

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																																	
2GIG Output Message Format	<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: #D3D3D3;">X Angle</th> <td>X Angle reading in hundredths of a degree (0.00)</td> </tr> <tr> <th style="background-color: #D3D3D3;">Y Angle</th> <td>Y Angle reading in hundredths of a degree (0.00)</td> </tr> <tr> <th style="background-color: #D3D3D3;">Output Rate</th> <td>Current Output Rate Frequency (Hz)</td> </tr> <tr> <th style="background-color: #D3D3D3;">Checksum (Hex)</th> <td>Data Validation Check by XORing all ASCII values between the \$ and * characters</td> </tr> <tr> <th style="background-color: #D3D3D3;">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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Input Commands	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #D3D3D3;">Adjustment</th> <th style="background-color: #D3D3D3;">Command Format</th> <th style="background-color: #D3D3D3;">Values for 'x'</th> <th style="background-color: #D3D3D3;">Description</th> </tr> </thead> <tbody> <tr> <td rowspan="5" style="background-color: #D3D3D3;">Baud Rate</td> <td rowspan="5" style="background-color: #D3D3D3;">Rx[LF]</td> <td style="background-color: #D3D3D3;">1</td> <td>2400 Bps</td> </tr> <tr> <td style="background-color: #D3D3D3;">2</td> <td>9600 Bps</td> </tr> <tr> <td style="background-color: #D3D3D3;">3</td> <td>19200 Bps</td> </tr> <tr> <td style="background-color: #D3D3D3;">4</td> <td>57600 Bps</td> </tr> <tr> <td style="background-color: #D3D3D3;">5</td> <td>115200 Bps</td> </tr> <tr> <td style="background-color: #D3D3D3;">Output Rate</td> <td style="background-color: #D3D3D3;">Oxxx[LF]</td> <td style="background-color: #D3D3D3;">1 – 100</td> <td>1 Hz – 100 Hz*</td> </tr> <tr> <td rowspan="2" style="background-color: #D3D3D3;">Zero Device</td> <td rowspan="2" style="background-color: #D3D3D3;">Zx[LF]</td> <td style="background-color: #D3D3D3;">1</td> <td>Revert to Factory Zero</td> </tr> <tr> <td style="background-color: #D3D3D3;">2</td> <td>Relative Zero</td> </tr> <tr> <td rowspan="2" style="background-color: #D3D3D3;">Protocol</td> <td rowspan="2" style="background-color: #D3D3D3;">Px[LF]</td> <td style="background-color: #D3D3D3;">1</td> <td>2GIG Format</td> </tr> <tr> <td style="background-color: #D3D3D3;">2</td> <td>TSS1 Format (Pitch and Roll) *For models manufactured after 6/18/2018</td> </tr> </tbody> </table> <p style="text-align: center;">* If the adjusted output rate exceeds the max output rate for the current baud rate, then the max output rate will be chosen.</p>					Adjustment	Command Format	Values for 'x'	Description	Baud Rate	Rx[LF]	1	2400 Bps	2	9600 Bps	3	19200 Bps	4	57600 Bps	5	115200 Bps	Output Rate	Oxxx[LF]	1 – 100	1 Hz – 100 Hz*	Zero Device	Zx[LF]	1	Revert to Factory Zero	2	Relative Zero	Protocol	Px[LF]	1	2GIG Format	2	TSS1 Format (Pitch and Roll) *For models manufactured after 6/18/2018
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