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**

To order, specify:

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>9301</td>
<td>Preamplifier</td>
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</table>

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

04/03/18