Model TA-1410
Fully Transistorized Voltage Divider/Preamplifier (GSP-1000)

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

Standard Features –
• Excellent stability with varying anode currents
• Very low power consumption
• Aluminum housing
• 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
• Transistorized High Voltage Divider
• Anode load resistor: 2.2MΩ (nominal)
• Signal connector: BNC
• High voltage connector: SHV
• Preamp power connector: Lemo EHP.0S.302.CLL or equivalent
• Supplied preamp power cable: 10 feet with Amphenol (9) PIN “D” Connector
• Voltage ratio cathode to dynode 1 is 2R.
• Support for Anode Currents >50 uA
• Maximum operating temperature: -20°C – +60°C

Preamplifier Specifications –
• High input impedance
• Nominal Charge sensitivity: 2.66 mVpC
• Decay time constant: 50μS (other time constants are possible.)
• Power requirements: ±12VDC @ less than 10mA.
• Rise time (square input): -10nS
• Cable driving capability: <750 feet
• Output impedance: 50 Ohms
• Charge rate capacity over 6μC/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 TA-1410N)
• 8-Stage option available (T-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.

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### Compatible Photomultiplier Tubes

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<th>Size</th>
<th>ADIT Model</th>
<th>Burle Model</th>
<th>Electron Tubes Model</th>
<th>Hamamatsu Model</th>
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</table>
Model TA-1410
Transistorized Scintillation Voltage Divider / Preamplifier

Configuration -

- Blue Anodized Aluminum Cover
- PCB Assembly Voltage Divider / Pre-Amp
- LEMO Plug Connector FFA.0S.302.CTAC32 or equivalent
- Alpha #3302 Multiconductor Cable 10 Ft. long
- Amphenol (9) PIN "D" Connector

TA-1410 Schematic -

- PIN #4 (+12 V.)
- PIN #1 & #2 Ground
- PIN #9 (-12 V.)

Equivalent one stage of the transistorized divider network.

TA-1410N Schematic -

- Equivalent of transistorized divider network.

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