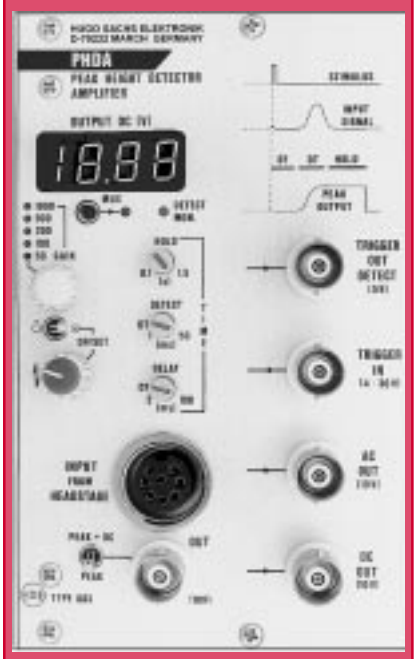
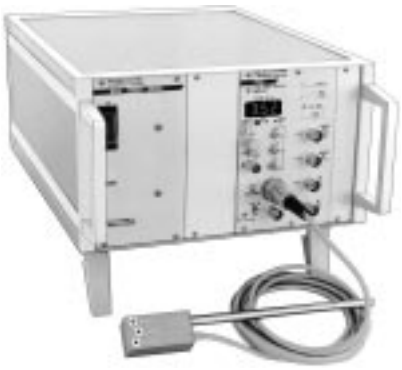
HSE-Harvard Peak Height Detector Amplifier (PHDA) Module

- Special amplifier for recording extracellular signals from isolated sympathetic ganglia or whole nerve bundles
- Works in combination with the Marsh Chamber





PHDA Built-In PLUGSYS Case, Type 601, with Headstage Preamplifier

The HSE-Harvard Peak Height Detector Amplifier PHDA Type 683 is used in conjunction with the ganglion chamber according to MARSH for measuring extracellular potentials of isolated sympathetic ganglia and whole nerve bundles of the rat.

The Peak Height Detector incorporates a variable gain, low-noise differential amplifier and a spike amplitude evaluator. This enables simultaneous monitoring of low amplitude D.C. signals and the amplitude of a selected portion of an evoked potential. The input circuit of this amplifier includes a headstage which is placed near the ganglion chamber. The peak height detector output, which can be displayed on a chart recorder, provides a single continuous record of changes in potential difference (membrane potential) and evoked potential amplitude or separate traces of the same two components, enabling high gain recording of low amplitude changes in membrane potential. An amplified signal output allows oscilloscope monitoring of the evoked potential and adjustment of the detection region for the peak detector.

Specifications

Input from Headstage:	
Headstage	Differential input
Input impedance	$>10^{12}\ \Omega$
Input Capacity	20 pF
Gain	10 (only for headstage)
Noise	40 μV_{pp}
Max. Differential Input Voltage	> 0.2 V
Common Mode Rejection Ratio	>120 dB
Overshoot Protection	15 V constant, 100 V non-repetitive peak
Trigger IN:	
BNC Connector	4 to 30 V
Input Resistance	5 kΩ
Trigger Out Detect	Monitor output, TTL level, to control detect time with oscilloscope, BNC connector
AC Out	Output of AC voltage, BNC connector 10 V, 10 mA; output used to connect oscilloscope
DC Out	Output of DC voltage to chart recorder or oscilloscope; DC voltage shown in display; BNC connector ±10 V, 10 mA; DC output shows membrane potential, which is slow signal in frequency range from 0 to 0.2 Hz
Out	Signal output used to connect up chart recorder or oscilloscope; it is possible to switch voltage peak height or peak height and additional DC voltage to BNC connector with switch PEAK/PEAK+DC. 10 V, 10 mA BNC connector
Gain	Switchable x50/100/200/500/1000 (including Headstage Gain 10)
Offset	Fine adjustment with 10-turn potentiometer, can be switched off
Hold	Hold time is duration of holding amplitude of peak in peak memory; time can be set from 0.1 to 1.5 seconds.
Detect	Time is on-time for detecting max. of input signal; detect time can be set in range from 1 to 50 msec
Delay	During time peak height detector is out of action, peak height detector is enabled for detect duration; delay time can be set in range from 2 to 100 msec
Frequency Range:	
AC	1.5 Hz to 40 kHz (-3 dB)
DC	0 to 0.2 Hz (-3 dB)
Signal Output MUX	After pressing MUX key, one of analog voltages (depending on switch PEAK/PEAK+DC) is switched to system bus line AM (analog multimeter), which can be switched to Digital Display Module (DM) or Digital Voltmeter Module (DVM). Function is self-maintained; module previously selected is switched off.
Power Supply	5 V/0.7 A through connector from PLUGSYS bus system
Dimensions, H x W x D	128.7 x 80.8 x 220 mm (5.1 x 3.2 x 8.7 in)

Catalog No.	Product
CGS 8457.71	PHDA Peak Height Detector Amplifier Module