing these limits

### TRIGGER

#### Input

Electrical via BNC socket on rear panel:

Triggers at +3V on positive edge

Maximum input =  $\pm 15V$

Minimum pulse duration= 5 microsecond

Maximum repetition rate= 1000pps

Front panel:

Push button

Rear panel via 1/4" mono jack socket:

Foot switch (contact closure)

#### Output

Rear panel BNC, positive TTL pulse 1 millisecond wide (can be factory set for negative polarity)

### INDICATORS

#### Trigger

LED - Amber, flashes for each trigger received

#### Out of Compliance

LED - Amber, lit when selected current not delivered

#### Fault

LED - Red, illuminated and latched for sensed over current, and at power on

#### Power On

LED - Green, illuminated for power on

### OTHER

#### Power

100-120V or 200-240V (externally selected), 47-63 Hz, 12VA

#### Classification

Class 1 with Type BF applied part

#### Safety

IEC601-1

#### Dimensions

225 x 100 x 255mm (w x h x d)

#### Weight

3kg (approx.)