

Interface Board

TriRate, AccelRate3D, MAG³

Functional Description

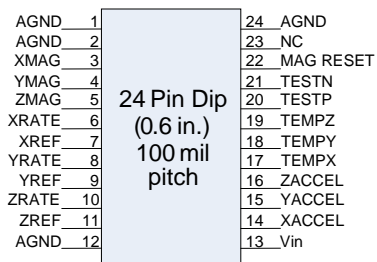
The Interface Board is used to interface MEMSense SMT products for system level testing. The dual sided component board provides buffered analog outputs for accelerometer, gyro and magnetometer data. In addition, buffered voltage references and temperatures for each gyro axis are provided. Onboard voltage regulation and a miniature JST 20 pin connector provide a convenient, space saving interface.

The Interface board can be attached using four bolt holes with standoffs or configured as a 24 pin DIP (0.6 in.).

For pricing information contact MEMSense Sales at 888.668.8743 extension 15 or via email at sales@memsense.com.

The Interface Board is available in a custom printed circuit board measuring 1.50 in x 0.910 in.

24 Pin Dip Pinout Option



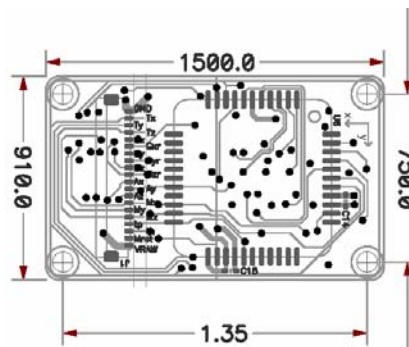
Features

- Small size
- 5V onboard regulator
- JST miniature 20 pin connector
- Mounting holes
- 24 Pin Dip Interface

Ordering Information

Part	Description
AIB01	Interface Board TriRate, AccelRate3D, MAG3

PCB Layout



2-56 in. bolt holes in four corners. Use socket head cap screws only.

Table 1 – Specifications

Parameter	Specification	Units	Conditions
Sensor			
Vin	5.2 to 10	V	
Output Drive			
Capacitance Load	1000	pF	
Drive	30	mA	0.110 V from rails
Absolute Maximum Ratings			
Vin	-0.3 (min) +12 (max)	V	
Operating Temperature	-55 to +125	°C	
Storage Temperature	-65 to +150	°C	

Typical Values at 25°C, Vin = 5.5 V. Unless otherwise noted



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Table 2 – J1 JST 20-pin Connector Pin Function Descriptions

Pin No.	Name	Function
1	AGND	Analog power supply return.
2	TEMPX	Analog temperature voltage output, X gyro.
3	TEMPY	Analog temperature voltage output, Y gyro.
4	TEMPZ	Analog temperature voltage output, Z gyro.
5	XRATE	X axis analog rate signal output.
6	XREF	X axis analog precision reference output.
7	YRATE	Y axis analog rate signal output.
8	YREF	Y axis analog precision reference output.
9	ZRATE	Z axis analog rate signal output.
10	ZREF	Z axis analog precision reference output.
11	XACCEL	X axis analog acceleration signal output.
12	YACCEL	Y axis analog acceleration signal output.
13	ZACCEL	Z axis analog acceleration signal output.
14	XMAG	X axis differential analog magnetic signal output.
15	YMAG	Y axis differential analog magnetic signal output.
16	ZMAG	Z axis differential analog magnetic signal output.
17	TESTP	High-level activated digital input stimulating X, Y and Z rate to Ref +660mV. ¹
18	TESTN	High-level activated digital input stimulating X, Y and Z rate to Ref – 660mV. ¹
19	MAG RESET	Magnetic reset input. ¹
20	Vin	Analog power supply.

1. See specification table in TriRate, AccelRate3D or MAG3 datasheet for appropriate test values.

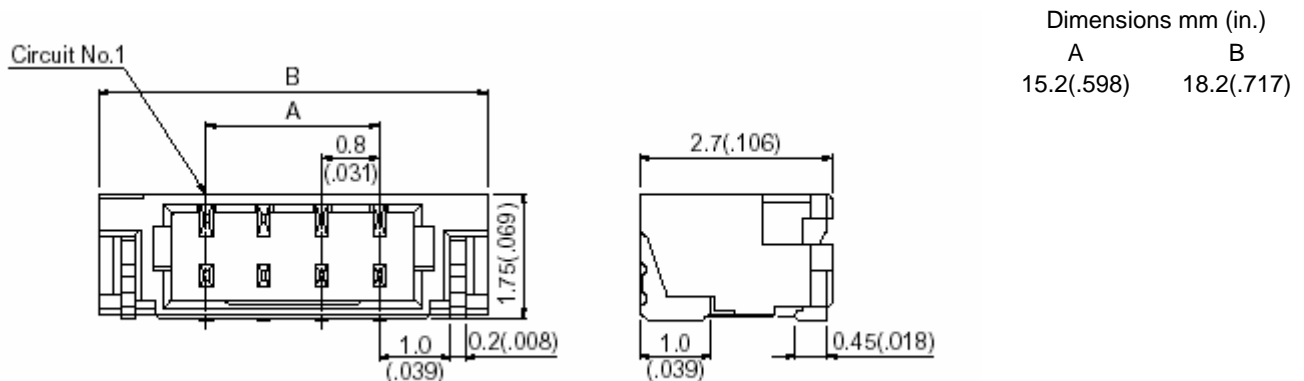


Figure 1 J1 JST Shrouded Header SM20B-SURS-TF mates with JST receptacle 20SUR-32S (included but not shown)



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Output Impedance vs Frequency

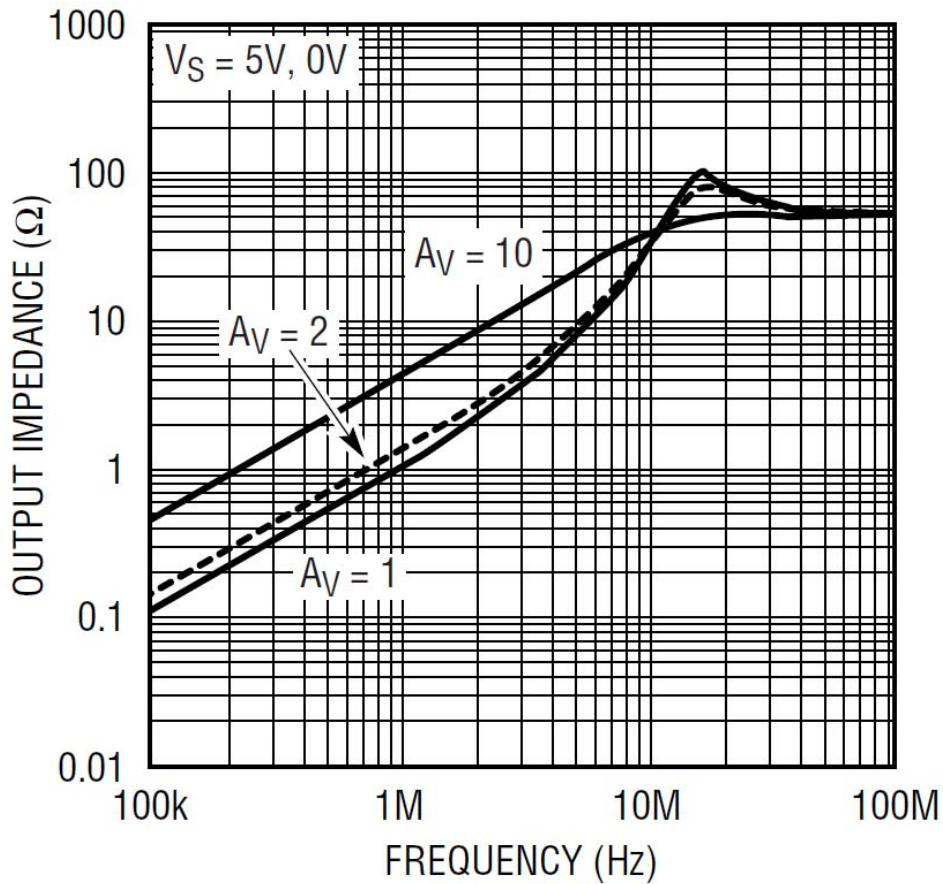


Figure 2 –Interface Board Signal Output Impedance verses Frequency
(Applies to pins 2 – 16 on the Interface Board)



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Page 3

