

SPI Mini Signal Conditioner Board (Part Number: 6200-005) Data Sheet

Specifications:

Power supply voltage	3 to 5 VDC (regulated)
Power supply current	6mA @ 5VDC
.....	3.5mA @ 3.3VDC
Operating temperature range (board only).....	-40°C to +85°C
Storage temperature range (board only)	-55°C to +100°C
Angle Range	0-100% of sensor range (16 bit, 65535 counts max)
Board dimensions.....	1.25 x 1.25 inches or 32mm x 32mm square
Mounting hole and spacing.....	0.089 inches diameter and 1.05 inches (center to center)
Temperature sensor range.....	-40°C to +125°C (10 bit resolution)



Signal descriptions J1:

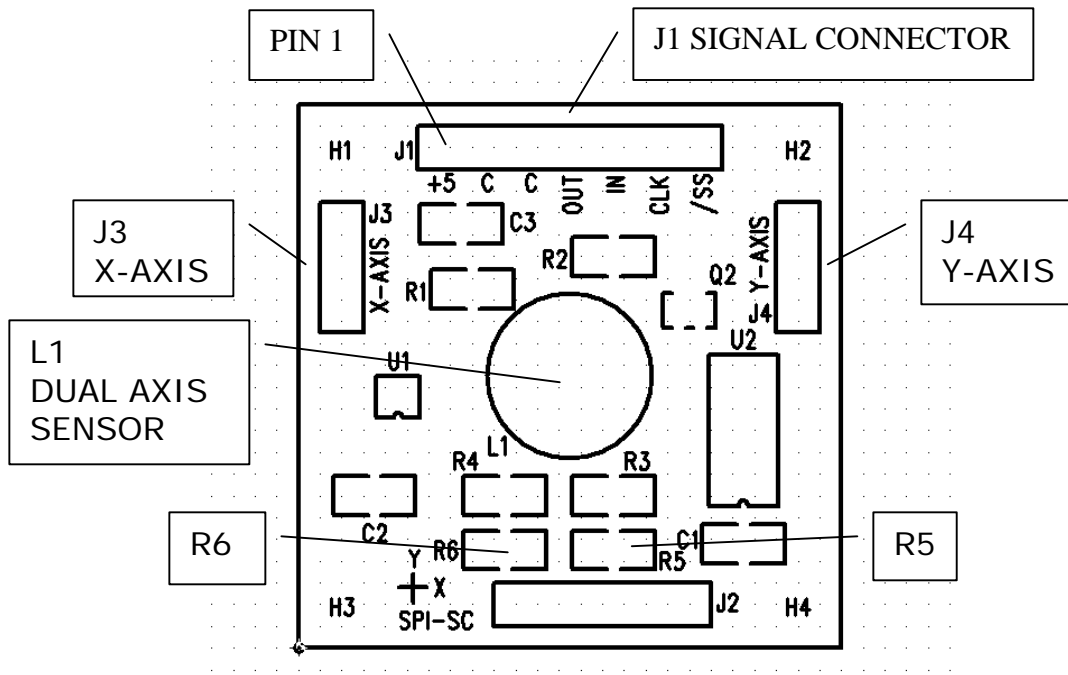
Pin #	Signal name	Direction	Description
1	Vcc	Input	Supply voltage input: +3 to +5 vdc regulated
2	GND	-	Ground - The reference for the digital signals and the supply voltage
3	GND	-	Ground - The reference for the digital signals and the supply voltage
4	SDO	Output	Slave output – SPI communications to master device 8 bit data from slave with clock from master
5	SDI	Input	Slave input – SPI communications from master device 8 bit command and clock from master
6	SCK	Input	SPI clock – SPI input clock from master device Clock polarity = High, Clock in data = High to Low Data rate = 500kHz to 20 mHz
7	/CS	Input	Chip select signal – signal to select slave device from master device

Command format:

Command data (SDI) and clock (SCK) from master	Response data from slave (SDO) and clock from master (SCK)
Decimal 49 (ascii '1')	X axis high byte of 16 bit value
Decimal 50 (ascii '2')	X axis low byte of 16 bit value
Decimal 51 (ascii '3')	Y axis high byte of 16 bit value
Decimal 52 (ascii '4')	Y axis low byte of 16 bit value
Decimal 53 (ascii '5')	Board temperature high byte of 10 bit value
Decimal 54 (ascii '6')	Board temperature low byte of 10 bit value

NOTE: To convert the 10 bit data returned from the on board MCP9700 use the following formulas,
MCP9700 output voltage = 10 bit value / 1023 * supply voltage
Temperature C = (MCP9700 output voltage – 0.5) / 0.010

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SPI signal conditioner board assembly

Sensor configuration	Description
Dual Axis sensor mounted on board (standard configuration)	Dual axis sensor is mounted in location L1 R5 is 10.0K ohms R6 is not installed
Single axis sensors mounted off board	Single axis sensors are connected to J3 (x-axis) and J4 (Y-axis) No sensor is installed in L1 R5 is not installed R6 is 1K ohms Note: If R5 is not removed then R6 must be less than 100 Ohms

Note: J2 is for factory use only.