



Manitou Systems Inc.

Products for
PLASMA Based
Research
& Manufacturing



Matrixx Deposition Crystal Switch

Owner's Manual

Manual PN: 00010091

Revision 0

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Matrixx Deposition Crystal Switch

Date	Revision	Details	Author
1-22-2016	0	Initial release	SMS

Matrixx Deposition Crystal Switch

This Owner's Manual and the information contained within are designed for the use by all people working directly or in-directly with the family of **Matrixx** Switch Module systems.

Descriptive information is provided to enable safe installation, operation and service. Failure to properly install or operate this unit will result in voiding the equipment warranty.

Prior to installation and operation of this system, this instruction manual should be consulted to ensure that the installation and operation are in accordance with Manitou Systems' recommendations. Only qualified personnel should install and service this equipment.

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It is our intent to publish the most accurate and up to date information regarding this equipment however, we do not guarantee that all specific information is included in the body of this manual. Please contact us with your comments and suggestions for improvements.

For more information or application & installation questions please contact us at: WWW.MANITOUSYS.COM or info@manitousys.com

This document is published in the United States of America.

This manual applies to all **Matrixx** Crystal Switch Module products. Additional information including schematics and user specific application information will be included with the shipped product.

Matrixx Deposition Crystal Switch

Quick Start Guide

System Components

The **Matrixx** Crystal Switch Module is a self contained module that includes a high reliability relay and low loss circuit that is used to switch the input of a deposition crystal monitor between 2 crystal detector modules.

The **Matrixx** Crystal Switch Module is sold as a “stand alone” device requiring the user to interface it with the deposition monitor. It includes a mating control connector.

Optional length coaxial cables may also be included based on your order specification.

Please refer to the shipping documents for a complete list of supplied components.

Typical components include:

1. **Matrixx** Crystal Switch Module

The image to the right shows the 2-output model with type BNC female connectors. The input connector (on this model) is located on the right side.



2. Accessory Kit

The accessory kit includes two coaxial cables with BNC male>male connectors and a female DB-9 connector and back shell to interface the module to the deposition monitor.



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Specifications

- PN 00010091 Matrixx module with two 6"/152.4mm long BNC cables
- Input Single BNC Female connector
- Outputs Two BNC Female connectors
- Operating Frequency DC > 6MHz
- Insertion loss <1 db
- Physical size (box) 1.56"/38.50mm wide x 3.646"/92.60mm long x 1.220"/31.00mm high

Note: The connectors and brackets will increase the overall size of the assembly.

- Overall size 2.5"/63.50mm wide x 4.118"/104.60mm long x 1.907"/48.44mm high
- Mounting via two brackets with 0.144"/3.66mm holes
- Switching power 24VDC @ 17mA
- Control connection via type DB9 male connector
- Operating temperature 0>50degC/122degF non-condensing
- Switching time < 0.1 second

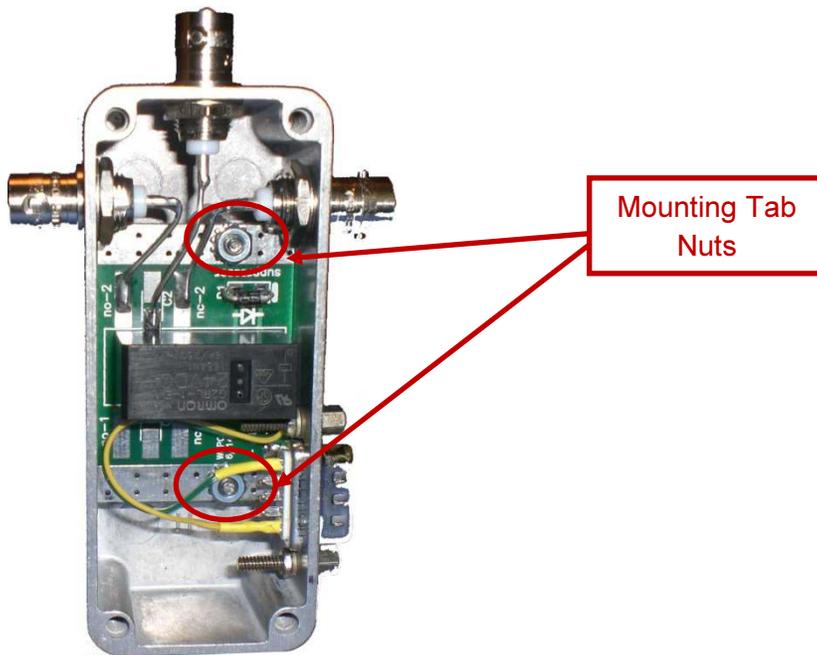
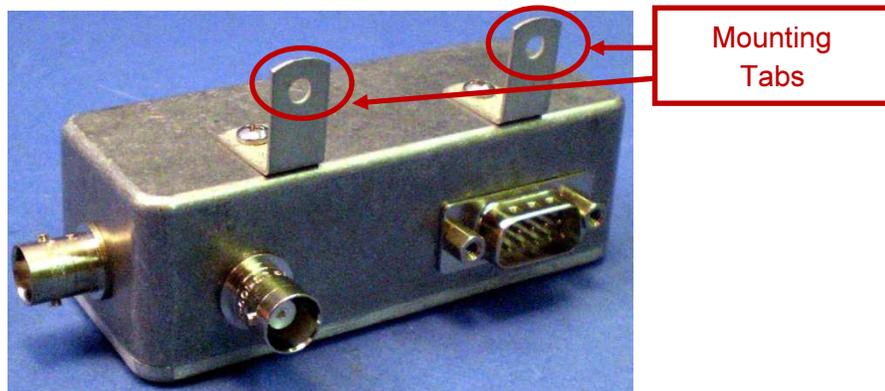
Matrixx Deposition Crystal Switch

Quick Start Guide

Assembly Steps

1. Remove all components from their packing material to verify all items were received.
2. Mount the **Matrixx** Crystal Switch Module to a surface or frame on the vacuum process system close to where the crystal detector feed-thrus are located.

Use the two mounting tabs, located on the module's bottom surface. The mounting hole on each tab measures 0.144"/3.66mm. These tabs can be swiveled into alternate directions by removing the box's lid, loosening the two nuts, re-setting the position, and tightening up the hardware.



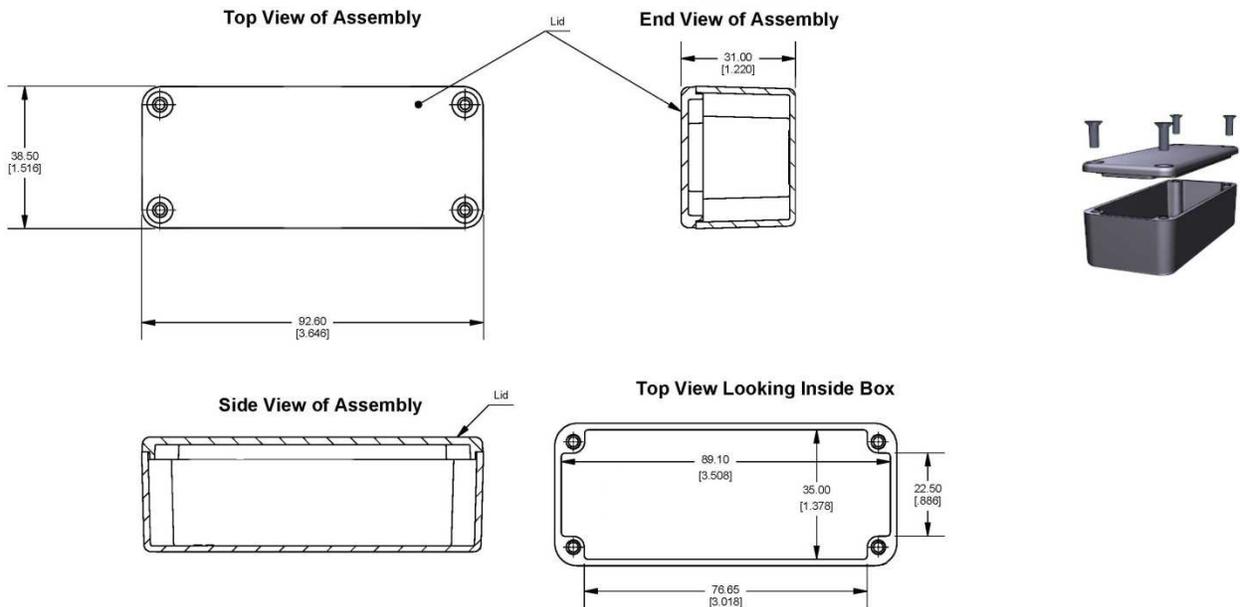
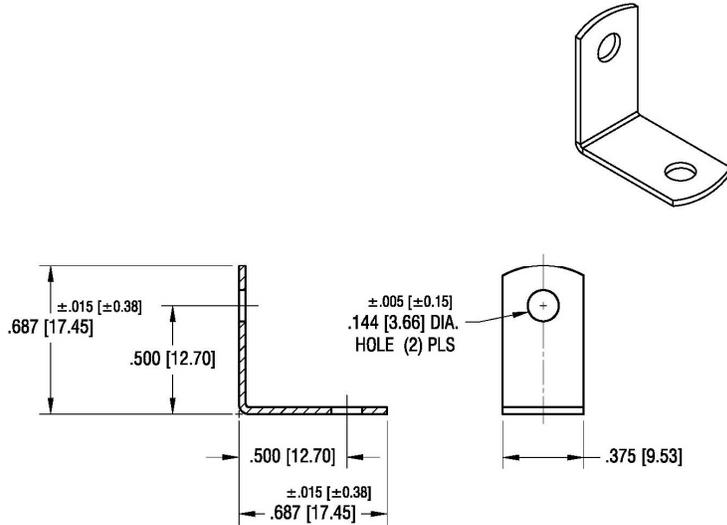
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Quick Start Guide

Assembly Steps

2. Assembly step continued

Mounting Tab Dimensions



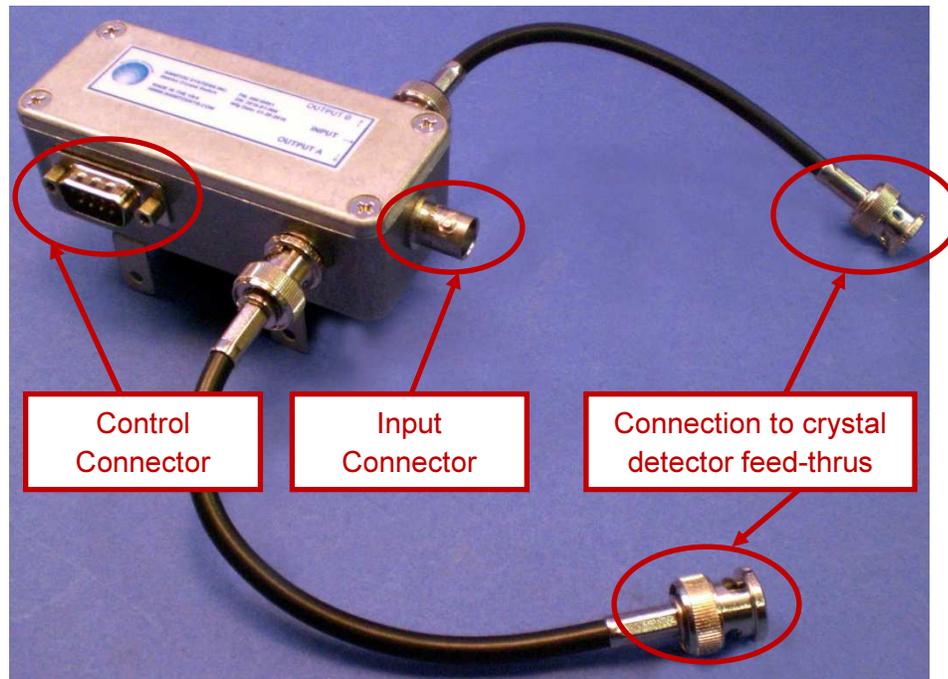
Enclosure Dimensions

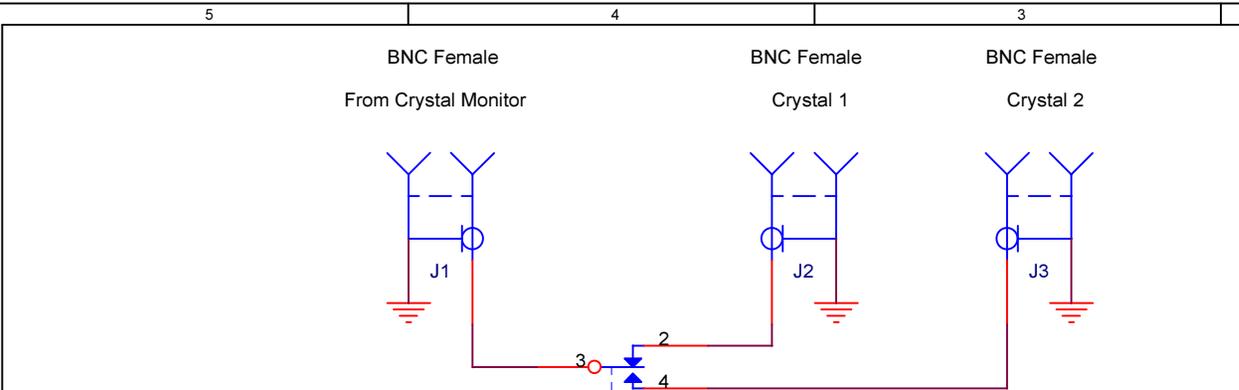
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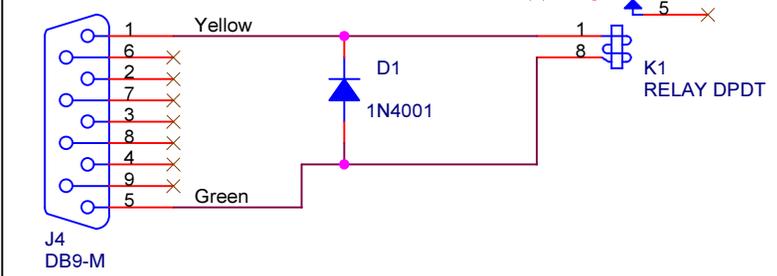
Assembly Steps

3. Connect the two coax cables to the crystal sensors and corresponding switch outputs. Connect the input cable to the deposition controller. Wire the mating DB-9 connector and connect it to the deposition controller. Refer to the schematic on the next page as well as the deposition controller recommendations.

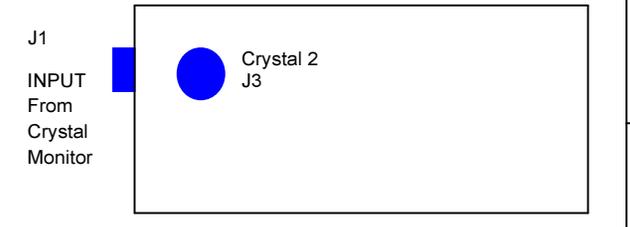




Control Input - connect to the crystal monitor / controller.



Rev	Description	Date
0	Original release	01/20/16



Operation Information

This unit requires 24VDC to power the relay.
 Apply the negative polarity to pin 5
 Apply the positive polarity to pins 1 to energize the relay.

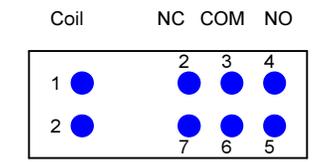
To operate Crystal 1 apply NO voltage
 To operate Crystal 2 apply voltage at pin 1

Specifications:
 Operating Frequency = DC > 6MHz
 Insertion Loss = <1dB
 DC control current = 17mA maximum @ 24V

Refer to the Matrixx Switch Module Owner's Manual for additional information.



D1 > 1N4002
 K1 > DPDT relay - Rated 17mA @ 24V



Bottom view - pinout of relay



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Title Deposition Crystal Switch- 2 output. BHC-F in to BNC-F out		
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Please consult the factory with any questions.

Click on the RF Witch Doctor for help



[Ask the RF Witch Doctor](#)