ORTEC®

9326
Fast Preamplifier

- **Sub-ns rise time for pulse amplification with:**
  - **Microchannel-plate detectors**
  - **Electron multipliers**
  - **Photomultiplier tubes**
  - **Fast photodiodes**
  - **Silicon charged-particle detectors**
- **Selectable gain: 5, 10, or 20 V/V (non-inverting)**
- **Low-frequency roll-off <10 kHz**
- **0 to –1 V output into 50 Ω**
- **Input overload protection**
- **Compact 9 x 13 x 3 cm preamplifier box**

The Model 9326 Fast Preamplifier is optimized for amplifying the pulses from microchannel-plate detectors, electron multipliers, photomultiplier tubes, fast photodiodes, and silicon charged-particle detectors. The fast rise times of these detectors are preserved by the <1-ns rise time of the Model 9326 output, which can supply 0 to –1-V pulse amplitudes into a 50-Ω load. The compact size permits placement close to the detector in order to avoid ground loop and environmental noise interference with the small signals produced by the detector. Gains of 5, 10, or 20 volts/volt (non-inverting) can be selected via a board jumper.

A low-frequency roll-off less than 10 kHz is unusual for a preamplifier intended for processing fast detector pulses. This low-frequency response was incorporated in order to virtually eliminate pulse undershoot when used with the ***FASTFLIGHT™*** Digital Signal Averager in the Electrospray Time-of-Flight Mass Spectrometry application.

To minimize damage caused by large transients from the detector, the input incorporates overload protection. The output is also short-circuit protected. Any 9-pin D preamplifier power connector meeting the ORTEC standard pin assignments can be used to supply the +12-V power via the standard power cable supplied with the Model 9326.

Specifications

PERFORMANCE

INPUT NOISE <100 µV rms.

OUTPUT RISE TIME <1 ns.

LOW FREQUENCY ROLL-OFF <10 kHz.

GAIN Selectable by board jumpers for 5, 10, or 20 V/V. The overall gain is non-inverting.

OPERABLE TEMPERATURE RANGE 0–50°C.

CONTROLS

COARSE GAIN Board jumper selection of low (5 V/V), medium (10 V/V), or high (20 V/V) gain.

INPUTS

ANALOG INPUT Front-panel BNC connector accepts negative-polarity analog signals in the range of 0 to –200 mV. Input impedance: 50 Ω ac, <1000 Ω dc to ground. Diode clamps provide protection against overload to ±2 V dc, or ±10 V for a 50-ns-wide pulse at a duty cycle of <1%.

OUTPUTS

ANALOG OUTPUT Rear-panel BNC connector provides a negative-polarity output pulse. Linear range is nominally +0.25 V to –1 V on a 50-Ω load. AC-coupled and short-circuit protected.

ELECTRICAL AND MECHANICAL

POWER REQUIREMENTS The required +12 V at 100 mA dc power can be supplied from any ORTEC preamplifier power connector via the 3-m (9.8-ft) long power cord included with the Model 9326. The mating connectors on the ends of the power cord are ORTEC-standard, 9-pin D, preamplifier power connectors. Pin assignments for the male connector on the preamplifier case are +12 V on pin 4, and ground on pins 1 and 2.

WEIGHT
Net 0.39 kg (0.85 lb).
Shipping 1.3 kg (2.9 lb).

PACKAGE AND DIMENSIONS Compact preamplifier box: 8.6 cm W x 13.3 cm D x 3.0 cm H (3.4 in. W x 5.3 in. D x 1.2 in. H).

Ordering Information

To order, specify:

Model	Description
9326	Fast Preamplifier (includes power cable)

Specifications subject to change
122707

ORTEC®
www.ortec-online.com
Tel. (865) 482-4411 • Fax (865) 483-0396 • ortec.info@ametek.com
801 South Illinois Ave., Oak Ridge, TN 37831-0895 U.S.A.
For International Office Locations, Visit Our Website

AMETEK®
ADVANCED MEASUREMENT TECHNOLOGY