



**D342 2-Channel Bi-Phasic Switcher**

This 2-Channel Bi-Phasic switcher is for use with a D333H or D343 module. The unit provides the switching function required to alternate the polarity of the stimuli to each of two preparations. It provides control of stimulus polarity (Normal, Alternating or Reverse) independently for each channel as well as warning of a stimulus timing rate that is too-fast. The control and timing for the pulses is generated by selecting other modules from the D330 - MultiStim™ range.

It should be noted that the unit works with mechanical relays that require a certain time to switch their polarity. The circuitry is designed so that the changeover command is taken (independently for each channel) from the end of each stimulus timing pulse so that the relay ‘moves’ when no stimulus is being applied.

As with all mechanical devices, relays have a finite life. This is quoted as a minimum of 100,000,000 mechanical operations. If the relay was to ‘move’ whilst a stimulus was presented the contacts would wear-out much quicker than the mechanics. Therefore, the circuit will detect and warn the user if the ‘time-between’ stimuli pulses is less than 5 ms. The user must ensure that this never happens.

**Specifications**

<b>Polarity Selector:</b>	
<b>Normal</b>	Left hand blue socket will go positive with respect to associated right hand blue socket
<b>Alt</b>	Polarity of sockets with respect to each other reverse with each stimuli
<b>Reverse</b>	Right hand blue socket will go positive with respect to associated left hand blue socket
<b>Amplitude</b>	As set on associated D333H/D343 channel, optional D335 METER module will display current and voltage
<b>Current</b>	1 A max. (depends on D333H/D343)
<b>Output</b>	Pair of 2 mm sockets (with compliance)
<b>Mechanical Life</b>	100,000,000 (100 Million) operations at 10 Hz
<b>Electrical Life</b>	5,000,000 operations at 200 mA, 200,000 operations at 1 A Note: only applies if stimulus rate is NOT too high (< 5 ms ISI)
<b>Indicators:</b>	
<b>Reverse</b>	Amber LED indicates output pulse is ‘REVERSE’
<b>Too-Fast</b>	Red LED illuminates if ‘off’ time between stimuli is < 5 msec

Catalog No.	Product
CGS 8115.71	Model D342 Dual Bi-Stim module (for use with a D333H/343)
CGS 8116.71	Dual Channel Bi-Phasic Switcher

**Current and Voltage Monitoring**

The current and output voltage of each channel can be monitored independently with the D335 METER as taken from the output of the D333H/343 stimulation module. This can show either the voltage or current of the selected channel immediately before the end of the stimulation pulse. The meter will always read a positive value irrespective of the polarity of the stimulus.

**Stimulators and Monitoring**

The D330-MultiStim System provides a choice of three different stimulators. Each has output channels with independent, automatically reset output protection and indication of error conditions but they differ in their capabilities.

The Meter module is a precise method of monitoring voltage or current without the need of an oscilloscope and more than one can be fitted per rack.

**D345 PowerStim**

Includes Case and Power Supply. This is a combination of a Rack and Power Supply along with a permanently mounted stimulator. This four-channel high-current, constant voltage stimulator has a common control for stimulus amplitude. The rack allows four bays for timing, gating and monitoring modules.

**D333H Dual Stimulator**

A double-width unit with two totally independent constant voltage stimulation channels. The D333H has an output capability allowing a maximum output of up to 1 A per channel.

**D343 Dual Stimulator**

Similar to the D333H but with constant current stimulation control.

**D335 Meter**

This module allows selection of the channel for monitoring of current or voltage. This is displayed on a 3-digit display which is ‘held’ until the next pulse, for ease of reading.

**Specifications**

D345 PowerStim:	0 to 80 V at 2.5 A/channel max. with 10 A rack limit at 5% duty cycle
Rise/Fall Time	< 5/20 µsec
D333H:	0 to 1 DV or 0 to 1 DDV at 200 mA max. per channel
Rise/Fall Time	< 5/20 µsec
D343 Dual Stimulator	0 to 50mA or 0 to 500mA from 100 V supply
D335 Meter	00.0 to 99.9 V, 0.00 to 9.99 A, 000 to 999 mA

Catalog No.	Product
CGS 8117.71	Model D345 PowerStim 4-Channel Unit (0 to 80 V, 2.5 A Max.)
CGS 8118.71	Model D333H Dual Stimulator (0 to 100 V, 1 A Max.)
CGS 8119.71	Model D343 Dual Stimulator (0 to 500 mA, 100 V Max.)
CGS 8120.71	Model D335 Meter Module