

# Model 5185

## Wideband Preamplifier

SIGNAL RECOVERY



### FEATURES

- ◆ 50 Ω or 1 MΩ input impedance
- ◆ Low noise
- ◆ ×10 or ×100 gain
- ◆ DC to > 200 MHz frequency response
- ◆ DC offset control
- ◆ Line power

### APPLICATIONS

- ◆ Signal averager preamplification
- ◆ Boxcar averager preamplification
- ◆ Increasing sensitivity of oscilloscopes and fast ADC

### DESCRIPTION

The model 5185 is a wideband voltage preamplifier with a frequency response from DC to 200 MHz and switchable gain settings of x10 (20 dB) or x100 (40 dB). It has a selectable input impedance of 50 Ω or 1 MΩ and a DC offset facility.

The 50 Ω frequency response extends from DC to 200 MHz with an equivalent input noise of 10 nV/√Hz at 10 kHz. The 1 MΩ response exceeds 100 MHz, has switch selected AC or DC coupling and an equivalent input noise of 30 nV/√Hz at 10 kHz. A ground switch allows the input signal to be isolated from the output and an adjustable offset facility allows a DC offset on the input signal to be subtracted before it reaches the amplifier output. An overload detector is also provided.

The unit is powered from an external line power supply module, model PS0108, included with each instrument. Signal connections are made via the front-panel BNC connectors.

The model 5185 will prove invaluable for users who need a compact, low cost, high performance wideband preamplifier. It is an ideal accessory for use with oscilloscopes, digitizers, signal averagers and boxcar averager systems.

### Specifications

#### General

DC coupled wideband voltage amplifier with selectable x10 (20dB) or x100 (40dB) voltage gain and a maximum frequency response extending from DC to > 200 MHz. Single-ended input and single-ended output via BNC connectors.

Line powered from model PS0108 power supply included with each unit.

#### Inputs

Configuration Single-ended. Front panel ground terminal provided

#### Coupling

50 Ω Input DC only  
1 MΩ Input DC or AC

#### Impedance

50 Ω or 1 MΩ // 25 pF

#### Frequency Response

50 Ω Input DC to 200 MHz (±1 dB)  
DC to 250 MHz (+1 to -3 dB)

1 MΩ Input DC	DC to 100 MHz (±1 dB)	Slew rate	> 2000 V/μs (unloaded)
	DC to 125 MHz (+1 to -3 dB)	Polarity	Non-inverting
1 MΩ Input AC	5 Hz to 100 MHz (±1 dB)	DC Stability	100 μV/°C (referred to input)
	5 Hz to 125 MHz (+1 to -3 dB)	DC Offset Control Range	± 10 mV (referred to input)
Equivalent input noise, rms.			
50 Ω Input	10 nV/√Hz @ 10 kHz	<b>Power</b>	
1 MΩ Input	30 nV/√Hz @ 10 kHz	a)	±15 V or ±18 V DC @ 300 mA
Rise and Fall Times		b)	110 V AC or 240 V AC via external model PS0108 power supply included with unit
50 Ω Input	< 2 ns		
1 MΩ Input	< 2.6 ns		
Max input voltage			
x10 gain	100 mV pk-pk	<b>Dimensions</b>	
x100 gain	10 mV pk-pk	(excluding connectors)	8.25" wide x 11" deep x 3.5" high
Gain	x10 (20 dB) or x100 (40 dB)		(210 mm wide x 279 mm deep x 89 mm high)
Gain Accuracy	±3% at 10 kHz		6.4lbs (2.9 kg) excluding power supply
Gain Stability	±250 ppm/°C		
<b>Output</b>			
Impedance	50 Ω	<b>Weight</b>	
Max voltage swing	> 1 V pk-pk		