

2GIG RS-232 Protocol

The RS232 series of tilt sensors communicates via the RX and TX (transfer and receive) wires. The sensor outputs the X (°), Y (°), and the current output rate. The sensor can receive commands through RS232 to adjust the baud rate, output rate, or zero out the device. The standard output message, input message, baud rate, and configuration settings can be modified to fit most systems.

Specification	RS-232																																				
Adjustable Output Rate (Hz)	1 – 100 (Default: 10 Hz)																																				
Adjustable Baud Rates (bits/sec) <i>(Max Output Rate (Hz))</i>	2400 <i>(8)</i>	9600 <i>(20)</i>	19200 (Default) <i>(40)</i>	57600 <i>(100)</i>	115200 <i>(100)</i>																																
Communication Specs	Data Bits 8	Parity None	Stop Bits 1	Handshaking None																																	
Output Message	<p>Dual Axis Format: \$2gig,[X Angle],[Y Angle],[Output Rate]*[Checksum][LF] Single Axis Format: \$2gig,[X or Y Angle],[Output Rate]*[Checksum][LF]</p> <p style="text-align: center;">Message Descriptions</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="background-color: #4F81BD; color: white;">X Angle</th> <td>X Angle reading in hundredths of a degree (0.00)</td> </tr> <tr> <th style="background-color: #4F81BD; color: white;">Y Angle</th> <td>Y Angle reading in hundredths of a degree (0.00)</td> </tr> <tr> <th style="background-color: #4F81BD; color: white;">Output Rate</th> <td>Current Output Rate Frequency (Hz)</td> </tr> <tr> <th style="background-color: #4F81BD; color: white;">Checksum (Hex)</th> <td>Data Validation Check by XORing all ASCII values between the \$ and * characters</td> </tr> <tr> <th style="background-color: #4F81BD; color: white;">LF</th> <td>Line Feed (New Line) Character – ASCII 10</td> </tr> </thead></table>					X Angle	X Angle reading in hundredths of a degree (0.00)	Y Angle	Y Angle reading in hundredths of a degree (0.00)	Output Rate	Current Output Rate Frequency (Hz)	Checksum (Hex)	Data Validation Check by XORing all ASCII values between the \$ and * characters	LF	Line Feed (New Line) Character – ASCII 10																						
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EXAMPLE OUTPUT MESSAGES

Dual Axis Output Message

\$2gig,-0.38,-0.19,10*75[LF]

X Angle = -0.38°

Y Angle = -0.19°

Output Rate = 10 Hz

Checksum = 0x75

Single Axis Output Message

\$2gig,2.54,20*44[LF]

Angle = 2.54°

Output Rate = 20 Hz

Checksum = 0x44

EXAMPLE INPUT MESSAGES

R5[LF]

Set the baud rate to 115200

O50[LF]

Set the output rate to 50 Hz

Z2[LF]

Relative zero the device

- All input commands are ASCII values (not including [LF])
- [LF] is a decimal value of 10, and it's also known as line feed or '\n'