

Inertia-Link[®]

3DM-GX2[®]

Orientation Sensors



Interfacing with Other RS-422 Devices

Overview

MicroStrain's Inertia-Link[®] and 3DM-GX2[®] can be outfitted with an RS-422 communications interface. There is no standard for connector pin compatibility between RS-422 devices made by different vendors. This technical note presents an example of how the Inertia-Link[®] and 3DM-GX2[®] can be interfaced to another vendor's device.

Pin Assignments

The Inertia-Link[®] and 3DM-GX2[®] present a female Micro-D 9-pin connector on the sidewall of the enclosure. This connector provides the communications and power interface to the devices. The pin layout as viewed from outside the enclosure is shown in the following figure:

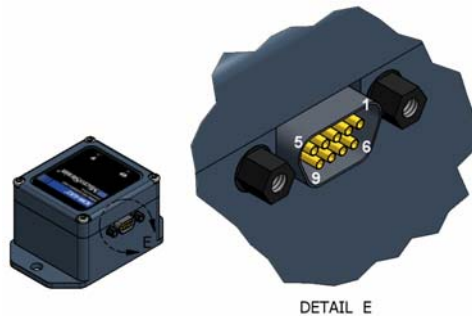


Figure 1

The connector pin assignments are described in the following table and notes:

Pin #	RS422
1	-
2	-
3	+5V ¹
4	RxD+ ²
5	RxD- ²
6	+6V/+9V/+12V ¹
7	TxD+ ²
8	GND
9	TxD- ²

Table 1

Interfacing with Other RS-422 Devices

Notes:

- ¹ Connect *either* pin 3 *or* pin 6 (no need to connect both).
Pin 3 voltage allowable range is +4.5V to +5.5V.
Pin 6 voltage allowable range is +5.2V to +16V.
Use whichever is more convenient.
- ² RxD is the node's receive pin, and should be connected to the host's transmit pin.
TxD is the node's transmit pin, and should be connected to the host's receive pin.

A mating male Micro-D 9-pin connector can be acquired from Ulti-Mate Connector, Inc. www.umi-c.com part number PR9N05-26 or PR9N05-26E5-4.0.

SEALEVEL[®] Systems Incorporated, Liberty, South Carolina, USA <http://www.sealevel.com> manufactures the Model 7204-SE Ultra-COMM+2 4.22 PCI Serial Interface board http://www.sealevel.com/product_detail.asp?product_id=691.

The connector pin assignments for the RS-422 interface are described in the following table:

Signal	Name	Pin#	Mode
GND	Ground	5	-
TX+	Transmit Data Positive	4	Output
TX-	Transmit Data Negative	3	Output
RTS+	Request To Send Positive	6	Output
RTS-	Request To Send Negative	7	Output
RX+	Receive Data Positive	1	Input
RX-	Receive Data Negative	2	Input
CTS+	Clear To Send Positive	9	Input
CTS-	Clear To Send Negative	8	Input

Table 2

Communication Connection

The connector pin assignments from the Inertia-Link[®] and 3DM-GX2[®] to the SEALEVEL[®] are described in the following table. Please note the Tx and Rx cross-over.

Inertia-Link [®] /3DM-GX2 [®]	SEALEVEL [®]
Pin #	Pin #
4	4
5	3
7	1
8	5
9	2

Table 3

Power

In our example we are only dealing with the communication connection; the SEALEVEL[®] board does not provide power to the Inertia-Link[®] and 3DM-GX2[®]; power must be provided through the standard MicroStrain cable or through user-designed means.



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