

- 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 ($\pm 2\%$) noninverting.
- RISE TIME** <1.5 ns.
- INPUT RMS NOISE EQUIVALENT** <25 μ V.
- OUTPUT IMPEDANCE** Typically 50 Ω .
- OUTPUT DYNAMIC RANGE** $>\pm 0.7$ V into 50 Ω .
- 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- 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

Specifications subject to change
040318