

PA200-10

Description

This is a +12V D.C. powered pre-amplifier designed to work with electronic output photonic imaging detectors.

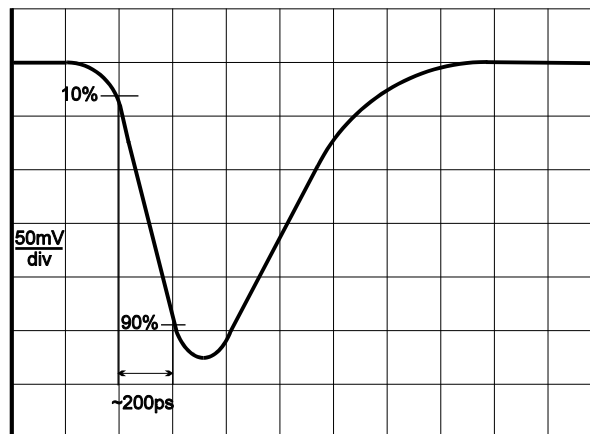
The output from this unit is a voltage-amplified version of the input pulse. Pulses below 1.25ns will be temporally stretched to approximately twice their length i.e. a 1ns pulse input will be a 2ns pulse output. The amplification ratio is a minimum of 20db, i.e. gain of 10. This module requires an external +12V power supply and both input and outputs must be 50Ω matched systems.

Operating Characteristics

This pre-amplifier has 50Ω input and output impedance's, 2 GHz Bandwidth and 180ps rise time. The gain of this unit is 20dB non-inverting.

Assuming minimum 20dB gain the maximum amplitude input pulse that this unit can amplify without clipping is 400mV, this would give approximately 4V output.

Assuming a negative going input pulse, the output pulse from this pre-amplifier is of the form illustrated below: -

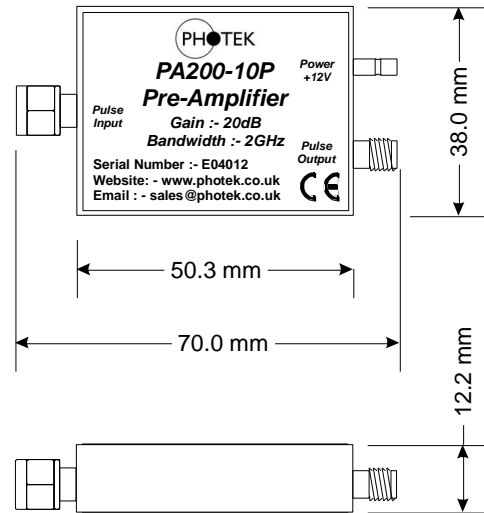


The rise time of the output pulse is related to the rise time of the input pulse and the rise time of the pre-amplifier approximately by the formula :-

$$\text{Output Pulse Rise Time} = \sqrt{t_i^2 + t_a^2}$$

Where t_i = Input pulse rise time
and t_a = Pre-Amplifier rise time

PA200-10 Connectors		
Input Power		
SMB Socket	Center	+12V
	Screen	0V
Input Signal		
SMA Socket	Center	Pulse Input
	Screen	0V
Output Signal		
SMA Socket	Center	Pulse Output
	Screen	0V



Pre-Amplifier Part Number Selection : -



This module is designed to mount directly onto the MCP device being used that should be fitted with a mating half of the SMA connector.

Items Supplied

- 1 off PA200-10P Pre-Amplifier - fitted with SMA plug input connector
- or 1 off PA200-10S Pre-Amplifier - fitted with SMA socket input connector
- 1 off Power Cable – 1m SMB to Bare Ends.

Electrical Specifications		Mechanical Specifications	
Supply Voltage	+12V D.C.	Length	50.3mm
Supply Current (max)	20mA	Length (Incl. Connectors)	70.0mm
Input Pulse Limits	200mV max	Width	38.0mm
Input Impedance	50Ω	Height	12.2mm
Output Impedance	50Ω	Weight	≈25g
Gain (Non-Inverting)	20dB	Operating Temperature Range	
3dB Bandwidth (typical)	2GHz	Temperature Minimum	0°C
Rise Time	180ps	Temperature Maximum	70°C

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Any unauthorised adjustment or modification to this unit will void all warranties and will only be supported at Photeks discretion.

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