



Finish Line Timer
Quickstart Instructions

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We thank you for purchasing the eTekGadget SmartLine Finish Line Timer System. Please review these instructions and FAQ section on our website before calling. The best way to get a quick answer is to send us an email with your question. Set up your timer and software in advance to familiarize yourself with them.

Setup SmartLine Finish Line Timer hardware

Install the SmartLine Pinewood Derby Finish Line Timer using the following steps. Additional instructions are found in the SmartLine Installation Manual if you are drilling your own holes and in the Space Derby Manual for setup on that track.

1. **Set up the displays:** The double-sided tape on the Plexiglas panel gives the panel stability. If you are planning to detach the panel from the frame for uses such as the Highboy frame or placing into the case, you may not want to peel the paper off the double-sided tape. Make sure to line up the screw holes carefully if you have peeled the paper off the double-sided tape. Attach the panel on the **opposite side from the SmartLine label** with the displays facing the same direction as the label. Attach the displays to the frame from the back as shown in step 8.
2. **Set up the mounting bar:** Anchor the SmartLine Finish Line Timer to the track using the method that is appropriate for the track you have.
 - Method 1: The Piantedosi type sensor bar has holes positioned where the sensors are installed. We supply a wooden sensor bar with your timer that is mounted onto the bottom of the timer feet. The sensors are pre-mounted in the sensor bar that we supply. Piantedosi supplied an aluminum bar in the past if you requested it; however it may not be the correct size for our timer. We recommend that you use the wooden under-bar we supply. If you need to remove the sensors from the bar we supply, be sure to push them out from the topside with the back of a ¼ or 3/16-inch drill bit or screwdriver. Be careful not to push on the center black sensor. They are glass and fragile. Do not pull the sensors out from the back because it may damage the wires or dislodge the metal centering ring. See Appendix C for details.
 - Method 2: The BestTrack type sensor bar is an aluminum bar with foam pads installed to hold the sensors in place. It is mounted onto the bottom of the timer when shipped. The sensors are pre-mounted on the sensor bar. We supply nuts and bolts to secure the timer onto the BestTrack track. See Appendix A for details.
 - Method 3: See Appendix B “Special Note For Custom Tracks” if you have a custom size track.

3. **Plug the display connector into the outside leg of the timer.**

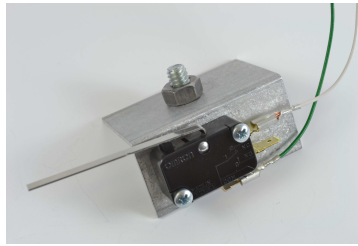
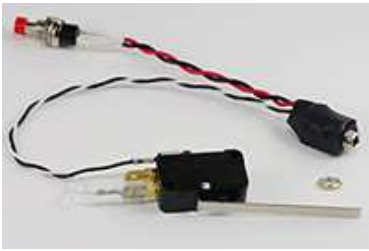
IMPORTANT: Be careful not to jam the connector in but you do need to press it in **FIRMLY**. It is a keyed connector that fits in one direction. Match up the RED marks on the plug and connector.

4. **Plug the 9-pin RS-232 interface cable from the SmartLine timer into any COM port on your PC.** Since most computers no longer have the Serial COM port, we offer a USB to Serial converter as an additional option. We have verified that the converter works with Windows 7. Follow the instructions with the USB Converter to install drivers. When the cable is plugged in you should get a message that new hardware was found. Follow the directions for your device. We did not integrate the USB into the timer because of the cable length limitations of USB. The signal degrades on the USB cable over 15 feet. This gives you the option to add a 25 or 50 foot serial extension cable so you can have the computer close to the top of the track.

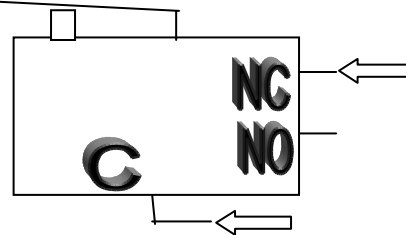
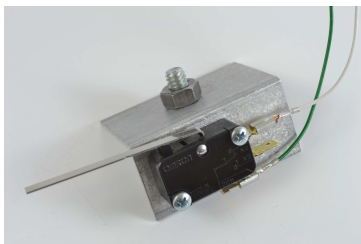


USB TO SERIAL CONVERTER

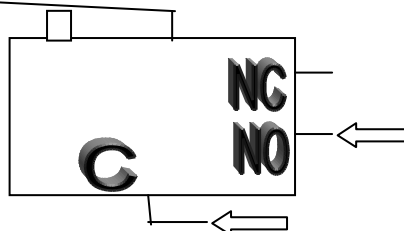
5. **Set up the Reset/Start gate Switches:** You need the Start Switch if you use the time to determine your race. If you only need the placement you do not need it. **Putting the wires on the correct terminals is very important.** If it is not correct the timer will not time the race properly. When the timer is timing there will be dashes on the displays so there should be dashes on the displays while the cars are racing down the track. The displays also indicate that the start gate is still open after the timer resets by displaying a dot on each display. They will be blank when everything is set for a new race.



WIRING INSTRUCTIONS: The supplied sensor switch has three terminals marked C(Common), NC(Normally Closed) and NO(Normally Open). The preferred method is to have the switch pressed before the race and un-pressed when the race starts. This method requires the use of the C and NC contacts. **The timer is shipped with the green (or black) wire on C and the white wire on NC.**



If you want the switch to be un-pressed before the race and pressed when the race starts, then the push-on terminal needs to be on the NO contact as indicated below.



6. **Peel the protective paper off the face of the displays.** We leave the paper on the front of the displays to protect them in shipping. You can protect them after you take the paper off by putting them in a case or wrapping them in the bubble wrap that they came in.
7. **Mount your display panel as shown in the figures on the next page.**
8. **Plug it in!** It is vital that you use the correct AC adapter. We supply the adapter that you need. We label the power supply with a SmartLine label. **Our timer uses a 12V Center Positive adapter.** Anything over 500mA for a 4 lane or less and 800mA for a 6 lane or more. **We use a 1A supply.** Some other equipment such as the remote start gate use 24 V power supply and that will do irreparable damage to the timer.

The displays need to be just over the bar as shown here. The metal bar on the back adds stability and protection for the glass panel.



Do NOT install the display panel as shown below. This is incorrect. It is unstable mounted this way.



The SmartLine Utility Program

We supply the SmartLine Utility Program (LINESETUP4.EXE) on the SmartLine Finish Line Timer CD to establish the initial communication and for easily updating any settings that you want to change.

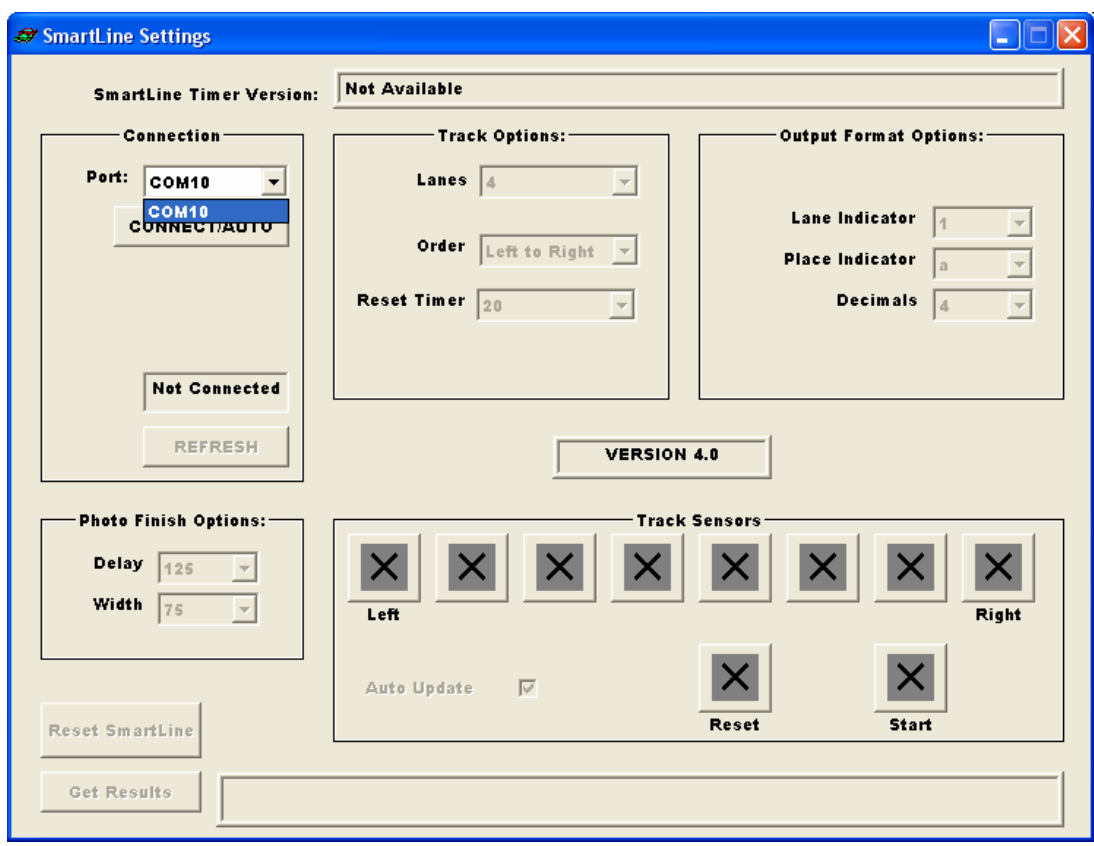
Install the driver for the USB to serial converter. Details are in step 4 above. Plug the SmartLine Timer serial plug into the USB to serial converter or directly into the computer if it has a serial port.

Use the LINESETUP4 program directly from the CD or copy it to any directory of your choice. You only need the one file, LINESETUP4.EXE, to run this program. Make sure that you do **NOT** have any other programs running that use the same COM port, such as a race manager program. If you are using Windows 7 or greater, you may need to right-click on the program name (LINESETUP4.EXE) and set the compatibility mode for the program to Windows XP (Service Pack 3).

To start the SmartLine Setup Program, double-click on the LINESETUP4.EXE program name. You will see the following screen:

The image shows the 'SmartLine Settings' window. At the top, the title bar says 'SmartLine Settings'. Below it, a text box displays 'SmartLine Timer Version: Not Available'. The main area is divided into several sections: 'Connection' with a 'Port' dropdown set to 'COM10', a 'CONNECT/AUTO' button, a 'Not Connected' status indicator, and a 'REFRESH' button; 'Track Options' with dropdowns for 'Lanes', 'Order', and 'Reset Timer'; 'Output Format Options' with dropdowns for 'Lane Indicator', 'Place Indicator', and 'Decimals'; 'Photo Finish Options' with dropdowns for 'Delay' and 'Width'; and 'Track Sensors' which includes a row of eight sensor status boxes (each with an 'X'), 'Left' and 'Right' labels, an 'Auto Update' checkbox (checked), and 'Reset' and 'Start' buttons. At the bottom left are 'Reset SmartLine' and 'Get Results' buttons, and at the bottom center is a 'VERSION 4.0' label.

Select the COM port you will be using for communication in the Connection Port dropdown box. Any COM ports that are active on your computer will be shown in the dropdown list.



You should know the COM number assignment after installation of the driver. If there are more than one listed, you can try selecting them until the timer responds. You may also determine what the COM number is by looking at the “ports” section of the “Device Manager”. The Device manager is found in the “Control Panel” under the “System” icon.

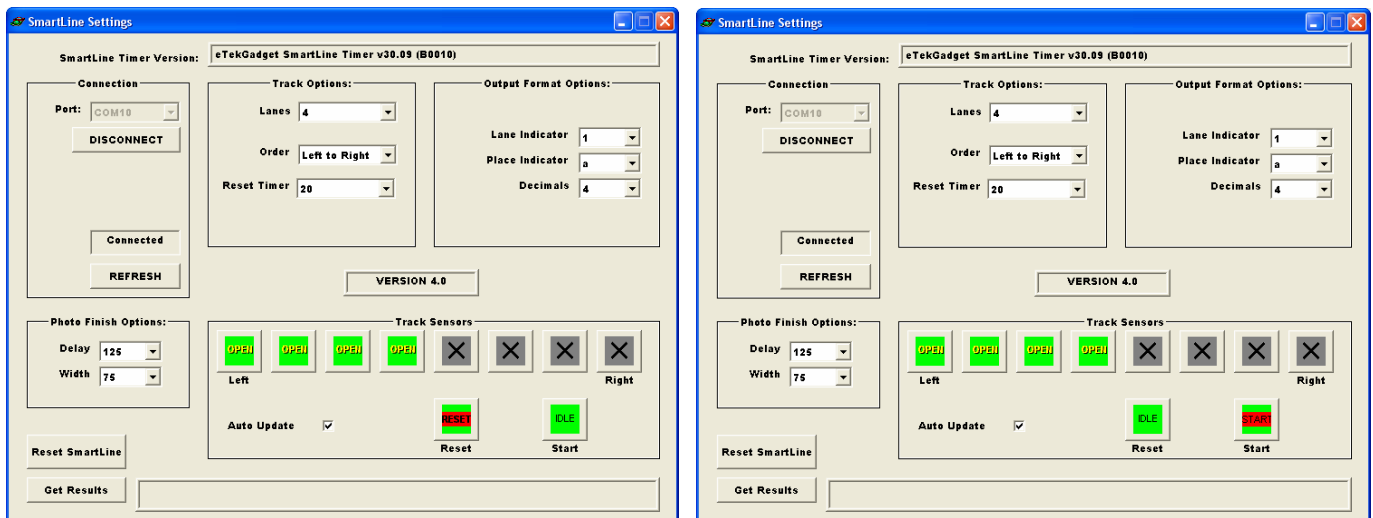
Click the “CONNECT/AUTO” button. The timer will respond with the SmartLine Timer Version text as shown in the top of the window. The “CONNECT/AUTO” button changes to “DISCONNECT”.

The image shows the 'SmartLine Settings' window. At the top, it displays 'SmartLine Timer Version: eTekGadget SmartLine Timer v30.09 (B0010)'. The window is divided into several sections:

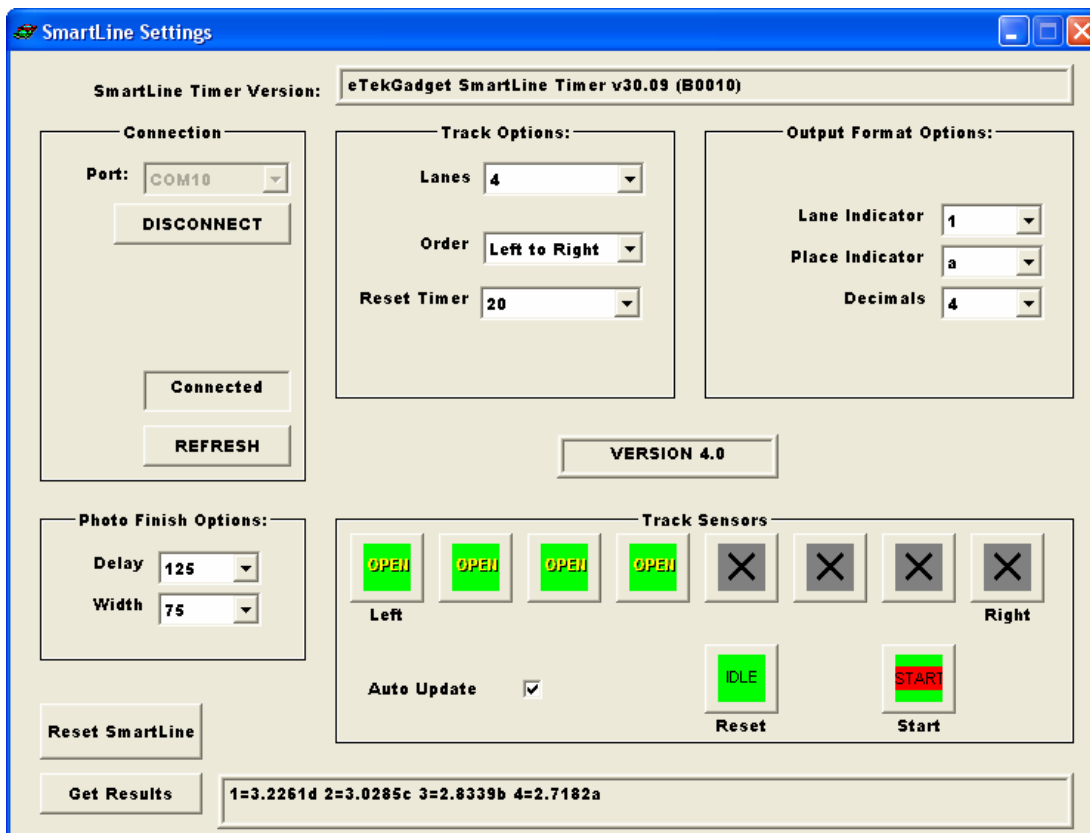
- Connection:** Includes a 'Port' dropdown set to 'COM10', a 'DISCONNECT' button, a 'Connected' status indicator, and a 'REFRESH' button.
- Track Options:** Includes 'Lanes' (4), 'Order' (Left to Right), and 'Reset Timer' (20).
- Output Format Options:** Includes 'Lane Indicator' (1), 'Place Indicator' (a), and 'Decimals' (4).
- Photo Finish Options:** Includes 'Delay' (125) and 'Width' (75).
- Track Sensors:** A row of eight indicators. The first four are green and labeled 'OPEN'. The next four are grey with an 'X'. Below this row, there is an 'Auto Update' checkbox (checked), and two larger indicators: 'IDLE' (green) and 'START' (red with a green bar).
- Buttons:** 'Reset SmartLine' and 'Get Results' are located at the bottom left.
- Version:** A 'VERSION 4.0' label is centered in the middle of the window.

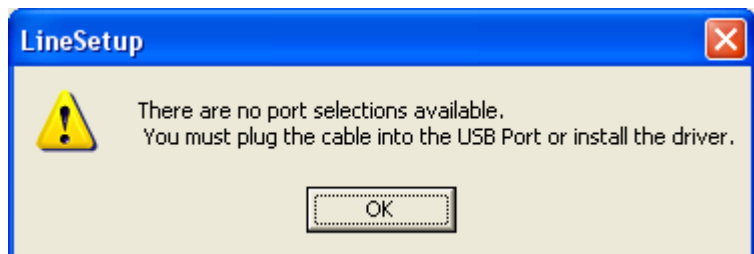
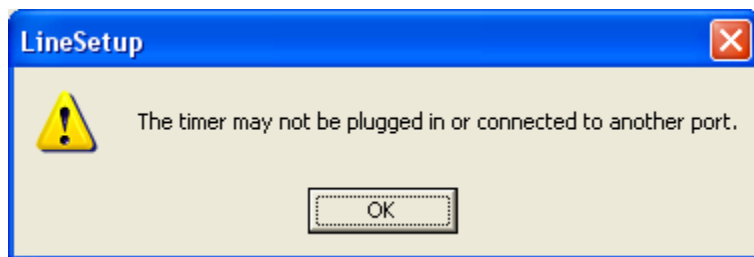
The Track Sensors area will show the state of the sensors and switches. The Auto Update checkbox will be checked to obtain continuous readings of the sensors and switches. This is the display as it appears when there are 4 lanes and communication has been established successfully.

When you press the reset button, you will see a red bar in the Reset indicator. The Start switch will also show the red bar, but the polarity of the switch will dictate when the indicator is red. The timer comes with the white wire on the farthest terminal from the ground (black or green) wire. In this case the red indicator appears when the switch is not depressed.



To test the timers operation, press the reset button. If there are dots shown on the displays, the timer thinks that the start gate is still open. If the start gate is closed but the timer still shows dots, the polarity of the switch is not correct or the switch is not closed. Please refer to the switch diagrams in step 5 above. Make sure the green or black ground wire is on the terminal opposite the switch lever. Release the start gate. The displays should show dashes on the displays. This means the timer is timing the race and the cars should be racing down the track. In testing you can simulate this without the track by manually releasing the switch and waving a hand under the sensors to trigger the timer. Press the 'Get Results' button to see the result string from the timer at the bottom of the window. If you see times of 1.999, the timer reset before you pressed the button.





The LineSetup program indicates if the power is not plugged in to the timer or the USB to serial converter is not available or installed correctly.

If the display on the timer shows, dd when the power is applied your timer is in DTX mode. You may have it set in this mode for use with the DerbyMaster program. The LineSetup program will not work properly in this mode. If your timer is in the DTX mode and you wish to reset it into the SmartLine native mode, hold the reset button down while you plug the timer in. The timer will show an SL on the displays when it is in SmartLine native mode. Setting the timer into DTX mode requires a special set of commands. If you have any questions or would like to use this mode, please contact us.

Setup the SmartLine Timer for use with various race management software packages.

GrandPrix Race Manager (Newer than Version 5.0) –

Select the SmartLine Timer in the GrandPrix Race Manager's Hardware Setup Options screen. Select the COM port that will be used.

You may test the communications at this point by pressing the Start Test button. The GrandPrix Race Manager will send the appropriate commands to the SmartLine Timer to get the readings from the next race. You may trigger the sensors, simulating a race, and the results will be displayed. You may also send individual commands to the timer.

When you select the SmartLine Timer in the Hardware Setup screen, a new tab will appear for setting the Photo Finish values. You may set the photo finish delay times at any time during the race.

DerbyMaster (Newer than version 8.0) –

Select the SmartLine Timer in the Hardware Setup screen.

DerbyMaster (any version before version 8.0) and GrandPrix Version 4.0 or less –

You will need to use a program such as Terminal, HyperTerminal or TeraTerm to change the communication settings and baud rate if you have one of these race management packages. We will assist you in setting the communication mode. Call 845-229-5189 or email nfritz@etekgadget.com. You can find links to the free programs, Terminal and TeraTerm, on the links page on our website.

We suggest you upgrade to a newer version for better functionality and ease of connecting.

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Appendix A: Special Note For BestTrack



This is the mounting bar for BestTrack tracks.

1. Remove the mounting bar from the timer. Attach the mounting bar to the track by sliding the head of the hex head bolts into the channel on the bottom of the track.
2. Position these bolts next to the middle hole in the track and set the sensors making sure the sensors are facing straight up.
3. Fasten down the bar to the track by tightening the nuts on the bolts that were slid into the channel. **Important: Make sure the wires are not pinched by the track.** You may add an extra nut as a spacer to make sure the wires are not crushed between the track and the bar.
4. Reconnect the timer to the bar either before installing the displays or after. However, be **careful** with the display panel. It is **fragile** and should not be used to prop up the track. Follow the quick start instructions to continue to install the panel and connect the timer. The quick start instructions also contain information about connecting the timer to a computer.



Make sure that you attach the bar in the correct direction. The plug should be on the right side when you are looking at the front of the timer. The front of the timer should be facing the starting gate. The SmartLine logo label is on the front of the timer.

Appendix B: Special Note For Custom Tracks

We are supplying a custom mounting bar for your track. To install the mounting bar, remove it from the timer by removing the screws in the feet of the timer and disconnecting the sensors. To attach the mounting bar to the track, drill a hole in your track and use the screws provided to secure the timer. You may need to drill ¼" holes in the center of your lanes for the sensors. Call us if you need any help.

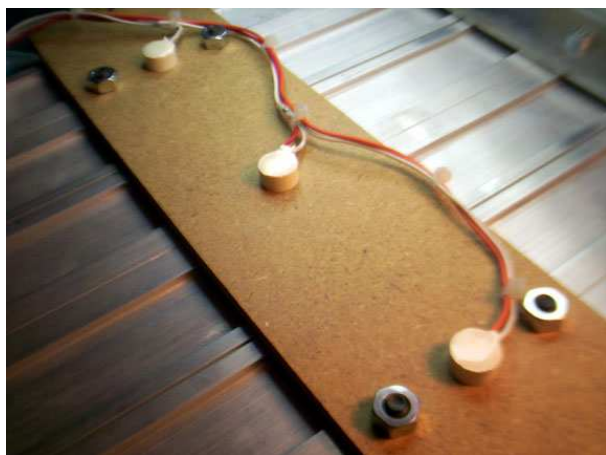
Set the bar with the sensors in place so that they are facing straight up into the hole. You may leave the sensors mounted on the bar or carefully remove them if you wish to place them into the hole in the track. You may use double-sided tape and some foam if you need to hold the sensors up in the hole. Make sure the sensors are not caught so that they are facing sideways. They must face straight up. Fasten the bar to the track with the wood screws provided. You will have to see how it fits on your track.

Reconnect the timer to the bar either before installing the displays or after. However, be careful with the display panel. It is fragile and should not be used to prop up the track. Follow the quick start instructions to continue to install the panel and connect the timer. The quick start instructions also contain information about connecting the timer to a computer.

Make sure that you insert the sensors in the correct direction. The plug should be on the right side when you are looking at the front of the timer. The front of the timer should be facing the starting gate. The SmartLine logo label is on the front of the timer.

Appendix C: Special Note For Piantedosi/Microwizard Freedom and Classic Type Tracks

The Piantedosi Freedom Aluminum track lane pitch is 3 ½" with 1 ¾" on either side. The Piantedosi Classic Wooden track also has a lane pitch of 3 ½", however the dimension from the edge of the track to the first lane is 2 ½" instead of 1 ¾". We supply a wooden sensor bar with your timer for either one of these. The sensors are press-fit mounted in the sensor bar that we supply. In the past Piantedosi supplied an aluminum bar for our timer if you have requested it. This may not be the case now. We supply a donut of double sided tape just in case one of the sensors becomes loose or you are using an aluminum mounting bar. If you do use an aluminum mounting bar, you will not be able to press-fit the sensors into it so you will need to secure them. You may use hot glue, super glue, double sided tape or regular tape. Please be careful not to get anything in the black center that would block the sensor. If you need to remove the sensors from the bar we supplied, it is very important to push them out from the topside with the back of a ¼ or 3/16-inch drill. Do not pull them out from the back or push on the center black part.



Make sure that you insert the sensors in the correct direction. The plug should be on the right side when you are looking at the front of the timer. The front of the timer with the SmartLine label should be facing the starting gate.

Appendix D: Case Arrangements

Your new storage case has been set up for two different arrangements. The first arrangement, as shown below, includes the sensor bar mounted onto the bottom of the timer feet. We have sent it in this initial configuration so that it is easier for you to put together and mount onto your track the first time. You may continue to store the timer in this configuration IF you DO **NOT** stick the Plexiglas panel to the LED bar with the double-sided tape. The display panel has been found to be quite sturdy with the addition of the metal bar on the back. You may choose to use the double-sided tape for additional stability.

BestTrack or Custom Style mounts shown here.



Case Arrangements

Use the second storage arrangement as shown below if the Plexiglas is stuck to the frame. Remove the screws holding the frame legs to the Plexiglas and store them in the slot where the mounting bar was. You may either leave the mounting bar connected to the track or lay it flat over the timer legs. Please make sure that you store all the screws in their respective places so that you have them next year.



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