

# Marquette/Sensormedics Max-1 Tango+ Interface Notes

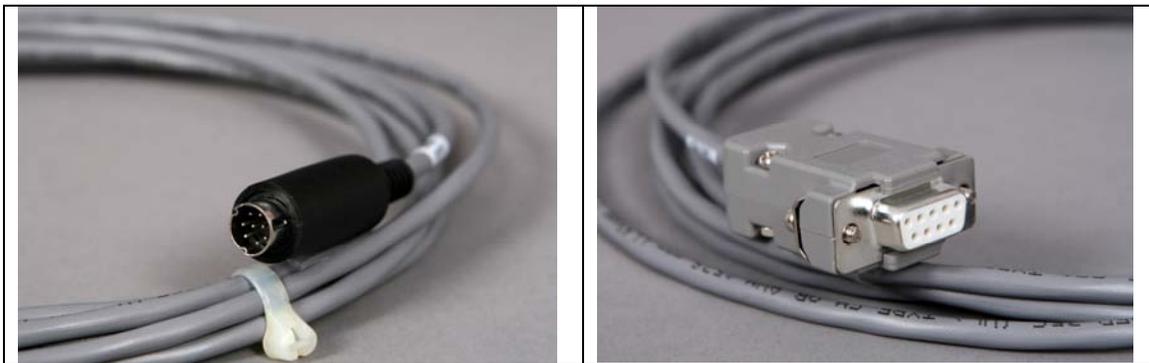
To setup Tango+ with the Max-1 stress system, simply follow the directions below.

## 1. Verify Correct RS-232 and ECG Trigger Cables

- **RS-232 Cable** – used to communicate with the Max-1. This cable enables the Max-1 to prompt Tango+ when it needs a BP measurement, and allows the Tango+ BP reading to be transferred to the Max-1 display and reports.
  - SunTech Part Number = 91-0010-00
  - Connection Ends:

**Max-1 Connection**  
**8 pin mini DIN male**

**Tango+ Connection**  
**9 pin female**



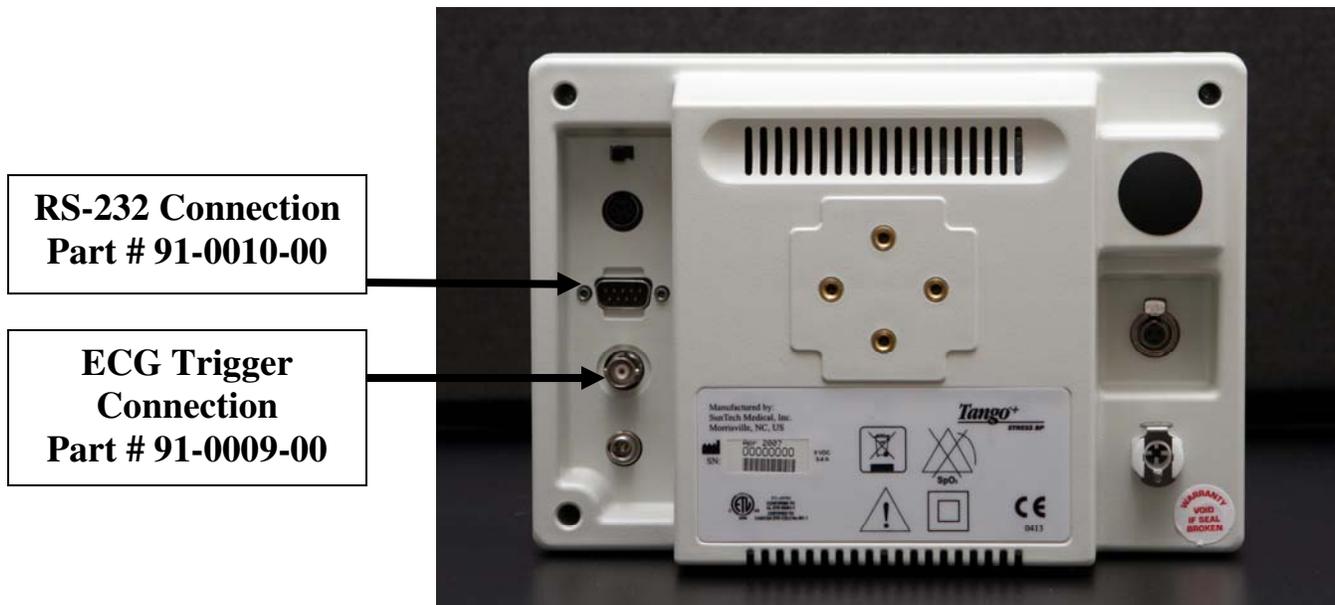
- **ECG Trigger Cable** – provides the ECG signal from the Max-1 to the Tango+.
  - SunTech Part Number = 91-0009-00
  - Connection Ends:

**Max-1 Connection**  
**9 pin male**

**Tango+ Connection**  
**BNC male**



## Tango+ Monitor



### 2. Connect the RS-232 Cable

From: the RS-232 connection on the rear panel of the Tango+.

To: the COM 1 port on the back of the monitor of the MAX-1 CRT (not on the base unit).

### 3. Connect the ECG Trigger Cable

From: the BNC External ECG connection on the rear panel of the Tango+.

To: the ANA/TTL port on the back of the MAX-1.\*

\*Note: If occupied, use the splitter (SunTech Part # 91-0053-00)

### 4. Tango+ Monitor Setup

- When the operating screen is displayed, press the **SELECT** button 2 times. This will bring up the **MAIN MENU** screen.
- Using the UP or DOWN arrows, highlight **MONITOR SET UP** and press the **SELECT** button.
- Using the UP or DOWN arrows, highlight **STRESS SYSTEM** and press the **SELECT** button.
- Using the UP or DOWN arrows, scroll through the list until **Max-1** is highlighted and press the **SELECT** button to confirm the choice.
- Using the UP or DOWN arrows, select **EXIT** twice to return to the operating screen.

### 5. Max-1 System Setup

- Turn the power on to the Max-1.
- At the Start Up screen, rotate the trim knob until the cursor is over the **MAIN MENU** and then press on the knob to bring up the Main Menu.
- Turn the trim knob to **SYSTEM SETUP**, and press it to select System Setup.
- Use the trim knob to select **INPUTS/OUTPUTS**. A list of Inputs/Outputs will be listed on the screen.
- Use the trim knob to select **TTL OUTPUT**.

- f. Use the trim knob to select **QRS DETECT**.
- g. Turn the knob to **WIDTH** and press it to select it. Now turn the knob until **40 msec** is displayed. If you cannot select 40 ms, simply type in 40 on the keyboard, then press the knob.
- h. Turn the Knob to **DELAY**, press it, and set the delay to **0 ms**. Press the knob again to set it.
- i. Go to **BP Device** and press the trim knob. Select **MEI 1950** and press the trim knob. If Suntech is available, choose **Suntech** instead of MEI 1950.
- j. Press the Escape Key (ESC) to leave this screen. The ESC key is located in the bottom left hand corner of the keyboard. Note: Do not use the return to exit this screen.
- k. Choose **SAVE SETUP**, then choose **SYSTEM**.
- l. Immediately go back and verify that your settings are still saved. If they are not saved, you will have to reset them and then exit this screen via the ESC key.
- m. Return to the Main Menu and select "Exercise".

## FAQs for Tango+

### **Q. The Tango+ displays a status message. What does it mean and what do I do?**

- A.** See the Quick Set-Up guide (that is attached to your Tango+) or the Troubleshooting section in your User's Guide for details on the Status Message and solution.

### **Q. The Tango+ monitor returns results of 0/0 after blood pressure measurements. What do I need to do to get a BP reading?**

- A.** There are certain noisy conditions where the Tango+ cannot accurately measure BP. When the Tango+ encounters these situations, it returns a reading of 0/0. Placement of the microphone attached to the cuff is critical for reliable operation of the Tango+. Follow the instructions in the **Cuff Tutorial** (located on the SunTech Medical website under Products → Tango+) for correct microphone placement. Follow steps 1 and 2 in Conducting the Stress Test in the User's Guide to provide the best conditions to obtain a measurement.

### **Q. Can I use a heart rate or blood pressure simulator to test whether the Tango+ is working correctly with my stress system?**

- A.** You cannot use a heart rate or blood pressure simulator to test whether the Tango+ is working with your stress system. The Tango+ monitor requires that the ECG signal and the Korotkoff sounds, collected by the microphone in the cuff, originate from the same source, meaning the patient.

### **Q. I cannot clearly see the Tango+ display. How do I fix this?**

- A.** If you cannot clearly read Tango+, you can adjust the contrast of the display by following these steps:
  1. When the operating screen is displayed, press the **SELECT** button 2 times. This will bring up the **MAIN MENU** screen.
  2. Using the UP or DOWN arrows, highlight **MONITOR SET UP** and press the **SELECT** button.
  3. Using the UP or DOWN arrows, highlight **CONTRAST** and press the **SELECT** button.

4. Using the UP or DOWN arrows, modify the contrast of the screen. When you are finished, and press the **SELECT** button to confirm the choice.
5. Using the UP or DOWN arrows, select **EXIT** twice to return to the operating screen.

**Q. My Tango+ displays a message, “Please VERIFY CALIBRATION” or “Equipment Maintenance and Calibration Required.” What do I do?**

**A. Verification of Pressure Calibration**

**Equipment Required:**

1. Calibrated electronic manometer or equivalent.
2. 500mL volume or the Orbit-K Adult Plus cuff wrapped around something that will not break or crush (no glass).
3. Hand Inflation Bulb with bleed valve.
4. Tubing, Tee pieces, and miscellaneous connectors or you can order the T-Tube Kit (SunTech Part # 98-0030-00).

**Procedure:**

5. When the operating screen is displayed, press the **SELECT** button 2 times. This will bring up the **MAIN MENU** screen.
6. Using the UP or DOWN arrows, highlight **MONITOR SET UP** and press the **SELECT** button.
7. Using the UP or DOWN arrows, highlight **VERIFY CALIBRATION** and press the **SELECT** button. The monitor will close its bleed valves and will display on its screen the pressure applied to the patient hose connector.
8. Verify the Tango+ calibration by manually inflating and checking the manometer against the pressure reading on the Tango+ display.
9. Once the calibration has been completed, use the UP or DOWN arrows to select **EXIT** twice and return to the operating screen.