9301
Fast Preamplifier

- **Used with photomultipliers, electron multipliers, etc., in photon or ion counting applications**
- **1.5-ns rise time**
- **Voltage gain of 10**
- **Output of ±0.7 V into 50 Ω**
- **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-Ω 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 Ω. 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 Ω.

VOLTAGE GAIN 10 (±2%) noninverting.

RISE TIME <1.5 ns.

INPUT RMS NOISE EQUIVALENT <25 μV.

OUTPUT IMPEDANCE Typically 50 Ω.

OUTPUT DYNAMIC RANGE >±0.7 V into 50 Ω.

NONLINEARITY <±1%.

TEMPERATURE GAIN INSTABILITY <±0.1%/°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

Model	Description
9301	Preamplifier

Suggested cable accessories:

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

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Specifications subject to change
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