

SSY0079 - Single Axis CMOS Signal Conditioning Module

> Open Architecture

The SSY0079 **Single Axis CMOS Signal Conditioning Module** is a DC input/output operated device, which operates off a single ended supply, and provides a bipolar DC output. Specifically designed to interface directly with all Spectron *Single Axis Tilt Sensors*, and with the *SP5000 Series Dual Axis Tilt Sensor* (operating in single axis mode), this low power consumption conditioner is ideal for battery driven applications, while the open architecture design affords easy installation and adjustment access for OEMs. The module internally converts the DC input voltage into an AC excitation voltage for the sensor, and demodulates the sensor output into a smooth amplified DC output voltage. Incorporating a proprietary signal processing algorithm, and an external temperature compensation sensor (optional), normal measurement errors are severely reduced. The SSY0079 also features overload protection, and is 100% reliability tested to provide the highest quality available.



General Specifications

Input voltage+5Vdc to +15Vdc
Input current 0.5mA @ +5Vdc, 0.9mA @ +15Vdc
Sensor excitation 3V pp, square wave
Input impedance 5 megohms
Output \bar{O} +/-1.5Vdc @+6Vdc supply, referenced to Vref
Note; minimum output = 50mVdc + (supply voltage . 1.5Vdc)
Load 100k ohm minimum
Time constant ... 70 msec
Offset adjustment +/-45 mVdc
Output ripple ... 0.35% of output voltage (RG 24k ohm)
Temperature coefficients (module w/out sensor)
- Null 100 microvolts / Co (typical)
- Scale ... 0.02% / C° @ +1Vdc
output Output short duration .. Continuous (Vout
and Vref) Temperature range
- Operating .. -25 to +70C°
- Storage . -40 to +80C°
Temperature Compensation
- Temperature compensation of the assembly (module and sensor) can be accomplished using an external silicon temperature sensor (KTY81-120) and a resistor (SBT). Exact resistor value is determined by placing a decade resistor box across R3, and adjusting until desired results is obtained. With this configuration, it is possible to reduce the scale temperature coefficient error from a 0.3%/C° (nominal), to 0.03%/C° (nominal). Please see wiring diagram for connection points.

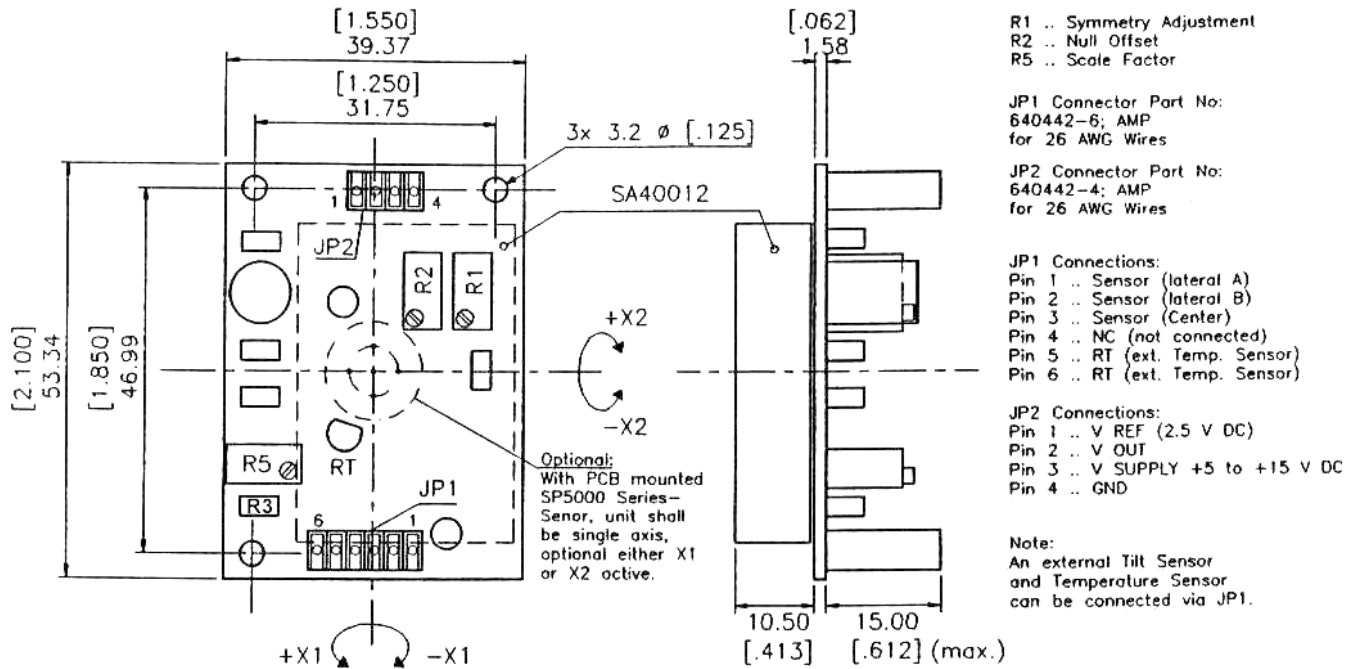
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Dimensions, Electrical Connections, and Adjustments

mm (inches)



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