

Low-Noise Current Amplifier
Fixed-Gain Cased Module

Features

- Compact: 84 x 55 x 24 mm
- Frequency Response Independent of Detector-Capacitance (up to 10 nF)
- Low Noise / Bandwidth Ratio

Applications

- Photodiode- and Photomultiplier-Preamplifier
- Ionization Detectors
- Impedance Measurement
- STM Microscopy

The A620X Series are state-of-the-art low-noise transimpedance preamplifier for current sources like photodiodes, tunnel contacts or ionization chambers. They offer high gain and low noise in a compact housing.

Standard BNC Input and Output Connectors provide convenient laboratory use. A matching power supply is available as an accessory.

Model	A6201	A6202	A6203	A6204	A6205	A6206
DC-Gain	10 ⁷ V/A	10 ⁸ V/A	10 ⁹ V/A	10 ¹⁰ V/A	10 ¹¹ V/A	10 ¹² V/A
Accuracy of Gain	0.5 %	0.5 %	0.5 %	0.5 %	1.0 %	2.0 %
Bandwidth ±5%	DC – 500 kHz	DC – 50 kHz	DC – 5 kHz	DC – 400 Hz	DC – 40 Hz	DC – 3 Hz
Input Current Noise (typ.)	70 fA/√Hz @10 kHz	20 fA/√Hz @1 kHz	7 fA/√Hz @200 Hz	2 fA/√Hz @40 Hz	0.7 fA/√Hz @10 Hz	0.3 fA/√Hz @2 Hz
Input Bias Current (typ.)	2 pA	2 pA	2 pA	10 fA	10 fA	10 fA
Input Bias Current Drift	x1.8 / 10 °C	x1.8 / 10 °C	x1.8 / 10 °C	x2 / 10 °C	x2 / 10 °C	x2 / 10 °C
Input Voltage Noise	5nV @ 10kHz	6nV @ 1kHz	8nV @ 200Hz	50nV @ 40Hz	90nV @ 10Hz	500nV @ 2Hz
Input Offset Voltage max.	0.1 mV	0.1 mV	0.1 mV	0.2 mV	0.2 mV	0.2 mV
Input Impedance (DC)	50 Ω	50 Ω	50 Ω	1 kΩ	1 kΩ	10 kΩ
Max. Source Capacitance	1 nF	10 nF	10 nF	10 nF	10 nF	10 nF

All characteristics are for ±15 V power supply and 25 °C ambient temperature.

Model A620X Series Data Sheet

Common Characteristics	
Nonlinearity	A6201 to A6204: < 0.1% A6205 and A6206: < 1%
Output Voltage Range	± 10 V (>10 kΩ Load)
Output Offset Voltage max.	0.2 mV (Input Open)
Output Impedance	50 Ω
Max. Output Current	± 10 mA
Power Supply Voltage	± 15 V
Power Supply Current	± 30 mA typ.
Case	Anodized Aluminum
Weight	130 gr.
Storage Temperature	-20 .. +80 °C
Operating Temperature	10 .. 50 °C

Absolute Maximum Ratings	
Input Voltage	± 5 V
Power Supply Voltage	± 20 V

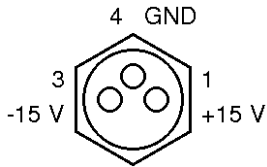
Ordering Information	
Ordering Code: A620X-Y	
X = Gain:	Y = Input Configuration:
1 = 10 ⁷ V/A	S = BNC Connector (Standard)
2 = 10 ⁸ V/A	A = SMA Connector
3 = 10 ⁹ V/A	B = SMB Connector
4 = 10 ¹⁰ V/A	
5 = 10 ¹¹ V/A	
6 = 10 ¹² V/A	

Ordering Code Example:
A6203-S = Gain 10⁹ V/A, Input with BNC Connector

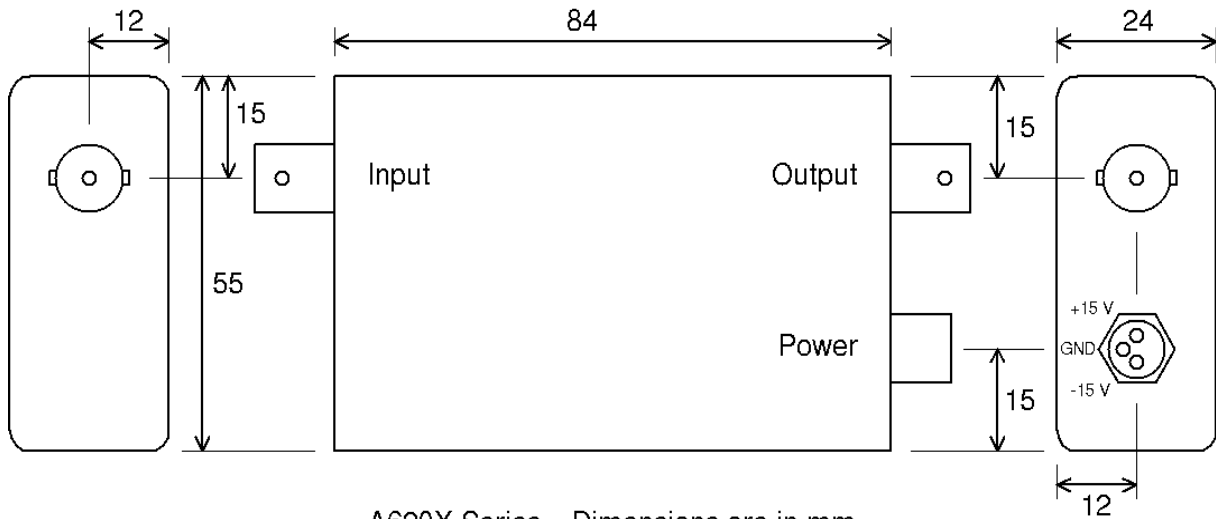
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Connections	
Input	BNC, SMA or SMB Connector
Output	BNC Connector
Power Supply	M8 Connector Pin 1 = +15V Positive Supply Pin 3 = -15V Negative Supply Pin 4 = Ground



Dimensions



A620X Series Dimensions are in mm

Power Supply is a female 3-pin industry standard M8-connector.