

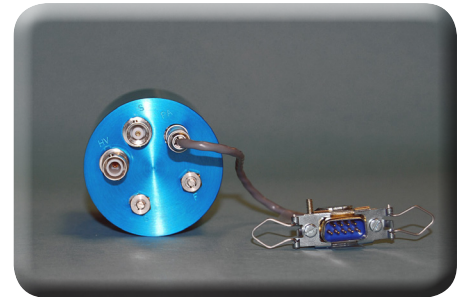
# Model PA-1410

## Scintillation Voltage Divider / Preamplifier (GSP-1000)

The PA-1410 is for use with scintillation detectors coupled to 14-pin, 10-stage photomultiplier tubes (PMTs). The PA-1410 is a plug-on PMT base/voltage divider that includes the same preamplifier contained in the Saint-Gobain GSP-1000, configured in a compact package with an optimized voltage divider. The plug-on models are easy to connect. You simply push the PA-1410 onto the 14-pin PMT base. The PA-1410 contains a charge-sensitive preamplifier for use in detection of X-rays, gamma rays, charged particles and neutrons.

### Standard Features -

- Aluminum housing
- Separate gain and focus control
- RoHS compliant
- Mount directly to a 14-pin base of a PMT or radiation detector.
- Optimized to work with Saint-Gobain Crystals standard detectors such as the 2M2/2 and 3M3/3 models.



### Voltage Divider Specifications -

- Positive HV max: 1500V
- Total divider resistance: 4.3M $\Omega$  (nominal) if gain potentiometer set to minimum
- Anode load resistor: 1M $\Omega$  (nominal)
- HV gain range adjustment: Varies with PMT applied HV between 82% and 100% of applied high voltage
- HV gain and focus: Lockable screw driver adjustable potentiometers
- Signal connector: BNC
- High voltage connector: SHV
- Preamp power connector: Lemo EHP.OS.302.CLL or equivalent
- Supplied preamp power cable: 10 feet with Amphenol (9) PIN "D" Connector
- Voltage ratio cathode to dynode 1 is 3R.
- Maximum operating temperature: -20°C - +60°C

### Preamplifier Specifications -

- High input impedance
- Nominal Charge sensitivity: 2.66 mV/pC
- Decay time constant: 50 $\mu$ S (other time constants are possible)
- Power requirements:  $\pm$ 12VDC @less than 10mA.
- Rise time (square input): ~10nS
- Cable driving capability: <750 feet
- Output impedance: 50 Ohms
- Charge rate capacity over 6 $\mu$ C/sec

### Options -

- High voltage connector: SHV or MHV
- Signal connector: Other types available upon request
- Conformal coating for high humidity applications
- Negative high voltage option available (Model PA-1410N)
- 8-stage option available (Model PA-1408)
- Charge sensitivity: Other gains as up to 50 mV/pC
- Output impedance: 50 ohm, 93 ohm or capacitor coupled
- Other preamp power cable lengths available upon request

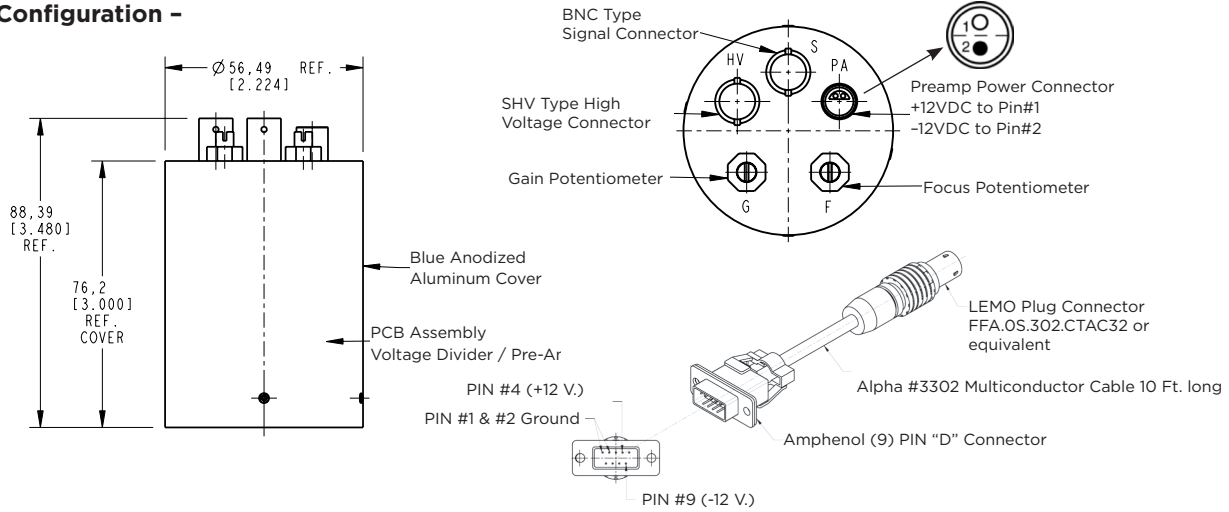
Compatible Photomultiplier Tubes					
Size	ADIT Model	Burle Model	Electron Tubes Model	Hamamatsu Model	Photonis Model
2"	B51D01	S83019	9266K	R550 R2154	XP2201B XP2202B XP2203B XP3230B XP6202B
3"	B76B01	S83021	9305K		XP3330B XP3332B XP6302B
3.5"	B89B01	S83013	9306K		XP3730B XP3732B
5"	B133D01	S83006	9390K	R877 R1513	XP3530B XP3540B XP3550B

CRYSTALS

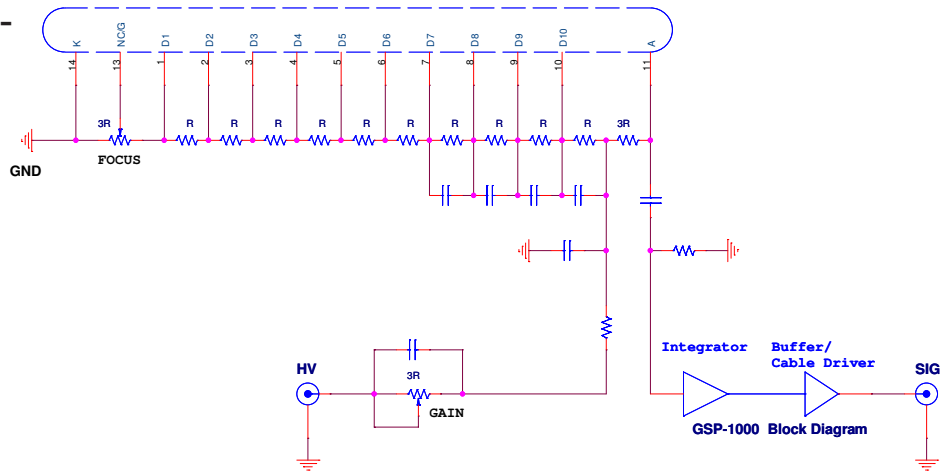
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# Model PA-1410 Voltage Divider/Preamplifier

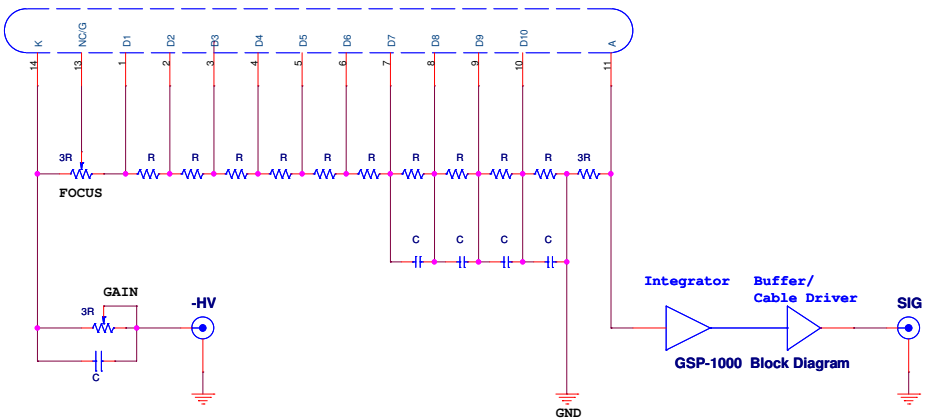
## Configuration -



## PA-1410 Schematic -



## PA-1410N Schematic -



The drawing dimensions are nominal and subject to change. Call the factory for current values.



Saint-Gobain Crystals

www.crystals.saint-gobain.com

Manufacturer reserves the right to alter specifications.

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