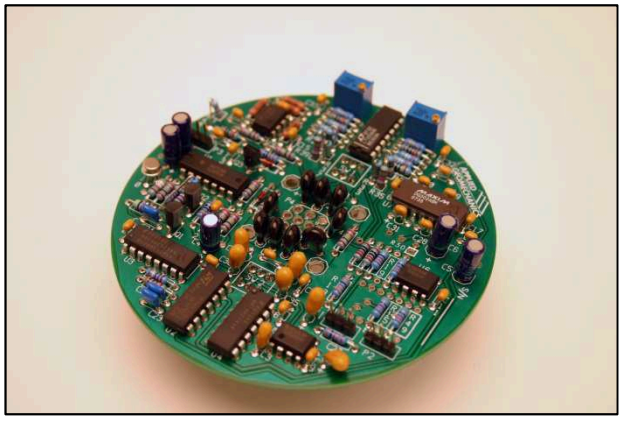
Model 83162

Dual-channel Signal Conditioning Card

The model 83162 is a precision, two-channel signal conditioning card for use with all Jewell miniature tilt sensors. Powerful electronics generate balanced AC sensor excitation for up to two tilt channels (X and Y), then amplify, rectify and filter sensor response to produce a high-level DC output signal. Output is ±8 VDC single-ended (±16 VDC differential).

Units conveniently come with two switchable gain and filter settings (high/low; on/off) for added signal processing flexibility. The 83162 also includes an amplifier for one LM35 temperature sensor, and will drive tilt and temperature signals over 1000m cable lengths. All units include calibration when ordered with Jewell Instruments miniature tilt sensors. Use the model 83162 for peak performance from our 755-, 756-, or ceramic tilt sensor packages.



Input Channels	Two Tilt Channels (X and Y tilt), One LM35 Temp. Sensor			
Output Signal	±8 VDC Single-ended (±16 VDC differential)			
Gain Settings	Two switchable gains, 10:1 ratio			
Standard Calibration	Sensor Type	High-gain	Low-gain	Linear Range
	755-Series	*0.1 µradian/mV*	*1.0 µradian/mV*	*±0.25°*
	756-Series	*0.1 °/V*	*1.0 °/V*	*±5.0°*
Output Filters	Filter "On" = 7.5 sec; Filter "Off" = 0.05 sec1; Roll-off = 6 dB/octave			
Temperature Output	0.1oC/mV (single-ended)			
Output Impedance	270 Ohms			
Power Requirements	±11 to ±15 VDC @ +11 and -6 mA, 250 mV ripple max., reverse polarity protected			
Connections	Sensor: Au-plated 100 mil header pins; Power/signal: 3-ft tinned pigtail			
Environmental	-25° to +70°C Operation, -30°C to +100°C Storage, 0-90% humidity non-condensing			
Materials	Fiberglass PCB, thru-holed soldered components			
Dimensions and Weight	3.85-inch (98 mm) dia. x 1.12 inches (28 mm) high (includes switches), 30 g			

Specifications subject to change without notice on account of continued product development

Ordering Code:

Model No.	Description
83162	Dual Channel Signal Conditioning Card, Round, 2 Gains, 2 Filters, ±8 VDC Output (Single-ended)

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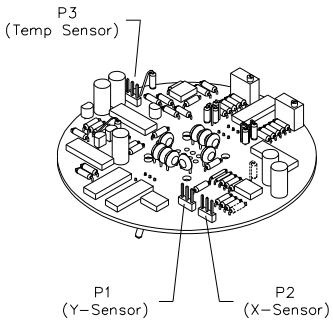
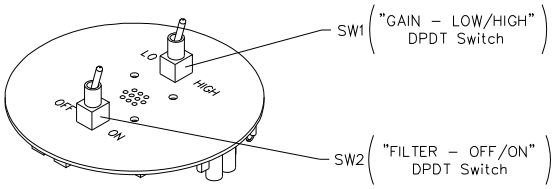
Dual-channel Signal Conditioning Card

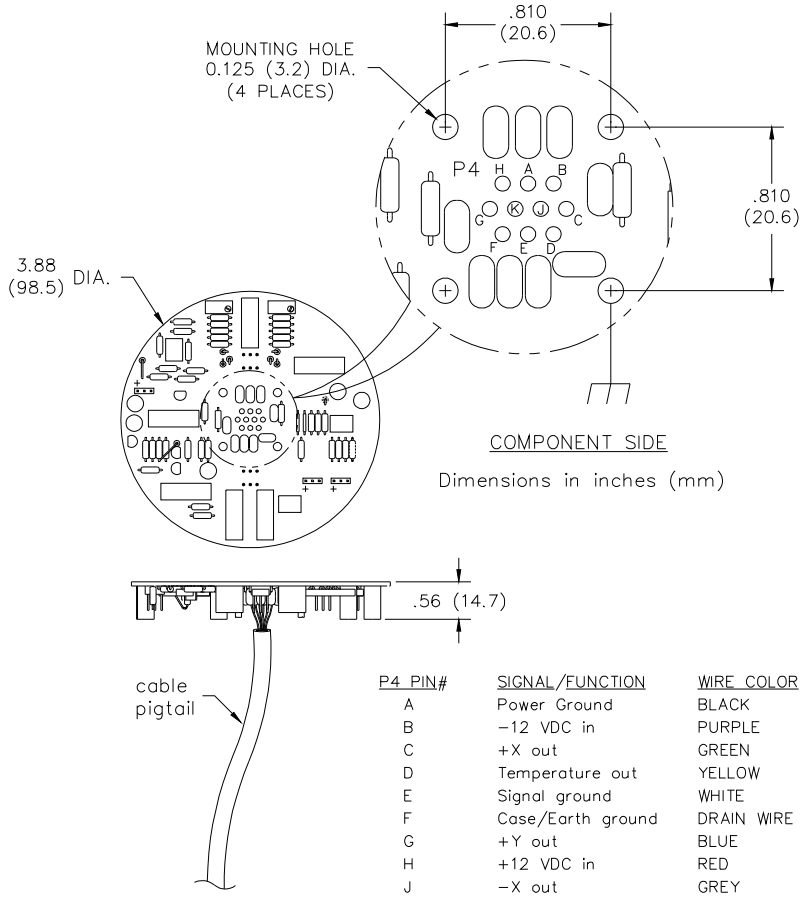
Dimensions and Pin-outs:



TOP VIEW
(Component Side)



BOTTOM VIEW
(Solder/Switch Side)



COMPONENT SIDE

Dimensions in inches (mm)

P4 PIN#	SIGNAL/FUNCTION	WIRE COLOR
A	Power Ground	BLACK
B	–12 VDC in	PURPLE
C	+X out	GREEN
D	Temperature out	YELLOW
E	Signal ground	WHITE
F	Case/Earth ground	DRAIN WIRE
G	+Y out	BLUE
H	+12 VDC in	RED
J	–X out	GREY
K	–Y out	BROWN

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