Multi-Lane Racer Timing System

Operations Manual

Welcome…

…and thank you for purchasing a Launch Logic *Multi-Lane Racer Timing System*. The following pages will assist you in the initial setup and continued operation of the system.

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1.0 THEORY OF OPERATION

The Launch Logic Multi-Lane Racer is designed to put guests in a 2 to 8 lane drag race down your waterslide. When the operator at the top of the slide presses the START button a set of launch lights along with an audible horn will signal the start of the race for all lanes in a drag race theme. Once the green light is displayed along with a long audible horn, The race display screens will begin timing each lane separately. There are finish Accu-Logic beams at the bottom of the slide to trigger the time to stop for each lane, the guest with the shortest amount of time wins. The system displays the rider's time and place at the end of the race. Each lane will be placed according to amount of time it took them to race down the slide. You have the option to install DQ (Disqualification) Accu-Logic beams at the top of the slide. If a rider breaks the top beam before the green light and horn signal, then it will not time them, and will show "FOUL" on their race display screen.

List Of Abbreviations

MLR-Multi-Lane Racer

DQ-Disqualification

2.0 DESCRIPTION OF HARDWARE

2.1 Upper and Lower Control Boxes

This launch logic system uses two different control boxes to send and receive different information needed to control the race. The upper control box is used to control all of the system settings along with signaling the start of the race and controlling the DQ System if DQ option is chosen. The lower control box is used for the finish Accu-Logic beams along with the race display screen.

2.2 Launch Lights

The MLR uses 8" multi-colored lights to signal the start of the race. When the operator pushes the start button, the system will begin the race by flashing a yellow ball 3 times with a short beep from the audible horn followed by the initial start of a long audible horn and display green arrow on the lights. After the race has been started, The system

will wait 5 seconds and turn the lights to a red “X” until the system is ready to start a new race. See table below for reference:

Beep	
Beep	
Beep	
LONG & LOUD	
After the Race has Started	

2.3 Start Controller

The slide operator will have a red, momentary mushroom-head push button used for signaling the start of a race. Once the operator has all of the guests lined up, he will push the start button one time.

2.4 Race Display Screens

At the bottom of your slide you will have 2-8 race display screens depending on the size of your slide. They display either “current race time” or “finish time” or “place”. In the settings screen you can adjust the brightness of the screen (Default is the highest possible setting). Each screen is programmed for a certain lane when shipped from the warehouse. So be sure to check the back for a sticker displaying which lane each screen is intended for.

2.5 Accu-Logic Beams

The Accu-Logic Beams send and receive a beam of light across the slide path, When the beam is blocked by a guest passing, the Accu-Logic beam sends a signal to either the upper or lower depending on if it's the DQ or finish Accu-Logic beams indicating that a guest has passed.

3.0 DETAILS OF OPERATION

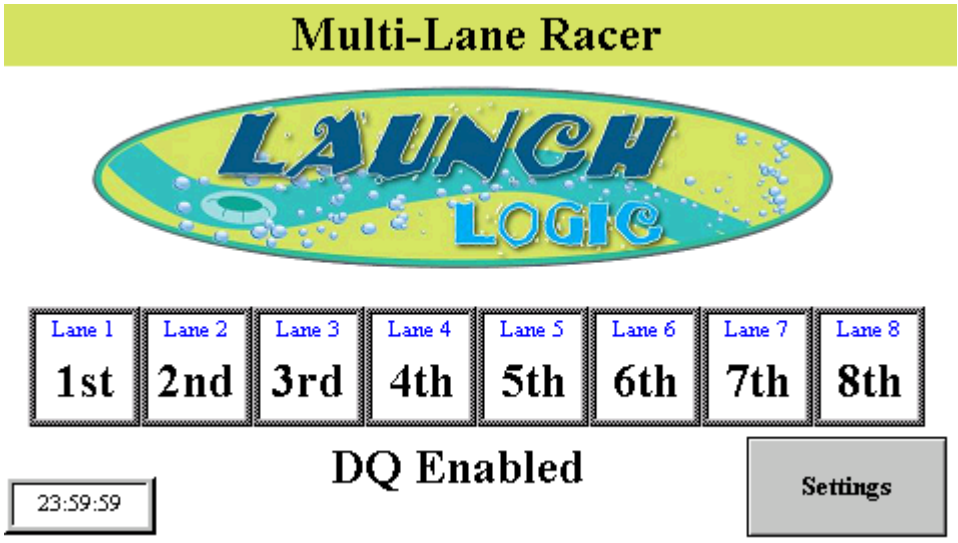
3.1 Overview

When the slide operator has all of the guests in place at the top of the slide he or she will push the start button. This begins the countdown for the start of the race. You will hear 3 short beeps along with yellow flashing lights followed by a long horn and green arrow indicating the start of the timers. Once the system has started the race, The green arrows will become red "X"s letting the next set of guests know not to enter the start tub. As the riders cross the finish line (finish Accu-Logic beams) it will place the riders with their respective time and place on the race display screens. Once all the lanes have finished or your maximum time has run out, The red "X"s at the top will go out indicating to the operator that the system is ready to start another race.

4.0 SYSTEM CONFIGURATION

4.1 Using the HMI User Control Screen

On the front face of the upper control box there is a 5" by 4" color touch screen. This screen is used to set all of the system timers for your slide.



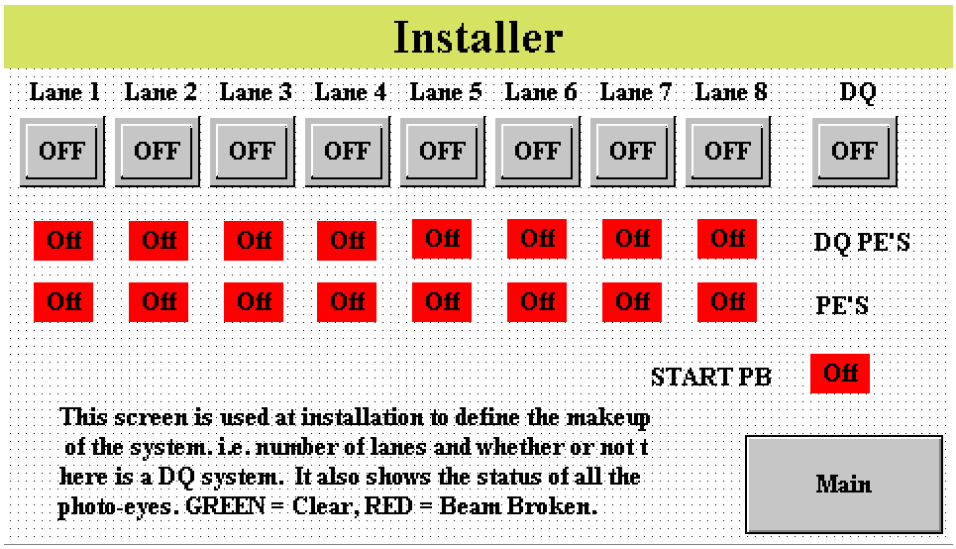
This is the main menu. Your screen should look like this when the system is first powered on.

4.2 Password

The system has (2) configuration screens that require a password, the password is 90630.

4.3 Installer Screen

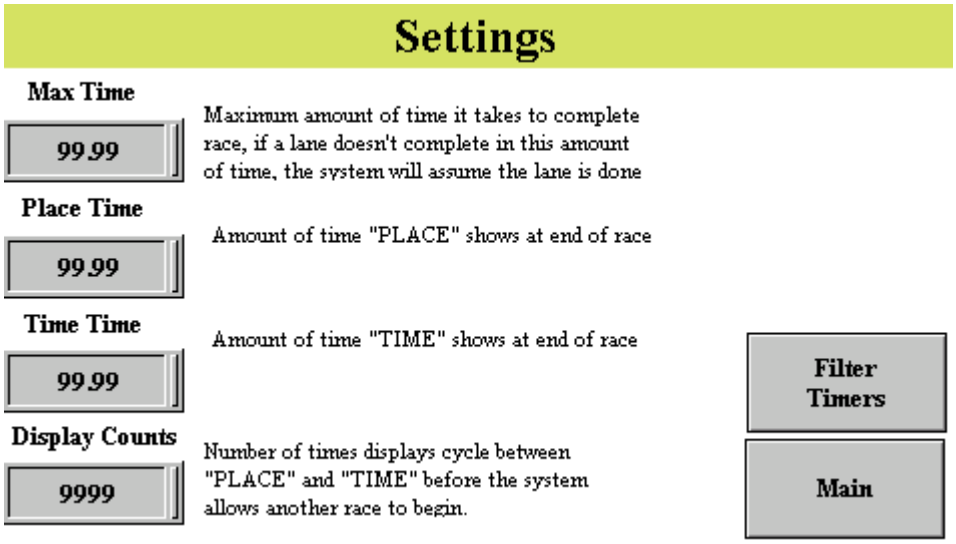
The Installer screen can be reached by pressing the “Launch Logic” Logo on the main screen, a numeric keypad will pop up, enter the password. This screen provides for the initial setup of the slide, it includes enabling the number of lanes and enabling or disabling DQ sensors. This screen also provides feedback for all sensors and the Start Push-Button and is useful for troubleshooting the wiring of the system.



The First row of “gray” buttons are used to turn lanes on and off, the final button labeled DQ enables and disables the DQ sensors. As each lane is enabled you will see a sensor indicator show up below the lane button. The indicators tell you the state of the sensor. With no sensors blocked, the indicator will show a GREEN On indicator, when a sensor is blocked it will show a RED Off indicator. The Start PB (push-button) indicator works in an opposite manner, when the button is not pressed it will indicate RED Off , and when the button is pressed it will indicate GREEN On.

4.4 Setting Your Systems Timers (Settings Screen)

Since every slide is different you have to set timers in the system based on times that your slide produces. With the help some guests and/or life guards and time them going down the slide 5 different times. Write down the average time it takes guests to slide down the racer. Go to the main menu screen of the HMI user screen and select "settings" in the bottom right corner of the screen, a numeric keypad will pop up, enter the password.



You should now see this screen.

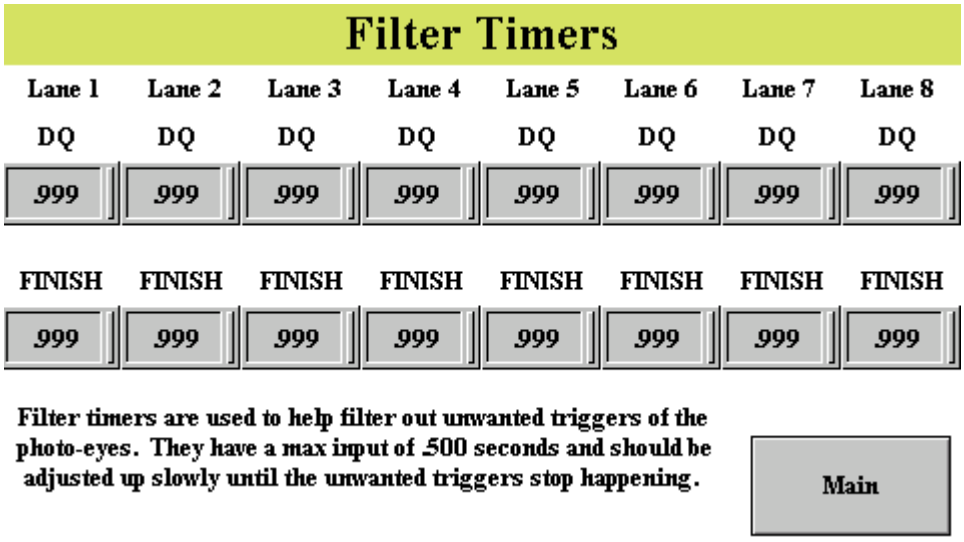
The first timer we need to set on this screen is the "MAX TIME". Example, if your average ride time was 28:00 seconds, set your "MAX TIME" for 35:00 seconds. This allows slow riders to still get timed but also keeps your lines moving.

The "PLACE TIME" and "TIME TIME" is the amount of time you want the place and racer's time to display between each other, Example if you set both of these at 1 sec, The place will display for 1 sec then the time will display for 1 sec and alternate back to place and so forth until the next race has been started.

The last setting that needs to be adjusted on this screen is the "DISPLAY COUNTS". This setting controls how many times it will display "PLACE & TIME" before allowing another race to begin. Example if you were to set this at "3" it would only display the place and time for 6 seconds before the next race is allowed to start given that the "PLACE TIME" & "TIME TIME" are set at 1 sec each.

4.5 Setting the Filter Timers

What is a filter timer? The filter timers are the amount of time taken to block an "Accu-Logic" beam. These timers are used to "filter" out very shorts breaks of the beam that are not actually riders. All the filter timers should be set to 0.05sec as a default setting.



The .05 setting should be sufficient for all lanes, if you find that you have lanes that are being blocked inadvertently by water, which can be seen by either a system FOUL when the rider didn't break the beam before the GREEN light, or a very short ride time, the race ended for a lane before the rider crosses the finish line. Then these timers can be used to filter out the undesired breaking of the beam. They should be incremented in a very small amounts until the undesired beam break is filtered out. Remember that at high enough settings the system will no longer be able to detect a rider breaking the beam, and you will see the race timer timing out to it's MAX time on every race, even though a rider has passed the finish line before the MAX time.

5.0 Optional Slide Clear Button

Normal operation of the system provides for an automatic RESET between races, this amount of time is a combination of the MAX time and the DISPLAY counts. The DISPLAY counts start at the end of the race, which is indicated by either all lanes finishing, or if a race is run without a lane occupied, after the MAX time for the unoccupied lane has elapsed. Once the Display count has elapsed the system is RESET, the lights at the top change from RED to OFF, and the START button can be pressed again to start a new race.

The optional “Slide Clear” button is an illuminated push-button that can be used to require an operator at the bottom to confirm that the slide is clear and that the system can start a new race. With this option added, when the DISPLAY counts have finished the light on the button illuminates, and the operator can now press the button to allow a new race to start.

[Note* Call Tech Support @ 909-394-1142 if further assistance is needed with these settings.]