

Constant Current Power Supply / Signal Conditioner

5648-X

The Columbia Model 5648-X Single Channel Power Supply / Signal Conditioner provides a ruggedized unity gain interface between Columbia's 8000 or 900 Series Sensors or any competitors Acceleration, Pressure or Acoustic Sensors with built in constant current powered electronics. The 5648-X provides a precision 4.0mA constant current to the signal conditioning circuitry within the selected sensor. It also provides a 2 pole 12dB/Octave low pass filter and low impedance AC coupled signal output stage capable of driving up to 2000pF cable capacity. A second signal output is provided that is biased at +2.50VDC. The 5648-X eliminates the need for a complex and costly current power supply and charge amplifier.

The Model 5648-X requires a user-supplied source of DC voltage between +16 and +32 volts. The minimum voltage should be chosen to be at least six volts greater than the specific DC output bias level of the selected transducer.

The 10-32 coaxial connector accepts the input from the sensor and power and signal outputs are available via a 5 pin Viking connector.

- Compact Single-Channel Unit
- Convenient DC Operation
- AC Coupled & Biased Signal Output
- Rugged Airborne Case



SPECIFICATIONS

Electrical	5648-X
Number of Channels	One, Biased and AC Coupled Outputs
Power Required	+16 to +32VDC
Power/Output Connections	Viking 5-Pin Cylindrical Connector
Output Current to Transducer	5.0mADC Nominal
Output Impedance	100Ω Max.
Voltage Gain	0.0dB (Unity Gain)
Frequency Response	See Table II
Residual Noise (1Hz to 20KHz)	75 μV RMS Max.
Temperature Range	-40 to 100°C
Maximum Output Voltage	5V pk/pk
Output Connector	Viking VR5-4AG15
Transducer Input Connector	#10-32 Coaxial Receptacle
Size	1.69 L x 1.0 W x 1.0 H
Weight	50gm Max.

TABLE I - 5648-X CONNECTOR	
PIN	FUNCTION
A	+28VDC
B	UNBIASED OUTPUT
C	BIASED OUTPUT
D	SIGNAL & PWR GND
E	CASE GND

TABLE II - LOW PASS FILTERS		
PN SUFFIX	±5% RESPONSE	ROLLOFF
F1	5Hz TO 100Hz	-12dB/Oct
F2	5Hz TO 200Hz	-12dB/Oct
F3	5Hz TO 500Hz	-12dB/Oct
F4	5Hz TO 1000Hz	-12dB/Oct
F5	5Hz TO 2000Hz	-12dB/Oct
F6	5Hz TO 5000Hz	-12dB/Oct
F7	5Hz TO 10000Hz	-12dB/Oct

Available Accessories:

- Miniature Low Noise High Temperature Coaxial Cable Assembly, #10-32 to #10-32, Columbia type LNHT.
- Viking VR5-4CE6 Mating Connector.

