ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Newport / Oriel 70710* at our website: *Click HERE*



70710 Current Preamplifier.

Converts current to voltage - ideal for PMTs and photodiodes
Low noise and wide dynamic range
Wide bandwidth - DC to 100 kHz

The 70710 is a low noise current-to-voltage amplifier, designed for photomultiplier tubes or photodiodes operating in the photovoltaic mode. It converts the low current output from many of our detectors, to a voltage signal for the Merlin™ Digital Lock-in (page 6-29), or DSO/Boxcar Oscilloscope (page 6-50).

This preamplifier converts the current from the following Oriel Detectors to a voltage signal, for readout.

Table 1 Compatible Detectors for This Amplifier

Detector Type	Page Nos.
Any PMT	6-65
GaN	6-70
InGaAs	6-73
Silicon	6-71

SIX AMPLIFIER SELECTIONS

One of the most practical features of the 70710 is that it has six switchable amplifier selections, 10^4, 10^5, 10^6, 10^7, 10^8 and 10^9 volts per ampere. The 70710 also has a three position time constant switch. Standard BNC input and output connectors facilitate connection to other devices.

BANDWIDTH

The preamplifier bandwidth depends on the gain setting and the selected time constant. The following table shows the bandwidth values at three gain settings.

Table 2 Bandwidth Values

Time Constant	Gain		
	10^4	10^6	10^9
"MIN"	100 kHz*	80 kHz	80 Hz
"MED"	100 kHz	1 kHz	1 Hz
"MAX"	1 kHz	10 Hz	0.01 Hz

* **No, this is not a typo; the bandwidth is inversely proportional to gain only up to the limiting bandwidth of 100 kHz for the amplifier. There may be a lower system limit due to the detector or other electronic element.**

WIDE DYNAMIC RANGE

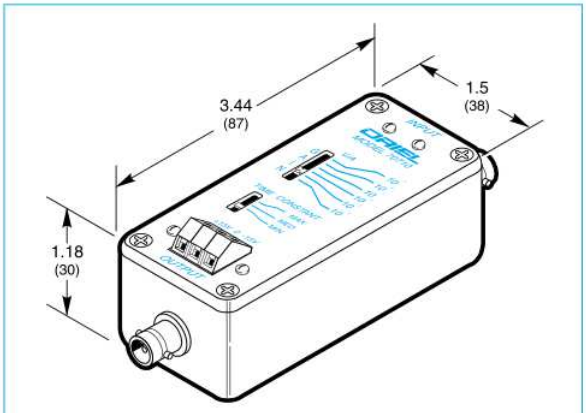
The 70710 has wide dynamic range and linearity. The volts per ampere conversion ratio is determined by the switch setting. Changing the switch changes the feedback resistor. The input impedance, i.e. the apparent resistance which the amplifier displays at its input, equals the feedback resistance divided by the gain of the operational amplifier (which is at least 150,000) plus a 1,200 ohm isolation resistor at the amplifier's input. A feedback resistor of 10^6 ohm corresponds to a conversion ratio of 10^6, etc. The input impedance is then 10^6/150,000 or about 7 ohms plus the 1,200 ohm isolation resistor. Even at the 10^9 V/A setting, the input impedance is only about 8,000 ohms. These relatively low impedances are essential for obtaining a wide linear dynamic range from photodiodes.

REQUIRES ±15 V SUPPLY

The 70710 must be powered by an external ±15 V supply such as our 70703 on the previous page. We provide a power cable with banana jack terminals for connection to the 70703 or other ±15 V source.

SPECIFICATIONS

Transimpedance:	10^9, 10^8, 10^7, 10^6, 10^5, 10^4 V/A
Maximum Input Impedance (DC):	8000 at 10^9 V/A
Bandwidth.	DC to 100 kHz (See Table 2)
Accuracy:	± 1%
Linearity:	± 1% (for AC signals)
Maximum output:	±10 V
Noise (@ 1 kHz, 10^6 V/A):	<2.3 x 10^{-12} A $Hz^{-1/2}$
Power requirements.	±13 V to ±18 V, 2 mA
Weight:	0.25 lbs (0.1 kg)



Dimensions in inches (mm)

Fig. 1 Dimensional diagram of 70710 Current Preamplifier.

ORDERING INFORMATION

70710	70709 Current Preamplifier
70144	3 ft (1 m) Long Cable Connects 70710 to Merlin™ Digital Lock-in
70703	Laboratory Power Supply, 110 V
70709	Laboratory Power Supply, 220 V

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP