

- For amplification of signals with very fast rise times from microchannel plates, photomultiplier tubes, and silicon detectors
- ≤ 1 ns rise time
- Output drives -5 V into 50Ω
- 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 ≤ 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 50Ω .

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- 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
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