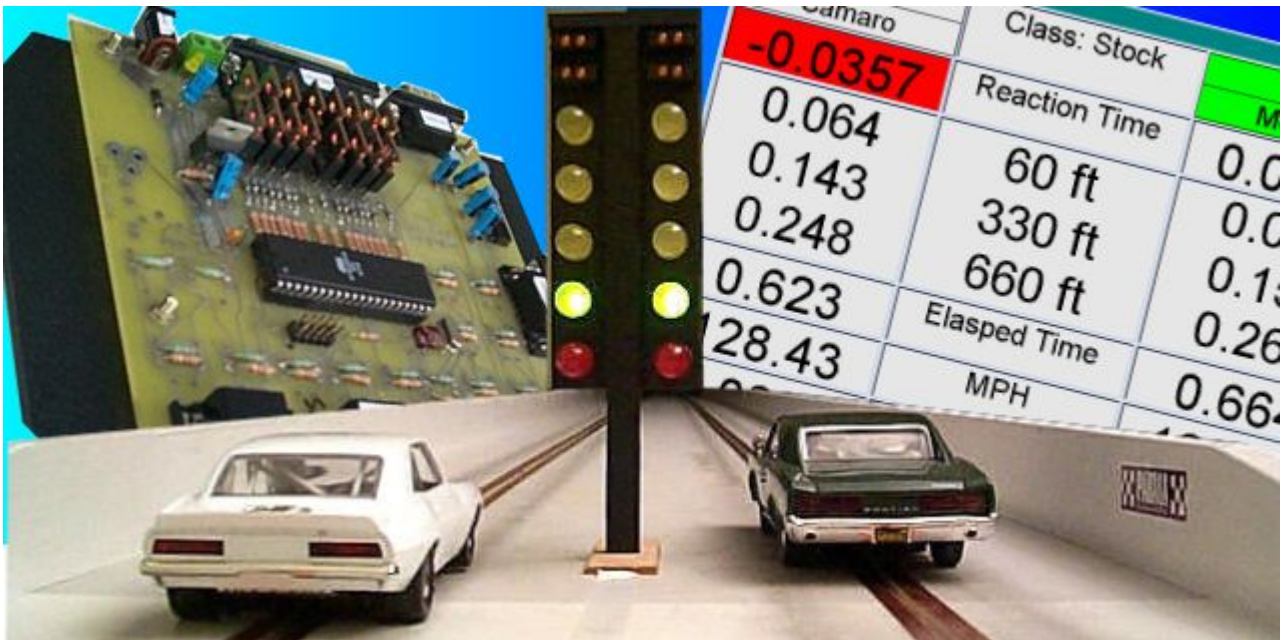




## TrakMate DragPro 3000



Camaro	Class: Stock	M
<b>-0.0357</b>	Reaction Time	0.0
0.064	60 ft	0.0
0.143	330 ft	0.1
0.248	660 ft	0.26
0.623	Elapsed Time	0.66
28.43	MPH	

CONTENTS OF TRAKMATE DRAGPRO TIMING SYSTEM

QTY	DESCRIPTION	FUNCTION
1	CD	DragPro Software
1	Controller Board	
1	Serial cable	Connects to PC
1	60' sensor cable –	Speed trap and finish sensors
1	10,30' sensor cable – telephone type	Intermediate sensors
1	8' sensor cable –	Prestage and start sensors
1	8 conductor cable	Connects 16 Tree lights to controller (use two)
1	9vdc adaptor	Powers Controller Board
<b>Optional Slotted Sensor Kit For 1:24 Scale</b>		
12	Red Connectors	For emitter side of Slotted Sensors
120'	22 gauge wire	Wire emitter side of Slotted Sensors
1	15dc Adaptor	Powers Slotted sensors
1	Plug with Resistor and LED	Connects to Slotted sensors

RT	Reaction Time	A perfect reaction time is .000 on a Full tree and .000 on a Pro tree
ET	Elapsed Time	Time from start sensor to finish sensor. It Does not include Reaction Time
DI	Dial In	See Bracket Racing
MPH	Miles Per Hour	Speed through Speed Trap

# TrakMate DragPro 3000 Connector Pin Out And Wire Color

Use network cables for your sensors. A total of Three DB9 9 pin male connector plugs are required for all the sensors. Four sensors per 9-pin connector plug.

Pins 6-9 are GND. The wires with the white stripe will go to GND. Below is a chart with recommended color codes.

## Pre-Stage Stage Cable

Pin#	Color	Lane	Sensor
1	Brown	Left	Prestage
6 – GND	Brown/White		
2	Orange	Right	PreStage
7 – GND	Orange/White		
3	Green	Left	Stage
8 – GND	Green/White		
4	Blue	Right	Stage
9 – GND	Blue/White		
5 - not used			

## Mid Sensors Cable

Pin#	Color	Lane	Sensor
1	Red – short cable	Left	60'
6 – GND	Black	Left	
2	Yellow –short cable	Right	60'
7 – GND	Green	Right	
3	Red – long cable	Left	1/8 MILE
8 – GND	Black	Left	
4	Yellow –long cable	Right	1/8 MILE
9 – GND	Green	Right	
5 – Not Used			

### Speed Trap / Finish Cable

Pin#	Color	Lane	Sensor
1	Brown	Left	Speed
6 – GND	Brown/White		
2	Orange	Right	Speed
7 – GND	Orange/White		
3	Green	Left	Finish
8 – GND	Green/White		
4	Blue	Right	Finish
9 – GND	Blue/White		
5 - not used			

### 1000' Sensor Cable (Optional)

Pin#	Color	Lane	Sensor
1	Red	Left	1000'
6 –GND	Black	Left	
2	Yellow	Right	1000'
7 -GND	Green	Right	

### Tree Lights

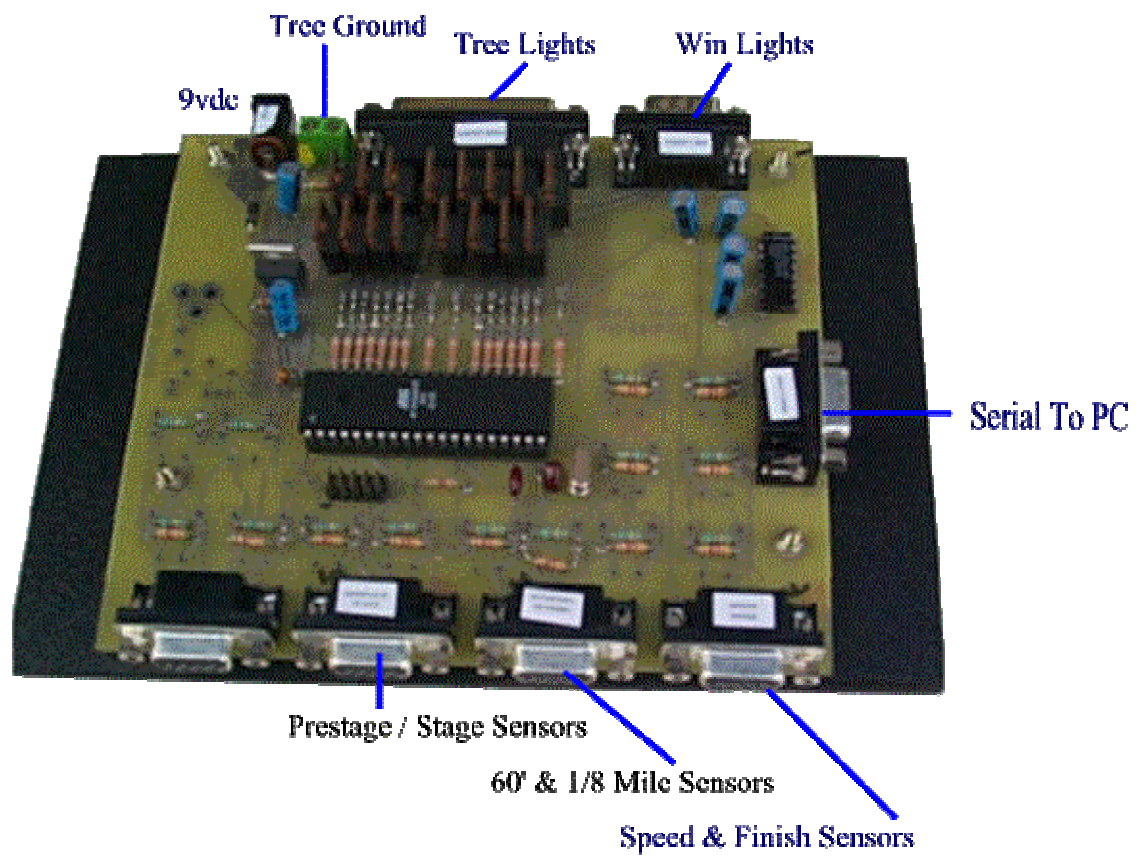
Tree lights cable connects to the DB25 (25 pin connector) on board.

The common for all the lights will connect to the **POSITIVE** of the power supply. (Yes positive NOT negative)

The negative of the power supply will connect to the terminal screws near the 25-pin connector on the DragPro board. Use either screw or both.

Tree Lights	DB25 male PIN# Left side lights	DB25 male PIN# Right side lights	
PRESTAGE	1	8	
STAGE	2	9	
TOP YELLOW	3	10	
MID YELLOW	4	11	
BOT YELLOW	5	12	
GREEN	6	13	
RED	7	14	
GND –	Connect ground from Tree Power Supply to pins 18-25 or use the two green screws near the 25pin tree connector		
One side of the entire tree lights will be tied together to create a common. Connect this to the <b>Positive</b> of the trees power supply.			

Win Lights	DB9 PIN# LEFT	DB9 PIN# RIGHT	
WIN	2	1	
GND	6-9	6-9	Or gnd screws
The common for all the win lights connects to the <b>Positive</b> of the trees power supply.			



## **Viewing Logged Races**

When viewing logged races you have an option to sort on RT, ET, etc. Double click on the column heading you wish to sort.

## **What is Bracket Racing?**

### **Why?**

Bracket racing is a form of drag racing whereby vehicles of different performance levels can compete on a potentially even basis. The anticipated elapsed times are compared for each vehicle, with the slower car receiving a head start equal to the difference of the two. With this system, virtually any two vehicles can be paired in a competitive drag race.

### **How it works**

If car A chooses a dial of 16.00 seconds and car B chooses a dial of 14.50, car A will get a 1.5-second head start. The win will go to the driver who crosses the finish line first. In TrakMate software simply enter the dial-in for both drivers and the tree will come down staggered giving one lane the appropriate head start. Bracket racing only works with the Full Tree.

### **Disqualifications**

If a driver runs quicker than his or her dial, he or she is said to break out and is disqualified. If both drivers run quicker than their dials, the win goes to the driver who breaks out by the least. A foul start, or red-light, takes precedent over a breakout, so a driver who red-lights is automatically disqualified even if his or her opponent breaks out. If both red-light the driver who red-lighted first loses. TrakMate Drag software takes care of all this and will display appropriate winner

### **Choosing a Dialin**

For example: car "A" has recorded times of 17.78, 17.74, and 17.76, and the driver feels that a "dial-in" of 17.74 is appropriate. Meanwhile, driver "B", has recorded times of 15.27, 15.22, and 15.26 on the same track, and has opted for a dial-in of 15.22. Accordingly, car "A" will get a 2.5 second ( $17.75 - 15.25 = 2.5$ ) head start over car "B" when the Tree counts down to each car's starting green light.

### **Strategy**

Picking a Dialin that is too slow and you are more likely to break out. Pick a Dial-in that is too quick and you will receive less of a head start or your opponent will receive more of a head start. Having a car that runs consistent ETs will help.

## Pro Tree Time for Slot Cars

On a Pro tree all 6 amber lights come on for .4 seconds then the green lights come on. In full scale drag racing drivers will react as soon as they see the ambers come on. Human reaction time takes about .2 seconds, that's the time it takes to respond to a visual. There's another .020 seconds before the light is perceived as on.  $0.2 + .02 = .220$  seconds, that leaves .180 seconds. It will take at least .180 seconds for the car to roll out of the stage beam. The driver never has to worry about Red lighting if he reacts when the amber lights come on. Now for slotcars it's a different story. A slot car will move forward a  $\frac{1}{4}$  " in about .010 seconds from a stand still, this means you will be Red lighting every time if you react as soon as the ambers come on. This is why TrakMate Dragpro software has made the Pro Tree adjustable. It has been requested by customers who race full scale drag racing cars. They believe that it should not be possible or difficult just as it is in full scale drag racing to red light on a Pro Tree if you react on soon as the ambers come on. I recommend adjusting the pro tree to .200 seconds if you're using external tree lights( for on-screen or LED trees you will need to adjust the Pro Tree time to a lower value) you might experience better racing because both cars will be coming off the line within a fraction of a second. It's easy as soon as you see the ambers come on pull the trigger. Changing the Pro Tree time will not effect ET times as ET times do not include reaction time. Some racers prefer a .200 second Pro Tree you just might like it also!!!!

## MPH Accuracy in TrakMate Timing System

12" Trap		
@ MPH		+/-MPH
10		.01
20		.05
30		.13
40		.23
50		.35
60		.54
70		.70
80		.88
90		1.12



## Sensor Positioning in track

Sensors in track...

1	2	3	4	5	6	Shut Down
1	2	3	4	5	6	Shut Down

Ref.	Sensor	Placement	Comments
1	Prestage	.25" before start Stage sensor	IF using U sensors place next to stage sensor
2	Stage		
3	60'	See scale table below	
4	1/8 mile	Halfway between Stage & Finish	
5	Speed	Minimum 12" before finish Or Scale 60' before Finish	Speed traps up to 4' have been used on long tracks for more accuracy
6	Finish	Scale 1/4 or 1/8 mile after start sensor.	You may if you wish set this to anything you like, it will not require any changes to the program

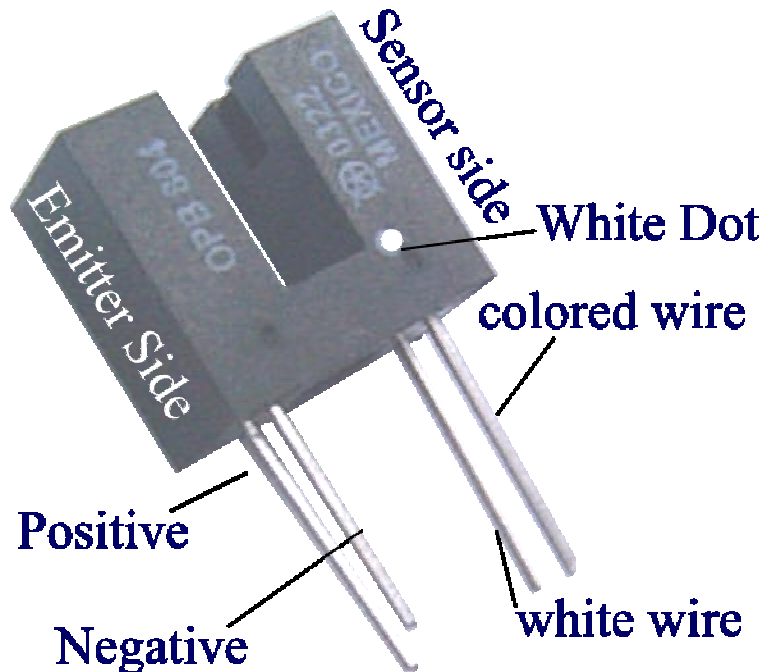
### Scale Table

<i>1 mile = 5280'</i>	<b>HO (1/64)</b>	<b>1/32</b>	<b>1/24</b>	<b>1/10</b>
1/4 mile	20' 7.5"	41' 3"	55'	132'
1000 feet	15' 7.5"	31' 3"	41' 8"	100'
1/8 mile	10' 3.75"	20' 7.5"	27' 6"	66'
60 feet	11.25"	1' 10.5"	2' 6"	6'

If you are making your own sensor cables use UTP – unshielded 4 twisted pair multi-stranded cable commonly used in computer networks. Connect the white (or white stripe) wire to the long lead of the sensor. Connect the colored wire to the short lead of the sensor. One cable will be required for the prestage and start sensors and one cable for the speed trap and finish line sensors. One cable for the intermediate sensors

## TrakMate Slotted Sensors for 1/24 Scale

Slotted/U shaped sensors are used to detect the flag of a slotcar. One side of the sensor is the receiver the other side emits an infrared light and is invisible to the human eye



### Installing optional U shaped Sensors for 1/24 scale

To avoid confusion install all the sensors the same way. Install U shape sensors with writing and white dot towards the start of the track.

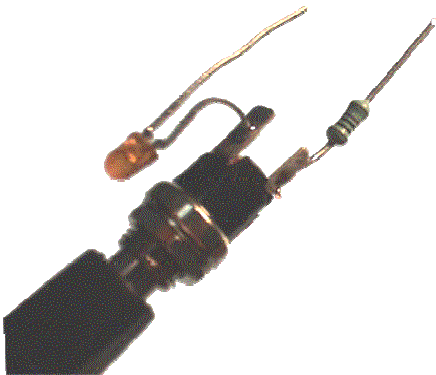
#### Connecting the Sensor Side

Using the network type cable that was shipped with the Drag system

Solid colored wires will go to the lead identified with a white dot (which is the sensor/receiver side). The white stripe wire will be ground and will go to the lead just next to it

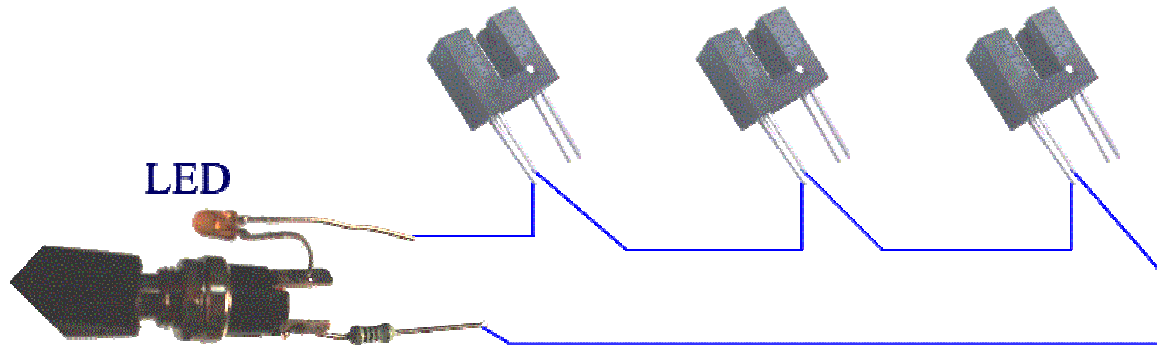
#### Connecting the Emitter Side

The remaining two leads are for the light source. The side with no dot. All ten must be connected in series, using 22 or 24 gauge wire and connectors, connect positive to negative to positive to negative and so on. This is powered by the supplied 15dc power pack with 2.1mm jack (Center negative) and inline LED and resistor.



The Led will be on if ALL the connections are made correctly.

**Only 3 sensor shown but connect all sensors in series**



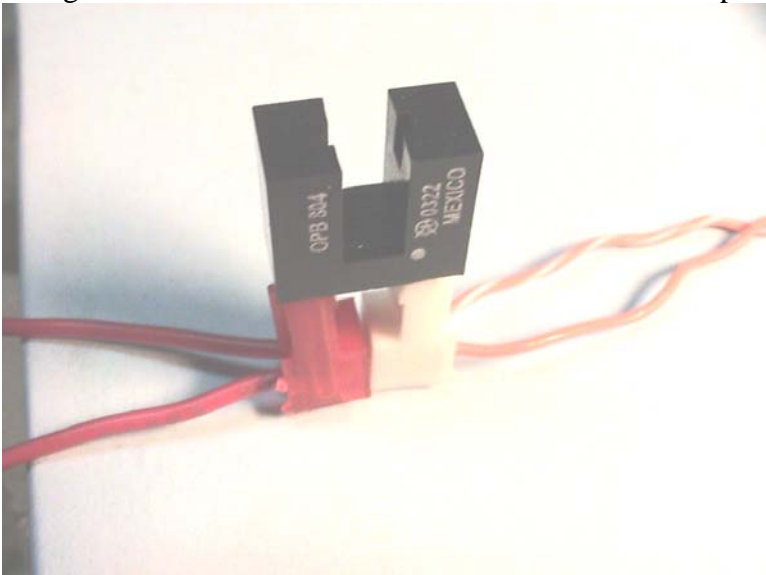
**Wiring the connectors:**

You do not need to strip the wires or use any special tools to wire the connectors.

White connectors are for 24 gauge wire (Sensor Cables- 4 twisted pair cables are 24 gauge)

Red Connectors are for 22 gauge wire (Can be used on the Emitter Side)

Using a vise to hold the connector can make it easier to push the wire in with a flat blade screwdriver.



Cables from TrakMate are wired to have the wires going away from the sensor as shown in the picture.

# Frequently Asked Questions

## **When testing tree in Diagnostic I get a “communication error”**

This is a bug in version 1 .7 and the error message should be ignored when testing the tree

## **How do I run diagnostics for the sensors?**

Click HELP -> Diagnostic

The squares should change color from red to green if you block the sensor

## **I connected all the sensors and the LED still doesn't come on. Why?**

The LED is an indicator that current is going through the whole circuit and working properly. Check all the connections. One bad connection and none of them will work or any connection done backwards and none of them will work.

Make sure you have the 9vdc adaptor plugged into the Controller board and the 15vdc adaptor is plugged into the LED/Resistor Jack

## **I'm getting weird times, what is causing it?**

Click on Help→ Diagnostic. This will bring up the diagnostic screen. Red means the sensors see light; green means the sensors are blocked. If one sensor is faulty verify that the white connector for that sensor is properly connected.

## **When I stage the car the Pre-stage and Stage lights go out, it's working backwards, why?**

Uncheck invert sensor signal in settings

## **On Pro tree The Yellow lights seen to stay on too long/too short**

Go to settings and verify that the pro tree time is set at .400

## **The MPH doesn't seem right**

Is the distance of the speed trap set correctly in the settings?

Set the speed multiplier in the settings to 1 for actual MPH.

## **Is there a way to shorten the time for the tree to start after clicking start?**

You can set the tree delay range in the settings.

## **My ET was quicker and I still lost, why?**

ETs do not include the reaction time.

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