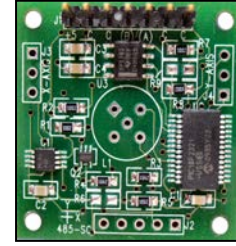# The Fredericks Company

1-6200-008

RS485 Mini Signal Conditioner Board

Actual size

Specifications

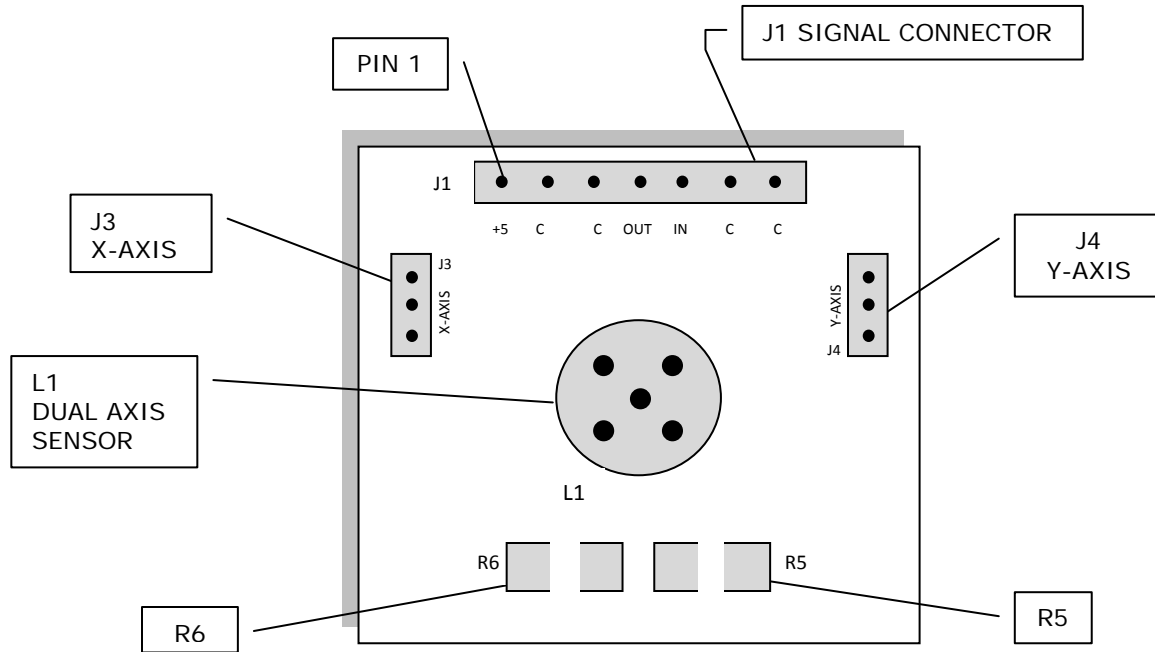|	
Power supply voltage	3 to 5 VDC (regulated)
Power supply current	9mA @ 5VDC
	6mA @3.3VDC
Operating temp range (board only)	-40°C to +85°C
Storage temp range (board only)	-55°C to0 +100°C
Angle range	0-100% of sensor range (16 bit,65535 counts max)
Board dimensions	1.25″ x 1.25″ or 32mm x 32mm square
Mounting hole and spacing	0.089″ dia. and 1.05″ (center to center)
Temp. sensor range	-40°C to +125°C (10 bit resolution)

Signal Description 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	B	Bi-directional	RS485 - B
5	A	Bi-directional	RS485 - A
6	GND	-	Ground – The reference for the digital signals and the supply voltage
7	GND	-	Ground – The reference for the digital signals and the supply voltage

Command Format

XXYY# (= start of string, XX = address, YY = command, # = end of string
Commands for X and Y axis, temperature
Additional commands to change address (1 to 99), baud rate (1200 to 38400), and enter and save a user ID
Refer to operating manual for all RS485 commands

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

SPI signal conditioner board assembly

PIN 1

J1 SIGNAL CONNECTOR

J3
X-AXIS

J4
Y-AXIS

J1

+5   C   C   OUT   IN   C   C

L1
DUAL AXIS
SENSOR

L1

R6

R5

Sensor Configuration

Sensor Configuration	Description
Dual Axis sensor mounted on board (standardd configuration)	- Dual Axis 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 1.0K ohms Note: if R5 is not removed then R6 must be less than 100 ohms SENSOR — ORN or YEL WIRE — GREEN ONLY WIRE — YEL or ORN WIRE — J3 and/or J4

NOTE: J2 is for factory use only.