PREAMPLIFIERS

MODELS 5660B, 5660C, 5662, 5670 and 5676

Panametrics wideband preamplifiers are a series of AC coupled, broadband units which provide very low noise amplification of ultrasonic signals ranging in frequency from 500 Hz to greater than 20 MHz. They are specifically designed to be used with ultrasonic flaw detection, thickness gaging, and acoustic emission instrumentation in general applications requiring high-gain/low-noise amplification of low amplitude ultrasonic signals.

Panametrics preamplifiers are ruggedly housed, completely self-contained, simple to operate, battery powered units. They offer performance features such as very low noise (4 μV peak-to-peak noise referred to the input in Model 5660B), input protection for high voltage transients such as transducer excitation pulses, and the ability to drive long coaxial cables (greater than 500 feet or 160 meters with Model 5660B). Both fixed gain and switchable gain versions are available. Typical industrial applications include flaw detection or thickness gaging of thick sections of materials exhibiting high ultrasonic attenuation such as nodular cast iron, brass, bronze, austenitic steel, rubber, Teflon, or reinforced composites. A preamplifier is also an important component of acoustic emission test systems, which require amplification of low signal-amplitude events and the ability to drive long cables from remotely located sensors.

SPECIFICATIONS[1]

MODEL	5660B	5660C	5662	5670	5676
VOLTAGE GAIN: [2] (INVERTING)	40 & 60dB Switchable ($R_L > 1K\Omega$)	40 & 60dB Switchable ($R_L > 1K\Omega$)	34 & 54dB Switchable ($R_L = 50\Omega$)	40dB Fixed ($R_L = 50\Omega$)	40dB Fixed ($R_L = 50\Omega$)
BANDWIDTH[2] (−3dB):	0.02-2 MHz	0.0005-2 MHz	0.5-5 MHz	0.5-10 MHz	0.5-20 MHz
EQUIVALENT INPUT NOISE:	5μVp-p	5μVp-p	10μVp-p	15μVp-p	20μVp-p
INPUT RESISTANCE:	1MΩ	1MΩ	100KΩ	100KΩ	100KΩ
INPUT CAPACITANCE:	≈320pf	≈320pf	≈80pf	≈80pf	≈80pf
INPUT PROTECTION:	300V pk (Pulse Width < 2μS, 1% Maximum Duty Cycle)				
OUTPUT VOLTAGE:	5Vp-p ($R_L > 1K\Omega$) 2Vp-p ($R_L = 50\Omega$)		2Vp-p ($R_L = 50\Omega$)		
OUTPUT IMPEDANCE:	50Ω in series with 4.7μfd				
MAX. OUTPUT CABLE LENGTH:	>500′ (152m)	>500′ (152m)	>50′ (15m)	>50′ (15m)	>50′ (15m)
POWER REQUIREMENTS[3]:	16V ± 2V supplied by 8 Mallory TR-133 or equivalent batteries				
CURRENT CONSUMPTION:	18mA	18mA	28mA	28mA	28mA
BATTERY LIFE:	100 hrs.	100 hrs.	70 hrs.	70 hrs.	70 hrs.
DIMENSIONS:	3″ W × 2″ H × 5″ D (76mm W × 51mm H × 127mm D)				
WEIGHT:	1.4 lbs. (0.64 Kg)				
OPERATING TEMPERATURE:	0° to 50° C				

All specifications subject to change without notice.

NOTES:
[1] Unless otherwise noted, specifications are typical at 20° C.
[2] Other gains and bandwidths available, consult Panametrics.
[3] Line operated units available on special request.

ORDERING INFORMATION

Panametrics preamplifiers are available in five standard models with the gains and bandwidths listed in the chart above. Other gains, bandwidths and features are available on special order; consult Panametrics for details. The Panametrics sales staff is also available to assist in transducer selection and other ultrasonic applications problems.