

In-line “A-weighting” Filter

For Acoustic Measurements Utilizing “Prepolarized” Microphones
and ICP™ Microphone Preamplifiers

- Meets ANSI S1.4 (R2001) and IEC60651 (2001-10) Type 1 Sound Level Meter Standards for A-weighting filter
- Installs Between ICP™ Microphone Preamplifier and ICP® Sensor Signal Conditioner
- Connects with Low-cost Coaxial Cable
- Supports Use of TEDS-capable ICP™ Microphone Preamplifiers
- Provides Cost-effective “A-weighting” Solution

Model 426B02 In-line Filter is used in conjunction with an ICP™ preamplifier to provide A-weighting for acoustic measurements. The filter can be used with PCB® microphone preamplifier Models 426B03 and 426D01. The filter and preamplifier are powered by low-cost, constant current (4 to 20 mA) excitation commonly used with ICP® sensors. The in-line filter is inserted between the preamplifier and the constant current source. Since the system is low impedance, low-cost cables can be used, greatly reducing overall signal conditioning costs.

Designed for stability over a wide range of environmental conditions, the filter's frequency response is weighted according to the A-weighting filter portion of both ANSI S1.4 and IEC 60651 Type 1 Sound Level Meter Standards; however, the tolerances are tighter than the Type 1 tolerance in these standards. The tighter tolerances permit the filter to be added to the system without compromising the Type 1 standards for the system. The filter supports "Smart Transducer Interface" IEEE P1451.4 with TEDS (Transducer Electronic Data Sheet) by passing the TEDS data from the preamplifier through the filter.

As with all PCB® instrumentation, this equipment is complemented with toll-free applications assistance, 24-hour customer service, and is backed by a no-risk policy that guarantees satisfaction or your money refunded.



Model 426B02
In-line “A-weighting” Filter



MODEL 426B02 IN-LINE "A-WEIGHTING" FILTER

Specifications

Model		426B02	
Performance		English	SI
Frequency Response (A-weighted)	(± 0.5 dB) ^[1]	50 to 8000 Hz	50 to 8000 Hz
	(± 1.0 dB) ^[1]	20 to 20,000 Hz	20 to 20,000 Hz
Gain	(at 1 kHz)	0.0 ± 0.3 dB	0.0 ± 0.3 dB
Output Voltage (Max)	(< -50 dB THD, 1 kHz)	3.5 V pk	3.5 V pk
Output (Max)	(with 50 mV/Pa microphone)	131 dB	131 dB
	(with 12.5 mV/Pa microphone)	143 dB	143 dB
Environmental			
Temperature Sensitivity	(-40 to +149 °F (-40 to +65 °C))	± 0.5 dB	± 0.5 dB
Maximum Temperature	(Operating)	176 °F	80 °C
Humidity Sensitivity	(0 to 95% RH, non-condensing) ^[2]	± 0.5 dB	± 0.5 dB
Electrical			
Electrical Noise	(Flat, 20 to 20k Hz)	< 25.0 µV	< 25.0 µV
	(1/3 octave band @ 1 kHz)	< 2.8 µV	< 2.8 µV
Input Impedance		30 kohm	30 kohm
Output Impedance		50 ohm	50 ohm
Excitation Voltage		24 to 32 VDC	24 to 32 VDC
Constant Current Excitation		4 to 20 mA	4 to 20 mA
Current Output (delivered to preamplifier)	(± 0.15 mA) ^[3]	0.75 mA	0.75 mA
Cable Driving Capability	(100 ft (30.4 m) cable length) ^{[3][4]}	3.5 V pk, to 30.3 kHz	3.5 V pk, to 30.3 kHz
Physical			
Electrical Connector	(input)	BNC Plug	BNC Plug
	(output)	BNC Jack	BNC Jack
Size	(diameter x length)	0.57 x 3.66 in	14.5 x 93 mm
Notes			
[1] re 1 kHz			
[2] at +104 °F (+40 °C)			
[3] for best performance, filter should be installed next to the preamplifier			
[4] with 4 mA excitation and 300 pF total cable capacitance			

Related Equipment



Model 482C
1, 4, or 8-channel, Multi-purpose ICP® Sensor Signal Conditioner with AC, DC or Battery Power



Model 480M122
Single-channel, Battery Powered ICP® Sensor Signal Conditioner with 4 mA, 28 VDC excitation



Model 426D01
ICP™ Pre-amplifier for 1/2-inch Pre-polarized Microphones



Model 426B03
ICP™ Pre-amplifier for 1/4-inch Pre-polarized Microphones



Model 377A02
1/2-inch Pre-polarized Free-field Microphone



Model 377A11
1/2-inch Pre-polarized Pressure Microphone



Model 377A20
1/2-inch Pre-polarized Random Incidence Microphone



Model 377A10
1/4-inch Pre-polarized Pressure Microphone



Model 377A01
1/4-inch Pre-polarized Free-field Microphone



Series 003B
Coaxial Cable
10-32 Plug to BNC Jack



Series 003D
Coaxial Cable
BNC Plug to BNC Plug



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ISO 9001:2000 CERTIFIED

A2LA ACCREDITED to ISO 17025

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