

- Used with photomultipliers, electron multipliers, etc., in photon or ion counting applications
- 1.5-ns rise time
- Voltage gain of 10
- Output of  $\pm 0.7$  V into 50  $\Omega$
- Compact and lightweight



The ORTEC Model 9301 low-noise, fast-rise-time Preamplifier has been designed for use with photomultipliers, electron multipliers, and other detectors employed in photon counting, ion counting, or fast-timing applications. When connected to the detector, the 50- $\Omega$  input resistance of the Model 9301 provides a load resistance for the detector output current pulse.

In addition to its fast rise time of 1.5 ns, this preamplifier has a voltage gain of 10 and an output impedance of 50  $\Omega$ . Because of its compact size and light weight, the Model 9301 is ideal for mounting directly or close to a detector. Consequently, low-level signals, which would otherwise be susceptible to pickup of noise or interference, are boosted to a suitable level for cable connection to the main amplifier. Connection to a power supply is through the 3-m (10-ft) long captive power cable furnished with the Model 9301.

Model 9301 is fitted with a power cable connector (Amphenol 17-20090) that is compatible with other ORTEC NIM-standard modules.

### Specifications

#### PERFORMANCE

**INPUT IMPEDANCE** 50  $\Omega$ .

**VOLTAGE GAIN** 10 ( $\pm 2\%$ ) noninverting.

**RISE TIME** <1.5 ns.

**INPUT RMS NOISE EQUIVALENT**  
<25  $\mu$ V.

**OUTPUT IMPEDANCE** Typically 50  $\Omega$ .

**OUTPUT DYNAMIC RANGE**  $>\pm 0.7$  V  
into 50  $\Omega$ .

**NONLINEARITY**  $<\pm 1\%$ .

**TEMPERATURE GAIN INSTABILITY**  
 $<\pm 0.1\%/^{\circ}\text{C}$ .

**INPUT CONNECTOR** Front-panel BNC.

**OUTPUT CONNECTOR** Rear-panel  
BNC.

#### ELECTRICAL AND MECHANICAL

**POWER REQUIRED** +12 V, 30 mA;  
-12 V, 30 mA.

#### WEIGHT

**Net** 0.17 kg (6 oz).

**Shipping** 0.9 kg (~2 lb).

**DIMENSIONS** 3.1 X 5.0 X 7.3 cm (1.25  
X 2 X 2.875 in.) plus 3-m (10-ft) cable.

### Ordering Information

To order, specify:

Model	Description
9301	Preamplifier

Suggested cable accessories:

C-25-1/2	RG-58A/U 50- $\Omega$ Cable with two BNC male plugs; 6-in. length
C-25-12	RG-58A/U 50- $\Omega$ Cable with two BNC male plugs; 12-ft length

Specifications subject to change  
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