



**DATASHEET**  
ELECTRONICS  
PA200-10



# PA200-10

## Preamplifier module



The PA200-10 preamplifier module is designed to be used with Photek detectors using 2 or less micro channel plates as they produce a small fast electrical pulse for each photon or particle passing through the detector.

The PA200-10 is to be used in close conjunction with these detectors to amplify the timing pulses for connection by a 50 ohm cable to oscilloscopes or other fast timing electronics.

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 1 ns pulse input will be a 2 ns 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.

### Key Attributes

- > 3dB Bandwidth 2 GHz (typical)
- > Rise time 180 ps
- > Jitter Less than 10 ps
- > Gain 20dB non-inverting
- > Max input 400 mV
- > Output 50 ohm SMA

### Applications

- > Preamplifier for photomultipliers and time of flight detectors
- > Takes timing pulses from vacuum compatible detectors, IPD's and other Photek photon imaging detectors.

## PA200-10 Connectors

Input Power		
SMB Socket	Centre	+12 V
	Screen	0 V
Input Signal		
SMA Plug	Centre	Pulse Input
	Screen	0 V
Output Socket		
SMA Socket	Centre	Pulse Output
	Screen	0 V

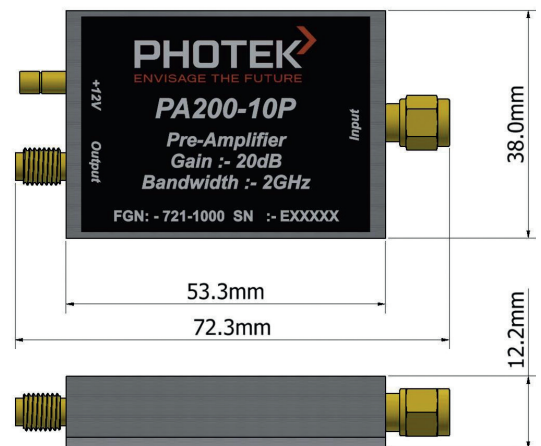
## Specifications

Electrical	
Supply Voltage	+12 V D.C.
Supply Current (max)	<100mA
Input Pulse Limits	400 mV max
Input Impedance	50Ω
Output Impedance	50Ω
Gain (non-Inverting)	20dB
3dB Bandwidth (typical)	2 GHz
Rise Time	180 ps
Mechanical	
Height	12.2 mm
Width	38.0 mm
Length	53.3 mm
Length (incl. Connectors)	72.3 mm
Weight	≈50g
Operating Temperature Range	
Temperature Minimum	0°C
Temperature Maximum	70°C

## Items Supplied

- 1x PA200-10P**  
Preamplifier fitted with SMA plug input connector
- or**
- 1x PA200-10S**  
Preamplifier fitted with SMA socket input connector
- 1x ED588**  
Output Cable - SMA to BNC - 2m

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.



**DATASHEET**  
**PA200-10****About Photek**

**Photek is a specialist manufacturer of vacuum based tubes and camera systems for photon detection.**

Our product range includes; Camera Systems, Image Intensifiers, Photomultiplier Tubes, Streak Tubes plus a range of associated electronics.

We are experts in large area and ultra-high speed imaging and advanced photon counting camera systems.

Our continuing success is built upon continuous innovation and product development, and by harnessing and applying knowledge to find solutions for all of our customers' applications.

**Photek is accredited to ISO 9001 and ISO 14001.**

**Contact Us**

**Our team of specialist engineers and scientists are ready to discuss your application requirements in depth.**

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