



# Signal Isolation Unit

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## User Manual

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### Signal Isolation Unit

The Signal Isolation Unit is an accessory item that allows EMG measurement devices to safely interface or connect to any A/C wall-powered system and a patient device, e.g. TeleMyo 2400T (G1 or G2). The Signal Isolation Unit is especially useful when the analog signals from wall-powered systems, e.g. isokinetic systems or force plates, need to be synchronized with the EMG signals.

### Signal Isolation Unit Setup

#### Step #1 - Unpack all items and check inventory




Signal Isolation Unit  
**(Battery Powered – green panels)**  
Part # 235A




Signal Isolation Unit Battery Charger  
18VDC, 2.5 Amps, Part # 235C

OR



Signal Isolation Unit  
**(Wall Powered – yellow panels)**  
Part # 235A



Signal Isolation Unit Power Supply  
12VDC, 1.5 Amps, Part # 235\_

Items included with both the Battery Powered and Wall Powered Signal Isolation Unit



Output Cable  
(DB15M to Binder x 3)  
Part #235D



Isolated Biodex Input Cable  
(DB15M to DB15F)  
Part #235F



Power Cord  
(Country specific)  
Part # CBL9

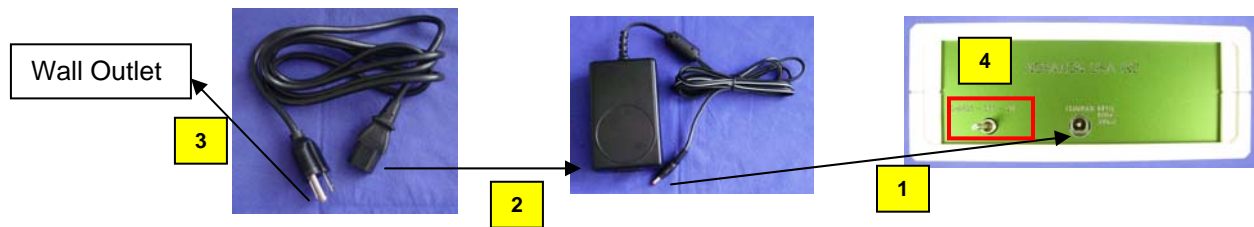
Optional Cables:  
Part #235G: Isolated BNC Input Cable (BNC x 3 to DB15F)  
Part #235H: Isolated Humac Cybex-Norm Input Cable

**Step #2: Charge the Signal Isolation Unit internal battery (Battery Powered units only)**

You may need to charge the Signal Isolation Unit internal battery before using the system. To determine if you need to charge the battery prior to use, set the toggle switch to “charge”, which is located on the back of the Signal Isolation Unit. If the unit is not fully charged, the “Charge” light on the front of the unit will illuminate. If you do not need the unit to be fully charged, set the toggle switch to “On” and check if the “Lo Bat” light on the front of the unit is illuminated.

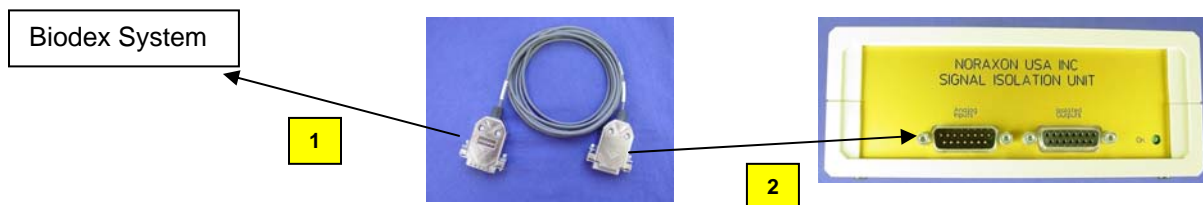
**To charge the internal battery:**

- 1) Insert the Battery Charger into the “Charger Input” on the back of the Signal Isolation Unit.
- 2) Insert the Power Cord into the Battery Charger
- 3) Plug the power cord into the wall outlet
- 4) Set the toggle switch to “Charge”

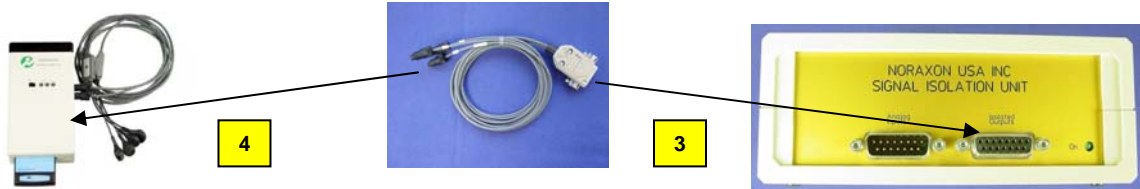
**Step #3: Install the Signal Isolation Unit**

**Note:** The instructions below are for the Standard Input Cable which connects to the Biodex 3. These instructions are similar for other third-party systems and input cables.

- 1) Plug the DB15M connector on the Isolated Input Cable into your Biodex System.
- 2) Plug the DB15F connector on the Isolated Input Cable into the “Analog Inputs” port on the Signal Isolation Unit.

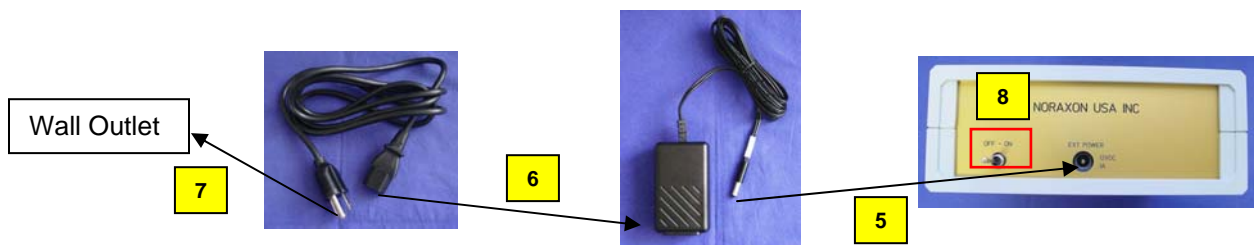


- 3) Plug the DB15F connector on the Output Cable into the "Isolated Outputs" port on the Signal Isolation Unit.
- 4) Plug the Binder connectors on the Output Cable into the TeleMyo 2400 transmitter into 3 available analog input channels.



**For Wall Powered Unit:**

- 5) Insert the round connector on the Power Supply into the "Ext Power" receptacle on the back of the Signal Isolation Unit.
- 6) Plug the Power Cord into the Signal Isolation Unit Power Supply
- 7) Plug the Power Cord into a wall outlet.
- 8) Turn on the Signal Isolation Unit using the Toggle Switch on the back of the unit.



**For Battery Powered unit:**

- 5) Toggle the power switch to “On”
- 6) Verify that the “On” light is illuminated.
- 7) Verify that the “Lo Bat” light is off.

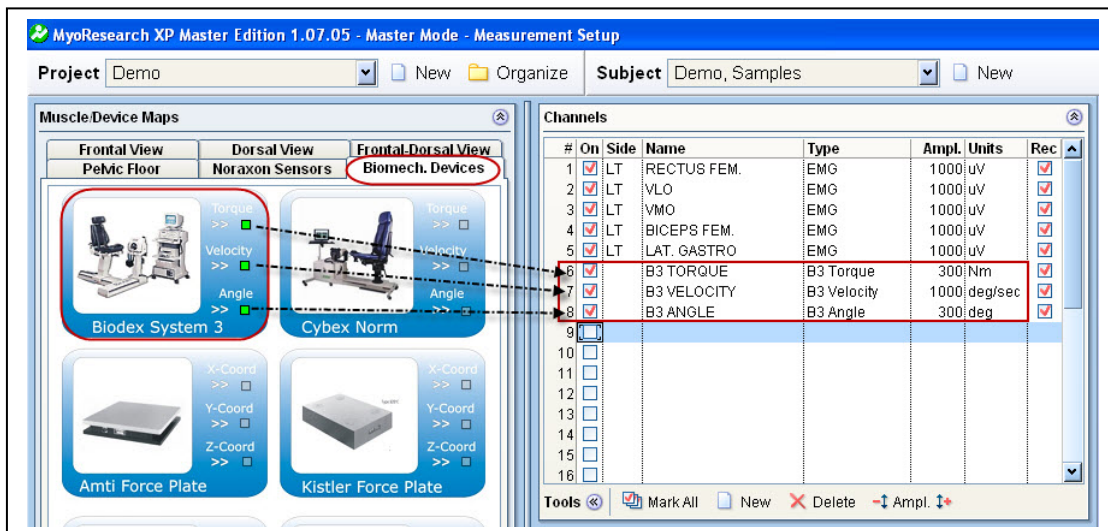


**Step #4: Turn on the Systems**

- 1) Turn on the Biodex system
- 2) Verify that the PCMCIA card or TeleMyo 2400 receiver is installed and ready to communicate with the transmitter.
- 3) Turn on the TeleMyo 2400T (G1 or G2) transmitter

**Step #5: Set up MyoResearch XP channel configuration**

- 1) Open MyoResearch XP and navigate to the Measurement Setup menu (Device Maps)
- 2) Select the “Biomechanical Sensors” device map.
- 3) Locate the Biodex device.
- 4) Click and drag the Biodex variables (T, V, P) to the channel that correlates with the channel on the TeleMyo 2400T
- 5) Now you are ready to begin a measurement in MRXP using the TM2400T and the Biodex system.



## Maintenance

The Signal Isolation Unit is designed to be maintenance free.

Care should be exercised not to place or stack objects (especially liquids) on top of the Signal Isolation Unit.

## Cleaning

The instrument case and cables can be wiped down with a damp cloth using a mild soap or detergent and water. Before cleaning any portion of the system, the instrument should be unplugged from the wall power outlet.

## Technical Specifications

### *Power Requirements (Battery Powered Unit)*

- Battery charger: 18 V (2.5 amps)
- Input: 100-250 VAC 50/60Hz (1.2 amps)
- Operation up to 8 hours with full battery charge

### *Power Requirements (Wall Powered Unit)*

- Power Supply: 12 VDC 1.5 amps
- Input: 100-240 VAC 50-60 Hz

### *Input Channels*

- 15 pin male D-sub connector
- Baseline noise < 1 m Volts RMS
- Input impedance 1 MegOhm
- CMR > 80 dB
- Range +/- 10 Volts
- Isolation > 2500 Volts

### *Analog Outputs*

- 15 pin female D-sub connector
- All output channels gain of 0.5 or 1.0 (jumper selectable)
- All outputs +/- 4.5 Volts max

### *Physical*

- Width: 5.5" (13.97 cm)
- Depth: 7.75" (19.685 cm)
- Height: 2.25" (5.715 cm)
- Weight: 2 lbs (0.91 kg) – Battery Powered Unit
- Weight: 1lb 3.6oz (0.56 kg) – Wall Powered Unit