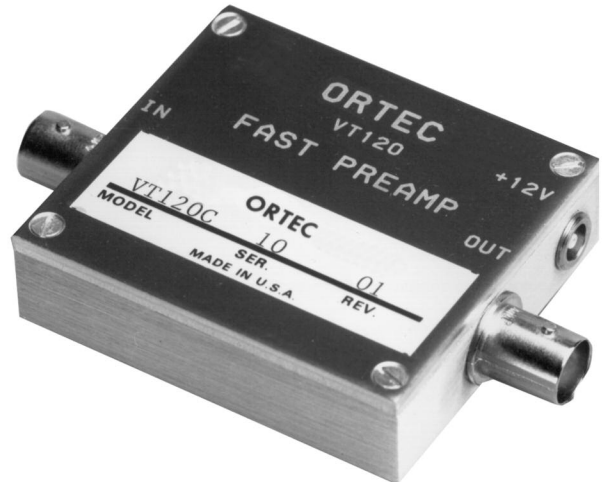


- For amplification of signals with very fast rise times from microchannel plates, photomultiplier tubes, and silicon detectors
- $\leq 1$  ns rise time
- Output drives  $-5$  V into  $50 \Omega$
- Compact preamplifier box for operation close to the signal source
- $\leq 20 \mu\text{V}$  rms equivalent input noise
- Gain of (A) 200, (B)  $-200$ , or (C) 20



The Model VT120 Fast-Timing Preamplifier is a high-performance, wide-bandwidth preamplifier designed for boosting very fast linear signals from microchannel plates, photomultipliers, electron multipliers, silicon detectors, and other detectors used in fast timing applications. The rise time on all versions is  $< 1$  ns with a 5-V output, enabling excellent timing resolution.

The Model VT120 is a single-channel unit in a small preamplifier package. It is available with a gain of 200, noninverting (A version); a gain of 200, inverting (B version); or a gain of 20, noninverting (C version). BNC connectors are used for signal connections on the Model VT120. A cable is available (Model C-VT120) for connecting power between the Model VT120 and conventional preamplifier power outputs using Amphenol-type 17-80090 connectors.

### PERFORMANCE

**GAIN** (10% gain tolerance on all versions):

**A Version** 200, noninverting.

**B Version** 200, inverting.

**C Version** 20, noninverting.

**RISE TIME**  $\leq 1$  ns.

**NOISE**  $\leq 20 \mu\text{V}$  rms equivalent input noise.

**BANDWIDTH** 10 to 350 MHz.

**OUTPUT RANGE** 0 to  $-5$  V with  $50\text{-}\Omega$  load.

**INPUT** BNC connector; input impedance  $50 \Omega$ .

**OUTPUT** BNC connector; 0 to  $-5$  V output with a  $50\text{-}\Omega$  load. Output impedance  $\leq 1 \Omega$ , ac-coupled.

### ELECTRICAL AND MECHANICAL

**POWER REQUIRED**  $+12$  V, 50 mA (uses LEMO power connector that is compatible with accessory cable C-VT120).

**DIMENSIONS** Aluminum housing 5.8 X 5.1 X 1.6 cm (2.3 X 2.0 X 0.63 in.).

### WEIGHT

**Net** 0.2 kg (0.4 lb).

**Shipping** 1.1 kg (2.4 lb).

### Optional Accessories

C-VT120 cable assembly with connections between VT120 power input (LEMO) and Amphenol-type 17-80090 preamplifier power connectors that are compatible with other ORTEC NIM-standard modules.

### Ordering Information

To order, specify:

Model	Description
VT120A	Fast-Timing Preamplifier (200 gain, noninverting)
VT120B	Fast-Timing Preamplifier (200 gain, inverting)
VT120C	Fast-Timing Preamplifier (20 gain, noninverting)
C-VT120	Power Cable Assembly for VT120A/B/C (3-m length)

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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